

From: [McGraw, Rachel Lynn](#)
To: [Mulkey, Cindy](#)
Cc: [SCO](#); [Seiler, Ann](#); [Wissler, Matt -Geosyntec](#); [Balcom, Ilia G.](#); [McDaniel, Kim Spence](#)
Subject: Duke Energy Florida, Citrus Combined Cycle Groundwater Monitoring Plan
Date: Monday, July 25, 2022 9:04:12 AM

EXTERNAL MESSAGE

This email originated outside of DEP. Please use caution when opening attachments, clicking links, or responding to this email.

Good morning Cindy,

Duke Energy Florida has uploaded a copy of the Citrus Combined Cycle results from the Background Groundwater Study, along with the revised Groundwater Monitoring Plan, to the Departments FTP site. The document can be found in the [Duke Energy Citrus Combined Cycle](#) folder. Please let me know if you are unable to access the folder or download the document.

Thank you, Rachel

Rachel McGraw

Lead Environmental Professional

Duke Energy Florida – Environmental Services

Water Programs

Post Office Box 14042 | Mailcode FL12AHYB | Saint Petersburg, Florida 33733-4042

Office 727-820-5053

Rachel.McGraw@duke-energy.com





July 25, 2022

Sent Via Electronic Mail

Ms. Cindy Mulkey
Florida Department of Environmental Protection
Program Administrator
Siting Coordination Office (SCO)
2600 Blair Stone Road, MS 5500
Tallahassee, FL 32399-2400

Subject: Duke Energy Florida, LLC
Citrus Combined Cycle Plant
WAFR ID FLA964891
Conditions of Certification PA 77-09U
Amendment Request-Results of the Background Groundwater Study and Revised
Ground Water Monitoring Plan

Dear Ms. Mulkey:

In accordance with Condition II.B.8 from Attachment H of the above-referenced Conditions of Certification (COC), Duke Energy Florida (DEF) is submitting the results of the Background Groundwater Study and a revised Ground Water Monitoring Plan (GWMP) for the Citrus Combined Cycle Plant, and requests an amendment to the site certification to implement the revised GWMP.

As indicated in the revised GWMP, DEF also requests a meeting with the Department to discuss administrative options to provide relief from the new site-specific ground water standard for Manganese while corrective actions are implemented and are effective.

Should you have any questions regarding this submittal, please contact Ms. Ilia Balcom at (813) 362-5123 or ilia.balcom@duke-energy.com. Please copy Ms. Balcom on all correspondence related to this submittal.

Sincerely,


Martin J. Drango
Station Manager
Citrus Combined Cycle Plant

Enclosures

Cc: Matt Wisler, P.G., Geosyntec



engineers | scientists | innovators



GROUNDWATER MONITORING PLAN – REVISION 3

Citrus Combined Cycle Plant

Prepared for

Duke Energy Florida, LLC

14385 N. Access Road
Crystal River, Florida 34428

Prepared by

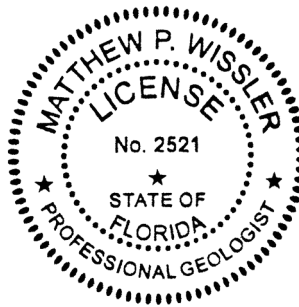
Geosyntec Consultants, Inc.
12802 Tampa Oaks Boulevard, Suite 151
Tampa, Florida 33637

Project FR7631A

July 2022

CERTIFICATE OF AUTHORIZATION
GROUNDWATER MONITORING PLAN

Citrus Combined Cycle PROJECT
Duke Energy Florida, LLC.
14385 N. Access Road
Crystal River, Florida 34428



Reviewed by:

Matthew Wissler, P.G.
Senior Principal Hydrogeologist
State of Florida Professional Geologist No.: 2521
Geosyntec Consultants, Inc.
Geology License Number GB200
Telephone (813) 558-0990

7/21/2022

Date

TABLE OF CONTENTS

1.	INTRODUCTION	1
1.1	Terms of Reference	1
1.2	Site Description	1
1.3	Document Organization	1
2.	SITE SETTING	2
2.1	Site Process Review	2
3.	HYDROGEOLOGIC AND PHYSICAL SETTING	4
3.1	Regional Setting	4
3.1.1	Regional Geology	4
3.1.2	Regional Hydrogeology	4
3.2	Site Setting	5
3.2.1	Site Topography and Soil Classifications	5
3.2.2	Site Geology	6
3.2.3	Site Hydrogeology	7
3.2.4	Area Surface Waters and Classifications	8
3.2.5	Sinkholes	9
3.2.6	Potable Well Survey	9
4.	GROUNDWATER MONITORING LOCATION RATIONALE	10
4.1	Program Objectives	10
4.2	Monitoring Program Rationale	10
4.3	Proposed Groundwater Monitoring Program	11
4.3.1	Background Study/Data Evaluation	12
4.3.2	Background Study Results	13
4.3.3	Manganese Evaluation	14
4.3.4	Manganese Transport and Cleanup Time	14
4.4	Monitoring Well Construction	16
5.	FIELD PROCEDURES	17
5.1	Monitoring Well Development and Field Testing	17
5.1.1	Water Level Measurements	17
5.1.2	Monitoring Well Sampling	17
5.1.3	Field Measurements	18
5.2	Groundwater Analytical Testing	18
5.2.1	Initial and Routine Samples	18
5.2.2	Sample Containers and Labels	18

5.3	Chain of Custody and Shipping.....	18
5.4	Sampling Documentation	19
6.	SUMMARY.....	20
7.	REFERENCES	21

LIST OF TABLES

Table 1	Monitor Well Construction Details and Groundwater Elevation Data
Table 2	Hydraulic Conductivity Summary
Table 3	Groundwater Quality Data
Table 4	Background Calculation Summary
Table 5	Proposed Quarterly Groundwater Monitoring Parameters

LIST OF FIGURES

Figure 1	Site Location Map
Figure 2	Site Layout
Figure 3	Regional Hydrogeologic Framework
Figure 4	Detailed 1-Foot Topographic Contours
Figure 5	Soil Classification in the Vicinity of CCC Plant Site
Figure 6	Soil Borings and Geologic Cross Section Transects
Figure 7	Geologic Cross Section A-A' (Southwest – Northeast)
Figure 8	Geologic Cross Section B-B' (Northwest – Southeast)
Figure 9	Geologic Cross Section C-C' (Southwest – Northeast)
Figure 10	Pre Operation Groundwater Contours 4Q2017
Figure 11	Operational Groundwater Contours 3Q2020
Figure 12	Surface Waters in Vicinity of CCC Project Site
Figure 13	Sinkholes in Vicinity of CCC Project Site
Figure 14	Site Sinkholes and Photolinear Features
Figure 15	Well Survey in Vicinity of CCC Project Site
Figure 16	Regional Arsenic Sampling Locations
Figure 17	Regional Iron Sampling Locations

Figure 18	Regional Manganese Sampling Locations
Figure 19	CREC Production Well Locations
Figure 20	Monitoring Well Construction Detail

LIST OF APPENDICES

Appendix A	Lithologic Borings
Appendix B	Groundwater Modeling Evaluation Citrus Combined Cycle Plant
Appendix C	Groundwater Quality Graphs
Appendix D	Correlation of IWW Pond System and Groundwater Well Measured Constituents
Appendix E	Groundwater Sampling Parameters
Appendix F	Statistical Analysis Summary
Appendix G	ISCO Sampling Results

1. INTRODUCTION

1.1 Terms of Reference

This document represents the Duke Energy Florida, LLC, (DEF) Groundwater Monitoring Plan (GWMP) for the Citrus Combined Cycle Plant (CCCP) (Site) in accordance with Florida Administrative Code (F.A.C.) 62-520.600(3) and Conditions of Certification (CoC) PA 77-09, Attachment H, Section II.B.8; Duke Energy Florida, LLC (DEF), Citrus Combined Cycle Plant (CCCP) has prepared this revised GWMP to present the results of the background study and request revision to CoC, Attachment H. . This GWMP is prepared in accordance with Chapter 62-520.600, F.A.C. to ensure compliance with applicable groundwater quality standards at the Site.

1.2 Site Description

The Site is adjacent to the eastern boundary of DEF's existing Crystal River Energy Complex (CREC) located at 14385 North Access Road, Crystal River, (Citrus County) FL 34428 (**Figure 1**) and consists of approximately 400 acres. The Site is located in Section 22, Township 17 south, and Range 16 east, near latitude 28° 57' 54" N and longitude 82° 39' 50" W. The facility consists of two combined cycle generation units using natural gas to produce approximately 820 megawatts each for a total of 1,640 megawatts.

1.3 Document Organization

The remainder of the GWMP is organized as follows:

- **Section 2** – describes the Site setting and process review;
- **Section 3** – describes the regional geology, hydrogeology, and the Site physical setting;
- **Section 4** - provides the rationale and construction details of the proposed Site groundwater monitoring locations and wells;
- **Section 5** – describes and provides a rationale for the field and analytical procedures that will be utilized during routine groundwater sampling;
- **Section 6** – provides the report summary.

2. SITE SETTING

2.1 Site Process Review

Construction activities for the CCCP began in early 2016 and commercial operation began in May 2018 for the first unit and December 2018 for the second unit. The power plant consists of two combined cycle generating units. Each unit consists of two advanced combustion turbine generators, two heat recovery steam generators, and one steam turbine generator (**Figure 2**). The condenser cooling system is a closed-loop, recirculating system consisting of a new mechanical draft cooling tower system for each combined cycle unit. Cooling tower makeup water consists of seawater withdrawn from the existing CREC intake canal through the existing Crystal River Unit 3 intake structure. Groundwater use is minimized through the use of seawater for cooling water. Cooling tower blowdown is directed to Crystal River Units 4 & 5 for use as makeup water or discharged via the existing CREC discharge canal through a discharge structure. Process and potable freshwater needs for the Site include demineralized water for steam cycle makeup, plant service water, wash water, fire protection water, and potable water. Freshwater is provided through the current groundwater withdrawals using the existing Southwest Florida Water Management District (SWFWMD) water use permit (WUP) for the CREC.

Industrial wastewater (IWW) discharges include low-volume waste streams as defined in 40 CFR Part 423. These discharges include, but are not limited to, flows from plant service water systems and floor drains, blowdown from the heat recovery steam generators (HRSGs), raw water treatment filter backwash, neutralized condensate polisher regeneration wastes, and other residual waters from the demineralized water treatment systems. Discharges from these sources are treated, as appropriate, and discharged to the on-Site percolation pond system. Except for cooling tower blowdown, IWWs are not discharged to surface waters unless in an emergency where IWW can be discharged via a spillway under the National Pollutant Discharge Elimination System (NPDES) permit no. FL0000159 discharge D-020. The percolation pond system was designed in accordance with all applicable nonprocedural requirements for IWW percolation ponds (ECT, 2014).

The percolation pond system currently consists of two ponds. The first pond was constructed in 2017 and is referred to as Pond 2. Pond 2 was used exclusively until Pond 1 was constructed in 2019. Pond 1 is currently used as the main pond with a spillway connecting Pond 1 to Pond 2 in case there is a need for additional storage/percolation. As previously mentioned, Pond 2 contains an emergency spillway. Ponds 1 and 2 are shown on **Figure 2**.

The wastewater from floor and equipment drains throughout the plant may be exposed to oily products and, therefore, are be collected and treated through oil/water separators. Residual water from the demineralized water system is neutralized. Infrequent HRSG and pipe cleaning that produces metal cleaning wastes is collected and disposed off-Site by a licensed vendor (ECT,

2014). Sanitary wastewater is sent to an on-Site, appropriately sized, package domestic wastewater treatment plant and the treated effluent is discharged to the IWW pond.

A stormwater management system has been designed to handle and treat the 25-year, 24-hour storm event in accordance with all applicable nonprocedural requirements, including the requirements in Chapter 62-330, F.A.C. Potential contact stormwater runoff from the power block and equipment areas is treated through oil/water separators and routed to the on-Site IWW percolation pond system. Noncontact stormwater runoff is collected and routed to the stormwater detention ponds shown on **Figure 2**.

The Site also includes associated facilities, such as closed-cycle mechanical draft cooling towers, administration/warehouse building and parking, auxiliary boiler, emergency diesel generators, firewater pump, water treatment and storage tank facilities, switchyard, stormwater management system and detention ponds (ECT, 2014).

3. HYDROGEOLOGIC AND PHYSICAL SETTING

3.1 Regional Setting

3.1.1 Regional Geology

The Site lies within the Coastal Swamps physiographic region and near the boundary of the Gulf Coastal Lowland physiographic region (Knochenmus and Yobi, 2001). The general hydrogeologic units that form the hydrogeologic framework in the region include the discontinuous, siliciclastic Surficial Aquifer System (SAS) and the limestone and dolostone of the Upper Floridan Aquifer System (UFAS).

Sediments within the SAS are characterized as undifferentiated surficial deposits (USDs) and are comprised of a discontinuous veneer of varying mixtures of sands, clayey sands, and shell. Thicknesses vary considerably due to the irregular surface of the underlying limestone (Spencer, 1984). A component of the USDs is comprised of residual and reworked Hawthorn Group sediments derived from the fluctuation of sea level (Faulkner, 1973).

Regionally, the UFAS is comprised of (in descending order) the Suwannee Limestone, the Ocala Group Limestone (including the Crystal River, Williston, and Inglis Formations), and the Avon Park Limestone (Spencer, 1984). A generalized regional cross-section is included in **Figure 3**.

3.1.2 Regional Hydrogeology

Groundwater in the area occurs in the unconsolidated SAS and porous limestone of the UFAS. In the vicinity of the CREC, the UFAS is unconfined due to the absence of well developed, low permeability sediments between the SAS and UFAS (Spencer, 1984). The predominant regional groundwater flow is generally from northeast to southwest toward the Gulf of Mexico with variability attributable to topography and lithology.

Regional groundwater quality data indicates that historic withdrawal of groundwater within the UFAS has resulted in saltwater intrusion along much of Florida's Gulf Coast (Guvanasen, 2000). Prior data from two USGS wells located at the CREC indicates that the upper transmissive zone (well screened from 42-47 feet [ft] below land surface [BLS]) of the Inglis Formation has a higher concentration of chlorides (200 to 1,800 milligrams per liter [mg/L]) than the lower transmissive zone with a well screened from 51.8-88 ft BLS (approximately less than 20 mg/L) (ESE, 1984). Additionally, the total dissolved solids (TDS) concentrations ranged from 768 to 4,736 mg/L in the upper transmissive zone and from 230 to 333 mg/L in the lower transmissive zone; iron ranged from 0.06 to 30.7 mg/L in the upper transmissive zone and from less than 0.2 to 11.2 mg/L in the lower transmissive zone; and manganese ranged from 0.003 to 0.201 mg/L in the upper transmissive zone and from less than 0.002 to 0.306 mg/L in the lower transmissive zone.

Elevated arsenic levels have been reported in northwest Citrus County Florida (Hunter, 2011; Florida Department of Health, 2021; Laughlin, 2011). It is important to note that the area investigated includes those areas with private drinking water wells. As the Site does not include private drinking water wells, the investigation of elevated arsenic concentrations did not proceed onto the Site. However, the arsenic laden groundwater flows under the Site and toward the Gulf of Mexico. Arsenic can be naturally occurring in the UFAS or associated with historical cattle dip vats and/or the historical use of arsenical pesticides. In addition, arsenic concentrations can fluctuate according to redox conditions within the aquifer.

3.2 Site Setting

3.2.1 Site Topography and Soil Classifications

The Site is located in the western portion of Citrus County in the Gulf Coastal Lowlands and Coastal Swamps. A detailed survey of the property was conducted by Southern Resource Mapping, Inc. in November 2013 and indicates that the Site topography ranges from 2 to 14 ft National Geodetic Vertical Datum of 1929 (NGVD29) in elevation (**Figure 4**). Site elevation slopes from a high in the northeast to a low in the southwest along the coast. Generally, pre-construction surface water runoff would be expected to follow Site topography but based on the relatively flat topography and lack of surface water features draining the Site location, surface water runoff is expected to be negligible.

During Site construction, the facility footprint was raised by 8 to 9+ ft with compacted structural fill for flood protection. The final constructed plant footprint directs Site stormwater to 5 stormwater detention ponds for infiltration (**Figure 2**). Stormwater flow in the areas outside of the plant footprint are expected to follow pre-construction flow-paths.

Soils at the Site are classified into five soil units under three soil series by the National Soil Characterization Survey (NSCS) (**Figure 5**). The principal soil unit at the Site is identified as Boca Series, which typically consists of 3 ft of sandy and loamy marine deposits over limestone. Additional soil units at the Site are the Broward Series, and Hallandale Series. The Broward Series is typically 3 ft of fine sand underlain by limestone bedrock. The Hallandale Series consists of a 1-ft thick surficial layer of fine sand on top of a hard limestone layer. A brief description of each series is provided below:

- The Boca Series is a fine sand to loamy sand moderately deep, poorly drained to very poorly drained, moderately permeable soils in low broad flats.
- The Broward Series consists of moderately deep, nearly level, somewhat poorly drained, rapidly permeable soils that formed in sandy marine deposits underlain by limestone bedrock.
- The Hallandale Series consists of shallow, nearly level, poorly drained, moderately

permeable to moderately rapidly permeable soils that formed in sandy and loamy marine deposits underlain by limestone bedrock.

3.2.2 Site Geology

The geologic and hydrogeologic units, in order of increasing depth below land surface, at the Site are summarized below.

- *Undifferentiated Surficial Deposits (USDs)* - The USDs are comprised of brown to grey silty sands to sandy clays with muck ranging in thickness from 0 to 20 ft below land surface (BLS) (AMEC, 2013 and Terracon, 2015). The thickness of the USDs is variable as a result of the irregular surface of the underlying limestone. Due to the limited extent of the USDs, the SAS is only locally present at the Site where saturated unconsolidated sediments are present.
- *Inglis Formation of the Ocala Group* - Encountered between land surface and 20 ft BLS, this white, fossiliferous, and friable limestone is the uppermost hydrogeologic unit of the UFA. The Inglis Formation is cavernous with solution channels and cavities. Permeable zones within the Inglis Formation are present at depths of less than 30 ft BLS and between 40 and 60 ft BLS (the base of the Inglis Formation).
- *Avon Park Formation* – The top of the Avon Park Formation is encountered between 45 and 70 ft BLS. It is comprised of an occasionally dolomitized limestone and well indurated limestone (AMEC, 2013 and Spencer, 1984). The Avon Park Formation is the formation utilized for water supply for CREC operations.

Two geotechnical investigations were completed at the Site. The initial investigation was completed by AMEC in November 2013 and the second investigation was completed by Terracon in October 2015. AMEC completed 25 standard penetration test (SPT) soil borings within the footprint of the Site facilities that ranged in depths from 26 ft BLS to approximately 100 ft BLS (AMEC, 2013). **Figure 6** shows the locations of the completed SPTs along with the transects of three cross-sections prepared using lithologic information from the boring logs. The cross-sections are included as **Figures 7** through **9**. The report indicates several “weak” locations where the SPT was driven by the weight of the drilling rod without hammering. Most of the “weak” locations only occurred over an interval of several ft and can be attributed to weathered limestone lenses or small solution cavities. However, at boring B-15, a weak zone that was approximately 23 ft deep was encountered and the boring had to be abandoned due to unsafe drilling conditions.

Terracon completed several shallow SPT borings across the Site to evaluate the potential locations of several large diameter circulation water pipes and the IWW percolation pond. The borings were completed to depths of between 6 and 16 ft BLS and were logged for soil type and density. In addition, Geosyntec installed four IWW monitoring wells associated with the previous GWMP

(Geosyntec, 2016) and two additional IWW monitoring wells associated with the subsequent GWMP (Geosyntec, 2019). The reported lithologic logs are included in **Appendix A**. Lithologic descriptions are similar between the AMEC, Terracon and Geosyntec borings suggesting similar geologic conditions across the Site.

3.2.3 Site Hydrogeology

The Site hydrogeology has been documented during several design investigations outlined in Section 3.2.2. In addition to the design investigations, hydrogeologic data was also collected from several monitoring wells installed in accordance with the previous GWMP (Geosyntec, 2016). Initially, MWB-1, MW-2, MW-3, and MW-4 were installed in 2017 and were followed by the installation of MW-5 and MW-6 in 2019. Construction details for these wells are included in **Table 1** and their locations are shown on **Figures 10** and **11**. Groundwater elevations were collected quarterly following the installation of each monitoring well and a summary of the groundwater levels and calculated groundwater elevations are summarized in **Table 1**. Groundwater elevations from 4th quarter 2017 (prior to the IWW pond system operation) and 3rd quarter 2020 (Post IWW pond system operation period with the lowest groundwater elevations) are shown on **Figures 10** and **11**, respectively. The groundwater flow direction in 2017 prior to pond system operation is to the west, southwest and the flow direction during pond operation is generally from east to west. Flow directions may vary due to the complex subsurface character of the UFA caused by solution cavities and surface water features.

A groundwater flow model was developed to evaluate groundwater mounding in response to IWW discharge to the IWW percolation pond system. Groundwater data from the monitoring wells installed in accordance with the previous GWMP (Geosyntec, 2016) were used to calibrate the groundwater flow model. The results of the model showed that groundwater mounding up to 0.1 ft can be induced by the IWW ponds at distances up to 2,000 ft from the IWW ponds. A detailed report describing the groundwater model is contained in **Appendix B**.

Terracon completed several in-situ, down-hole permeability tests and double ring infiltrometer (DRI) tests during the geotechnical investigation in October 2015 (Terracon, 2015). The down-hole permeability tests were conducted by pumping the un-cased portion of a test boring and measuring the recovery time between two set water level indicators after the pump was shut off. The calculated permeabilities range from 0.3 feet per day (ft/day) to 51 ft/day with an average of 12.8 ft/day. A summary of the calculated permeabilities is included in **Table 2**. These permeabilities may be biased low due to the small volume of aquifer actually tested. Additional hydraulic conductivity data collected during previous evaluations at the CREC indicate that hydraulic conductivities range from 7.9 to 170 ft/day in the shallow part of the UFA (Geosyntec, 2017).

Two DRI tests were performed in the proposed stormwater retention area of the Site. The DRI test procedure consisted of installing a 12-inch diameter steel ring and a 24-inch diameter steel

ring concentrically into the ground. Water was then added to a desired head level of approximately 12 inches in both casings and held constant. The amount of infiltration observed in the inner ring versus time was then recorded. The results of the DRI tests indicate an average infiltration rate of 4.9 inches per hour (Terracon, 2015).

Baseline groundwater quality at the CCCP was documented at MWB-1, MW-2, MW-3, and MW-4 in November 2017 before the units were constructed and operated. These monitoring wells were installed as part of the preliminary GWMP (Geosyntec, 2016). Based on the initial groundwater quality, two additional monitoring wells were installed: MW-5 along northern property boundary and MW-6 located approximately 2,000 ft southwest of Pond 2. Construction details for these wells are included in **Table 1** and their locations are shown on **Figure 11**. The six monitoring wells have been sampled quarterly since installation for the monitoring analytes listed in Table 3 of the FDEP's "Guidance for Groundwater Water Monitoring Plan Design," dated 2008. The results of these analyses are included in **Table 3**. Graphical trends of select analytes including arsenic, chloride, nitrate, sulfate, total dissolved solids (TDS), iron, and manganese from 2017 to May 2022 (one pre-operational and quarterly sampling rounds) are included in **Appendix C**.

Baseline results collected prior to operation of the IWW pond system showed that the TDS concentration exceeded 500 mg/L in wells MW-3 and MW-4 suggesting that TDS is naturally high in the area. In addition, the sampling of MW-6 revealed arsenic concentrations ranging from 3.3 to 174 ug/L. MW-6 is approximately 2,000 ft from the IWW system and percolating water from the IWW system is unlikely to have reached this well. Iron concentrations during baseline sampling were as high as 2.56 mg/l (MW-2) which exceeds the compliance limit of 0.3 mg/L. Manganese concentrations were as high as 0.107 mg/l (MW-04) during the baseline sampling which is greater than the compliance criteria of 0.05 mg/L.

3.2.4 Area Surface Waters and Classifications

The CCCP is located near several surface waters designated as Outstanding Florida Waters (OFW) (62-302.700, F.A.C.) (**Figure 12**). An Outstanding Florida Water classification determines that the waters designated are worthy of special protection because of their natural attributes and is intended to protect and maintain existing acceptable quality standards. Surface waters in the vicinity of the Site designated as OFWs include Lake Rousseau to the northeast, Crystal Bay and Crystal River to the south, the Gulf of Mexico to the east, the Withlacoochee River to the north.

No freshwater surface waters will be used for the operation of the CCCP. Marine surface water will be used for cooling tower makeup and flow augmentation. Marine surface water will be withdrawn and directed to Crystal River Units 4 & 5 for use as makeup water or discharged back into the Gulf of Mexico via the connection to the existing CREC intake and discharge canals. The operation of the CCCP is not anticipated to cause significant changes in hydrologic or water quality in the existing CREC canals or surrounding surface waters.

A survey was conducted to locate any springs within a 1-mile radius of the Site as well as any on-Site sinkholes. The survey was conducted using existing FDEP databases as well as an analysis of aerial images from the Site. There were no springs identified within a one-mile radius of the Site (**Figure 12**).

3.2.5 Sinkholes

The Site is located in the FDEP designated Area I sinkhole classification. The FDEP sinkhole Area I generally contains bare limestone at land surface or thinly covered limestone near surface. Sinkholes are few and are generally shallow and broad and develop gradually. Solution type sinkholes are dominant. A map including FDEP designated sinkhole areas and known sinkhole locations near the Site are included in **Figure 13**.

One anomaly and one sinkhole were identified during the geotechnical investigation by AMEC in 2013. The anomaly was encountered when completing SPT boring B-15 and later assessed with ground penetrating radar (GPR). A circular, water-filled sinkhole was observed south of boring B-15 (**Figure 14**) which was later confirmed by AMEC during a GPR assessment. Both the anomaly and identified sinkhole displayed GPR reflections that are typical of karst features. The diameter of the anomaly is approximately 50 ft and the diameter of the identified sinkhole is approximately 20 ft. The total depth could not be determined in either potential karst features. The anomaly and the sinkhole are not located near the IWW percolation pond or near any proposed stormwater detention features.

Figure 14 also includes photolinear features mapped at the Site by AMEC during the geotechnical investigation. Not all photolinear features represent fracture traces, and karst features could be present in the subsurface at locations not associated with mapped photolinear features, as in the case of the anomaly and the observed sinkhole.

3.2.6 Potable Well Survey

A survey of permitted potable groundwater use wells was conducted using the SWFWMD Well Construction Permit (WCP), WUP and Florida Department of Health (FDOH) databases. The results of the well survey indicate no permitted potable wells within 500 ft of the Site (**Figure 15**).

4. GROUNDWATER MONITORING LOCATION RATIONALE

4.1 Program Objectives

A groundwater monitoring program was developed to monitor groundwater entering and leaving the IWW pond area and to allow DEF to monitor trends in Site groundwater conditions associated with the discharge of IWW to the groundwater. However, the CCCP was not operational until approximately October 2018 and permanent well locations and designations could not be established at that time. After the pond expansion in 2019, additional wells were required, and DEF proposed augmentation of the monitoring well network in 2019 based on the quarterly groundwater sampling during 2018 and subsequent groundwater modeling. Attachment H permit requirement for the CCCP includes two additional requirements for the GWMP:

- The zone of discharge (ZOD) for the CCCP will be established in accordance with Chapter 62-520.465(2), F.A.C., after ground water monitoring data are collected from existing monitoring wells MWB-1, MW- 2, MW-3 and MW-4, and new monitoring wells MW-5 and MW-6 for one year after the construction of the new monitoring wells.
- Fourteen months after completion of installation of new monitoring wells MW-5 and MW-6, the licensee shall submit a request for a revision to this attachment, which will include a revised CCCP ground water monitoring plan, in accordance with Chapter 62-520.600(3), F.A.C.

This GWMP revision is designed to address these additional requirements.

4.2 Monitoring Program Rationale

Well placements for groundwater monitoring are typically based on one or more of the following general criteria:

- Direction of groundwater flow and downgradient positioning between the Site and potential off-Site receptors;
- Historical groundwater conditions,
- Nearness and travel time (average linear flow velocity) to the IWW pond system; and
- Natural background conditions.

Groundwater flow at the Site, as indicated by the groundwater flow maps and the groundwater flow model, is influenced by the IWW percolation pond system. Monitoring conducted since the installation of the IWW percolation pond system confirms what was predicted by the model. The groundwater model and the collected groundwater elevation data indicate that groundwater mounds around the IWW percolation pond system and that flow is generally radially outward from the pond towards the Site boundaries. Monitoring wells will be utilized to ensure that DEF will be able to document and address any changes in groundwater quality before compliance points are affected.

Chapter 62-520.465 F.A.C., states that “the boundary of the zone of discharge shall be 100 ft from the Site boundary or to the installation’s property boundary, whichever is less.” The Rule also allows the Department to establish a larger zone of discharge provided certain provisions are met. In an effort to establish an appropriate zone of discharge and monitoring well placement, DEF has implemented a groundwater monitoring program and performed groundwater modeling at the CCCP to establish permanent well locations and designations.

4.3 Proposed Groundwater Monitoring Program

The results of the mounding analysis conducted for the IWW percolation pond (**Appendix B**), the groundwater quality data shown in **Table 3**, and the measured groundwater contours in **Figures 10** and **11** were reviewed. The modeling exercise predicted that there would be mounding associated with discharge into the IWW percolation pond. This mounding was confirmed with the quarterly groundwater elevation measurements.

Evaluation of the chemical data showed that the only constituent with a primary groundwater standard that exceeded the compliance limit was arsenic. The secondary groundwater standard for TDS, iron and manganese were also exceeded. However, as indicated in Section 3.2.3, elevated levels of arsenic, TDS, iron, and manganese exceeding default screening criteria were observed during the baseline sampling.

Wide variability of arsenic concentrations in groundwater have been observed as indicated in **Table 3** and **Appendix C**. This includes arsenic concentrations exceeding 100 µg/L at well MW-5 along the northern property boundary and downgradient well MW-6 located approximately 2,000 ft southwest of the percolation pond system. These concentrations exceeded, by several order of magnitude, the highest arsenic value measured in the IWW pond system. Additionally, the arsenic concentrations in wells closer to the IWW percolation pond (i.e., MW-2, MW-3, and MW-4), at times, reported arsenic concentration in groundwater that exceeded those measured concurrently in the IWW percolation pond system. The variability in arsenic concentrations is likely a result of a naturally occurring regional background source. Elevated background arsenic concentrations that exceed Florida Groundwater Cleanup Target Level (GCTL) of 10 µg/L have been documented in Citrus County (Laughlin, 2011).

Concentrations of TDS, iron, and manganese were observed to exceed the GCTLs during baseline sampling prior to IWW pond system operation with the exception of iron at MW-4 and TDS at MW-2 and MWB-1. Additionally, the concentrations of TDS, iron and manganese from the monitoring wells also periodically exceed the concentrations from the IWW pond system. Finally, as shown in **Appendix D** the concentrations of these constituents measured in the groundwater wells do not correlate with the concentrations measured in the IWW pond system. Therefore, DEF has conducted a background study for TDS, iron, and manganese in the area using Site and available FDOH and other regional/local data. Results of the study were used to calculate an appropriate background/compliance arsenic, iron, manganese, and TDS concentration for incorporation into Attachment H of the Site’s conditions of certification (COC).

4.3.1 Background Study/Data Evaluation

Arsenic, iron, and manganese water quality data from public and private water supply wells completed in the UFA were collected from the following sources:

- Florida Department and Environmental Protection (FDEP) Public Water Supply (PWS) database (Citrus County data); and
- Florida Department of Health (FDOH) Well Surveillance Program database (Citrus County data).

Wells with available water quality data and ranges of concentrations for each of the constituents are shown in **Figures 17** through **19**. Raw data can be made available to FDEP upon request.

Compiled background data from groundwater wells at the Site and at nearby wells was filtered based on the following criteria:

- Wells located upgradient or side gradient to the Site; and
- Wells screen interval are comparable to onsite wells – screened in the same aquifer.

After being filtered, the data was evaluated statistically to derive concentrations to be used as background criteria (i.e., alternative performance criteria). This approach involved evaluation of spatial and temporal trends. Additionally, background concentrations were derived using both the onsite background well (MWB-1) and the compiled regional background data sets (or a production well data set in the case of TDS) described above.

The approach for determining an appropriate background concentration was based on the methods presented in the Unified Guidance (EPA, 2009) and Guidance for Comparing Background and Site Chemical Concentrations in Groundwater (FDEP, 2013). These guidance documents suggest that two methods can be used to define the upper end of the range of background concentrations. The method ultimately chosen was based on available data and characteristics of that data.

The first method is the Simple Method (FDEP, 2013). In this method statistical tests are not required, and background is determined using the lower of the maximum concentration in background wells or two times the mean concentration in background wells.

An alternate procedure to determine background concentrations is the Statistical Method (EPA, 2009) whereby the upper tolerance limits (UTLs) of the data set are calculated. The UTL constructed on background data is designed to cover all but a small percentage of the background population measurements. The UTL is a confidence limit constructed on an upper percentile of the background data set, for example, 95th percentile, also known as coverage. The coverage defines the proportion of background population that the limit is supposed to contain, typically 95% or 99%. Confidence level defines the confidence level with which the limit contains that proportion of the background, typically 95%. For example, a UTL with 95% confidence and 99% coverage is denoted as 95-99 UTL and would contain 99% of the background population with 95% confidence. UTLs were derived using parametric or nonparametric methods depending on the underlying distribution determined for each data set. A stand-alone summary of the statistical analysis is provided in **Appendix F**.

4.3.2 Background Study Results

4.3.2.1 Arsenic

After filtering for the criteria discussed above, arsenic had the greatest amount of useable data. Review of **Figure 16** shows a large number of wells with concentrations that exceed the FDEP GCTL of 10 µg/L east of the Site. For the purposes of this evaluation, only data from within a 5-mile radius of the Site was included as this data appeared to be from the same statistical population and contained within Citrus County. Additionally, only wells with at least four data points were included in the data set¹. The regional arsenic data is provided in **Appendix F**.

The final evaluation of 1472 samples from 174 wells provided a new background concentration for the area of 72 µg/L based on the 95-99 UTL. This 99-95 UTL was a nonparametric UTL as the data did not follow a discernable distribution. The 95-99 UTL method was used as it contains 99% of the background population with 95% confidence. A summary of the statistical evaluation is shown in **Table 4**.

4.3.2.2 Iron

Both the regional data (**Figure 17**) and on-Site data from MWB-1 (through October 2021) (**Table 3**) was evaluated to calculate a background value for iron in groundwater. Similar to arsenic, the available data seemed to be from the same underlying population. However, the background concentrations calculated from the regional data using the 95-99 UTL was 14.9 mg/L which was the same as the maximum reported regional concentration. Due to limited data, all data were included in the regional background assessment, including data from wells where temporal trends could not be evaluated. The regional iron data did not have a discernable distribution and the determined UTL was nonparametric.

Therefore, a background concentration was also calculated using MWB-1. This evaluation produced a mean of 3.89 mg/L, a two times the mean value of 6.78 mg/L, and a 95-99 UTL of 5.94 mg/L. The 95-99 UTL for iron MWB-1 is also nonparametric. To be consistent with the arsenic background determination, the 95-99 UTL of 5.94 mg/L was selected as the background criteria. A summary of the background statistical evaluation is shown in **Table 4**.

4.3.2.3 Manganese

Both the regional data (**Figure 18**) and on-Site data from MWB-1 (through October 2021) (**Table 3**) was evaluated to calculate a background value for manganese in groundwater. Similar to arsenic, the available data seemed to be from the same underlying population. However, similar to iron there was limited available regional. Therefore, a background concentration was also calculated using MWB-1. This evaluation produced a mean of 0.106 mg/L, a two times the mean value of 0.212 mg/L and a 95-95 UTL of 0.168 mg/L. To be consistent with the arsenic and iron

¹ It should be noted that these data sets included those with increasing and decreasing trends. Inspection of the time series indicated that concentrations did not increase or decrease by orders of magnitude.

background determination, the 95-95 UTL value of 0.168 mg/L was selected as the background criteria. A summary of the statistical evaluation is shown in **Table 4**.

4.3.2.4 TDS

TDS concentrations were not available in regional databases. Therefore, background TDS values were calculated using data from Site production wells (**Figure 19**) used for groundwater supply for the Crystal River Energy Center (CREC) and also data from MWB-1 (through October 2021) (**Table 3**). While statistics were calculated for TDS for the production wells, this dataset was not selected to reduce any contention that the production wells could potentially be causing upconing of the saltwater. Instead, background concentrations were calculated using reported manganese values for groundwater in MWB-1. This evaluation produced a mean of 404.4 mg/L, a two times the mean value of 809 mg/L and a 95-99 UTL of 840 mg/L. To be consistent with the arsenic, iron, and manganese background determination, the 95-99 UTL value of 840 mg/L was selected as the background criteria. This UTL was nonparametric as the MWB-1 TDS data did not follow a discernable distribution. A summary of the statistical evaluation is shown in **Table 4**.

4.3.3 Manganese Evaluation

As shown in **Appendix C**, many recent groundwater samples at downgradient wells MW-3 and MW-4 exceed the new calculated background concentration. The IWW frequently had lower concentrations of manganese than that measured in MW-3 and MW-4. Prior to July of 2021, only water that was present in the IWW pond was sampled and submitted to the laboratory. However, there were times when little water was present in the IWW pond and only puddles at the base of the pond were available for sampling. As a result, DEF began sampling the two sumps that discharge to the IWW pond (i.e., power block 1 and 2 sump (PB-1 and PB-2) beginning in July 2021. Since then, the concentration in PB-1, as shown in **Appendix C**, has been consistently higher than that measured in PB-2.

On 12 May 2022, DEF began collecting samples from approximately two ft below the water surface in PB-1 using an ISCO sampler collecting samples once an hour for 24 hours. These samples results are available in **Appendix G**. The results indicate that the manganese in the sump ranged from 213 to 413 µg/L. It is probable the source of manganese in groundwater measured in MW-3 and MW-4 is from wastewater draining to PB-1.

DEF has determined the source of the elevated manganese in the PB-1 sump originates from the periodic backwash effluent generated by the iron filtration system. The iron filtration system is part of the reverse osmosis treatment of groundwater at CCCP. DEF will install two new bag filters to capture manganese and iron from the backwash prior to discharging into the PB-1 sump. This corrective action will be completed by the end of 4th quarter 2022.

4.3.4 Manganese Transport and Cleanup Time

The manganese time series in **Appendix C** was evaluated to estimate a manganese in groundwater travel time from the IWW ponds to the MW-4 area. Based on visual review of the available data, it appears that concentrations at MW-4 became relatively stable during approximately February 2021. It is assumed that the concentrations of manganese in PB-1 were consistent since Power

Block 1 became operational in October 2018. This indicates that it took approximately 2.25 years for the manganese introduced in the IWW pond to reach MW-4. Depending on the chemistry of the water introduced into the IWW pond described in Section 4.3.3, the manganese in groundwater concentration at MW-4 is not expected to be less than the proposed background concentration of 167 µg/L until at least 2.25 years after DEF remedies the manganese in PB-1 issue. It may take longer depending on the desorption kinetics of manganese in the UFA.

Pursuant to these background studies, DEF proposes the following language be added to Attachment H of the Conditions of Certification:

“The Licensee has conducted a study to determine the background, or natural background, water quality of the receiving ground water for arsenic, iron, manganese, and total dissolved solids (TDS) (collectively “Study Parameters”), where “background” and “natural background” shall be as defined in Rule 62-520.200, F.A.C. Based on this study, the upper limit for the controlling background groundwater concentrations shall be the following: arsenic – 72 µg/L; iron – 5.94 mg/L; manganese – 0.167 mg/L; and TDS – 840 mg/L. However, it should be noted that the discharges exceeding the manganese background concentration level are not expected to cease until October 31, 2022 in the discharge from the Licensee’s facilities. Furthermore, groundwater concentrations over time at downgradient wells indicate that the travel time of manganese from the IWW ponds is approximately 2.25 years. The desorption kinetics from the UFA may indicate that it will take longer than 2.25 years for manganese concentrations to decrease below the calculated background concentration in the groundwater monitoring wells. Therefore, it is recommended that a meeting be scheduled between DEF and DEP to discuss the administrative mechanism for the facility to continue operation while DEF implements the corrective action and the effects of the corrective action are observed in the groundwater wells.

Based on the above information, the following monitoring plan is proposed:

- MW-4 should be designated as the facility’s downgradient compliance wells;
- MW-5 should be designated a ZOD compliance well since it is located at the property boundary but is sidegradient of the IWW Ponds 1 and 2;
- Designate monitoring wells MW-2 and MW-3 as intermediate wells;
- Remove MW-6 from the sampling plan; and
- Retain monitoring well MW-1B as the background well.

The locations of the current groundwater monitoring wells are shown on **Figure 11** and well construction details are summarized in **Table 1**. All monitoring wells are located within the facility property and groundwater samples will be collected on a quarterly schedule.

4.4 Monitoring Well Construction

The monitoring wells were installed by a water well contractor licensed by the State of Florida and according to SWFWMD requirements and water well construction standards described in Chapter 62-532.500 F.A.C. Monitoring wells were installed using either the hollow-stem auger or sonic drilling method. Initially, a nominal 6-inch diameter borehole was drilled to a depth of approximately 20 or 25 ft BLS. The monitoring wells were constructed with 10 ft of 2-inch diameter schedule 40 poly-vinyl chloride (PVC) casing attached to 10 ft of PVC, 0.010-inch slotted well screen set at a depth of 20 or 25 ft BLS. The annular space between the borehole and the well casing and screen was filled with a 20/30 graded filter sand to 1 ft above the well screen. A 30/65 grade fine sand seal was placed in the borehole to approximately 2 ft above the filter pack, and the remaining annular space was filled with a neat grout to land surface. The monitoring wells were completed approximately 3 ft above land surface in an aluminum, locking well housing placed in a 2 ft by 2 ft by 4-inch thick concrete pad and surrounded by protective bollards. A typical monitoring well construction diagram is shown on **Figure 20**.

5. FIELD PROCEDURES

The following field procedures and methods in this section are included to provide consistent groundwater sampling methods, analytical testing, and sample management which will aid in ensuring groundwater sample integrity. The procedures should be followed when sampling all Site groundwater monitoring wells.

5.1 Monitoring Well Development and Field Testing

5.1.1 Water Level Measurements

Prior to sampling, depth to water will be measured in each well. Depth to water measurements will be used to calculate the appropriate volume of water to evacuate from each well prior to sampling. Groundwater elevation in each well will be determined by subtracting the depth to water measurement from the elevation of the surveyed reference point.

5.1.2 Monitoring Well Sampling

All wells will be sampled using low-flow groundwater sampling techniques in accordance with FDEP Standard Operating Procedure (SOP) for Field Activities (SOP-FS2200). Geochemical field parameters (i.e., temperature, pH, specific conductivity, turbidity, and dissolved oxygen (DO)) will be allowed to stabilize to the following criteria for three consecutive readings prior to sampling:

- ± 0.2 units for pH;
- $\pm 5\%$ for specific conductance;
- ± 0.2 degrees Celsius ($^{\circ}\text{C}$) for temperature;
- ± 20 NTU for turbidity; and
- ± 0.2 milligrams per liter mg/L for DO.

In addition, oxidation reduction potential (ORP) will be monitored during well sampling.

DO and turbidity tend to stabilize last and are better measures of sufficient purging. Drawdown will be minimized during purging and/or sampling, not exceeding 0.1 ft, if possible. Sampling

equipment that will be used in other wells will be properly decontaminated before reuse. Decontamination procedures will be consistent with FDEP SOP FC1000.

5.1.3 Field Measurements

The results of all field/geochemical parameters will be on form FD 9000-24 as described in FDEP SOP FS 2200. Temperature, pH, specific conductance, and DO will be collected until stabilization within FDEP SOP's is achieved.

5.2 Groundwater Analytical Testing

5.2.1 Initial and Routine Samples

Subsequent to well installation, groundwater samples have been collected from monitoring wells MWB-1, MW-2, MW-3, MW-4, MW-5, and MW-6 and analyzed for the primary and secondary drinking water parameters included in Chapter 62-550, F.A.C., Tables 1, 4, 5 and 6 (**Appendix E**), excluding asbestos, acrylamide, Dioxin, butachlor, epichlorohydrin, PCBs, and pesticides. This was a one-time event to establish baseline groundwater conditions at the Site. Subsequent groundwater samples will be collected quarterly and analyzed for the parameters presented in in **Table 5** as outlined in FDEP, 2008. Sample analyses will be performed in accordance with Test Methods for Evaluating Solid Waste Physical/Chemical Methods, third edition (U.S Environmental Protection Agency [USEPA] Publication Number SW-846, 1986, as revised February, 2007).

5.2.2 Sample Containers and Labels

Samples will be collected directly into appropriately labeled sample containers with preservatives, as appropriate. Sample container labels will include information listed below.

- Well number and/or sample identification number;
- Analysis or analyses;
- Preservatives;
- Date and time; and
- Samplers.

5.3 Chain of Custody and Shipping

Upon collection, samples will be placed on ice in a cooler. Prior to shipping, the cooler will be sealed and shipped under chain of custody by overnight courier or transported directly to the analytical laboratory. The chain-of-custody record will document the samples shipped to the laboratory and the analyses requested. For each transfer of custody of the samples, the person relinquishing the samples and the person receiving the samples will sign the chain-of-custody with the date and time of the transfer of custody or the name of the common shipper.

5.4 Sampling Documentation

Field forms will be maintained which documents for each sample the well identification number, total well depth, evaluation of top of casing, water level, water color, well-evacuation procedures and equipment, date, time, weather conditions, sample identification numbers, field measurements (pH, specific conductance, etc.) and methods, name of collector, field observations, calculations of the standing-water volume in the well, and the total volume evacuated.

6. SUMMARY

This document represents the proposed revised GWMP for DEF's CCCP. It was prepared in accordance with Chapter 62-520.600, F.A.C. to ensure compliance with applicable groundwater quality standards at the Site. The document summarizes the following information.

- A description of the power plant and associated IWW makeup and disposal procedures;
- The hydrogeologic and physical setting of the facility and surrounding area including; the direction of groundwater flow and ambient ground water characteristics, permeability data for the shallow sediments and upper portion of the receiving aquifer, Site lithology, topography, soil information, and surface water drainage surrounding the Site;
- The locations of surface water and their classification in the vicinity of the Site;
- The location and use of potable wells within 500 ft of the Site;
- Rationale for proposed background, intermediate and compliance monitoring well locations, including well installation and construction details;
- Rationale for conducting a groundwater background study for arsenic, TDS, iron, and manganese to develop compliance criteria;
- Rationale for adding additional language to Attachment H regarding the aforementioned compliance criteria for arsenic, TDS, iron, and manganese; and
- A summary of groundwater sampling protocols and proposed groundwater monitoring parameters.

7. REFERENCES

- AMEC, 2013. Site Characterization and Preliminary Geotechnical Design Recommendations. Lakeland, FL. December 2013.
- ECT, 2014. Duke Energy Florida, Inc. Citrus Combined Cycle Project Site Verification Application. Gainesville, FL. August 2014.
- ESE, Proposed Ground Water Monitoring Plan for Crystal River Energy Complex. Gainesville, FL. February 1984.
- Fanning, K.A., J.A. Breland, and R.H. Byrne, 1980. Radium-226 and Radon-222 in the Coastal Waters of West Florida: High Concentrations and Atmospheric Degassing. Science, Vol. 215, No. 4533, pg. 667-670.
- Hunter, Jim. “Arsenic Answers” *Citrus County Chronicle*. August 14, 2011.
- Laughlin, Roy. “High arsenic levels in Citrus County wells reduced through carbon filtration.” *Florida Specifier*. October 2011.
- Faulkner, G.L., 1973. Geohydrology of the Cross-Florida Barge Canal with special reference to the Ocala vicinity. U.S. Geological Survey Water-Resources Investigations 1-73.
- Florida Department of Environmental Protection, 2013. Guidance for Comparing Background and Site Chemical Concentrations in Groundwater. Division of Waste Management, Tallahassee, FL.
- Florida Department of Environmental Protection, 2008. Guidance for Ground Water Monitoring Plan Design. Bureau of Water Facilities Regulation, Tallahassee, FL.
- Florida Department of Health, 2021: <https://gis.floridahealth.gov/ehwater/>
- Geosyntec, Groundwater Monitoring Plan – Citrus Combined Cycle Project. January 2016.
- Geosyntec, Groundwater Monitoring System Design and Construction Report – Crystal River Energy Complex. 2017.
- Guvanasen, V., S.C. Wade, and M.D. Barcelo, 2000. Simulation of Regional Ground Water Flow and Salt Water Intrusion in Hernando County, Florida. Groundwater, 38: 772–783.
- Kaufman, R.F. and J.D. Bliss, 1977. Effects of the Phosphate Industry on Radium-226 in Ground Water of Central Florida. U. S. Environmental Protection Agency, Office of Radiation Program, Las Vegas Facility.

- Knochenmus, L.A. and D.K. Yobbi, 2001. Hydrology of the Coastal Springs Ground-Water Basin and Adjacent Parts of Pasco, Hernando, and Citrus Counties, Florida. US Geological Survey Water-Resources Investigations Report 01-4230.
- Miller, R.L. and H. Sutcliffe, 1985. Occurrence of natural radium-226 radioactivity in ground water of Sarasota County, Florida. US Geological Survey. Vol. 84, No. 4237.
- Spencer, Steven M., “Geology of Citrus County, Florida”. Florida Geological Survey, Open file Report No. 5, Tallahassee, Florida, 1984.
- Terracon, 2015. Geotechnical Engineering Report Citrus County Combined Cycle Project. Charlotte, NC. October 15, 2015.
- U.S. Environmental Protection Agency, 2007. Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846. February 2007.
- U.S. Environmental Protection Agency, 2009. Statistical Analysis of Groundwater at RCRA Facilities. March 2009.

TABLES

Table 1: Monitor Well Construction Details and Groundwater Elevation Data

Citrus Combined Cycle Project
Crystal River, FL

Well ID	Designation	Latitude	Longitude	Top of Casing (ft NGVD29)	Diameter (in)	Total Depth (ft bls)	Screen Interval (ft bls)	Sampling Date	Depth to Water (ft)	Groundwater Elevation (ft NGVD29)
MWB-1	Background	28°58' 15.7"	-82°40 5.8"	13.20	2	25	15 - 25	11/1/2017	9.04	4.16
								02/27/2018	8.62	4.58
								05/17/2018	10.03	3.17
								08/27/2018	6.60	6.60
								11/13/2018	9.01	4.19
								02/14/2019	7.10	6.10
								05/30/2019	9.80	3.40
								08/08/2019	6.30	6.90
								10/29/2019	7.85	5.35
								02/13/2020	8.95	4.25
								04/23/2020	9.70	3.50
								07/30/2020	9.90	3.30
								10/29/2020	9.27	3.93
								02/09/2021	9.45	3.75
								04/22/2021	8.32	4.88
								07/26/2021	7.67	5.53
								10/19/2021	7.25	5.95
								02/16/2022	9.05	4.15
								5/17/2022	8.81	4.39

Table 1: Monitor Well Construction Details and Groundwater Elevation Data

Citrus Combined Cycle Project
Crystal River, FL

Well ID	Designation	Latitude	Longitude	Top of Casing (ft NGVD29)	Diameter (in)	Total Depth (ft bls)	Screen Interval (ft bls)	Sampling Date	Depth to Water (ft)	Groundwater Elevation (ft NGVD29)
MW-2	Intermediate	28°58' 9.8"	-82°40 37.1"	15.52	2	20	10 - 20	11/01/2017	11.58	3.94
								02/27/2018	11.40	4.12
								05/17/2018	12.62	2.90
								08/27/2018	9.49	6.03
								11/13/2018	11.22	4.30
								02/14/2019	9.74	5.78
								05/30/2019	12.15	3.37
								08/08/2019	9.60	5.92
								10/29/2019	10.40	5.12
								02/13/2020	11.45	4.07
								04/23/2020	12.26	3.26
								07/30/2020	12.37	3.15
								10/29/2020	11.75	3.77
								02/11/2021	11.95	3.57
								04/22/2021	11.25	4.27
								07/27/2021	10.79	4.73
								10/19/2021	-	-
								02/16/2022	11.81	3.71
								5/18/2022	11.12	4.40

Table 1: Monitor Well Construction Details and Groundwater Elevation Data

Citrus Combined Cycle Project
Crystal River, FL

Well ID	Designation	Latitude	Longitude	Top of Casing (ft NGVD29)	Diameter (in)	Total Depth (ft bls)	Screen Interval (ft bls)	Sampling Date	Depth to Water (ft)	Groundwater Elevation (ft NGVD29)
MW-3	Intermediate	28°58' 11.3"	-82°40 39.7"	14.47	2	20	10 - 20	11/01/2017	10.60	3.87
								02/27/2018	10.45	4.02
								05/17/2018	11.61	2.86
								08/27/2018	8.62	5.85
								11/13/2018	10.28	4.19
								02/04/2019	8.74	5.73
								05/30/2019	11.12	3.35
								08/08/2019	8.69	5.78
								10/21/2019	9.41	5.06
								02/13/2020	10.45	4.02
								04/23/2020	11.22	3.25
								07/30/2020	11.35	3.12
								10/29/2020	10.75	3.72
								02/11/2021	10.95	3.52
								04/20/2021	10.27	4.20
								07/27/2021	9.85	4.62
								10/19/2021	9.30	5.17
								02/16/2022	10.80	3.67
								5/18/2022	10.20	4.27

Table 1: Monitor Well Construction Details and Groundwater Elevation Data

Citrus Combined Cycle Project
Crystal River, FL

Well ID	Designation	Latitude	Longitude	Top of Casing (ft NGVD29)	Diameter (in)	Total Depth (ft bls)	Screen Interval (ft bls)	Sampling Date	Depth to Water (ft)	Groundwater Elevation (ft NGVD29)
MW-4	Intermediate	28°58' 9.4"	-82°40 41.1"	12.21	2	25	15 - 25	11/01/2017	10.60	3.87
								02/27/2018	8.22	3.99
								05/17/2018	9.35	2.86
								08/27/2018	6.61	5.60
								11/13/2018	8.25	3.96
								02/14/2019	6.81	5.40
								05/30/2019	9.05	3.16
								08/08/2019	6.50	5.71
								10/29/2019	7.33	4.88
								02/13/2020	8.32	3.89
								04/23/2020	9.00	3.21
								07/30/2020	9.15	3.06
								10/29/2020	8.55	3.66
								02/11/2021	8.74	3.47
								04/20/2021	8.03	4.18
								07/27/2021	7.67	4.54
								10/19/2021	7.17	5.04
								02/16/2022	8.40	3.81
								5/18/2022	8.18	4.03

Table 1: Monitor Well Construction Details and Groundwater Elevation Data

Citrus Combined Cycle Project
Crystal River, FL

Well ID	Designation	Latitude	Longitude	Top of Casing (ft NGVD29)	Diameter (in)	Total Depth (ft bls)	Screen Interval (ft bls)	Sampling Date	Depth to Water (ft)	Groundwater Elevation (ft NGVD29)
MW-5	Intermediate	28°58' 16.8"	-82°40 38.3"	12.08	2	20	10 - 20	07/09/2019	6.60	5.48
								10/29/2019	6.96	5.12
								02/11/2020	8.04	4.04
								04/21/2020	7.80	4.28
								05/22/2020	9.32	2.76
								07/28/2020	9.10	2.98
								10/27/2020	8.40	3.68
								02/09/2021	8.60	3.48
								04/20/2021	7.81	4.27
								07/26/2021	7.40	4.68
								10/19/2021	6.70	5.38
								02/16/2022	8.23	3.85
MW-6	Compliance	28°58' 50.4"	-82°40 52.1"	10.00	2	20	10 - 20	5/17/2022	7.75	4.33
								07/09/2019	4.78	5.22
								10/29/2019	5.58	4.42
								02/11/2020	6.12	3.88
								04/21/2020	6.45	3.55
								07/28/2020	7.20	2.80
								10/27/2020	6.40	3.60
								02/09/2021	6.33	3.67
								04/20/2021	5.30	4.70
								07/26/2021	5.45	4.55
								10/19/2021	5.51	4.49
								02/16/2022	6.31	3.69
								5/17/2022	6.47	3.53

Notes:

in = inches

ft = feet

bls = below land surface

NGVD29 = National Geodetic Vertical Datum of 1929

Table 2: Hydraulic Conductivity Summary

Citrus Combined Cycle Project
Crystal River, FL

Boring No.	Trial No.	k (cm/sec)	k (ft/day)
FP-01	1	7.70E-03	21.8
	2	7.10E-03	20.1
	3	7.40E-03	21.0
FP-02	1	3.80E-04	1.1
	2	2.70E-04	0.8
	3	3.30E-04	0.9
	4	3.60E-04	1.0
FP-03	1	4.00E-03	11.3
	2	4.00E-03	11.3
	3	4.10E-03	11.6
FP-04	1	5.00E-04	1.4
	2	5.60E-04	1.6
	3	5.10E-04	1.4
FP-05	1	1.70E-02	48.2
	2	1.80E-02	51.0
	3	1.60E-02	45.4
FP-06	1	5.90E-03	16.7
	2	5.80E-03	16.4
	3	6.20E-03	17.6
FP-07	1	5.80E-03	16.4
	2	5.90E-03	16.7
	3	5.70E-03	16.2
FP-08	1	8.50E-03	24.1
	2	7.50E-03	21.3
	3	7.80E-03	22.1
FP-09	1	9.60E-05	0.3
	2	1.80E-04	0.5
	3	2.30E-04	0.7
	4	2.80E-04	0.8
	5	2.50E-04	0.7
FP-10	1	1.50E-04	0.4
	2	1.80E-04	0.5
	3	1.80E-04	0.5
Geometric Mean		1.6E-03	4.6

Notes:

No. = number

k = Hydraulic Conductivity

cm = centimeter

sec = second

ft = feet

Source: Geotechnical Engineering Report, Terracon
Consultants, Inc., 2015

Table 3: Groundwater Quality Data

Citrus Combined Cycle Plant
Crystal River, FL

Location	Date	pH (S.U.)	Temp (°C)	Specific Conductance (µmhos/cm)	Turbidity (NTUs)	Chloride (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TDS (mg/L)	Arsenic (ug/L)	Cadmium (ug/L)	Chromium (ug/L)	Lead (ug/L)	Iron (mg/L)	Sodium (mg/L)	Dissolved Oxygen (mg/L)	Fluoride (mg/L)	Fecal Coliform (#/100ml)	Aluminum (mg/L)	Manganese (mg/L)	Color (color units)							
	Compliance Limit	6.5 - 8.5	Report	Report	Report	250	10	250	500	10	5	100	15	0.3	160	Report	2	4	0.2	0.05	15							
MWB-1	11/1/2017	6.88	24.4	587	16.09	12.11	0.200	U	16.2	356	3.9	0.2	U	1	U	1	U	0.336	5.13	0.77	0.2	U	NA	0.0161	I	0.0489	5	U
	2/27/2018	7.12	22.7	765	2.4	7.33	I	0.010	U	14.0	266	6.3	0.2	U	1	U	1	U	3.05	5	0.43	0.123	1	U	0.0366	0.0787	5	U
	5/17/2018	6.91	22.9	550	7.51	8.18	0.010	U	20.8	272	6.6	0.2	U	1.2	I	1	U	2.82	4.7	0.31	0.05	1	U	0.01	0.0799	10	U	
	8/27/2018	7.35	24.9	621	3.3	8.37	0.010	U	29.3	346	7.9	0.2	U	1	U	1	U	3.42	8	1.23	0.05	1	U	0.833	0.102	5	U	
	11/13/2018	7.07	24.8	684	5.15	8.86	0.010	U	34.8	762	6.5	0.2	U	1	U	1	U	3.44	6	0.71	0.05	1	U	0.165	0.0975	20	U	
	02/14/2019	7.04	21.9	632	5.16	7.50	0.456	33	840	11.4	0.2	1	U	1	U	1	U	3.6	47	2.58	0.077	1	U	0.031	0.168	5	U	
	05/30/2019	7.19	23.1	567	17.79	4.00	0.01	U	26	332	6.9	0.2	1	U	1	U	3.38	5	0.62	0.05	1	U	0.01	0.104	10	U		
	08/08/2019	8.13	24.4	577	6.22	7.29	I	0.02	U	30	342	7.1	0.3	1.7	U	1	U	3.8	5.56	0.42	0.0738	1	U	0.04	0.125	5	U	
	10/21/2019	7.09	25.1	636	13.58	8.00	0.2	U	23	354	6.7	1	1	U	1	U	3.6	52	0.56	0.2	U	1	U	0.01	0.11	5	U	
	02/13/2020	7.34	23.3	614	7.44	8.35	0.226	I	16	442	5.9	1	U	1	U	1	U	3.26	4.61	1.37	0.2	U	1	U	0.01	0.101	5	U
	04/23/2020	6.87	23.1	601	4.32	10.30	0.2	U	16	360	6.7	1	1	U	1	U	3.3	4.48	0.2	0.2	U	1	U	0.01	0.104	5	U	
	07/30/2020	6.93	22.3	582	18.42	10.40	0.2	U	18	424	7.3	1	1	U	1	U	3.34	4.94	0.51	0.2	U	1	U	0.01	0.108	5	U	
	10/29/2020	6.95	25.2	576	0.12	9.87	0.346	I	18	388	7.2	1	U	1	U	1	U	3.21	4.69	0.25	0.2	U	1	U	0.0189	0.107	10	U
	02/09/2021	6.92	23.5	602	1.14	10.90	0.2	U	17	328	6.8	1	U	1	U	1	U	3.23	5.36	0.25	0.2	U	1	U	0.01	0.109	5	U
	04/22/2021	6.89	22.4	597	1.89	10.70	0.304	I	18	352	6.6	1	U	1.7	I	1	U	5.94	5.57	0.5	0.2	U	1	U	0.01	0.123	5	U
	07/26/2021	6.64	24.7	593	3	11.24	0.542	19	342	9.8	1	U	1	U	1	U	4.30	5.27	0.14	0.2	U	1	U	0.01	0.122	5	U	
	10/19/2021	6.71	25.8	661	0.43	6.20	0.2	U	15	368	6.8	1	U	1	U	1	U	3.57	3.45	0.71	0.2	U	1	U	0.01	0.118	5	U
	02/16/2022	6.95	23.3	523	3.42	8.33	0.200	U	13	340	6.1	1	U	1	U	1	U	3.49	3.94	0.27	0.2	U	1	U	0.01	0.108	5	U
	5/17/2022	6.82	22.7	531	0.18	6.75	0.2	U	9	366	5.56	1	U	1	U	1	U	3.06	4.35	0.58	0.2	U	1	U	0.01	0.099	5	U
	MW-2	11/1/2017	6.85	25.7	791	17.74	68.9	0.200	19.9	438	7.88	0.2	U	1	U	1	U	2.56	30.2	0.85	0.2	U	NA	0.0328	0.0713	5	U	
2/27/2018		6.97	22.8	710	11.58	45.4	0.011	I	24.9	366	10.9	0.2	U	2	1	U	3.09	27	0.41	0.05	1	U	0.0966	0.0782	5	U		
5/17/2018		6.93	23.4	837	8.24	73.6	0.010	U	31.2	438	13.2	0.2	U	2.4	1	U	2.9	42.3	0.19	0.05	1	U	0.01	0.0889	15	U		
8/27/2018		7.24	26.0	1,091	7.49	156.3	0.010	U	54.7	608	13.9	0.2	U	1.2	I	1	U	2.2	83	0.22	0.07	1	U	0.385	0.0838	5	U	
11/13/2018		7.18	29.4	806	12.83	78.5	0.010	U	37.6	808	23.7	0.2	U	2.2	1	U	3.24	40	0.62	0.106	1	U	0.206	0.0821	5	U		
02/14/2019		7.16	25.1	641	5.18	64	0.2	35	814	24.7	U	0.2	2.2	1	U	3.46	38	1.74	0.1	1	U	0.0218	0.0847	15	U			
05/30/2019		7.17	25.6	607	10.98	58	0.01	30	330	21.2	U	0.2	1.2	1	U	3.85	36	0.21	0.117	1	U	0.0363	0.0857	5	U			
08/08/2019		7.98	25.8	538	7.25	31	0.02	19	368	15.6	<2.0	1	1	U	0.94	20.6	0.18	0.0756	I	7.4	U	0.0652	0.0887	5	U			
10/21/2019		7.42	26.6	6	16.23	35	0.2	18	284	29	U	1	1	U	3.9	28	0.49	0.2	U	1	U	0.0471	0.086	10	U			
02/13/2020		7.59	25.5	539	8.72	22.7	0.202	I	22	594	29.9	1	U	1	U	1	U	4.51	21.3	0.56	0.226	I	1	U	0.01	0.0914	5	U
04/23/2020		7.05	25.4	590	11.36	30.8	0.200	U	21	290	27	1	U	2.3	1	U	5	24.5	0.17	0.2	U	1	U	0.0678	0.108	10	U	
07/30/2020		6.92	24.4	597	16.47	30.3	0.200	U	29	354	34.8	1	U	1	U	1	U	6.23	27.2	0.39	0.2	U	1	U	0.01	0.115	5	U
10/29/2020		7.08	31.4	1118	5.77	198	0.200	U	49	646	29.9	1	U	1.4	I	1	U	3.85	108	0.1	0.2	U	10.9	0.0649	0.0929	15	U	
11/19/2020		7.11	30.6	1193	3.35	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.22	NA	1	U	NA	NA	NA	NA	NA	NA	U	
02/11/2021		7.12	28.3	1045	6.4	146	0.4	51.2	600	35.7	1	U	1.4	I	1	U	4.92	84.7	0.14	0.2	U	1	U	0.0141	0.104	5	U	
04/22/2021		6.74	26.6	953	4.36	96.1	0.315	I	37	516	29.8	1	U	1	U	1	U	7.23	60	0.4	0.2	U	1	U	0.01	0.203	5	U
07/27/2021		6.96	28.3	841	5.12	71.8	0.2	U	45.7	430	40.1	1	U	1.4	I	1	U	4.56	52.5	0.12	0.2	U	1	U	0.0203	0.1003	5	U
10/21/2021		7.06	29.6	723	9.25	47.9	0.2	U	29.5	336	30.7	1	U	1	U	1	U	3.36	35.4	0.56	0.2	U	1	U	0.0122	0.0748	5	U
02/16/2022		7.13	27.1	613	7.73	39.6	0.351	I	28.3	314	32.4	1	U	1	U	1	U	4.09	33.4	0.12	0.2	U	1	U	0.0172	0.0881	5	U
5/17/2022		6.55	26.8	627	16.44	38.3	0.518	J	342	32.8	1	U	1	U	1	U	4.28	29.6	0.53	0.2	U	1	U	0.0496	0.0831	5	U	

Table 3: Groundwater Quality Data

Citrus Combined Cycle Plant
Crystal River, FL

Location	Date	pH (S.U.)	Temp (°C)	Specific Conductance (µmhos/cm)	Turbidity (NTUs)	Chloride (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TDS (mg/L)	Arsenic (ug/L)	Cadmium (ug/L)	Chromium (ug/L)	Lead (ug/L)	Iron (mg/L)	Sodium (mg/L)	Dissolved Oxygen (mg/L)	Fluoride (mg/L)	Fecal Coliform (#/100ml)	Aluminum (mg/L)	Manganese (mg/L)	Color (color units)						
	Compliance Limit	6.5 - 8.5	Report	Report	Report	250	10	250	500	10	5	100	15	0.3	160	Report	2	4	0.2	0.05	15						
MW-3	11/1/2017	6.73	25.3	1,302	13.78	215.1	0.200	U	39.2	790	3.9	0.2	U	1	U	0.383	85.8	0.69	0.2	U	NA	0.0359	0.0937	5	U		
	2/27/2018	6.85	23.6	1,268	3.77	182.5	0.010	U	34.0	692	1	U	0.2	U	1	U	0.498	105	0.37	<0.0500	U	1	U	0.0264	0.105	5	U
	5/17/2018	6.83	23.3	1,150	14.29	145.9	0.049	U	34.9	578	2.6	0.2	U	1.9	U	0.527	146.0	0.49	0.05	U	1.11	0.0297	0.0858	10	U		
	8/27/2018	7.08	24.8	1,289	3.96	186.3	0.010	U	45.5	702	5.2	0.2	U	1.1	U	0.304	97	0.35	<0.05	U	1	U	0.197	0.0999	5	U	
	11/13/2018	6.92	26.2	1,136	1.78	132.5	0.011	U	57.2	556	7.6	0.2	U	1	U	0.274	65	1.16	0.05	U	1	U	0.112	0.117	5	U	
	02/14/2019	6.88	24.3	921	3.59	118	0.2	U	49	578	5.9	0.2	U	1	U	0.596	69	2.4	0.05	U	1	U	0.01	0.12	5	U	
	05/30/2019	6.72	25.2	1,061	2.74	118	0.01	U	50	594	5	0.2	U	1	U	0.475	63	0.27	0.05	U	1	U	0.01	0.126	5	U	
	08/08/2019	7.63	25.2	856	2.64	61	0.02	U	72	216	7.4	0.2	U	1	U	0.466	37	0.29	0.05	U	1	U	0.0229	0.185	5	U	
	10/21/2019	6.9	26.2	952	5.42	58	0.2	U	61	514	19.7	1	U	1	U	1	1.1	37	0.8	0.2	U	1	U	0.01	0.171	15	U
	02/13/2020	7.17	24.8	1006	2.16	70.3	0.2	U	42	1150	20.6	1	U	1	U	1	1.52	46.1	1.1	0.2	U	1	U	0.01	0.198	5	U
	04/23/2020	6.81	24.6	814	9.31	61.8	0.2	U	34	438	33.3	1	U	1	U	1	2.86	38.8	0.94	0.2	U	1	U	0.01	0.319	10	U
	07/30/2020	6.56	23.8	899	19.84	55.5	0.2	U	50	560	33.6	1	U	1	U	1	1.81	41.1	0.5	0.2	U	1	U	0.01	0.206	10	U
	10/29/2020	6.7	27.3	889	1.72	65.1	0.2	U	57	532	32	1	U	1	U	1	2.75	41.1	0.27	0.2	U	1	U	0.0276	0.233	15	U
	02/11/2021	6.91	25.7	978	2.99	69.8	0.314	U	38	606	41.7	1	U	1	U	1	2.65	53.5	0.21	0.2	U	1	U	0.01	0.285	5	U
	04/22/2021	6.61	24.4	993	1.43	89.5	0.364	U	52	604	28.9	U	1	U	1	U	2.09	58.6	0.36	0.2	U	1	U	0.01	0.259	10	U
	07/27/2021	6.59	26	1028	0.5	80.3	0.2	U	54	550	51.6	1	U	1	U	1	2.56	51.9	0.15	0.2	U	1	U	0.01	0.206	5	U
	10/21/2021	6.67	27.2	980	3.34	57.2	0.242	U	48	524	18	1	U	1	U	1	0.97	40.5	0.88	0.2	U	1	U	0.0599	0.173	5	U
	02/16/2022	6.86	25.5	759	0.89	52.6	0.2	U	43	448	26	1	U	1	U	1	1.95	38.2	0.24	0.2	U	1	U	0.01	0.277	5	U
	5/17/2022	6.63	25.4	789	1.25	40.2	0.2	U	45	458	25.1	1	U	1	U	1	1.40	27.7	0.98	0.2	U	1	U	0.01	0.192	10	U
MW-4	11/1/2017	6.94	25.2	834	19.33	110.5	0.200	U	23.1	506	2.3	0.2	U	1	U	0.0514	40.5	0.66	0.2	U	NA	0.0207	0.107	5	U		
	2/27/2018	7.02	22.7	765	4.47	77.1	0.010	U	20.4	414	15.1	0.2	U	1	U	1	1.16	39	2.62	0.05	U	1	U	0.01	0.215	5	U
	5/17/2018	7.00	22.9	838	4.14	86.5	0.010	U	26.0	446	10.1	0.2	U	1.3	U	1	1.04	48.0	0.19	0.05	U	1	U	10	0.187	5	U
	8/27/2018	7.29	24.9	888	7.09	105.8	0.010	U	27.2	502	4	0.2	U	1	U	1	0.459	50	0.58	0.05	U	1	U	0.672	0.157	5	U
	11/13/2018	7.10	25.0	974	8.14	117.7	0.010	U	35.7	502	4.3	0.2	U	1	U	1	0.369	50	0.72	0.05	U	1	U	0.207	0.152	5	U
	02/14/2019	7.16	22	762	3.82	4	0.2	U	33	560	7.3	0.2	U	1	U	1	0.564	47	2.57	0.05	U	1	U	0.01	0.168	5	U
	05/30/2019	6.97	23.1	814	13.99	105	0.01	U	31	470	6.9	0.2	U	2	U	1	0.586	51	0.2	0.05	U	1	U	0.0357	0.196	5	U
	08/08/2019	7.95	24	821	15.05	94	0.02	U	32	550	10	0.2	U	1	U	1	1.15	49.1	0.29	0.0652	U	1	U	0.0617	0.216	10	U
	10/21/2019	7.12	24.9	907	13.64	91	0.2	U	31	508	6.8	1	U	1	U	1	0.575	51	0.63	0.2	U	1	U	0.01	0.231	10	U
	02/13/2020	7.33	7.3	899	4.35	87.9	0.2	U	25	844	11.8	1	U	1	U	1	1.1	47.8	0.97	0.2	U	1	U	0.01	0.256	5	U
	04/23/2020	6.85	23.4	907	18.3	96.6	0.2	U	25	514	14.4	1	U	1	U	1	1.61	49.8	0.13	0.2	U	1	U	0.233	0.338	5	U
	07/30/2020	6.8	22.1	907	18.84	110	0.2	U	32	424	13.1	1	U	1	U	1	1.07	51.6	0.53	0.2	U	1	U	0.01	0.322	5	U
	10/29/2020	6.87	25	860	2.36	80.3	0.2	U	30	530	13	1	U	1	U	1	1.25	45.9	0.21	0.2	U	1	U	0.0326	0.298	10	U
	02/11/2021	6.93	23.6	914	5.64	80.5	0.2	U	21	552	17.9	1	U	1	U	1	2.5	45.8	0.22	0.2	U	1	U	0.01	0.362	5	U
	04/22/2021	6.75	22.8	859	0.76	68.2	0.361	U	27	498	20.6	1	U	7.9	U	1	3.61	38.9	0.28	0.2	U	1	U	0.01	0.343	5	U
	07/27/2021	6.68	23.5	764	3.04	55.1	0.2	U	25	442	23.9	1	U	1	U	1	2.66	30.6	0.13	0.2	U	1	U	0.01	0.300	5	U
	10/21/2021	6.71	24.7	797	2.33	49.6	0.2	U	28	478	15.6	U	1	U	1	U	1.71	34.2	0.66	0.2	U	1	U	0.0294	0.314	5	U
	02/16/2022	6.88	23.3	761	1.55	53.9	0.2	U	17	480	20.8	1	U	1	U	1	2.45	35.8	0.31	0.2	U	1	U	0.01	0.421	5	U
	5/17/2022	6.75	23	741	1.72	47.9	0.2	U	27	438	17.1	1	U	1	U	1	2.14	27.7	0.76	0.2	U	1	U	0.01	0.331	5	U

Table 3: Groundwater Quality Data

Citrus Combined Cycle Plant
Crystal River, FL

Location	Date	pH (S.U.)	Temp (°C)	Specific Conductance (µmhos/cm)	Turbidity (NTUs)	Chloride (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TDS (mg/L)	Arsenic (ug/L)	Cadmium (ug/L)	Chromium (ug/L)	Lead (ug/L)	Iron (mg/L)	Sodium (mg/L)	Dissolved Oxygen (mg/L)	Fluoride (mg/L)	Fecal Coliform (#/100ml)	Aluminum (mg/L)	Manganese (mg/L)	Color (color units)
	Compliance Limit	6.5 - 8.5	Report	Report	Report	250	10	250	500	10	5	100	15	0.3	160	Report	2	4	0.2	0.05	15
MW-5	07/09/2019	5.03	22.9	449.5	9.22	15.4	J 0.2	U 22	J 360	1	U 1	U 1	U 1	U 0.0433	10.5	1.54	0.2	U NA	0.0241	0.0166	I 5
	10/21/2019	7.32	25.6	535	9.15	16	0.2	U 24	296	1	U 1	U 1	U 1	U 0.06	12	0.67	0.2	U 1	0.257	0.257	5
	02/11/2020	7.5	24	542	5.19	22.1	0.2	U 20	310	2.1	1	U 1	U 1	U 0.533	19.4	0.51	0.2	U 1	0.01	0.04	10
	04/21/2020	7.08	21.9	536	5.45	23.3	0.2	U 18	320	162	1	U 1	U 1	U 1.55	13.4	0.15	0.2	U 138	0.01	0.01	U 15
	05/22/2020	7.26	24.4	484.6	10.13											0.18		1	U		
	07/28/2020	7.38	25.1	478.6	16.75	30.6	0.2	U 34	284	11.1	1	U 1	U 1	U 0.654	27.5	0.44	0.2	U 1	0.01	0.0234	15
	10/27/2020	7.28	29	497	0.19	26.4	0.2	U 24	276	12.6	1	U 1	U 1	U 0.635	23.1	0.22	0.2	U 1	0.0262	0.0272	10
	02/09/2021	7.31	26.9	553	0.12	26	0.2	U 18	284	12.2	1	U 1	U 1	U 0.81	24.7	0.56	0.2	U 1	0.01	0.0308	5
	04/20/2021	7.1	26.2	551	0.06	32.7	0.2	U 23	302	10.9	1	U 1.3	I 1	U 0.872	24.8	0.54	0.2	U 1	0.01	0.05	U 5
	07/26/2021	6.99	27	555	3.49	21.6	0.511	23	298	11.8	1	U 1.2	I 1	U 1.21	18.2	0.14	0.2	U 1	0.01	0.0408	5
	10/19/2021	7.11	27.4	583	1.07	18.8	0.2	U 17	318	6	1	U 1	U 1	U 1.00	15.4	0.64	0.2	U 1	0.01	0.0323	5
	02/16/2022	7.14	25.7	549	3.92	31.0	0.2	U 16	328	8.89	1	U 1	U 1	U 0.98	23.3	0.26	0.2	U 1	0.01	0.0321	5
	5/17/2022	4.72	25.5	514	1.97	25.1	0.2	U 18	302	6.89	1	U 1	U 1	U 0.87	20.0	1.19	0.2	U 1	0.01	0.0313	5
	07/09/2019	7.69	22.9	511.5	9.22	32.8	0.2	U 13	348	11.2	1	U 1	U 1	U 0.0775	14.9	0.39	0.2	U NA	0.01	0.0416	5
	10/21/2019	7.34	23.8	553	17.48	30	0.2	U 7	308	32	1	U 1	U 1	U 0.47	13	0.65	0.2	U 1	0.019	0.032	5
	02/11/2020	7.56	22.1	554	10.63	31.4	0.2	U 7	310	65	1	U 1	U 1	U 1.11	18.9	1.65	0.2	U 1	0.01	0.0544	5
MW-6	04/21/2020	7.21	21.9	529.4	7.12	32.3	0.2	U 5	312	3.3	1	U 1	U 1	U 0.7	13.4	0.38	0.2	U 1	0.01	0.052	10
	07/28/2020	7.38	21.1	548	15.98	32.3	0.2	8	316	174	1	U 1	U 1	U 1.29	14.5	0.78	0.2	U 1	0.01	0.0473	10
	10/27/2020	7.29	24.3	521	5.41	29.3	0.2	U 9	310	51.3	1	U 1	U 1	U 1.35	13.7	0.16	0.2	U 1	0.01	0.052	5
	02/09/2021	7.29	22.4	536	9.23	29.1	0.409	3.2	286	117	1	U 1	U 1	U 1.61	13.2	0.37	0.2	U 1	0.01	0.0552	5
	04/20/2021	7.21	21.7	499.5	5.91	28.8	0.2	U 2	258	163	1	U 1.4	I 1	U 1.84	15.7	0.59	0.2	U 1	0.01	0.0611	I 5
	07/26/2021	6.78	23.1	514	2.14	30.4	0.579	9	310	114	1	U 1	U 1	U 2.15	13.9	0.21	0.2	U 1	0.01	0.0713	5
	10/19/2021	7.25	23.9	581	7.44	40.8	0.2	U 14	310	42.6	1	U 1	U 1	U 1.74	17.3	0.64	0.2	U 1	0.01	0.0674	5
	02/16/2022	6.94	22.2	504	3.16	38.3	0.200	U 5	312	59	J 1	U 1	U 1	U 1.85	17.2	0.35	0.2	U 1	0.0153	0.072	5
	5/17/2022	6.33	23.3	507	9.52	37.9	0.2	U 8	338	49.1	1	U 1	U 1	U 1.54	16.1	1.09	0.2	U 1	0.01	0.0646	5

Table 3: Groundwater Quality Data

Citrus Combined Cycle Plant
Crystal River, FL

Location	Date	pH (S.U.)	Temp (°C)	Specific Conductance (µmhos/cm)	Turbidity (NTUs)	Chloride (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TDS (mg/L)	Arsenic (ug/L)	Cadmium (ug/L)	Chromium (ug/L)	Lead (ug/L)	Iron (mg/L)	Sodium (mg/L)	Dissolved Oxygen (mg/L)	Fluoride (mg/L)	Fecal Coliform (#/100ml)	Aluminum (mg/L)	Manganese (mg/L)	Color (color units)									
	Compliance Limit	6.5 - 8.5	Report	Report	Report	250	10	250	500	10	5	100	15	0.3	160	Report	2	4	0.2	0.05	15									
CCCP IWW Pond	2/27/2018	9.22	20.3	475	1.58	8.6	0.055	32.4	252	4.7	0.2	U	1	U	1	U	0.366	6.04	8.82	0.177	1.11	24.6	0.01	U	5	U				
	5/17/2018	7.52	26.6	298	6.85	10.1	0.0362	21.6	224	9.5	1.1	U	2.7	U	1.1	U	1.91	6.24	5.48	0.2	NA	0.0222	U	0.0632	20					
	8/27/2018	7.78	31.0	766	9.27	13.9	0.010	U	31.8	340	7.8	0.2	U	1	U	1	U	0.698	11.6	1.8	0.175	43.2	0.971	0.198	5	U				
	11/13/2018	8.08	36.1	1,224	5.92	194.0	0.014	I	59.1	598	10.1	0.2	U	1.1	I	1	U	0.346	91.8	4.48	0.2	U	NA	0.0636	0.0221	5	U			
	02/14/2019	7.7	18.3	274	7.99	22.7	0.717	29.2	178	10.2	0.2	U	1	U	1	U	0.562	19.4	10.64	0.116	1	U	0.01	U	0.01	U	30			
	05/27/2019	8.04	29.3	373	21.01	31.3	0.01	22.4	162	1	U	1.6	8.2	7.1	U	0.251	18.9	4.79	0.103	1	U	2.55	0.01	U	5	U				
	08/08/2019	10.4	30.3	210	347.3	12.1	0.196	11.5	188	22.3	0.2	U	2.2	1	U	0.94	13.7	5.8	0.0844	I	6.75	0.0682	0.0467	20						
	10/31/2019	8.5	29.4	411	13.82	14.5	2	U	24.6	256	5.3	1	U	1	U	1	U	0.129	13.2	8.05	0.2	U	NA	0.01	U	0.01	U	15		
	02/13/2020	8.57	28.4	535	8	9.2	0.2	15.75	261	11.35	3	U	2.1	U	1	U	0.135	17.7	3.29	0.268	I	1	U	0.01	U	0.0173	I	10		
	04/21/2020	8.03	33.6	529	7.12	11	0.2	9.81	198	4.9	1	U	1	1	U	1	U	0.338	5	5.62	0.2	U	1	U	0.01	U	0.01	U	10	
	07/30/2020	8.6	34.7	269	34.95	11.3	2	U	14.6	158	20.4	1	U	1	1	U	2.52	0.28	4.3	0.2	U	3.1	U	0.01	U	0.106	15			
	10/27/2020	8.16	35.8	867	5.63	27.9	0.2	U	48.7	562	18.3	1	U	1	U	1	U	2.02	35.6	5.03	0.336	I	1990	J	0.0161	I	0.0782	15		
	11/19/2020	8.55	45.5	4	8.48	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.73	NA	NA	10	U	NA	NA	NA	NA				
	04/20/2021	7.78	27.8	626	NA	45.3	0.2	U	26.1	352	16.7	1	U	2.2	1	U	1.02	30.8	4.04	0.2	U	261	U	0.01	U	0.214	5	U		
PB-1	07/27/2021	8.77	39.3	4,454	8.71	11.4	0.2	U	7.42	130	14.3	1	U	1	U	1	U	1.25	7.92	3.82	0.2	U	--	U	0.01	U	0.0228	5	U	
	10/21/2021	7.83	26.4	524	1.85	--	--	--	14.5	--	--	--	--	--	--	--	13.3	3.78	--	--	--	--	--	--	--	--	--			
	02/15/2022	8.83	29.8	354	--	13.0	0.43	U	7.9	132	29.1	1	U	1	U	1	U	4.36	8.7	3.6	0.20	U	--	U	0.01	U	0.106	--		
PB-2	05/18/2022	7.16	24.2	443	--	17.2	0.43	U	21.9	J	264	73.7	1	U	1	U	1	U	9.36	9.1	4.56	0.20	U	1	U	0.0127	I	0.206	5	U
	07/27/2021	7.97	48.4	1,276	4.19	26.5	0.20	I	25.6	482	9.2	1	U	1.4	U	1	U	0.99	30.0	2.31	0.23	I	--	U	0.01	U	0.0157	10		
	10/21/2021	8.28	36.7	427	3.93	--	--	--	12.7	--	--	--	--	--	--	--	10.7	3.91	--	--	--	--	--	--	--	--	--			
	02/15/2022	8.75	23.3	954	--	37.6	0.20	U	51.3	672	2.4	1	U	1	U	1	U	0.13	42.3	7.19	0.27	I	--	U	0.01	U	0.005	5	U	
	05/18/2022	7.17	31.7	1,435	--	42.6	0.20	U	67.6	J	998	3.56	1	U	1	U	1	U	0.10	49.0	3.97	0.38	I	1	U	0.01	U	0.005	5	U

Notes:
 -- = No data
 S.U. = Standard units
 °C = degrees Celsius
 NTU = Nephelometric Turbidity Unit
 µmhos/cm = micromhos per centimeter
 mg/L = milligrams per liter
 ug/L = micrograms per liter
 TDS = Total Dissolved Solids
 NA = not analyzed

Table 4
Background Calculation Summary
Citrus Combined Cycle Plant
Crystal River, FL

Analyte	Arsenic (µg/L)	Iron (mg/L)		Manganese (mg/L)		TDS (mg/L)	
Well Data Source	Regional	Regional	MWB-1	Regional	MWB-1	Production Wells	MWB-1
Number of Wells	174	33	1	29	1	10	1
Number of Samples	1472	43	17	37	17	618	17
Minimum	0.06	0.011	0.336	0.001	0.0489	6.9	266
Mean	14	2.07	3.388	0.037	0.106	239.6	404.4
Maximum	167	14.9	5.94	0.234	0.168	645	840
2 x Mean	28	4.14	6.78	0.074	0.212	479.2	809
95-99 UTL	72	14.9	5.94	0.18	0.168	472	840

Notes:

µg/L = micrograms per liter

mg/L = milligrams per liter

UTL = upper tolerance limit

Yellow highlight indicates which concentration was selected as background criteria

Table 5: Proposed Groundwater Monitoring Parameters

Citrus Combined Cycle Project
Crystal River, FL

Parameters	Compliance Well Limit	Units	Sample Type	Monitoring Frequency
Turbidity	Report	NTU	In-situ	Quarterly
Specific Conductance	Report	umho/cm	In-situ	Quarterly
pH	Report	S.U.	In-situ	Quarterly
Temperature (C), Water	Report	°C	In-situ	Quarterly
Oxygen, Dissolved (DO)	Report	mg/L	In-situ	Quarterly
Water Level Relative to NGVD	Report	ft	In-situ	Quarterly
Oxidation reduction Potential (ORP)	Report	mV	In-situ	Quarterly
Solids, Total Dissolved (TDS)	500	mg/L	Grab	Quarterly
Chloride (as Cl)	250	mg/L	Grab	Quarterly
Nitrogen, Nitrate, Total (as N)	10	mg/L	Grab	Quarterly
Sulfate, Total	250	mg/L	Grab	Quarterly
Lead, Total Recoverable	0.015	mg/L	Grab	Quarterly
Arsenic, Total Recoverable	10	ug/L	Grab	Quarterly
Cadmium, Total Recoverable	5	ug/L	Grab	Quarterly
Chromium, Total Recoverable	100	ug/L	Grab	Quarterly
Coliform, Fecal	4	#/100mL	Grab	Quarterly

Notes:

S.U. = Standard units

°C = degrees Celsius

NTU = Nephelometric Turbidity Unit

umhos/cm = micromhos per centimeter

mg/L = milligrams per liter

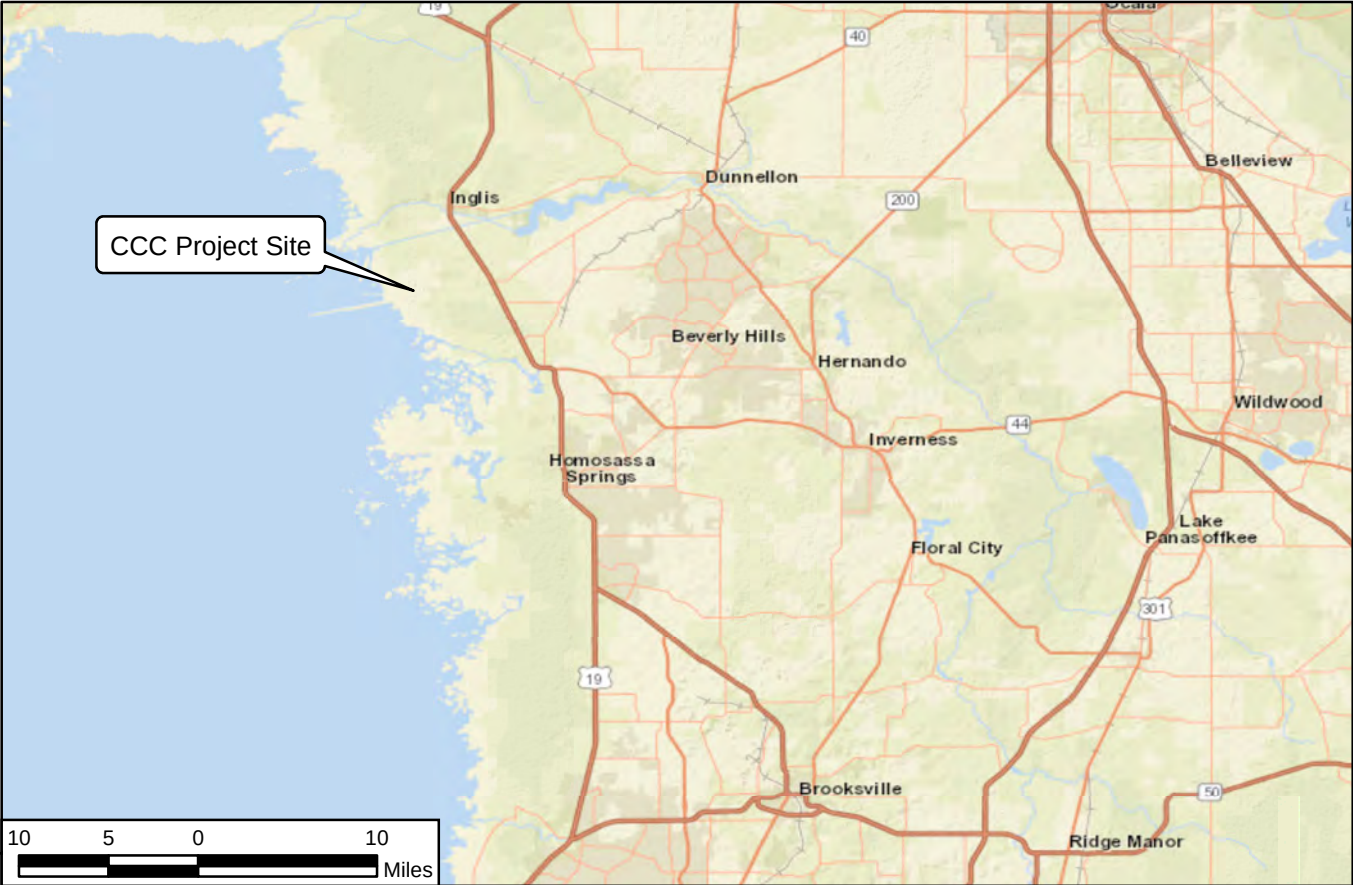
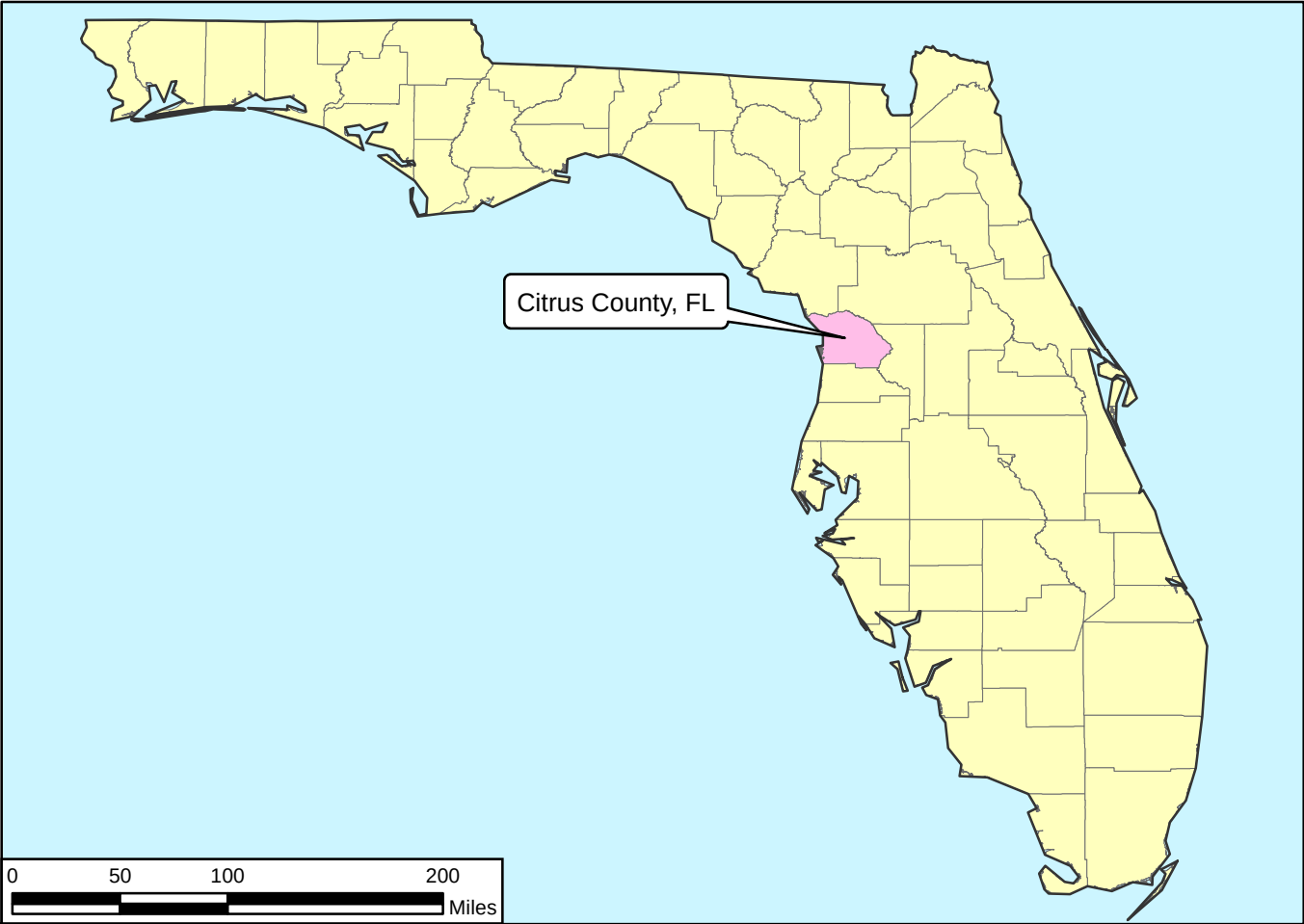
ug/L = micrograms per liter

mL = milliliters

NGVD = National Geodetic Vertical Datum

ft = feet

FIGURES

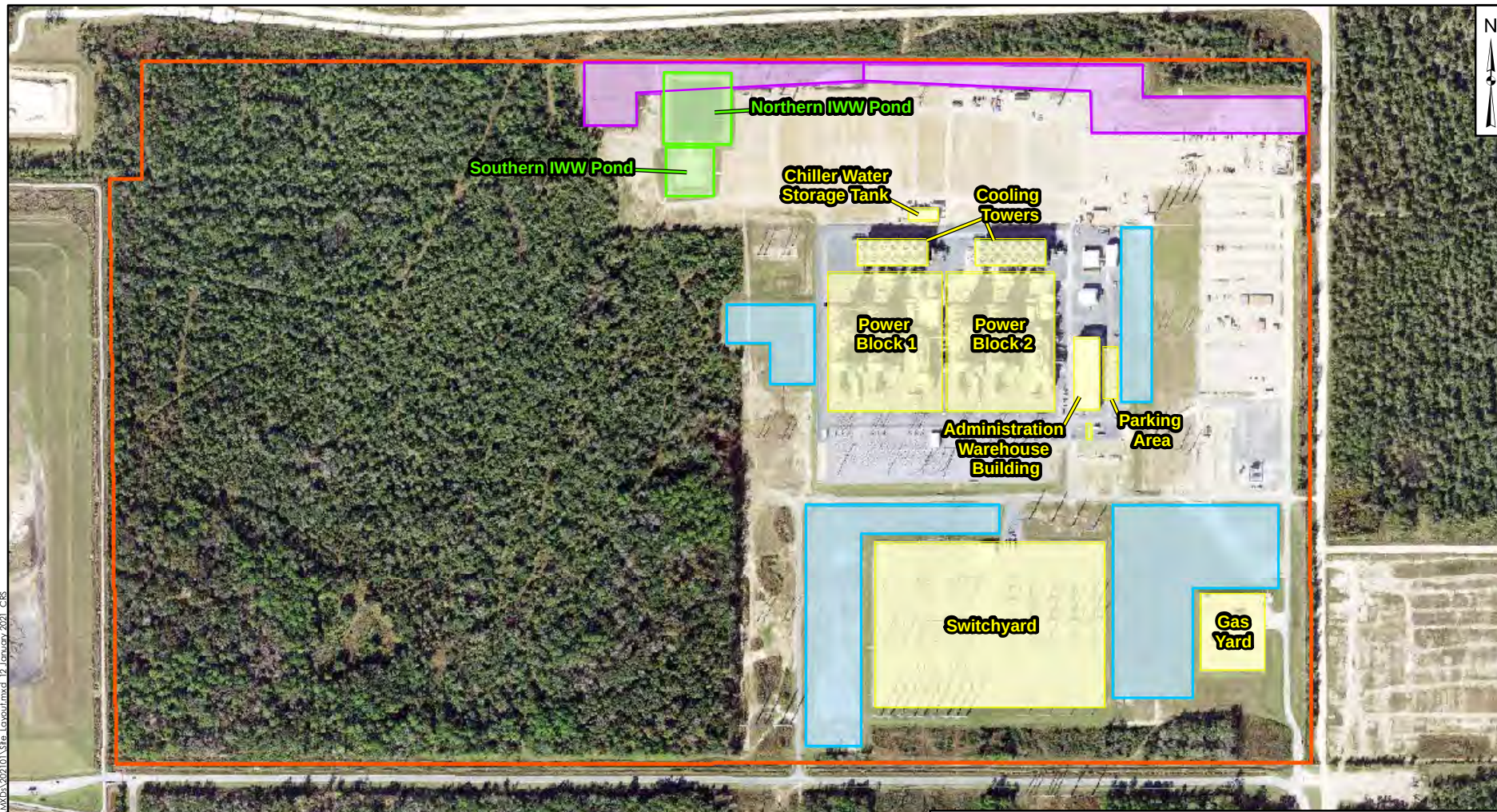


Note:
World Street Map Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community.



Legend CCC Project Site	Site Location Map Citrus Combined Cycle Project 14385 N. Access Road Crystal River, FL 34428	
Notes: 1. CCC Project footprint obtained from Duke Energy Florida, Inc. Citrus Combined Cycle Project Site Certification Application, ECT, 2014. 2. Property boundary obtained from the Citrus County Property appraiser's office. 3. 2020 World Imagery Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community.	Geosyntec consultants	Figure 1
	Tampa, FL	

Path: \\floridass\DATA\PROJECTS\2021\202101\Site Layout.mxd 12 January 2021 CRS



Legend

- Facility Layout
- Construction Stormwater Detention Pond
- Stormwater Detention Ponds
- IWW Percolation Pond
- CCC Project Site

Notes:

1. CCC Project footprint obtained from Duke Energy Florida, Inc. Citrus Combined Cycle Project Site Certification Application, ECT, 2014.
2. Property boundary obtained from the Citrus County Property appraiser's office.
3. 2020 aerial image source: Florida Department of Transportation, Office of Surveying and Mapping website.

700 350 0 700 Feet



Site Layout

Citrus Combined Cycle Project
14385 N. Access Road
Crystal River, FL 34428

Geosyntec
consultants

Tampa, FL

January 2021

Figure

2

Path: (Thrive)01\DATA\TUGS\DUke, Confidential_GIS\F2729_Data\CitrusRiver\XCD\Region_Hydro.mxd 11 December 2015 .R8

SURFACE BEDS	Era	System	Series	Formation	
SUB-SURFACE BEDS	Cenozoic	Quaternary	Recent	Sand, peat and clay, unnamed	
			Pleistocene	Lake Flirt marl, of late Wisconsin glacial stage	
				Pamlico formation, of Peorian age	
				Wicomico formation, of Sangamon age	
				Okefenokee formation, of Yarmouth age	
				Coharie formation, of Aftonian age	
		Tertiary	Miocene	Alachua formation Terrestrial	
				Hawthorn formation Marine	
			Oligocene	Suwannee limestone	
			Eocene	Ocala limestone, of Jackson age	
				Moody Branch formation Jackson age	Williston member
					Inglis member
				Avon Park limestone, of Claiborne age	
				Lake City limestone, of Claiborne age	
				Oldsmar limestone, of Wilcox age	
			Paleocene	Cedar Keys formation, of Midway age	
				Lawson limestone, of Navarro age	
	Mesozoic	Cretaceous	Gulf	Beds of Taylor age	
				Beds of Austin age	
				Atkinson formation	Beds of Eagle Ford age
					Beds of Woodbine age
			Comanche?	Undifferentiated shale and sand, "red beds"	
SUB-SURFACE BEDS	Paleozoic	Triassic?		Quartz diabase, possible sill?	
		Lower Devonian or Upper Silurian ?...?...? Lower Ordovician		Possible fault contact	

Vernon, R.O. 1951. Geology of Citrus and Levy Counties, Florida. US Geological Survey Bulletin No. 33:17, 186-224.

System	Series	Stratigraphic Unit	General Lithology	Hydrogeologic Unit	
Quaternary	Holocene and Pleistocene	Alluvium and terrace deposits	Sands and clays	Surficial aquifer system	
Tertiary	Pliocene	Alachua Formation	Phosphatic sands and clays	(Of limited areal extent in study area)	
	Miocene	Hawthorn ¹ Group	Phosphatic sands, and clays		
	Eocene	Ocala Limestone	Limestone, fossiliferous to micritic	Floridan aquifer system	Upper S
		Avon Park Formation	Upper part, limestone and dolostone		Floridan D
			Lower part, dolomite with intergranular gypsum; some bedded gypsum, peat and chert		Middle confining unit
		Oldsmar Formation	Limestone and dolomite; some evaporites and chert		Lower Floridan aquifer
	Paleocene	Cedar Keys Formation	Dolomite with evaporites		

¹ Based on nomenclature of Scott (1988)

 Typical open intervals of shallow (S) and deep (D) wells

Sacks, L.A. 1995. Geochemical and Isotopic Composition of Ground Water with Emphasis on Sources of Sulfate in the Upper Floridan Aquifer in Parts of Marion, Sumter, and Citrus Counties, Florida. US Geological Survey Water-Resources Investigations Report 95-4251.

Regional Hydrogeologic Framework

Citrus Combined Cycle Plant
14385 N. Access Road
Crystal River, FL 34428

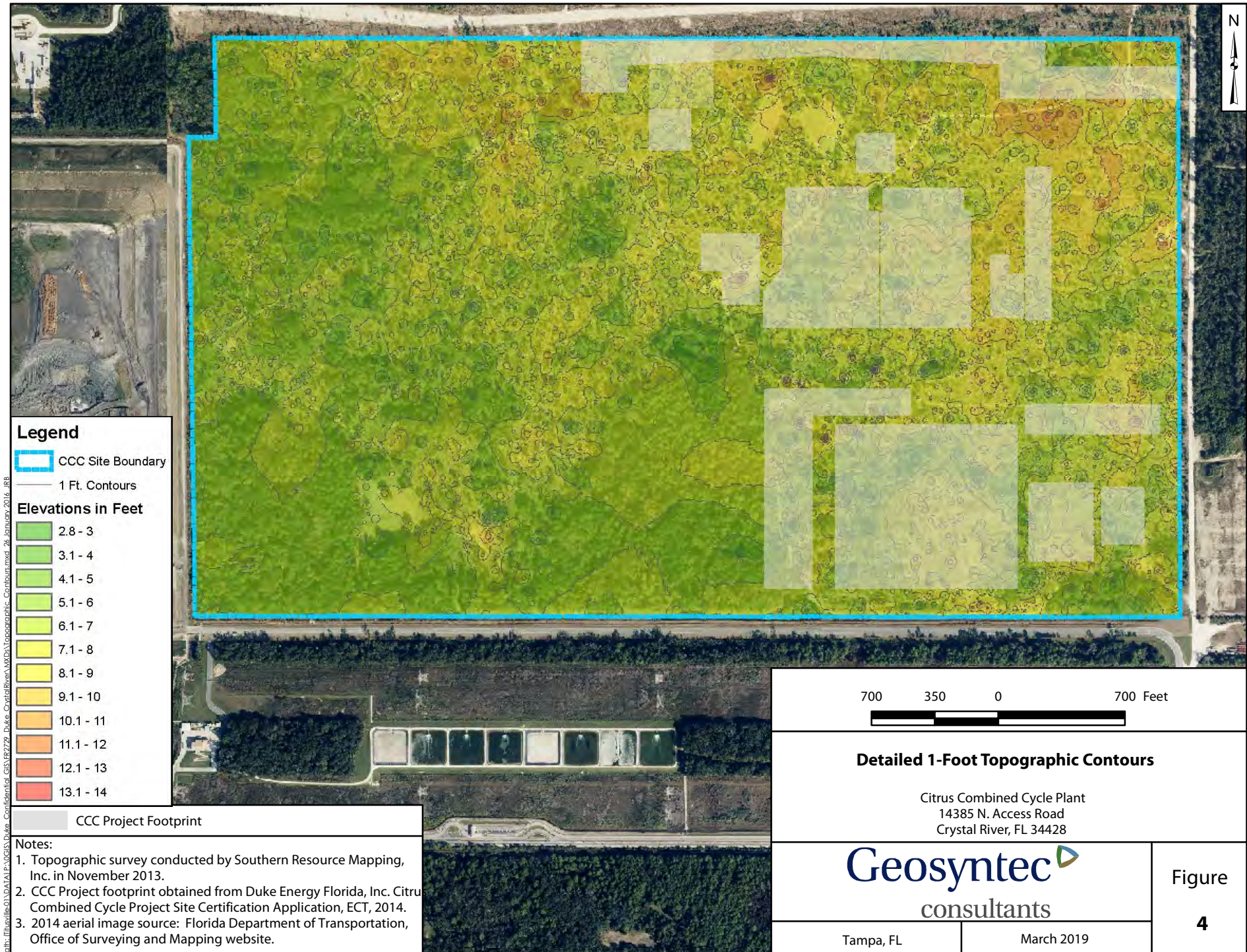
Geosyntec

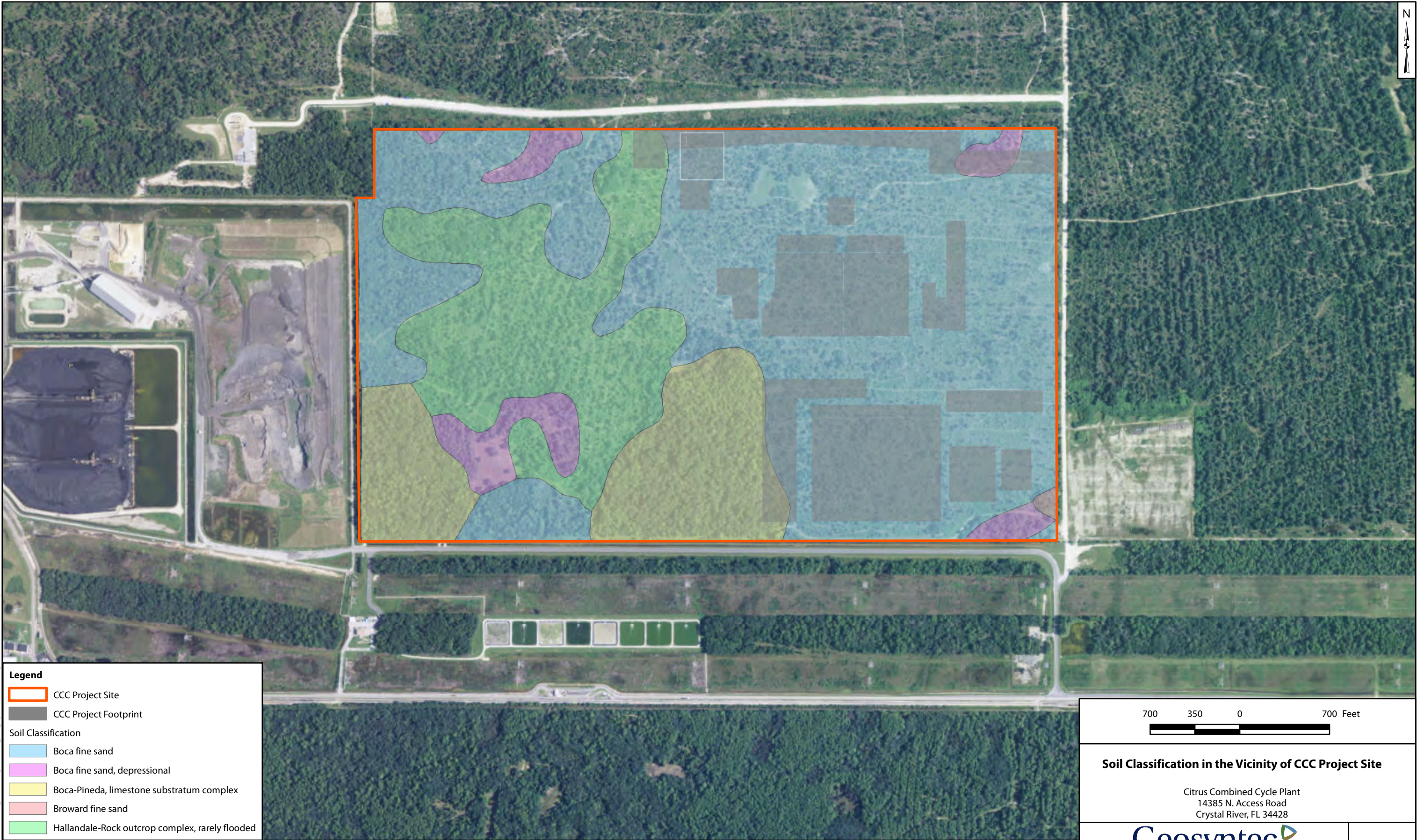
consultants

Tampa, FL

December 2015

Figure
3





Path: (Thrufile:01)\\DATA\\PA\\GIS\\Duke_Confidential_GIS\\V2729_Duke_City\\Bkive\\MXD\\Soil_Classification.mxd 24 January 2016 JRB

Legend

CCC Project Site

CCC Project Footprint

Soil Classification

Boca fine sand

Boca fine sand, depressional

Boca-Pineda, limestone substratum complex

Broward fine sand

Hallandale-Rock outcrop complex, rarely flooded

- Notes:
1. Source of soil classification shapefile: Southwest Florida Water Management District website.
 2. CCC Project footprint obtained from Duke Energy Florida, Inc. Citrus Combined Cycle Project Site Certification Application, ECT, 2014.
 3. Property boundary obtained from the Citrus County Property appraiser's office.
 4. 2013 World Imagery Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community.

7003500700 Feet

Soil Classification in the Vicinity of CCC Project Site

Citrus Combined Cycle Plant
14385 N. Access Road
Crystal River, FL 34428

Geosyntec

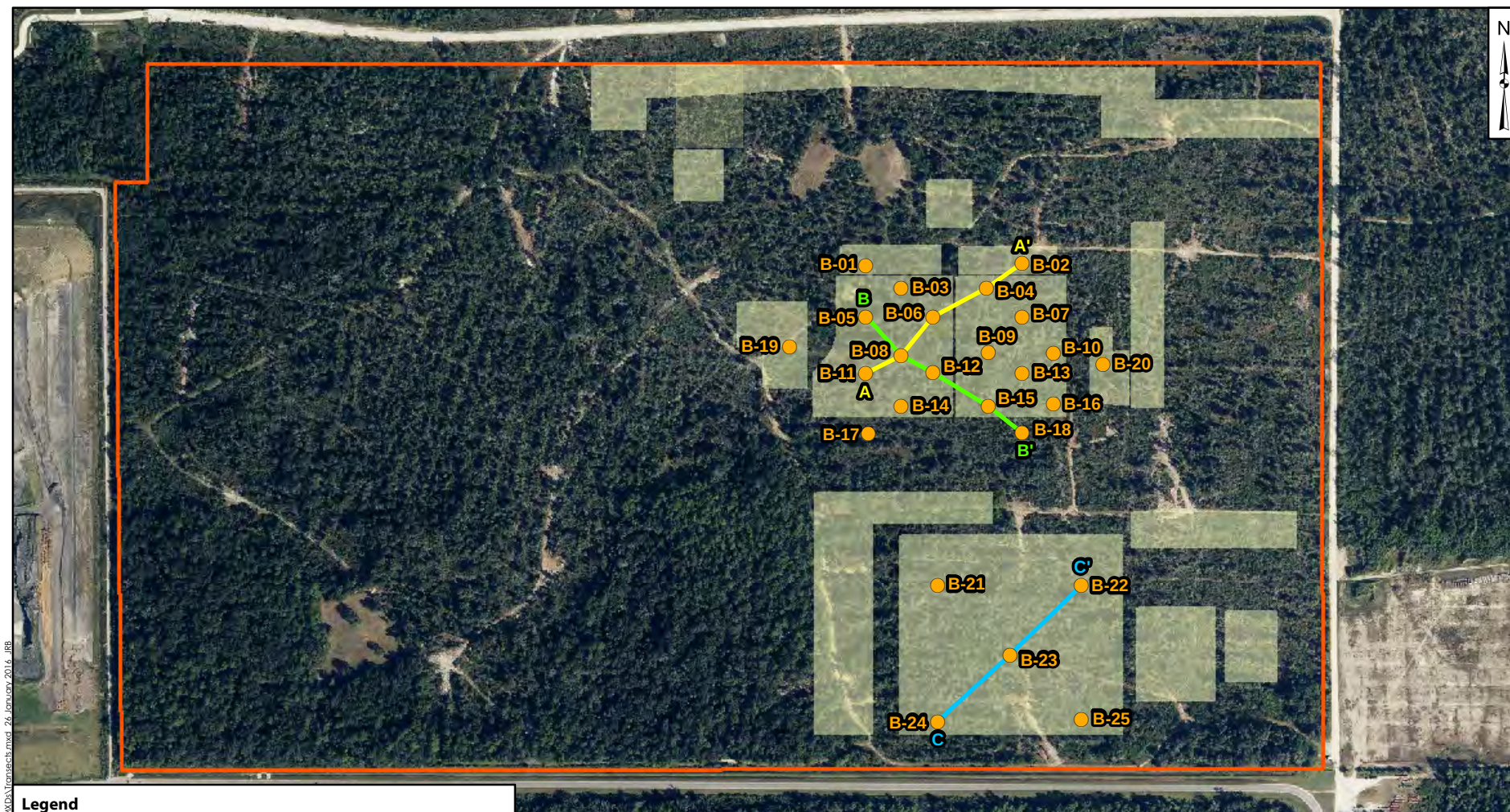
consultants

Tampa, FL

Figure

5

JMarch2019



Legend

- Soil Boring Location
- A-A' Transect
- B-B' Transect
- C-C' Transect
- CCC Project Footprint
- CCC Project Site

Notes:

1. CCC Project footprint and soil boring locations obtained from Duke Energy Florida, Inc. Citrus Combined Cycle Project Site Certification Application, ECT, 2014.
2. Property boundary obtained from the Citrus County Property appraiser's office.
3. 2014 aerial image source: Florida Department of Transportation, Office of Surveying and Mapping website.

700 350 0 700 Feet



Soil Borings and Geologic Cross Section Transects

Citrus Combined Cycle Plant
14385 N. Access Road
Crystal River, FL 34428

Geosyntec
consultants

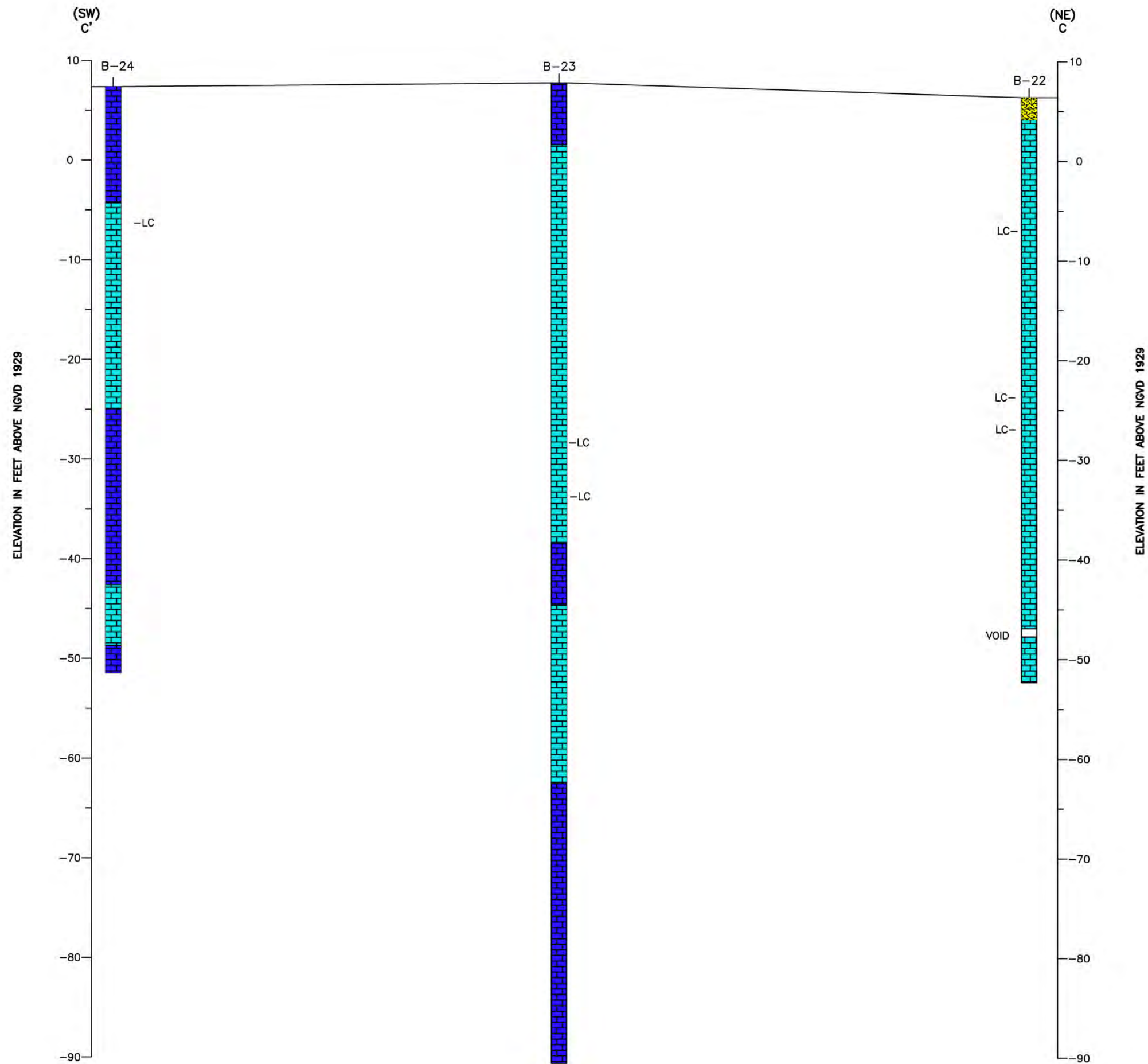
Tampa, FL

March 2019

Figure

6

Path: (T:\w\01\DATA)\1\GSI\GSI\Confidential_GIS\F2729_Duke_CrystalRiver\XDX\C.C.CrossSection_1x17.mxd 11 December 2015 JBS



LEGEND

- SAND
- LIMESTONE - WEATHERED - POORLY TO MODERATELY INDURATED
- LIMESTONE - WELL INDURATED - MODERATELY TO WELL INDURATED
- LC = LOSS OF CIRCULATION OF DRILLING FLUID

HORIZONTAL SCALE: 1"=130'
VERTICAL SCALE: 1"=10'

Obtained from Duke Energy Florida, Inc. Citrus Combined Cycle Project Site Certification Application, ECT, 2014.

Geologic Cross Section C-C' (Southwest - Northeast)

Citrus Combined Cycle Plant
14385 N. Access Road
Crystal River, FL 34428

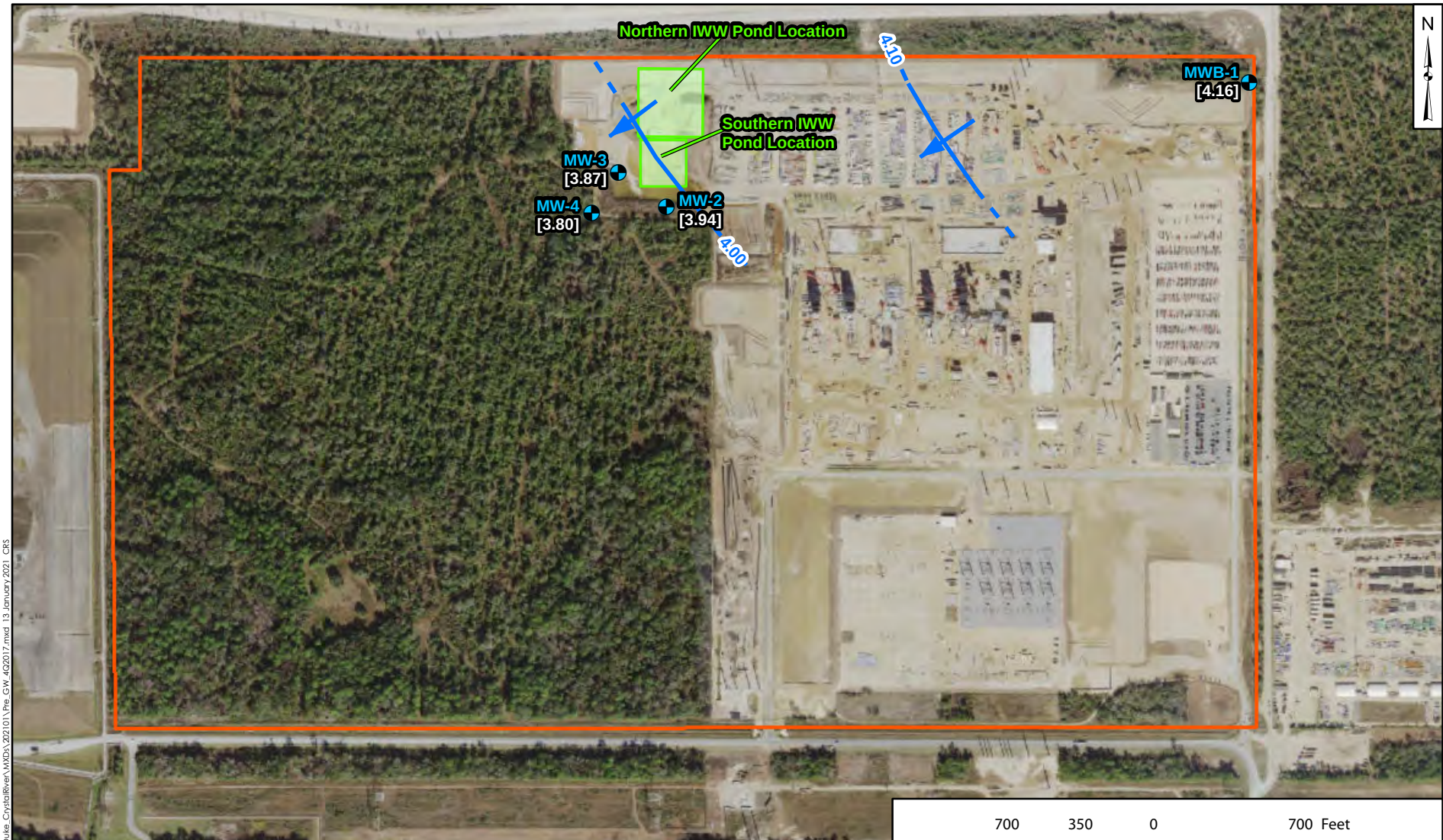
Geosyntec
consultants

Tampa, FL

December 2015

Figure

9



Legend

- Monitoring Well Location
- Groundwater Elevation Contour (Dashed where Inferred)
- Groundwater Flow Direction
- IWW Percolation Pond
- CCC Project Site
- Groundwater Elevation (NGVD)

Designation	Latitude	Longitude	Ground Elevation (NGVD 1929)	TOC Elevation (NGVD 1929)
MWB-1	28° 58' 15.7"	-82° 40' 5.8"	10.36	13.20
MWB-2	28° 58' 9.8"	-82° 40' 37.1"	12.35	15.52
MWB-3	28° 58' 11.3"	-82° 40' 39.7"	11.45	14.47
MWB-4	28° 58' 9.4"	-82° 40' 41.1"	9.45	12.21

Notes:

1. NGVD 1929 indicates National Geodetic Vertical Datum of 1929 (US Survey feet).
2. TOC indicates top of casing.
3. Property boundary obtained from the Citrus County Property appraiser's office.
4. 2017 aerial image source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community.

700 350 0 700 Feet

Pre Operation Groundwater Contours 4Q2017

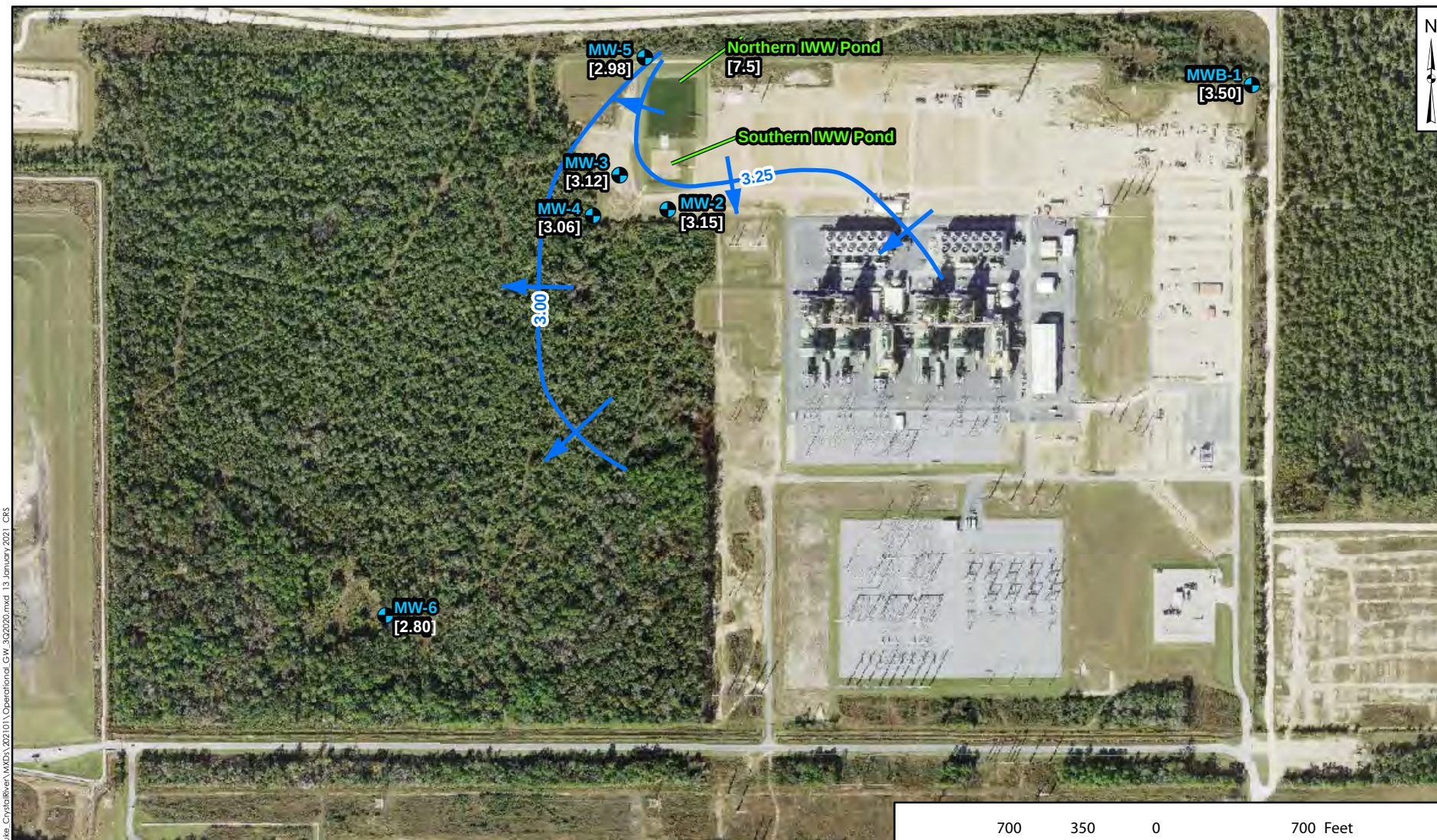
Citrus County Combined Cycle Plant
15760 W. Power Line St.
Crystal River, FL 34428

Tampa, FL

January 2021

Figure
10

Path: [I:\usville-01\DATA\T:\OGIS\DUKE-Confidential\GIS\PR2729 Duke-CrystalRiver\MDA\202101\Operational_GW_3Q2020.mxd 13 January 2021 CRS



Legend

- Monitoring Well Location
- [4.13]** Groundwater Elevation (NGVD)
- Groundwater Elevation Contour
- Groundwater Flow Direction

Designation	Latitude	Longitude	Ground Elevation (NGVD 1929)	TOC Elevation (NGVD 1929)
MWB-1	28° 58' 15.7"	-82° 40' 5.8"	10.36	13.20
MW-2	28° 58' 9.8"	-82° 40' 37.1"	12.35	15.52
MW-3	28° 58' 11.3"	-82° 40' 39.7"	11.45	14.47
MW-4	28° 58' 9.4"	-82° 40' 41.1"	9.45	12.21
MW-5	28° 58' 16.8"	-82° 40' 38.3"	9.16	12.08
MW-6	28° 57' 50.4"	-82° 40' 52.1"	7.05	10.00

Notes:

1. NGVD 1929 indicates National Geodetic Vertical Datum of 1929 (US Survey feet).
2. TOC indicates top of casing.
3. NM indicates not measured.
4. Property boundary obtained from the Citrus County Property appraiser's office.
5. 2020 aerial image source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

700 350 0 700 Feet



Operational Groundwater Contours 3Q2020

Citrus County Combined Cycle Plant
15760 W. Power Line St.
Crystal River, FL 34428

Geosyntec
consultants

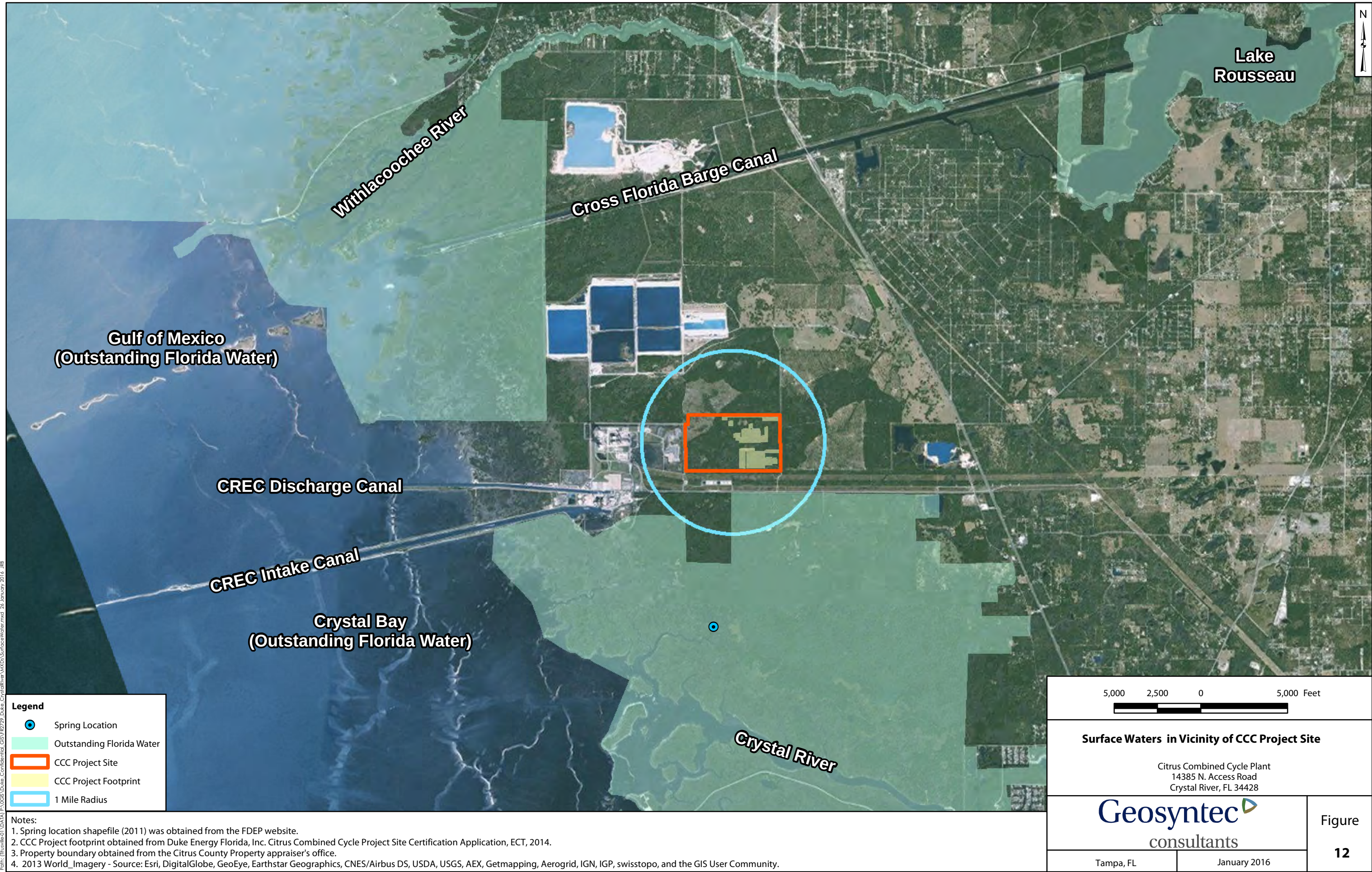


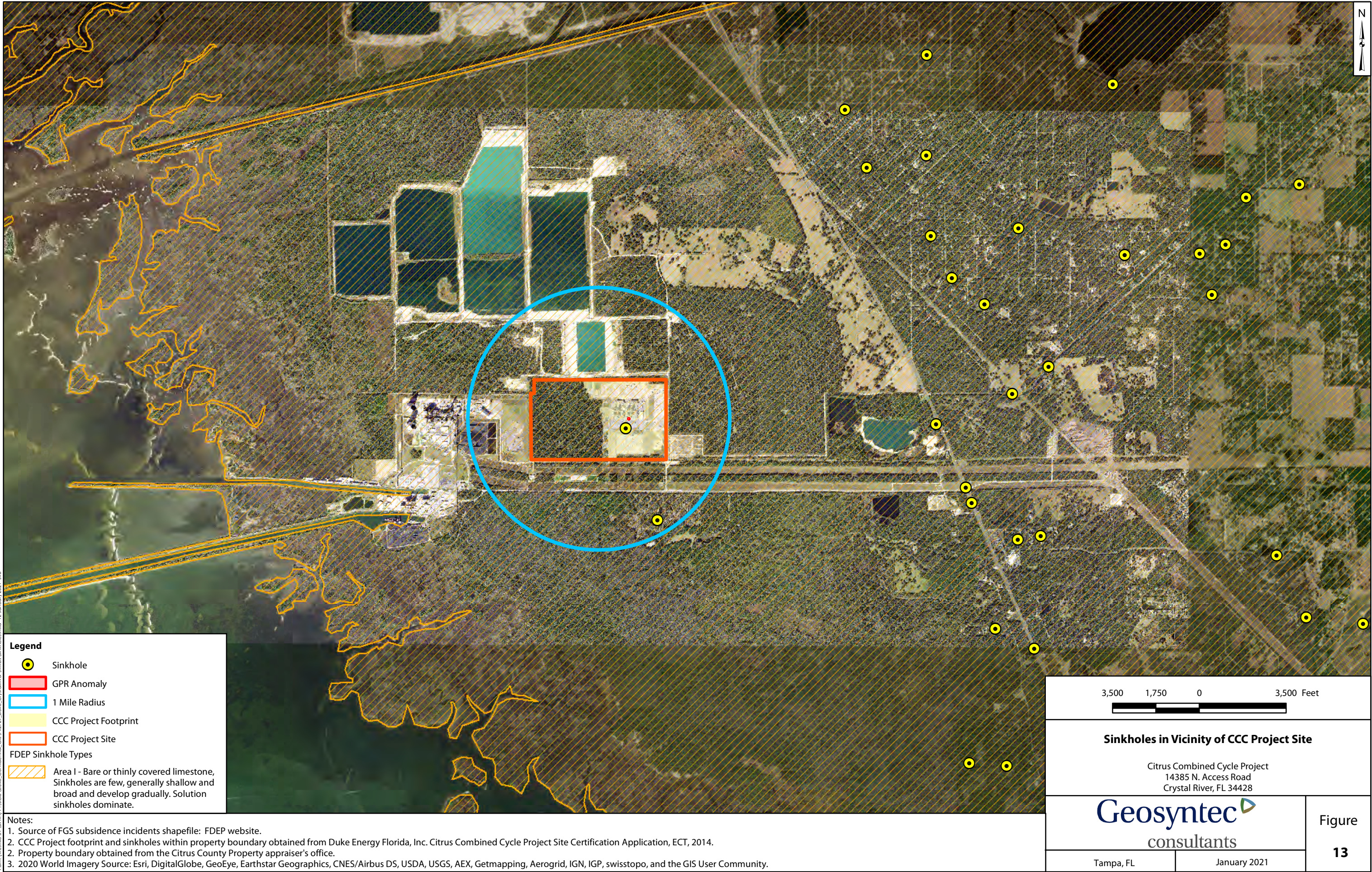
Tampa, FL

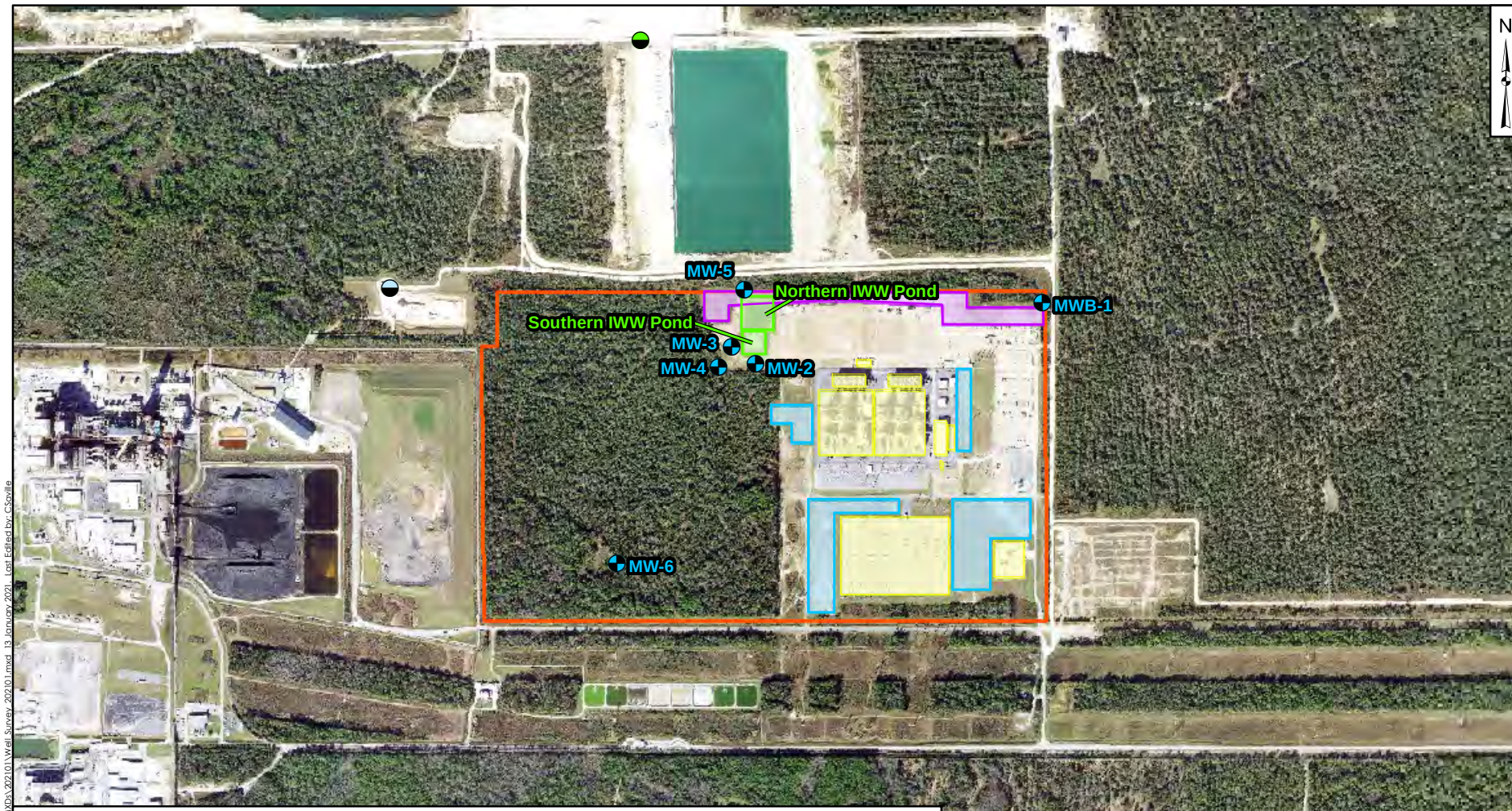
January 2021

Figure

11







Legend

- | | | | |
|--|---------------------------------|--|--|
| | Monitoring Well Location | | Facility Layout |
| | Domestic | | Construction Stormwater Detention Pond |
| | Public Supply - Limited Use/DOH | | Stormwater Detention Ponds |
| | | | IWW Percolation Pond |
| | | | CCC Project Site |

Notes:

- Well locations were obtained from the Southwest Florida Water Management District (SWFWMD) well construction permit (WCP) [29 March 2019] shapefile.
- CCC Project footprint obtained from Duke Energy Florida, Inc. Citrus Combined Cycle Project Site Certification Application, ECT, 2014.
- Property boundary obtained from the Citrus County Property appraiser's office.
- 2020 World Imagery Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.

1,500 750 0 1,500 Feet

Well Survey in Vicinity of CCC Project Site

Citrus Combined Cycle Project
14385 N. Access Road
Crystal River, FL 34428

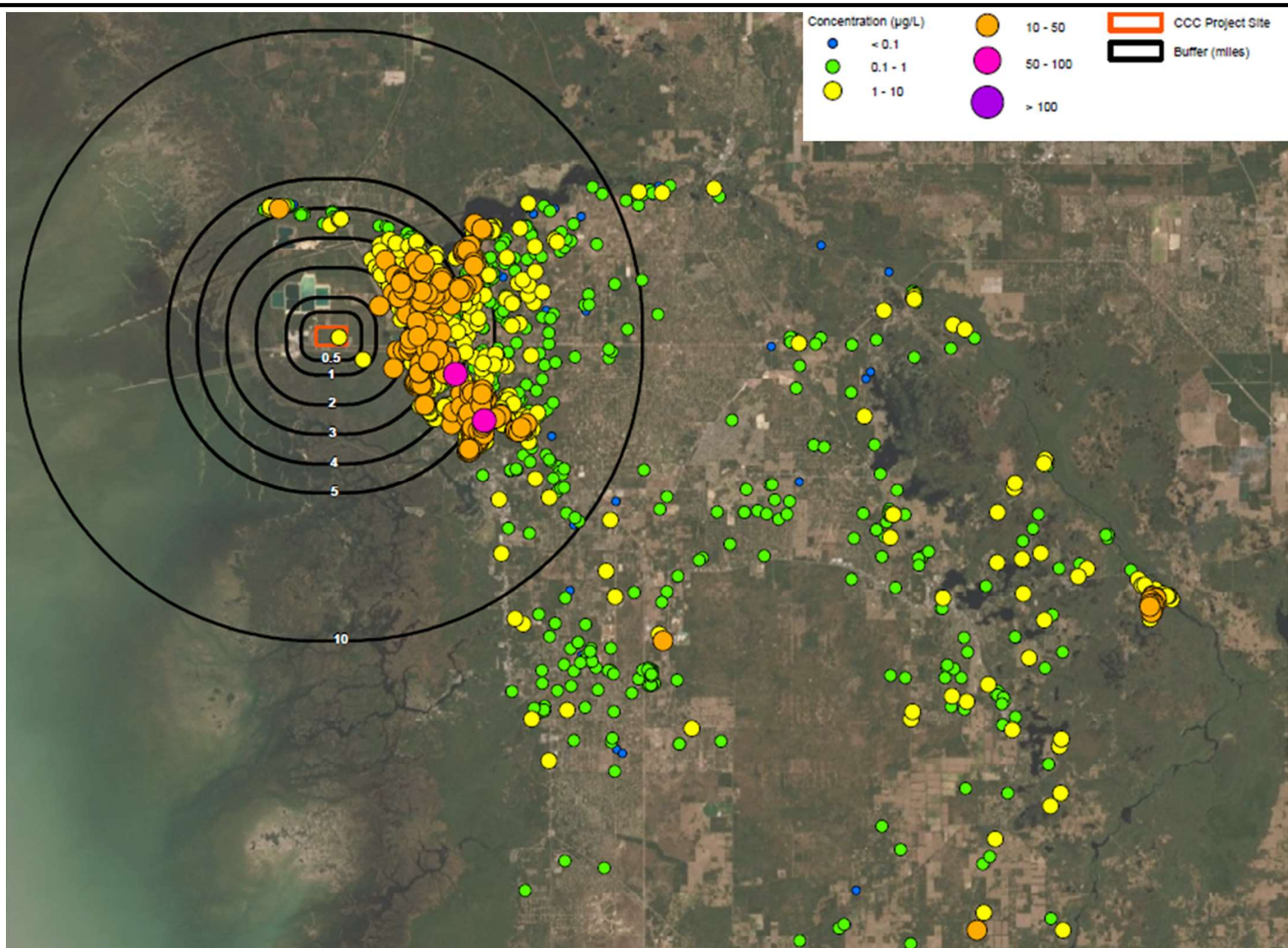
Geosyntec
consultants

Tampa, FL

January 2021

Figure

15



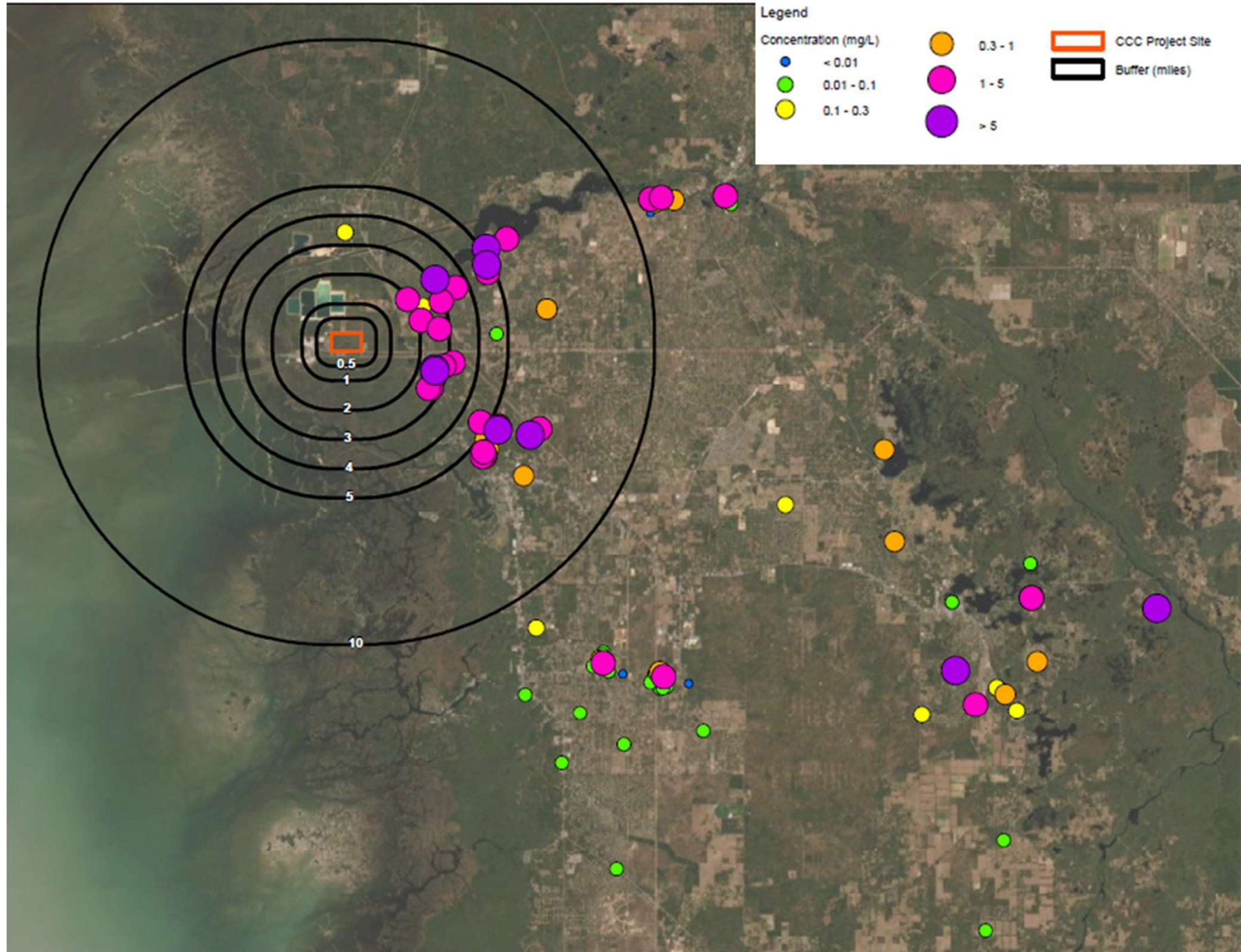
Regional Arsenic Sampling Locations

Geosyntec
consultants

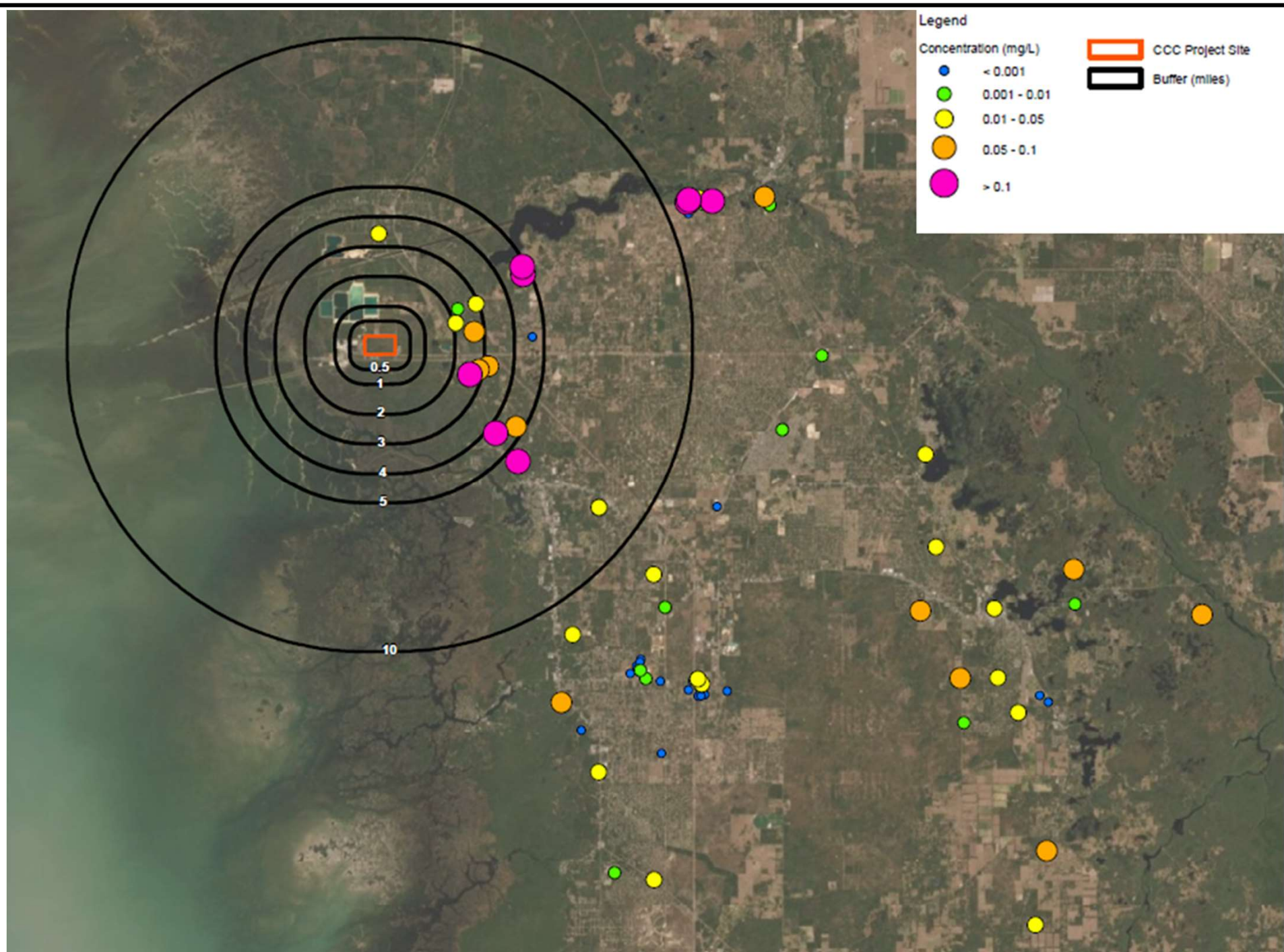
Tampa, Florida

July 2022

**Figure
16**



Regional Iron Sampling Locations



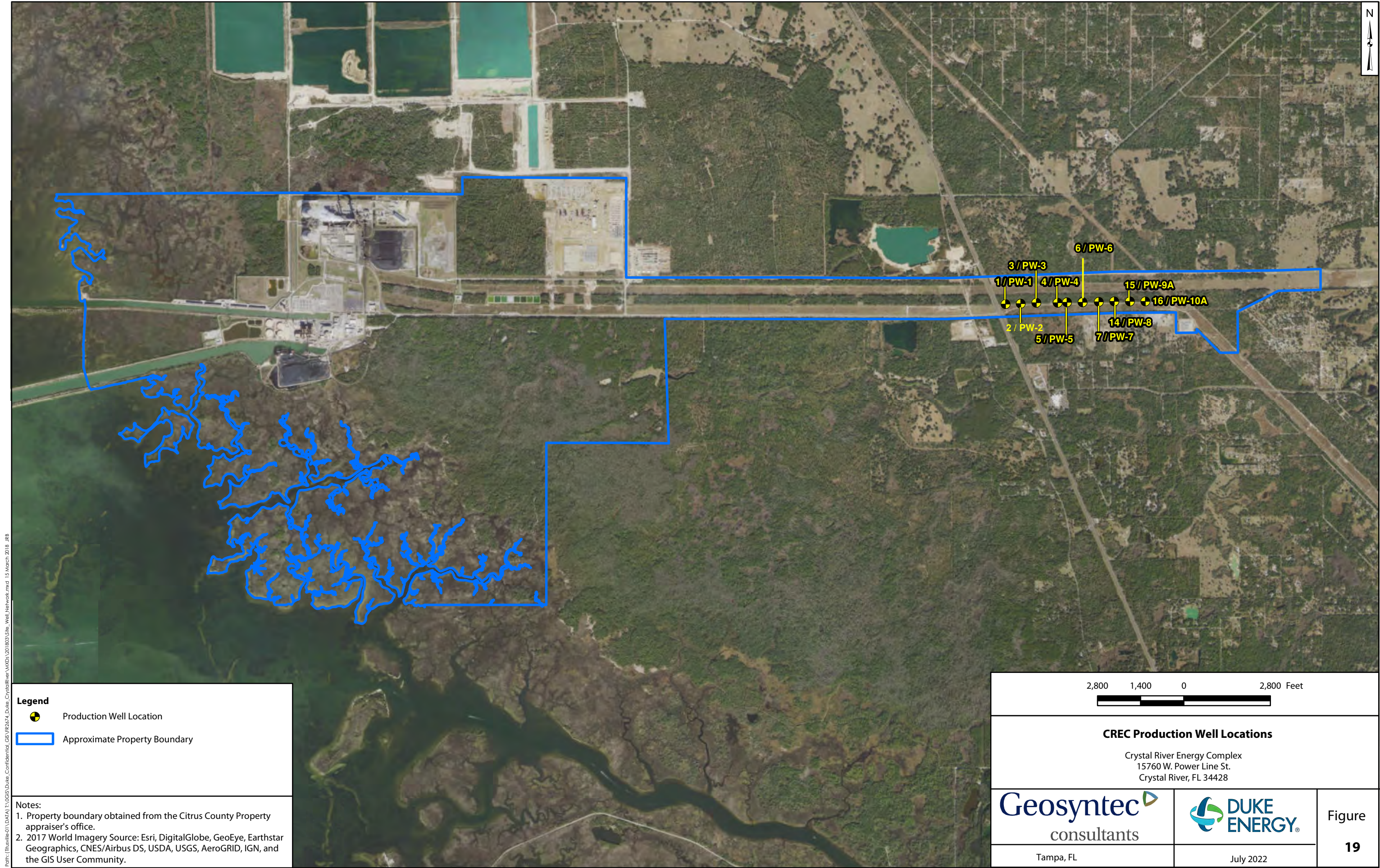
Regional Manganese Sampling Locations

Geosyntec
consultants

Tampa, Florida

July 2022

**Figure
18**



Legend

-  Production Well Location
-  Approximate Property Boundary

Notes:

1. Property boundary obtained from the Citrus County Property appraiser's office.
2. 2017 World Imagery Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.

2,800 1,400 0 2,800 Feet

CREC Production Well Locations

Crystal River Energy Complex
15760 W. Power Line St.
Crystal River, FL 34428

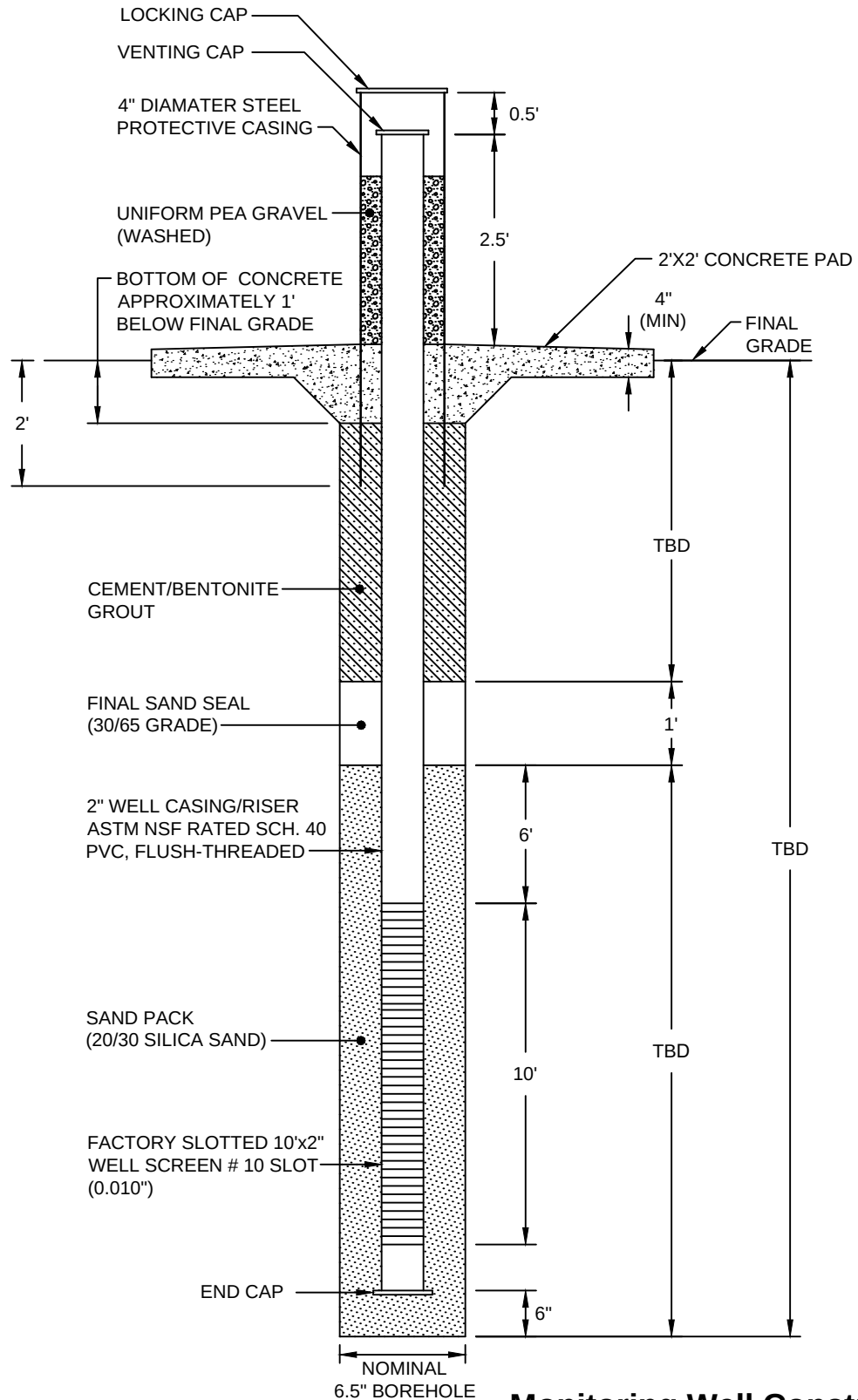
Geosyntec
consultants



Tampa, FL

July 2022

Figure
19



Monitoring Well Construction Detail

Geosyntec
consultants

TAMPA, FL

DATE: December 2015

FILE NO.

PROJECT NO. FR2729.01

FIGURE NO.

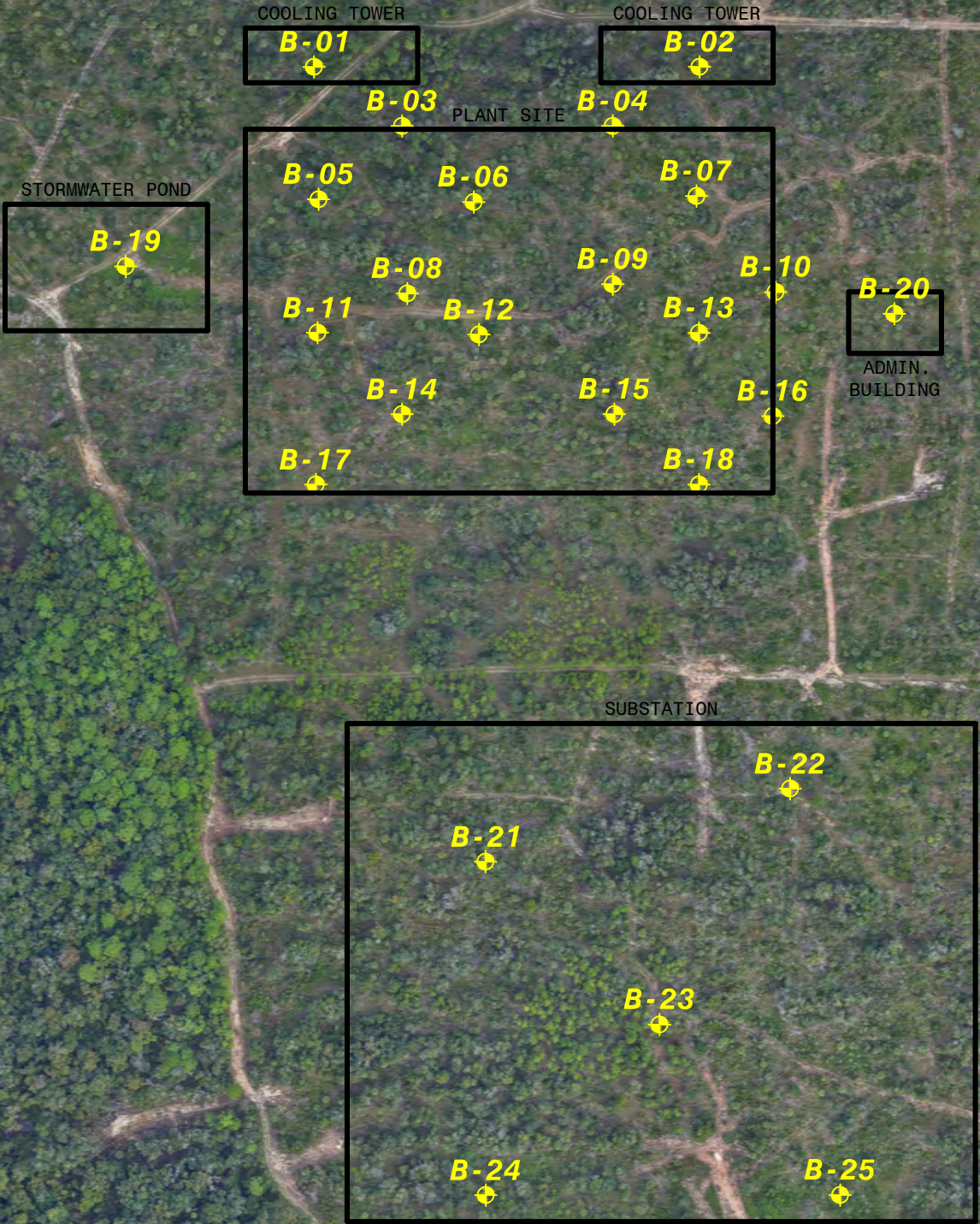
20

APPENDIX A

Lithologic Borings

P:\PROJECTS-C3D\300743X2 DUKE CITRUS COUNTY CRYSTAL RIVER\DWG\300743X2 FIG_BORINGS.DWG

Boring ID	Elevation	Location		Total Depth (ft.)
		Latitude	Longitude	
B-01	7.1	28° 58' 07.7"	82° 40' 28.7"	39.7
B-02	5.6	28° 58' 07.8"	82° 40' 20.8"	38.8
B-03	5.7	28° 58' 06.7"	82° 40' 26.9"	58.1
B-04	7.9	28° 58' 06.7"	82° 40' 22.6"	72.0
B-05	6.9	28° 58' 05.4"	82° 40' 28.7"	73.6
B-06	7.4	28° 58' 05.4"	82° 40' 25.3"	74.8
B-07	8.6	28° 58' 05.4"	82° 40' 20.8"	66.0
B-08	6.5	28° 58' 03.7"	82° 40' 26.9"	73.8
B-09	5.8	28° 58' 03.8"	82° 40' 22.5"	99.3
B-10	7.9	28° 58' 03.8"	82° 40' 19.2"	73.6
B-11	5.2	28° 58' 02.9"	82° 40' 28.7"	68.4
B-12	7.7	28° 58' 02.9"	82° 40' 25.3"	70.0
B-13	7.6	28° 58' 02.9"	82° 40' 20.8"	98.5
B-14	7.1	28° 58' 01.4"	82° 40' 26.9"	98.6
B-15	7.7	28° 58' 01.4"	82° 40' 22.5"	26.0
B-16	8.1	28° 58' 01.5"	82° 40' 19.2"	54.6
B-17	6.3	28° 58' 00.2"	82° 40' 28.6"	63.7
B-18	7.5	28° 58' 00.2"	82° 40' 20.8"	56.0
B-19	6.8	28° 58' 04.1"	82° 40' 32.6"	28.3
B-20	7.2	28° 58' 03.3"	82° 40' 16.7"	55.0
B-21	6.6	28° 57' 53.4"	82° 40' 25.1"	58.7
B-22	6.2	28° 57' 53.4"	82° 40' 17.8"	58.1
B-23	7.5	28° 57' 50.3"	82° 40' 21.4"	98.6
B-24	6.7	28° 57' 47.3"	82° 40' 25.1"	58.8
B-25	7.0	28° 57' 47.4"	82° 40' 17.8"	63.9



DATE	REVISIONS



AMEC Environment & Infrastructure, Inc.
2000 E. Edgewood Dr., Ste #215 Lakeland, FL 33803
Phone: 863.667.2345 Fax: 863.667.2662
www.amec.com CA-5392

DESIGNED BY:	ND	SCALE:	AS SHOWN
DRAWN BY:	MAJ	DATE:	12/13/13
CHECKED BY:	ND	PROJECT NO.	300743X2
APPROVED BY:	MPK		

DUKE ENERGY FLORIDA
CITRUS COUNTY COMBINED CYCLE PROJECT
FIGURE 3
BORING LOCATION PLAN
CRYSTAL RIVER, FLORIDA

CLIENT Duke EnergyPROJECT NAME Energy Plant Ho c m S tePROJECT NUMBER 300743x2PROJECT LOCATION Crysta R verDATE STARTED 10/30/13COMPLETED 10/31/13GROUND ELEVATION 7.1 ftHOLE SIZE 4 nchesDRILLING CONTRACTOR Independent Dr ng, Inc.

GROUND WATER LEVELS:

DRILLING METHOD Standard Penetrat on / Mud Rotary▽ AT TIME OF DRILLING 4.00 ft / E ev 3.10 ftLOGGED BY BBCHECKED BY Tha Nguyen

AT END OF DRILLING

NOTES DR 33 R g CME550 Automat c Hammer

AFTER DRILLING

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0								
	SS 1		1 2 2 5 (4)		SP		(SP) redd sh brown f ne gra ned quartz SAND, trace s t	
	SS 2		7 11 16 13 (27)				pa e ye ow, wh te LIMESTONE, poor y ndurated, oca weather ng	
5	SS 3		16 16 6 4 (22)	ntroduced dr ng f u d at 4'				
	SS 4		5 3 1 1 (4)					
	SS 5		1 1 1 1 (2)				(SP) brown f ne gra ned quartz SAND	
10				oss of dr ng f u d c rcu at on at 10'	SP		abundant LIMESTONE and she fragments	
	SS 6		1 2 3 (5)					
	SS 7		2 28 50/3"	4 nch cas ng nsta ed to 15', dr ng f u d c rcu at on rega ned			pa e brown LIMESTONE, s ty, fr ab e	
15								
	SS 8		3 6 12 (18)				pa e brown LIMESTONE, do om t c, s ty, fr ab e	
				oss of dr ng f u d c rcu at on at 17.5'				
	SS 9		50/2"				pa e brown, pa e ye ow LIMESTONE, do om t c, oca y s ty, fr ab e	
20								

(Continued Next Page)



CLIENT Duke Energy

PROJECT NAME Energy Plant Ho cm Site

PROJECT NUMBER 300743x2

PROJECT LOCATION Crysta River

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 21 - C \ HA CRYSTAL RIVER 300743X2 CRYSTAL RIVER (2) GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
20	RC 1	10 (0)		4 inch casing installed to 20', drilling fluid circulation resisted			pa e brown, pa e ye ow LIMESTONE, do om t c, oca y s ty, fr ab e (continued)	
25	SS 10		50/4"					
	SS 11		50/2"					
	SS 12		50/2"	loss of drilling fluid circulation at 28'				
30	SS 13		50/1"					
	SS 14		19 18 50/5"				very s ty	
35	SS 15		50/2"					
	SS 16		24 16 50/2"				s ty, grave y	
39.7								

Bottom of borehole at 39.7 feet.

CLIENT Duke EnergyPROJECT NAME Energy Plant Ho c m S tePROJECT NUMBER 300743x2PROJECT LOCATION Crysta R verDATE STARTED 11/4/13COMPLETED 11/4/13GROUND ELEVATION 5.6 ftHOLE SIZE 3 nchesDRILLING CONTRACTOR Independent Dr ng, Inc.

GROUND WATER LEVELS:

DRILLING METHOD Standard Penetrat on / Mud Rotary▽ AT TIME OF DRILLING 4.00 ft / E ev 1.60 ftLOGGED BY HICHECKED BY Tha Nguyen

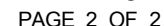
AT END OF DRILLING

NOTES DR 15 R g CME55 Automat c Hammer

AFTER DRILLING

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0							
	SS 1	1 1 2 2 (3)		SM		(SM) brown sh orange, dark brown f ne gra ned quartz s ty SAND	
	SS 2	0 0 0 2 (0)	WOH/18", 2				
						4 0	1 6
5	SS 3	3 15 15 20 (30)	dr ng f u d ntroduced at 4'			wh te f ne gra ned to grave gra ned s ze LIMESTONE, sandy	
	SS 4	15 17 11 15 (28)					← benton te sea
	SS 5	3 5 0 0 (5)	3, 5, WOH/12"				
10						10 0	-4 4
	SS 6	0 0 0 (0)	WOR/12", WOH			(SM) brown f ne gra ned quartz s ty SAND, trace c ay	
						few f ne LIMESTONE fragments	
	SS 7	1 0 0 (0)	1, WOH/12"	SM			← sand pack
15							
	SS 8	0 0 0 (0)	WOH/18"				← screen
			oss of dr ng f u d c rcu at on at 18'				
	SS 9	1 0 0 (0)	1, WOH=12"			wh te LIMESTONE at spoon t p	
20						20 0	-14 4

(Continued Next Page)



PROJECT LOCATION Crysta River

Bottom of borehole at 38.8 feet.

GENERAL BH/ P /WELL -GN S DUSLABGD -12/13/13 16 21 - C \ HA \CRY S AL R VER300743X2 CRY S AL R VER (2) GPJ



BORING NUMBER B-03

PAGE 1 OF 3

CLIENT <u>Duke Energy</u>	PROJECT NAME <u>Energy Plant Ho cm Site</u>
PROJECT NUMBER <u>300743x2</u>	PROJECT LOCATION <u>Crysta R ver</u>
DATE STARTED <u>11/14/13</u> COMPLETED <u>11/14/13</u>	GROUND ELEVATION <u>6 ft</u> HOLE SIZE <u>4 nches</u>
DRILLING CONTRACTOR <u>Independent Dr ng, Inc.</u>	GROUND WATER LEVELS:
DRILLING METHOD <u>Standard Penetrat on / Mud Rotary</u>	AT TIME OF DRILLING _____
LOGGED BY <u>HI</u> CHECKED BY <u>Tha Nguyen</u>	AT END OF DRILLING _____
NOTES <u>DR 33 R g CME550 Automat c Hammer</u>	AFTER DRILLING _____

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0							
	SS 1		3 1 2 2 (3)		SP		(SP) dark brown, brown, ght brown f ne gra ned quartz SAND, m nor s t
	SS 2		1 1 1 7 (2)				trace organ cs
						4 0	2 0
5	SS 3		13 8 4 3 (12)	dr ng f u d ntroduced at 4'			pa e brown, wh te LIMESTONE
	SS 4		8 9 5 4 (14)	oss of dr ng f u d c rcu at on at 7'			
	SS 5		2 4 4 10 (8)				coarse fragments
10							
	SS 6		1 0 0 (0)	1, WOH/12"			
	SS 7		1 5 1 (6)				
15							
	SS 8		1 2 1 (3)		SP		(SP) brown, pa e brown, gray f ne gra ned quartz SAND
						18 0	-12 0
	SS 9		4 10 17 (27)				brown, pa e brown, orange LIMESTONE, oca y do om t c
20							fr ab e

(Continued Next Page)



CLIENT Duke Energy

PROJECT NAME Energy Plant Ho cm S te

PROJECT NUMBER 300743x2

PROJECT LOCATION Crysta R ver

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
20							
							brown, pale brown, orange LIMESTONE, oca y do om t c (continued)
25							
	SS 10		50/3"				
27 0							-21 0
							brown LIMESTONE, coarse fragments
30	SS 11		12 0 7 3 (7)	12, WOH, 7, 3			
				4 nch casing nsta ed to 30', dr ng f u d c rcu at on rega ned			
32 0							-26 0
							pale brown LIMESTONE
35	SS 12		50/2"				
							we ndurated
40	RC 1	92 (78)		oss of dr ng f u d c rcu at on at 40'			
40 0							-34 0

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 21 - C \ HA C RYS AL R VER 300743X2 C RYS AL R VER (2) GPJ

(Continued Next Page)

**BORING NUMBER B-03**

PAGE 3 OF 3

CLIENT Duke EnergyPROJECT NAME Energy Plant Ho cm S tePROJECT NUMBER 300743x2PROJECT LOCATION Crysta R ver

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 21 - C \ HA C RYS AL R VER 300743X2 C RYS AL R VER (2) GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
40							
	SS 13		0 0 1 2 (1)	WOH/12", 1, 2			brown LIMESTONE, do om t c, s ty, fr ab e
						42 0	-36 0
							brown LIMESTONE, s ty, fr ab e
	SS 14		10 47 50/4"				
45							
	SS 15		20 15 13 25 (28)				
50						50 0	-44 0
							brown LIMESTONE, fr ab e
	SS 16		2 5 0 0 (5)	2, 5, WOH/12"			
55							
						56 0	-50 0
							brown LIMESTONE
						58 1	-52 1
	SS 17		50/1"				Bottom of boreho e at 58.1 feet.



CLIENT Duke Energy PROJECT NAME Energy Plant Home Site
PROJECT NUMBER 300743x2 PROJECT LOCATION Crystal River
DATE STARTED 11/12/13 COMPLETED 11/13/13 GROUND ELEVATION 8 ft HOLE SIZE 4 inches
DRILLING CONTRACTOR Independent Drilling, Inc. GROUND WATER LEVELS:
DRILLING METHOD Standard Penetration / Mud Rotary AT TIME OF DRILLING _____
LOGGED BY HI CHECKED BY Tha Nguyen AT END OF DRILLING _____
NOTES DR 33 Rg CME550 Automatic Hammer AFTER DRILLING _____

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0							
	SS 1		3 2 1 1 (3)		SP		(SP) orange fine grained quartz SAND, some silt
	SS 2		1 1 16 16 (17)				2.0 pale brown, white LIMESTONE 6.0
	SS 3		28 50/3"	drilling fluid introduced at 4'			
5	SS 4		50/2"				
	SS 5		8 8 3 3 (11)				7.0 pale brown, gray, white LIMESTONE 1.0
10	SS 6		0 0 0 (0)	loss of drilling fluid circulation at 11'			
	SS 7		8 7 7 (14)				
15	SS 8		5 5 2 (7)				
	SS 9		2 1 13 (14)				
20							

(Continued Next Page)



CLIENT Duke Energy

PROJECT NAME Energy Plant Ho cm S te

PROJECT NUMBER 300743x2

PROJECT LOCATION Crysta R ver

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 21 - C \ HA C RYS AL R VER 300743X2 C RYS AL R VER (2) GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
20							pa e brown, gray, wh te LIMESTONE (continued)
25	SS 10		1 9 18 5 (27)				
							end of sh ft on 11/12/2013
30	SS 11		7 1 0 1 (1)	4 nch cas ng nsta ed to 30', dr ng f u d rega ned	MH		(MH) pa e brown, o ve SILT
35	SS 12		4 3 1 11 (4)	oss of dr ng f u d c rcu at on at 33'			
40	SS 13		31 21 5 27 (26)				brown, pa e brown LIMESTONE, do om t c, fr ab e

(Continued Next Page)



CLIENT Duke Energy

PROJECT NAME Energy Plant Home Site

PROJECT NUMBER 300743x2

PROJECT LOCATION Crystalline River

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 21 - C \ HA CRYSTAL RIVER 300743X2 CRYSTAL RIVER (2) GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
40							
45	SS 14		6 21 19 8 (40)				brown, pale brown LIMESTONE, dominant, friable (continued)
50	SS 15		49 30 9 4 (39)				
55	SS 16		50/4"				
60	RC 1	73 (63)					
	RC 2	87 (70)					

53.0

-45.0

brown, pale brown, orange LIMESTONE, dominant

(Continued Next Page)

CLIENT Duke Energy

PROJECT NAME Energy Plant Ho cm Ste

PROJECT NUMBER 300743x2

PROJECT LOCATION Crysta River

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
60							
	SS 17	38 (0)	50/1"				brown, pale brown, orange Limestone, dolomitic (continued)
	RC 3						
	RC 4	86 (62)					
	RC 5	83 (83)					
65	SS 18		50/1"				65.0 gray DOLOSTONE, silty, calcareous, sugary
	RC 6	48 (35)					
70							
	SS 19		24 32 48 16 (80)				72.0

Bottom of borehole at 72.0 feet.

**BORING NUMBER B-05**

PAGE 1 OF 4

CLIENT Duke Energy **PROJECT NAME** Energy Plant Ho c m S te
PROJECT NUMBER 300743x2 **PROJECT LOCATION** Crysta R ver
DATE STARTED 11/20/13 **COMPLETED** 11/21/13 **GROUND ELEVATION** 6.1 ft **HOLE SIZE** 4 nches
DRILLING CONTRACTOR Independent Dr ng, Inc. **GROUND WATER LEVELS:**
DRILLING METHOD Standard Penetrat on / Mud Rotary **AT TIME OF DRILLING** _____
LOGGED BY BB **CHECKED BY** Tha Nguyen **AT END OF DRILLING** _____
NOTES DR 15 R g CME55 Automat c Hammer **AFTER DRILLING** _____

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
	SS 1		4 19 24 10 (43)			very pale brown LIMESTONE, indurated
	SS 2		5 3 27 37 (30)			sandy
	SS 3		16 46 17 28 (63)	dr ng f u d ntroduced at 4'		s ty
5	SS 4		8 6 3 3 (9)			few grave
	SS 5		8 20 13 7 (33)			
10						
	SS 6		3 10 24 (34)			
	SS 7		32 26 38 (64)			
15				oss of dr ng f u d c rcu at on at 15'		
	SS 8		1 2 2 (4)			pale brown, weathered, oca clay ens
	SS 9		2 11 29 (40)			
20						
						18.0
						-11.9
						pale brown LIMESTONE, doom t c, s ty, fr ab e

(Continued Next Page)



CLIENT Duke Energy

PROJECT NAME Energy Plant Home Site

PROJECT NUMBER 300743x2

PROJECT LOCATION Crystalline River

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 21 - C \ HA \ CRYSTAL RIVER 300743X2 CRYSTAL RIVER (2) GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
20						pa e brown LIMESTONE, do om t c, s ty, fr ab e (continued)
22 0						-15 9
						very pa e brown, pa e brown LIMESTONE, do om t c
						we ndurated
25	SS 10		50/3"			
	RC 1	17 (8)				ndurated LIMESTONE and soft fr ab e LIMESTONE or SILT
30	SS 11		50/5"			fr ab e
35	SS 12		0 50/5"			
37 0						-30 9
						very pa e brown, pa e brown LIMESTONE, do om t c
40	SS 13		50/3"			

(Continued Next Page)



CLIENT Duke Energy

PROJECT NAME Energy Plant Home Site

PROJECT NUMBER 300743x2

PROJECT LOCATION Crystalline River

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
40						
	RC 2	70 (50)				very pale brown, pale brown LIMESTONE, dolomitic (continued) cherty, some vugs, fossiliferous
45	SS 14		23 24 23 (47)			locally cemented
	SS 15		50/4"			pale brown, brown, indurated
50						
						end of day 11/20/2013
	SS 16		50/3"			
55						
	SS 17		50/3"			well indurated, fossiliferous
60				soft drilling from		

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 21 - C \ HA \ CRYSTAL RIVER 300743X2 CRYSTAL RIVER (2) GPJ

(Continued Next Page)

CLIENT Duke EnergyPROJECT NAME Energy Plant Home SitePROJECT NUMBER 300743x2PROJECT LOCATION Crystal River

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 21 - C \ HA CRYSTAL RIVER 300743X2 CRYSTAL RIVER (2) GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
60				60' to 63'		very pale brown, pale brown LIMESTONE, dolomitic (continued)
						62.0 -55.9 brown dolomitic DOLOSTONE, well indurated, vuggy, slightly calcareous, sugary
	SS 18		50/5"			
65						
	SS 19		650/1"			locally weathered, sandy
70						
	SS 20		50/1"			73.6 -67.5 Bottom of borehole at 73.6 feet.



CLIENT Duke Energy **PROJECT NAME** Energy Plant Ho c m S te
PROJECT NUMBER 300743x2 **PROJECT LOCATION** Crysta R ver
DATE STARTED 11/22/13 **COMPLETED** 11/22/13 **GROUND ELEVATION** 7.2 ft **HOLE SIZE** 4 nches
DRILLING CONTRACTOR Independent Dr ng, Inc. **GROUND WATER LEVELS:**
DRILLING METHOD Standard Penetrat on / Mud Rotary ☒ **AT TIME OF DRILLING** 3.00 ft / E ev 4.20 ft
LOGGED BY BB **CHECKED BY** Tha Nguyen **AT END OF DRILLING** _____
NOTES DR 15 R g CME55 Automat c Hammer **AFTER DRILLING** _____

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
	SS 1		2 13 14 7 (27)			very pale brown LIMESTONE, ndurated, sandy, s ty
	SS 2		7 7 16 14 (23)			
5	SS 3		11 9 17 13 (26)	dr ng f u d ntroduced at 4'		
	SS 4		18 12 16 18 (28)			
	SS 5		1 4 9 10 (13)			
10						
	SS 6		40 20 16 (36)			
	SS 7		50/4"			13.0 very pale brown LIMESTONE, oca y do om t c -5.8 we ndurated
15						
	SS 8		3 6 5 (11)			poor y ndurated, sandy, s ty
						pale brown, few grave
	SS 9		11 3 2 (5)			
20						

(Continued Next Page)



CLIENT Duke Energy

PROJECT NAME Energy Plant Ho cm S te

PROJECT NUMBER 300743x2

PROJECT LOCATION Crysta R ver

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 21 - C \ HA C RYS AL R VER 300743X2 C RYS AL R VER (2) GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
20						very pale brown LIMESTONE, oca y do om t c (continued)
25	SS 10		8 13 13 (26)			
30	SS 11		12 50/5"			29 0 -21 8 pale brown LIMESTONE, do om t c, fr ab e, ndurated, s ty
35	SS 12		50/3"			
40	SS 13		44 10 34 (44)			36 0 -28 8 pale brown LIMESTONE, do om t c, fr ab e, ndurated, s ty sandy

(Continued Next Page)



CLIENT Duke Energy

PROJECT NAME Energy Plant Ho c m S te

PROJECT NUMBER 300743x2

PROJECT LOCATION Crysta R ver

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 21 - C \ HA \ CRY S AL R VER 300743X2 CRY S AL R VER (2) GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
40						pa e brown LIMESTONE, do om t c, fr ab e, ndurated, s ty (continued)
45	SS 14		12 12 16 (28)			few grave
50	SS 15		8 50/5"			
55	SS 16		50/2"			we ndurated
	RC 1	42 (0)		oss of dr ng f u d c rcu at on at 54'		
60	SS		9 28 21			

(Continued Next Page)



CLIENT Duke Energy

PROJECT NAME Energy Plant Home Site

PROJECT NUMBER 300743x2

PROJECT LOCATION Crysta River

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
60	17		(49)			pa e brown LIMESTONE, do om t c, fr ab e, ndurated, s ty (continued) s ty
						62 0 -54 8
	SS 18		50/2"			some grave
65						
	SS 19		50/1"			pa e brown, gray DOLOSTONE, we ndurated, sucros c
70						
	SS 20		7 31 50/4"			74 8 -67 6

Bottom of borehole at 74.8 feet.

CLIENT Duke EnergyPROJECT NAME Energy Plant Ho c m S tePROJECT NUMBER 300743x2PROJECT LOCATION Crysta R verDATE STARTED 11/25/13 COMPLETED 11/27/13GROUND ELEVATION 7.7 ft HOLE SIZE 4 nchesDRILLING CONTRACTOR Independent Dr ng, Inc.

GROUND WATER LEVELS:

DRILLING METHOD Standard Penetrat on / Mud Rotary

AT TIME OF DRILLING _____

LOGGED BY BB CHECKED BY Tha Nguyen

AT END OF DRILLING _____

NOTES DR 15 R g CME55 Automat c Hammer

AFTER DRILLING _____

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
	SS 1		2 3 12 17 (15)			very pale brown LIMESTONE, sandy, poorly indurated
	SS 2		50/5"	dr ng f u d ntroduced at 2'		
5	SS 3		13 13 18 15 (31)			sandy, s ty, ndurated
	SS 4		16 15 12 11 (27)			
	SS 5		11 12 12 18 (24)			
10						
	SS 6		37 14 13 (27)			
	SS 7		9 6 6 (12)			
15					15 0	very pale brown LIMESTONE, sandy, s ty, we ndurated
	SS 8		5 26 50/2"			
	SS 9		50/5"			
20						

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 22 - C \ HA \ CRY S AL R VER 300743X2 CRY S AL R VER (2) GPJ

(Continued Next Page)



CLIENT Duke Energy

PROJECT NAME Energy Plant Home Site

PROJECT NUMBER 300743x2

PROJECT LOCATION Crystalline River

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 22 - C \ HA CRYSTAL RIVER 300743X2 CRYSTAL RIVER (2) GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
20						
25	SS 10		12 19 10 (29)			very pale brown LIMESTONE, sandy, slightly weathered (continued)
30	SS 11		50/2"			
35	SS 12		25 5 10 (15)	loss of drilling fluid circulation at 36'		
40	SS 13		10 5 4 (9)	4 inch casing installed to 45'		
						33 0 -25 3 pale brown to brown LIMESTONE, slightly friable

(Continued Next Page)



CLIENT Duke Energy

PROJECT NAME Energy Plant Home Site

PROJECT NUMBER 300743x2

PROJECT LOCATION Crysta River

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
40				drilling fluid circulation regained		pa e brown to brown LIMESTONE, s ty, fr ab e (continued)
						42 0 -34 3 very pa e brown LIMESTONE, we ndurated
	SS 14		50/3"			
45						
	SS 15		50/1"			
50	RC 1	47 (37)				end of day 11/25/2013 very pa e brown, gray, cha ky, vuggy, weathered, foss ferous
	SS 16		1 2 1 (3)			54 0 -46 3 brown LIMESTONE, sandy, s ty, weathered, fragmented
55						
	SS 17		40 37 50/3"			57 0 -49 3 brown LIMESTONE, s ty, we ndurated
60						

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 22 - C \ HA CRYSTAL RIVER 300743X2 CRYSTAL RIVER (2) GPJ

(Continued Next Page)

GENERAL BH/ P /WELL - GN S DUS LAB GD - 12/13/13 16 22 - C\ HA \CRY S AL R VER\300743X2 CRY S AL R VER(2) GPJ

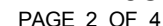
**BORING NUMBER B-08**

PAGE 1 OF 4

CLIENT Duke Energy **PROJECT NAME** Energy Plant Ho c m S te
PROJECT NUMBER 300743x2 **PROJECT LOCATION** Crysta R ver
DATE STARTED 11/8/13 **COMPLETED** 11/11/13 **GROUND ELEVATION** 7.2 ft **HOLE SIZE** 4 nches
DRILLING CONTRACTOR Independent Dr ng, Inc. **GROUND WATER LEVELS:**
DRILLING METHOD Standard Penetrat on / Mud Rotary ☒ **AT TIME OF DRILLING** 3.00 ft / E ev 4.20 ft
LOGGED BY BB **CHECKED BY** Tha Nguyen **AT END OF DRILLING** _____
NOTES DR 33 R g CME550 Automat c Hammer **AFTER DRILLING** _____

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
	SS 1		8 13 9 6 (22)			very pale brown, white LIMESTONE, oca y do om t c
	SS 2		7 14 14 13 (28)			redd sh ye ow, sandy, poor y ndurated
5	SS 3		10 15 17 11 (32)	dr ng f u d ntroduced at 4'		s ty
	SS 4		9 10 11 16 (21)			
10	SS 5		7 4 12 9 (16)			
	SS 6		8 16 20 (36)			sandy, s ty, some grave , ndurated
	SS 7		5 6 10 (16)			
15	SS 8		10 10 4 (14)			redd sh ye ow
	SS 9		18 5 7 (12)			
20						

(Continued Next Page)



PROJECT LOCATION Crysta River

GENERAL BH/ P /WELL -GN S DUS LABGD -12/13/13 16 22 - C \ HA \CRY S AL R VER\300743X2 CRY S AL R VER (2)GPJ

(Continued Next Page)



CLIENT Duke Energy

PROJECT NAME Energy Plant Home Site

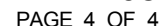
PROJECT NUMBER 300743x2

PROJECT LOCATION Crystalline River

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 22 - C \ HA CRYSTAL RIVER (2) GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
40						
				4 inch casing installed to 40', drilling fluid circulation regained		pa e brown LIMESTONE, do m t c, s ty, fr ab e (continued)
45	SS 14		4 17 17 (34)			
	SS 15		50/1"			48 5 -41 3 very pa e brown LIMESTONE, do m t c, we ndurated
50	RC 1	80 (73)				vuggy, crysta ne, foss ferous
55	SS 16		6 7 13 (20)			54 0 -46 8 brown LIMESTONE, do m t c, s ty, fr ab e
	SS 17		7 3 3 (6)			
60						

(Continued Next Page)



PROJECT LOCATION Crysta River

GENERAL BH/ P /WELL -GN S DUS LABGD -12/13/13 16 22 - C \ HA \CRY S AL R VER\300743X2 CRY S AL R VER (2)GPJ

Bottom of borehole at 73.8 feet.

CLIENT Duke EnergyPROJECT NAME Energy Plant Ho cm SitePROJECT NUMBER 300743x2PROJECT LOCATION Crysta RiverDATE STARTED 11/1/13COMPLETED 11/4/13GROUND ELEVATION 5.8 ftHOLE SIZE 4 inchesDRILLING CONTRACTOR Independent Dr ng, Inc.

GROUND WATER LEVELS:

DRILLING METHOD Standard Penetrat on / Mud Rotary

AT TIME OF DRILLING

LOGGED BY BBCHECKED BY Tha Nguyen

AT END OF DRILLING

NOTES DR 33 R g CME550 Automat c Hammer

AFTER DRILLING

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0								
	SS 1		1 1 1 1 (2)		SM		(SM) redd sh brown s ty SAND, var ab y cayey oca sand ens	
	SS 2		1 2 3 3 (5)					
5	SS 3		2 2 2 2 (4)	dr ng f u d ntroduced at 4'	SC		(SC) gray, brown cayey SAND	
	SS 4		2 2 3 5 (5)					
	SS 5		2 1 22 7 (23)				pa e brown LIMESTONE, poor y ndurated, sandy cayey ens at 8'	
10								
	SS 6		2 1 2 2 (3)				ye ow sh brown LIMESTONE, do om t c, fr ab e, sandy and s ty	
15	SS 7		1 2 10 4 (12)	oss of dr ng f u d c rcu at on at 13.5'			wh te, brown, very pa e brown LIMESTONE, sandy, s ty, oca she fragments, weathered, fr ab e, oca y do om t c	
	SS 8		2 2 2 2 (4)					
20	SS 9		7 11 1 6 (12)	4 nch cas ng				

(Continued Next Page)



CLIENT Duke Energy

PROJECT NAME Energy Plant Ho cm S te

PROJECT NUMBER 300743x2

PROJECT LOCATION Crysta R ver

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 22 - C \ HA ICRY S AL R VER 300743X2 CRY S AL R VER (2) GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
20				nsta ed to 20'				
	SS 10		1 1 1 1 (2)	rega ned dr ng f u d c rcu at on at 21'			wh te, brown, very pa e brown LIMESTONE, sandy, s ty, oca she fragments, weathered, fr ab e, oca y do om t c (continued)	
25	SS 11		1 5 4 1 (9)	oss of dr ng f u d c rcu at on at 23.5'				
	SS 12		2 22 50/5"				we ndurated	
	SS 13		34 50/3"				we ndurated	
30								
	SS 14		0 0 7 38 (7)	WOR/12", 7, 38				
35	SS 15		7 2 2 10 (4)					
	SS 16		13 16 8 50 (24)					
	SS 17		50/2"	4 nch cas ng advanced to 40', dr ng f u d c rcu at on rega ned				
40								

(Continued Next Page)



CLIENT Duke Energy

PROJECT NAME Energy Plant Home Site

PROJECT NUMBER 300743x2

PROJECT LOCATION Crystalline River

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 22 - C \ HA \ CRYSTAL RIVER 300743X2 CRYSTAL RIVER (2) GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
40								
	SS 18		0 1 0 1 (1)	WOR, 1, WOR, 1			brown, very pale brown LIMESTONE, oolitic, sandy, silty, oolitic fragments, weathered, friable, mostly fine grained, with some coarse grained (continued)	
45	SS 19		9 1 42 3 (43)	loss of drilling fluid circulation at 43'				
	SS 20		50/2"					
50	SS 21		4 8 9 12 (17)					
	SS 22		50/3"					
55	SS 23		43 33 27 22 (60)					
	SS 24		22 27 50/5"					
60	SS 25		48 22 24 35 (46)					
							very pale brown LIMESTONE, oolitic, well indurated	

(Continued Next Page)



CLIENT Duke Energy

PROJECT NAME Energy Plant Home Site

PROJECT NUMBER 300743x2

PROJECT LOCATION Crystal River

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 22 - C \ HA CRYSTAL RIVER 300743X2 CRYSTAL RIVER (2) GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
60								
	SS 26		50/1"				very pale brown LIMESTONE, do om t c, we ndurated (<i>continued</i>)	
61.0							-55.2	
	RC 1	60 (57)					gray LIMESTONE, do om t c, very we ndurated	
65								
	RC 2	97 (97)						
70	SS 27		50/1"				end of sh ft on 11/02/13	
							gray LIMESTONE, moderate y to weak y ndurated	
70.0							-64.2	
	RC 3	28 (28)						
73.0							-67.2	
	NR			core advanced w th no down force (73 76')			poss b e vo d or very soft/ oose mater a	
75								
	RC 4	69 (17)					gray LIMESTONE, very soft, porous, foss ferous	
76.0							-70.2	
							gray LIMESTONE, we ndurated, porous, foss ferous	
78.0							-72.2	
							gray LIMESTONE, we ndurated, porous, foss ferous	
79.0							-73.2	
							brown, gray DOLOSTONE, weathered, porous, foss ferous, sandy, s ty	
80								

(Continued Next Page)



CLIENT Duke Energy

PROJECT NAME Energy Plant Home Site

PROJECT NUMBER 300743x2

PROJECT LOCATION Crystal River

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 22 - C \ HA CRYSTAL RIVER 300743X2 CRYSTAL RIVER (2) GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
80	RC 5	33 (8)					brown, gray DOLOSTONE, weathered, porous, fossiliferous, sandy, silty (continued)	
	SS 28		28 50/2"				83.5 brown, gray DOLOSTONE, weathered, friable, sandy, silty	-77.7
85								
	SS 29		64.7 (11)				with lenses of gray clay	
90								
	SS 30		50/1"	drilling a transition between hard/soft zones			shelly, fossiliferous	
95								
	SS 31		550/3"				with lenses of greenish gray clay, occasional chert	
							99.3 Bottom of borehole at 99.3 feet.	-93.5

**BORING NUMBER B-10**

PAGE 1 OF 4

CLIENT Duke Energy **PROJECT NAME** Energy Plant Ho c m S te
PROJECT NUMBER 300743x2 **PROJECT LOCATION** Crysta R ver
DATE STARTED 11/20/13 **COMPLETED** 11/20/13 **GROUND ELEVATION** 7.7 ft **HOLE SIZE** 4 nches
DRILLING CONTRACTOR Independent Dr ng, Inc. **GROUND WATER LEVELS:**
DRILLING METHOD Standard Penetrat on / Mud Rotary **AT TIME OF DRILLING** _____
LOGGED BY JS **CHECKED BY** Tha Nguyen **AT END OF DRILLING** _____
NOTES DR 33 R g CME550 Automat c Hammer **AFTER DRILLING** _____

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0							
	SS 1		3 13 23 50/3"		SC	0.5	(SC) red f ne gra ned quartz SAND, c ayey
	SS 2		50/3"	dr ng f u d ntroduced			wh te LIMESTONE var ab y ndurated, fr ab e
5	SS 3		35 39 44 37 (83)				
	SS 4		40 34 12 11 (46)				
	SS 5		14 15 8 11 (23)			8.0	white, brown LIMESTONE, oca y do om t c, poor y ndurated, common ca careous s t, fr ab e
10							
	SS 6		6 6 5 (11)				
	SS 7		3 4 3 (7)				
15							
	SS 8		7 13 6 (19)				
	SS 9		13 5 10 (15)				
20							

(Continued Next Page)



CLIENT Duke Energy

PROJECT NAME Energy Plant Ho cm S te

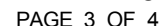
PROJECT NUMBER 300743x2

PROJECT LOCATION Crysta R ver

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 22 - C \ HA C RYS AL R VER 300743X2 C RYS AL R VER (2) GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
20							
25	SS 10		9 10 18 (28)				wh te, brown LIMESTONE, oca y do om t c, poor y ndurated, common ca careous s t, fr ab e (continued)
30	SS 11		2 1 1 (2)	oss of dr ng f u d c rcu at on at 26'			
35	SS 12		10 4 2 (6)				
40	SS 13		5 4 7 (11)				
							36 0 -28 3 pa e brown LIMESTONE, do om t c, poor y ndurated, most y ca careous s t

(Continued Next Page)



PROJECT LOCATION Crysta River

GENERAL BH/ P /WELL -GN S DUS LABGD -12/13/13 16 22 - C \ HA \CRY S AL R VER\300743X2 CRY S AL R VER (2)GPJ

(Continued Next Page)



CLIENT Duke Energy

PROJECT NAME Energy Plant Home Site

PROJECT NUMBER 300743x2

PROJECT LOCATION Crysta River

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 22 - C \ HA \ CRYSTAL RIVER 300743X2 CRYSTAL RIVER (2) GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
60							
							pa e brown LIMESTONE, var ab y ndurated (continued)
							we ndurated
65	SS 18		50/0"				
	RC 1	70 (67)					
70	SS 19		17 10 20 (30)				pa e brown LIMESTONE
							moderate y ndurated
	SS 20		50/1"				
							Bottom of borehole at 73.6 feet.

69.0

-61.3

73.6

-65.9

**BORING NUMBER B-11**

PAGE 1 OF 4

CLIENT Duke Energy **PROJECT NAME** Energy Plant Ho c m S te
PROJECT NUMBER 300743x2 **PROJECT LOCATION** Crysta R ver
DATE STARTED 10/30/13 **COMPLETED** 10/31/13 **GROUND ELEVATION** 4.5 ft **HOLE SIZE** 3 nches
DRILLING CONTRACTOR Independent Dr ng, Inc. **GROUND WATER LEVELS:**
DRILLING METHOD Standard Penetrat on / Mud Rotary ☒ **AT TIME OF DRILLING** 3.00 ft / E ev 1.50 ft
LOGGED BY HI **CHECKED BY** Tha Nguyen **AT END OF DRILLING** _____
NOTES DR 15 R g CME55 Automat c Hammer **AFTER DRILLING** _____

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
	SS 1	1 1 2 2 (3)		SP SM		(SP SM) dark brown, orange SAND with s t
3.5	SS 2	1 1 1 8 (2)				
5	SS 3	9 4 4 13 (8)	dr ng f u d ntroduced at 4'			wh te, gray LIMESTONE
	SS 4	7 6 11 16 (17)				
	SS 5	15 25 30 19 (55)				coarse gra ned, weathered
10			hard dr ng, r g chatter ng at 11'			
	SS 6	1 0 1 (1)	poor recovery			
			oss of dr ng f u d c rcu at on at 13'			
	SS 7	50/3"	6 nch cas ng nsta ed to 15'			
15			oss of dr ng f u d c rcu at on at 15'			
	SS 8	10 29 40 (69)				very f ne gra ned, fr ab e from 16' 20'
20	SS 9	13 19 24 (43)				

(Continued Next Page)

CLIENT Duke EnergyPROJECT NAME Energy Plant Ho cm SitePROJECT NUMBER 300743x2PROJECT LOCATION Crysta River

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 22 - C \ HA \ CRYSTAL RIVER 300743X2 CRYSTAL RIVER (2) GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
40						
			loss of drilling fluid circulation			pa e brown, brown LIMESTONE, do om t c (continued)
	SS 16	50/3"				
45						
			hard drilling, r g chatter ng			
	SS 17	50/1"				
50						
	SS 18	50/3"				
55						
	SS 19	50/2"				
60			hard drilling, r g			

(Continued Next Page)

**CLIENT** Duke Energy**PROJECT NAME** Energy Plant Home Site**PROJECT NUMBER** 300743x2**PROJECT LOCATION** Crystal River

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
60			chattering			pa e brown, brown LIMESTONE, do om t c (continued)
65	SS 20	50/1"	hard drilling, r g chattering			
	SS 21	50/5"				
					68.4	

-63.9

Bottom of borehole at 68.4 feet.

**BORING NUMBER B-12**

PAGE 1 OF 4

CLIENT Duke Energy **PROJECT NAME** Energy Plant Home Site
PROJECT NUMBER 300743x2 **PROJECT LOCATION** Crystal River
DATE STARTED 11/11/13 **COMPLETED** 11/12/13 **GROUND ELEVATION** 10 ft **HOLE SIZE** 4 inches
DRILLING CONTRACTOR Independent Drilling, Inc. **GROUND WATER LEVELS:**
DRILLING METHOD Standard Penetration / Mud Rotary **AT TIME OF DRILLING** _____
LOGGED BY HI **CHECKED BY** Tha Nguyen **AT END OF DRILLING** _____
NOTES DR 33 Rg CME550 Automatic Hammer **AFTER DRILLING** _____

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0							
	SS 1		1211 (3)		SP		(SP) brown, orange fine grained quartz SAND, some silt
	SS 2		54817 (12)				pa e brown, white, gray LIMESTONE
	SS 3		2353 (8)	drilling fluid introduced at 4'			sandy
5	SS 4		82122 50/2"				fine to coarse, sandy
	SS 5		50/3"				coarse
10	RC 1	32 (8)					
15	SS 6		48111 (19)				
	SS 7		624 (6)				
	SS 8		100 (0)	1, WOH/12"			
20							

(Continued Next Page)



CLIENT Duke Energy

PROJECT NAME Energy Plant Ho cm S te

PROJECT NUMBER 300743x2

PROJECT LOCATION Crysta R ver

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 22 - C \ HA C RYS AL R VER 300743X2 C RYS AL R VER (2) GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
20							
				loss of dr ng f u d c r c u at on at 22'			pa e brown, wh te, gray LIMESTONE (continued)
25	SS 9		2 0 0 0 (0)	2, WOH/18"			coarse
30	SS 10		1 0 5 2 (5)	1, WOH, 5, 2			
35	SS 11		11 6 3 3 (9)	4 nch cas ng nsta ed to 35', dr ng f u d rega ned			
							end of sh ft 11/11/2013
							37 0
							pa e brown LIMESTONE
							-27 0
40	SS 12		50/1"	loss of dr ng f u d c r c u at on at 38'			

(Continued Next Page)

**BORING NUMBER B-12**

PAGE 3 OF 4

CLIENT Duke EnergyPROJECT NAME Energy Plant Ho cm S tePROJECT NUMBER 300743x2PROJECT LOCATION Crysta R ver

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 22 - C \ HA ICRY S AL R VER 300743X2 CRY S AL R VER (2) GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
40							
	RC 2	61 (61)					pa e brown LIMESTONE (continued)
	SS 13		50/1"				pa e brown, wh te
45							
	RC 3	53 (37)					
50							
	SS 14		50/1"				
	RC 4	31 (24)					
55							
	SS 15		50/1"				do om t c
	RC 5	31 (31)					
60							

(Continued Next Page)

**BORING NUMBER B-12**

PAGE 4 OF 4

CLIENT Duke EnergyPROJECT NAME Energy Plant Home SitePROJECT NUMBER 300743x2PROJECT LOCATION Crystal River

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
60	SS 16		50/2"				pale brown LIMESTONE (continued)
	RC 6	37 (37)					
65	SS 17		50/1"				
	RC 7	32 (24)					
70							

70.0

-60.0

Bottom of borehole at 70.0 feet.

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 22 - C \ HA \ CRYSTAL RIVER 300743X2 CRYSTAL RIVER (2) GPJ

**BORING NUMBER B-13**

PAGE 1 OF 5

CLIENT Duke Energy **PROJECT NAME** Energy Plant Home Site
PROJECT NUMBER 300743x2 **PROJECT LOCATION** Crystal River
DATE STARTED 11/21/13 **COMPLETED** 11/21/13 **GROUND ELEVATION** 7.5 ft **HOLE SIZE** 4 inches
DRILLING CONTRACTOR Independent Drilling, Inc. **GROUND WATER LEVELS:**
DRILLING METHOD Standard Penetration / Mud Rotary **AT TIME OF DRILLING** _____
LOGGED BY JS **CHECKED BY** Tha Nguyen **AT END OF DRILLING** _____
NOTES DR 33 Rg CME550 Automatic Hammer **AFTER DRILLING** _____

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0							
	SS 1		15 25 22 (30)		SM		(SM) brown fine grained quartz sandy SILT
	SS 2		45 50/3"	drilling fluid introduced at 2'			white, pale yellow LIMESTONE
5	SS 3		40 38 45 30 (83)				
	SS 4		14 10 7 7 (17)				poorly indurated
	SS 5		13 12 10 6 (22)				
10	SS 6		5 11 12 (23)				
	SS 7		5 6 10 (16)				some calcareous silt
15	SS 8		3 6 12 (18)				
	SS 9		10 16 20 (36)				moderately indurated
20							

(Continued Next Page)



CLIENT Duke Energy

PROJECT NAME Energy Plant Home Site

PROJECT NUMBER 300743x2

PROJECT LOCATION Crysta River

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 22 - C \ HA \ CRYSTAL RIVER 300743X2 CRYSTAL RIVER (2) GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
20							
25	SS 10		12 12 23 (35)				white, pale yellow Limestone (continued)
30	SS 11		50/5"				white Limestone
35	SS 12		20 32 41 (73)				fractured
40	SS 13		50/4"	loss of drilling fluid circulation at 37'			weathered brown Limestone
							mostly calcareous silt

(Continued Next Page)



CLIENT Duke Energy

PROJECT NAME Energy Plant Home Site

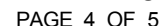
PROJECT NUMBER 300743x2

PROJECT LOCATION Crysta River

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 22 - C \ HA CRYSTAL RIVER 300743X2 CRYSTAL RIVER (2) GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
40							pa e brown LIMESTONE (continued)
45	SS 14		50/0"				
	RC 1	40 (25)					
50	SS 15		50/1"				we ndurated, do om t c
	RC 2	60 (52)					
55	SS 16		50/5"				most y ca careous s t, fr ab e, do om t c
	SS 17		50/1"				we ndurated, foss ferous, do om t c
60							

(Continued Next Page)



PROJECT LOCATION Crysta River

GENERAL BH/ P /WELL -GN S DUS LABGD -12/13/13 16 22 - C \ HA \CRY S AL R VER\300743X2 CRY S AL R VER (2)GPJ

(Continued Next Page)

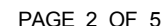
**BORING NUMBER B-14**

PAGE 1 OF 5

CLIENT Duke Energy **PROJECT NAME** Energy Plant Ho c m S te
PROJECT NUMBER 300743x2 **PROJECT LOCATION** Crysta R ver
DATE STARTED 11/11/13 **COMPLETED** 11/13/13 **GROUND ELEVATION** 6.9 ft **HOLE SIZE** 4 nches
DRILLING CONTRACTOR Independent Dr ng, Inc. **GROUND WATER LEVELS:**
DRILLING METHOD Standard Penetrat on / Mud Rotary ☒ **AT TIME OF DRILLING** 4.00 ft / E ev 2.90 ft
LOGGED BY BB **CHECKED BY** Tha Nguyen **AT END OF DRILLING** _____
NOTES DR 15 R g CME55 Automat c Hammer **AFTER DRILLING** _____

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
	SS 1		9 16 18 25 (34)			very pa e brown LIMESTONE, ndurated
	SS 2		24 20 20 12 (40)			sandy, s ty
5	SS 3		9 6 4 3 (10)	dr ng f u d ntroduced at 4'		
	SS 4		2 10 7 5 (17)			s ty, poor y ndurated
10	SS 5		18 15 18 11 (33)			
	SS 6		7 9 5 (14)			
	SS 7		14 28 25 (53)			sandy, s ty, ndurated
15	SS 8		11 15 21 (36)			
	SS 9		25 22 18 (40)			we ndurated
20						

(Continued Next Page)



PROJECT LOCATION Crysta River

GENERAL BH/ P /WELL -GN S DUS LABGD -12/13/13 16 22 - C \ HA \CRY S AL R VER\300743X2 CRY S AL R VER (2)GPJ

(Continued Next Page)



CLIENT Duke Energy

PROJECT NAME Energy Plant Home Site

PROJECT NUMBER 300743x2

PROJECT LOCATION Crystalline River

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 22 - C \ HA \ CRYSTAL RIVER (2) GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
40						pa e brown LIMESTONE, poor y ndurated, s ty (continued)
45	SS 14		18 22 20 (42)			
						ssue w th cas ng nsta at on at 30', end of sh ft 11/11/13
50	SS 15		18 33 28 (61)			var ab y ndurated, trace grave
						52 0 -45 1
						very pa e brown LIMESTONE, we ndurated
	SS 16		50/2"			
55	RC 1	28 (0)				
	SS 17		49 50/3"			
60						

(Continued Next Page)



CLIENT Duke Energy

PROJECT NAME Energy Plant Home Site

PROJECT NUMBER 300743x2

PROJECT LOCATION Crystal River

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 22 - C \ HA \ CRYSTAL RIVER (2) GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
60						very pale brown LIMESTONE, well indurated (continued)
	RC 2	65 (52)				
65	SS 18		50/1"			silty, mostly gravel
	RC 3	32 (28)				
70	SS 19		50/3"			dark gray, white DOLOSTONE, poorly indurated, vuggy, sucrose
						72 0 -65 1
75	SS 20		6 7 8 (15)			end of shaft on 11/12/13
						77 0 -70 1
						pale brown to brown DOLOSTONE, poorly indurated, vuggy, sandy
80	SS 21		10 5 50/3"			

(Continued Next Page)



CLIENT Duke Energy

PROJECT NAME Energy Plant Home Site

PROJECT NUMBER 300743x2

PROJECT LOCATION Crysta River

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 22 - C \ HA CRYSTAL RIVER 300743X2 CRYSTAL RIVER (2) GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
80						pa e brown to brown DOLOSTONE, poor y ndurated, vuggy, sandy (continued)
85	SS 22		50/1"	soft dr ng from 86' to 88'		
90	SS 23		50/1"			
95	SS 24		50/3"			gray, pa e brown DOLOSTONE, we ndurated, oca y c ayey
	SS 25		50/2"			cherty
						Bottom of borehole at 98.6 feet.

93.0

-86.1

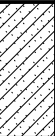
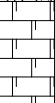
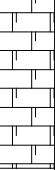
98.6

-91.7

**BORING NUMBER B-15**

PAGE 1 OF 2

CLIENT Duke Energy **PROJECT NAME** Energy Plant Ho cm S te
PROJECT NUMBER 300743x2 **PROJECT LOCATION** Crysta R ver
DATE STARTED 11/22/13 **COMPLETED** 11/22/13 **GROUND ELEVATION** 7.1 ft **HOLE SIZE** 4 nches
DRILLING CONTRACTOR Independent Dr ng, Inc. **GROUND WATER LEVELS:**
DRILLING METHOD Standard Penetrat on / Mud Rotary **AT TIME OF DRILLING** _____
LOGGED BY JS **CHECKED BY** Tha Nguyen **AT END OF DRILLING** _____
NOTES DR 33 R g CME550 Automat c Hammer **AFTER DRILLING** _____

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
	SS 1	1 0 0 1 (0)	1, WOH, WOH, 1	SC		(SC) red c ayey/s ty f ne gra ned quarts SAND
	SS 2	5 13 20 (33)				wh te, pa e ye ow LIMESTONE
5	NR	0	WOH/30"			
10						
15						
	NR	0	WOR/20'			
20						

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 22 - C \ HA \ CRY S AL R VER 300743X2 CRY S AL R VER (2) GPJ

(Continued Next Page)

**BORING NUMBER B-16**

PAGE 1 OF 3

CLIENT Duke Energy **PROJECT NAME** Energy Plant Ho c m S te
PROJECT NUMBER 300743x2 **PROJECT LOCATION** Crysta R ver
DATE STARTED 11/18/13 **COMPLETED** 11/19/13 **GROUND ELEVATION** 8 ft **HOLE SIZE** 4 nches
DRILLING CONTRACTOR Independent Dr ng, Inc. **GROUND WATER LEVELS:**
DRILLING METHOD Standard Penetrat on / Mud Rotary **AT TIME OF DRILLING** _____
LOGGED BY BB **CHECKED BY** Tha Nguyen **AT END OF DRILLING** _____
NOTES DR 15 R g CME55 Automat c Hammer **AFTER DRILLING** _____

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0							
	SS 1		3 16 50/5"	dr ng f u d ntroduced at 1'	SP SM		(SP SM) redd sh brown f ne gra ned quartz SAND w th s t,
							7 0
	SS 2		50/4"				very pa e brown, pa e brown LIMESTONE, sandy, we ndurated
	SS 3		50/3"				
5							
	SS 4		13 30 25 28 (55)				very pa e brown LIMESTONE, sandy, s ty, we ndurated
	SS 5		20 7 8 11 (15)				poor y ndurated
10							
	SS 6		9 14 5 (19)				
	SS 7		3 6 15 (21)				
15							
	SS 8		8 8 9 (17)				more s ty
	SS 9		4 9 12 (21)				
20							

(Continued Next Page)



CLIENT Duke Energy

PROJECT NAME Energy Plant Ho c m S te

PROJECT NUMBER 300743x2

PROJECT LOCATION Crysta R ver

GENERAL BH / P / WELL - G N S D US LAB GD - 12/13/13 16 22 - C \ HA CRYS AL R VER 300743X2 CRYSTAL R VER (2) GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
20							very pale brown LIMESTONE, sandy, s ty, we ndurated (continued)
25	SS 10		20 6 14 (20)				do om t c
30	SS 11		22 42 42 (84)				more sandy
35	SS 12		23 16 24 (40)				
40	SS 13		50/5"	loss of dr ng f u d c rcu at on at 38'			36 0 pale brown LIMESTONE, do om t c, fr ab e, s ty, we ndurated -28 0

(Continued Next Page)



CLIENT Duke Energy

PROJECT NAME Energy Plant Home Site

PROJECT NUMBER 300743x2

PROJECT LOCATION Crystalline River

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 22 - C \ HA CRYSTAL RIVER 300743X2 CRYSTAL RIVER (2) GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
40							
							pa e brown LIMESTONE, do om t c, fr ab e, s ty, we ndurated (continued)
45	SS 14		50/3"				
	RC 1	28 (17)					vuggy, cha ky
						46 0	-38 0
							very pa e brown LIMESTONE, we ndurated
50	SS 15		50/2"				
	RC 2	52 (25)					vuggy, cha ky, oca y crysta ne, few foss s
	SS 16		50/2"			54 6	-46 6
							Bottom of borehole at 54.6 feet.



CLIENT Duke Energy PROJECT NAME Energy Plant Ho c m S te
PROJECT NUMBER 300743x2 PROJECT LOCATION Crysta R ver
DATE STARTED 11/4/13 COMPLETED 11/5/13 GROUND ELEVATION 6.3 ft HOLE SIZE 4 nches
DRILLING CONTRACTOR Independent Dr ng, Inc. GROUND WATER LEVELS:
DRILLING METHOD Standard Penetrat on / Mud Rotary ∇ AT TIME OF DRILLING 4.00 ft / E ev 2.30 ft
LOGGED BY BB CHECKED BY Tha Nguyen AT END OF DRILLING _____
NOTES DR 33 R g CME550 Automat c Hammer AFTER DRILLING _____

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0					pa e ye ow, pa e brown, wh te LIMESTONE	
	SS 1	6 12 12 12 (24)			sand to s t s zed gra ns	
	SS 2	8 10 26 10 (36)				
5	SS 3	5 5 6 9 (11)	dr ng f u d ntroduced at 4'		poor y ndurated	
	SS 4	31 13 18 28 (31)			sandy, s ty, poor y ndurated	← benton te sea
10	SS 5	30 20 24 29 (44)				
	SS 6	14 20 19 (39)			sandy	
	SS 7	15 14 10 (24)			few grave s zed gra ns	← sand pack
15	SS 8	7 9 10 (19)				← screen
	SS 9	14 16 14 (30)			sandy, grave s ze gra ns	
20						

(Continued Next Page)



CLIENT Duke Energy

PROJECT NAME Energy Plant Home Site

PROJECT NUMBER 300743x2

PROJECT LOCATION Crystal River

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 22 - C \ HA CRYSTAL RIVER 300743X2 CRYSTAL RIVER (2) GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
20					pa e ye ow, pa e brown, wh te LIMESTONE (continued)	
25	SS 10	43 38 3 (41)	loss of drilling fluid circulation at 25' 4 inch casing installed to 25', drilling fluid circulation regained		sandy, well indurated	
30	SS 11	19 29 34 (63)			color changed to brown, sandy, friable, domitic	
35	SS 12	14 50/1"			gravel size grains	
40	SS 13	50/5"	4 inch casing advanced to 40'		gravelly, well indurated	
40 0						-33 7

(Continued Next Page)

CLIENT Duke EnergyPROJECT NAME Energy Plant Ho cm SitePROJECT NUMBER 300743x2PROJECT LOCATION Crysta River

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 22 - C \ HA CRYSTAL RIVER 300743X2 CRYSTAL RIVER (2) GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
40					pa e ye ow, pa e brown LIMESTONE, do om t c	
					co or gradua y changed to pa e brown	
45	SS 14	47 28 23 (51)	oss of dr ng f u d c rcu at on at 45'		s ty, fr ab e	
50	SS 15	50/2"			very pa e brown, sandy	
55	SS 16	13 17 30 (47)			s ty, fr ab e	
60	SS 17	18 50/2"			pa e brown, brown LIMESTONE s ty, fr ab e	

(Continued Next Page)

CLIENT Duke EnergyPROJECT NAME Energy Plant Ho cm SitePROJECT NUMBER 300743x2PROJECT LOCATION Crysta RiverDATE STARTED 11/5/13COMPLETED 11/6/13GROUND ELEVATION 7.5 ftHOLE SIZE 3 inchesDRILLING CONTRACTOR Independent Dr ng, Inc.

GROUND WATER LEVELS:

DRILLING METHOD Standard Penetrat on / Mud Rotary

AT TIME OF DRILLING

LOGGED BY HICHECKED BY Tha Nguyen

AT END OF DRILLING

NOTES DR 15 R g CME55 Automat c Hammer

AFTER DRILLING

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0								
	SS 1		8 13 7 18 (20)				pa e brown, brown LIMESTONE, sandy	
	SS 2		21 12 27 17 (39)		SM		(SM) pa e brown, wh te SILTY SAND, f ne to coarse mestone fragments	
	SS 3		15 22 19 14 (41)	dr ng f u d ntroduced at 4'			wh te, pa e brown LIMESTONE, f ne to coarse s ze fragments	
5	SS 4		9 10 13 15 (23)					
	SS 5		7 7 10 11 (17)					
10								
	SS 6		11 34 26 (60)					
	SS 7		18 11 7 (18)					
15								
	SS 8		8 49 50/4"					
	SS 9		10 11 19 (30)					
20								

(Continued Next Page)



CLIENT Duke Energy

PROJECT NAME Energy Plant Ho cm S te

PROJECT NUMBER 300743x2

PROJECT LOCATION Crysta R ver

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 22 - C \ HA C RYS AL R VER 300743X2 C RYS AL R VER (2) GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
20								
25	SS 10		21 9 49 24 (58)				wh te LIMESTONE, f ne to coarse s ze fragments	
30	SS 11		1 2 18 50/2"	samp e most y cave n				
35	SS 12		50/1"	oss of dr ng f u d c rcu at on at 31' dr ng f u d c rcu at on rega ned at 33' 4 nch cas ng nsta ed to 35', dr ng f u d c rcu at on rega ned hard dr ng, rg chatter ng				
40	SS 13		45 46 50/3"	oss of dr ng f u d			36 0 pa e brown LIMESTONE, f ne to coarse s ze fragments fr ab e, do om t c	-28 5

(Continued Next Page)



PAGE 3 OF 3

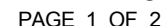
CLIENT	Duke Energy	PROJECT NAME	Energy Plant Ho c m S te
---------------	-------------	---------------------	--------------------------

PROJECT NUMBER 300743x2 **PROJECT LOCATION** Crysta River

[illegible]

Bottom of borehole at 56.0 feet.

GENERAL BH/ P /WELL - GN S D USLABGD -12/13/13 16 22 - C \ HA \ CRY5 AL R VER300743X2 CRY5 AL R VER(2)GPJ



AFTER DRILLING

(Continued Next Page)



PAGE 2 OF 2

CLIENT	Duke Energy	PROJECT NAME	Energy Plant Ho c m Ste
---------------	-------------	---------------------	-------------------------

PROJECT NUMBER 300743x2 **PROJECT LOCATION** Crysta R ver

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
20								
	SS 10		50/2"				pa e brown to brown LIMESTONE, ca careous, s ty	
	SS 11		50/3"					
25	SS 12		15 41 50/4"					
	SS 13		50/3"					
							Bottom of borehole at 28.3 feet.	

GENERAL BH/ P /WELL - GN S DUSLABGD -12/13/13 16 22 - C \ HA \CRY S AL R VER\300743X2 CRY S AL R VER (2) GPJ

**BORING NUMBER B-20**

PAGE 1 OF 3

CLIENT Duke EnergyPROJECT NAME Energy Plant Ho c m S tePROJECT NUMBER 300743x2PROJECT LOCATION Crysta R verDATE STARTED 11/19/13 COMPLETED 11/19/13GROUND ELEVATION 9.1 ft HOLE SIZE 4 nchesDRILLING CONTRACTOR Independent Dr ng, Inc.

GROUND WATER LEVELS:

DRILLING METHOD Standard Penetrat on / Mud Rotary

AT TIME OF DRILLING _____

LOGGED BY BB CHECKED BY Tha Nguyen

AT END OF DRILLING _____

NOTES DR 15 R g CME55 Automat c Hammer

AFTER DRILLING _____

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
	SS 1	1 2 1 2 (3)		SP SM		(SP SM) redd sh brown f ne gra ned quartz SAND, m nor s t
	SS 2	3 10	samp er ang ed, unab e to obta n more samp e dr ng f u d ntroduced at 3'		2 5	6 6 very pa e brown LIMESTONE, sandy
5	SS 3	50/2"				we ndurated
	SS 4	27 8 12 7 (20)				var ab y ndurated, few grave , s ty
	SS 5	7 10 5 8 (15)				
10					10 5	-1 4 (CH) ght green sh gray, redd sh ye ow CLAY, var ab y sandy, oca mestone fragments
	SS 6	2 2 1 (3)		CH		
					13 0	-3 9 very pa e brown LIMESTONE, poor y ndurated
15	SS 7	3 4 5 (9)				oca cay ens
	SS 8	4 4 3 (7)				sandy
20	SS 9	1 1 2 (3)				

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 22 - C \ HA ICRYS AL R VER 300743X2 CRY S AL R VER (2) GPJ

(Continued Next Page)



CLIENT Duke Energy

PROJECT NAME Energy Plant Home Site

PROJECT NUMBER 300743x2

PROJECT LOCATION Crysta River

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 22 - C \ HA CRYSTAL RIVER 300743X2 CRYSTAL RIVER (2) GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
20						
						very pale brown LIMESTONE, poorly indurated (continued)
25	SS 10	18 13 3 (16)				some grave
			loss of drilling fluid circulation at 27'			
30	SS 11	0 1 0 (1)	WOR, 1, WOH/24", 8			reddish brown, pale brown, sandy
	SS 12	0 0 0 8 (0)				
35	SS 13	5 5 7 (12)	4 inch casing installed to 35', drilling fluid circulation regained momentarily			
40	SS 14	8 10 11 (21)				
						33.0 pale brown LIMESTONE, dolomitic, poorly indurated, sandy, friable -23.9

(Continued Next Page)

**BORING NUMBER B-21**

PAGE 1 OF 3

CLIENT Duke Energy **PROJECT NAME** Energy Plant Ho c m S te
PROJECT NUMBER 300743x2 **PROJECT LOCATION** Crysta R ver
DATE STARTED 11/18/13 **COMPLETED** 11/18/13 **GROUND ELEVATION** 6.2 ft **HOLE SIZE** 4 nches
DRILLING CONTRACTOR Independent Dr ng, Inc. **GROUND WATER LEVELS:**
DRILLING METHOD Standard Penetrat on / Mud Rotary **AT TIME OF DRILLING** _____
LOGGED BY BB **CHECKED BY** Tha Nguyen **AT END OF DRILLING** _____
NOTES DR 15 R g CME55 Automat c Hammer **AFTER DRILLING** _____

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
	SS 1	1 2 2 1 (4)		SP SM		(SP SM) brown f ne gra ned quartz SAND w th m nor s t, m nor roots
	SS 2	3 6 12 10 (18)				2 0 very pa e brown, redd sh ye ow LIMESTONE, sandy, s t, poor y ndurated
5	SS 3	5 5 5 6 (10)	dr ng f u d ntroduced at 4'			
	SS 4	4 9 8 13 (17)				
	SS 5	3 4 4 2 (8)				
10						
	SS 6	6 8 4 (12)				
	SS 7	2 4 3 (7)				s ty
15						
	SS 8	8 9 13 (22)				
	SS 9	4 7 8 (15)				some grave
20						

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 22 - C \ HA ICRY S AL R VER 300743X2 CRY S AL R VER (2) GPJ

(Continued Next Page)

CLIENT Duke EnergyPROJECT NAME Energy Plant Ho cm SitePROJECT NUMBER 300743x2PROJECT LOCATION Crysta River

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 22 - C \ HA CRYSTAL RIVER 300743X2 CRYSTAL RIVER (2) GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
20						
			loss of drilling fluid circulation at 22'			very pale brown, reddish yellow LIMESTONE, sandy, soft, poorly indurated (continued)
						22 0 -15 8
						(SP) gray, pale brown fine grained quartz SAND, calcareous
25	SS 10	0 0 0 0 (0)	WOH/24"	SP		
						26 0 -19 8
						very pale brown LIMESTONE, sandy, soft, indurated
30	SS 11	8 33 19 (52)	4 inch casing installed to 30', drilling fluid circulation not regained			
35	SS 12	8 10 9 (19)	4 inch casing advanced to 35', drilling fluid circulation regained			
40	SS 13	25 31 46 (77)				
						36 0 -29 8
						pale brown LIMESTONE, domitic, mostly soft, well indurated

(Continued Next Page)



PAGE 3 OF 3

CLIENT Duke Energy **PROJECT NAME** Energy Plant Hockmesterville

PROJECT NUMBER 300743x2 **PROJECT LOCATION** Crysta River

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
40						
						pa e brown LIMESTONE, do om t c, most y s ty, we ndurated (continued)
45	SS 14	27 26 26 (52)				
	SS 15	50/5"				
50						50 0 -43 8 pa e brown LIMESTONE, most y s ty
55	SS 16	5 9 10 (19)				
						56 0 -49 8 very pa e brown, pa e brown LIMESTONE, we ndurated
	SS 17	50/2"				58 7 -52 5 Bottom of boreho e at 58.7 feet.

GENERAL BH/ P / WELL - GN S D US LAB GD - 12/13/13 16 22 - C \ HA \ CRY S AL R VER \ 300743X2 CRY S AL R VER (2) GPJ

**BORING NUMBER B-22**

PAGE 1 OF 3

CLIENT Duke Energy **PROJECT NAME** Energy Plant Ho c m S te
PROJECT NUMBER 300743x2 **PROJECT LOCATION** Crysta R ver
DATE STARTED 11/15/13 **COMPLETED** 11/15/13 **GROUND ELEVATION** 6.2 ft **HOLE SIZE** 4 nches
DRILLING CONTRACTOR Independent Dr ng, Inc. **GROUND WATER LEVELS:**
DRILLING METHOD Standard Penetrat on / Mud Rotary **AT TIME OF DRILLING** _____
LOGGED BY HI **CHECKED BY** Tha Nguyen **AT END OF DRILLING** _____
NOTES DR 33 R g CME550 Automat c Hammer **AFTER DRILLING** _____

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0							
	SS 1		1 3 3 1 (6)		SP		(SP) brown f n gra ned quartz SAND
	SS 2		4 15 19 5 (34)				2 0 4 2 pa e brown, gray, wh te LIMESTONE
5	SS 3		3 4 4 2 (8)	dr ng f u d ntroduced at 4'			
	SS 4		9 14 50/5"				6 0 0 2 wh te LIMESTONE, coarse s ze fragments
	SS 5		28 29 23 15 (52)				
10	SS 6		15 10 5 (15)				
	SS 7		2 1 1 (2)	oss of dr ng f u d c rcu at on at 13'			13 0 -6 8 pa e brown, wh te LIMESTONE, coarse
15	SS 8		7 7 11 (18)				
	SS 9		6 4 4 (8)				
20							

(Continued Next Page)



CLIENT Duke Energy

PROJECT NAME Energy Plant Ho cm S te

PROJECT NUMBER 300743x2

PROJECT LOCATION Crysta R ver

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
20							
				dr ng f u d c rcu at on rega ned at 22'		22 0	pa e brown, wh te LIMESTONE, coarse (continued) -15 8
25	SS 10		2 5 14 7 (19)	4 nch cas ng advanced to 25'			wh te, gray LIMESTONE
	SS 11		3 50/3"				
30	RC 1	37 (32)		oss of dr ng f u d c rcu at on at 30' dr ng f u d c rcu at on rega ned at 31'			
				oss of dr ng f u d c rcu at on at 33'			
35	SS 12		3 9 12 5 (21)				do om t c, some s t, some c ay
						37 0	-30 8
							brown, pa e brown LIMESTONE, do om t c, fr ab e
40	SS 13		1 1 2 3 (3)				some s t

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 22 - C \ HA C RYS AL R VER 300743X2 C RYS AL R VER (2) GPJ

(Continued Next Page)

CLIENT Duke EnergyPROJECT NAME Energy Plant Home SitePROJECT NUMBER 300743x2PROJECT LOCATION Crystal River

GENERAL BH / P / WELL - GN S DUS LAB GD - 12/13/13 16 22 - C \ HA CRYSTAL RIVER 300743X2 CRYSTAL RIVER (2) GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
40							
45	SS 14		18 10 4 4 (14)				brown, pale brown LIMESTONE, dolomitic, friable (continued)
50	SS 15		3 4 7 10 (11)				
55	SS 16		0 4 3 37 (7)	WOH/12", 4, 3, 37			
	SS 17		50/1"				
							Bottom of borehole at 58.1 feet.

58.1

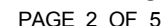
-51.9



CLIENT Duke Energy **PROJECT NAME** Energy Plant Ho c m S te
PROJECT NUMBER 300743x2 **PROJECT LOCATION** Crysta R ver
DATE STARTED 11/6/13 **COMPLETED** 11/6/13 **GROUND ELEVATION** 7.5 ft **HOLE SIZE** 4 nches
DRILLING CONTRACTOR Independent Dr ng, Inc. **GROUND WATER LEVELS:**
DRILLING METHOD Standard Penetrat on / Mud Rotary ☒ **AT TIME OF DRILLING** 2.00 ft / E ev 5.50 ft
LOGGED BY BB **CHECKED BY** Tha Nguyen **AT END OF DRILLING** _____
NOTES DR 33 R g CME550 Automat c Hammer **AFTER DRILLING** _____

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0							
	SS 1		32 22 50/3"			very pa e brown, wh te LIMESTONE	
						we ndurated	
	SS 2		38 50/2"				
5	SS 3		32 37 38 37 (75)	dr ng f u d ntroduced at 4'		s ty, sandy	← benton te sea
	SS 4		22 22 29 30 (51)			very pa e brown, wh te LIMESTONE	
	SS 5		47 48 30 42 (78)			redd sh ye ow	
10	SS 6		18 15 10 (25)			s ty	
	SS 7		19 25 16 (41)			s ty, c ayey	← sand pack
15	SS 8		17 13 9 (22)			s ty, sandy	← screen
	SS 9		50/5"				
20							

(Continued Next Page)



PROJECT LOCATION Crysta River

(Continued Next Page)



CLIENT Duke Energy

PROJECT NAME Energy Plant Ho cm Site

PROJECT NUMBER 300743x2

PROJECT LOCATION Crysta R ver

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 22 - C \ HA CRYSTAL R VER 300743X2 CRYSTAL R VER (2) GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
40							
				dr ng f u d c rcu at on rega ned oss of dr ng f u d c rcu at on at 41'		very pa e brown LIMESTONE, do om t c	
45	SS 14		4 14 18 (32)			sandy	
						46 0 -38 5	
						pa e brown LIMESTONE, do om t c, we ndurated	
50	SS 15		50/5"				
						52 0 -44 5	
						brown LIMESTONE, fr ab e. sandy, s ty	
55	SS 16		6 50/2"				
60	SS 17		18 13 28 (41)				

(Continued Next Page)



CLIENT Duke Energy

PROJECT NAME Energy Plant Home Site

PROJECT NUMBER 300743x2

PROJECT LOCATION Crystalline River

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 22 - C \ HA \ CRYSTAL RIVER (2) GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
60						brown LIMESTONE, fr ab e. sandy, s ty (continued)	
65	SS 18		13 16 45 (61)			oca y cemented	
70	SS 19		21 45 28 (73)				
75	SS 20		50/2"			pa e brown LIMESTONE, do om t c, we ndurated	
80	SS 21		50/5"			gray to dark gray DOLOSTONE, sandy, grave y, vuggy, porous, foss ferous	

(Continued Next Page)



CLIENT Duke Energy

PROJECT NAME Energy Plant Home Site

PROJECT NUMBER 300743x2

PROJECT LOCATION Crystal River

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 22 - C \ HA CRYSTAL RIVER 300743X2 CRYSTAL RIVER (2) GPJ

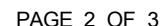
DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
80							
	RC 1	27 (7)				gray to dark gray DOLOSTONE, sandy, gravelly, vuggy, porous, fossiliferous (continued)	
85	SS 22		22 35 45 (80)				
	SS 23		50/1"				
90						90.0 very pale brown LIMESTONE, well indurated -82.5	
	SS 24		50/1"				
95							
	SS 25		50/1"			98.6 Bottom of borehole at 98.6 feet. -91.1	



CLIENT Duke Energy PROJECT NAME Energy Plant Ho c m S te
PROJECT NUMBER 300743x2 PROJECT LOCATION Crysta R ver
DATE STARTED 11/15/13 COMPLETED 11/15/13 GROUND ELEVATION 7.1 ft HOLE SIZE 4 nches
DRILLING CONTRACTOR Independent Dr ng, Inc. GROUND WATER LEVELS:
DRILLING METHOD Standard Penetrat on / Mud Rotary ∇ AT TIME OF DRILLING 4.00 ft / E ev 3.10 ft
LOGGED BY BB CHECKED BY Tha Nguyen AT END OF DRILLING _____
NOTES DR 15 R g CME55 Automat c Hammer AFTER DRILLING _____

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
	SS 1		26 26 46 30 (72)			very pa e brown, redd sh ye ow LIMESTONE, sandy
	SS 2		23 18 38 33 (56)			s ty
5	SS 3		29 50 50/2"	dr ng f u d ntroduced at 4'		oca s ty sand ens, we ndurated
	SS 4		50/5"			we ndurated
10	RC 1	65 (27)				
	SS 5		2 11 7 (18)			very pa e brown, redd sh ye ow LIMESTONE sandy and s ty
15	SS 6		5 10 10 (20)	oss of dr ng f u d c rcu at on at 13.5'		
20	SS 7		5 10 11 (21)			

(Continued Next Page)



PROJECT LOCATION Crysta River

GENERAL BH/ P /WELL -GN S DUS LABGD -12/13/13 16 22 - C \ HA \CRY S AL R VER\300743X2 CRY S AL R VER (2)GPJ

(Continued Next Page)



CLIENT Duke Energy

PROJECT NAME Energy Plant Home Site

PROJECT NUMBER 300743x2

PROJECT LOCATION Crystalline River

GENERAL Borehole / P / WELL - G N S DUS LAB GD - 12/13/13 16 22 - C \ HA CRYSTAL RIVER 300743X2 CRYSTAL RIVER (2) GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION
40						pa e brown LIMESTONE, s ty, fr ab e
45	SS 12		41 47 50/5"			do om t c
50	SS 13		50/5"			50 0 -42 9 pa e brown LIMESTONE, do om t c, weak y ndurated
55	SS 14		30 10 9 (19)			56 0 -48 9 pa e brown LIMESTONE, do om t c, we ndurated
	SS 15		50/3"			58 8 -51 7 Bottom of borehole at 58.8 feet.



CLIENT Duke Energy PROJECT NAME Energy Plant Ho c m S te
PROJECT NUMBER 300743x2 PROJECT LOCATION Crysta R ver
DATE STARTED 11/14/13 COMPLETED 11/14/13 GROUND ELEVATION 6.8 ft HOLE SIZE 4 nches
DRILLING CONTRACTOR Independent Dr ng, Inc. GROUND WATER LEVELS:
DRILLING METHOD Standard Penetrat on / Mud Rotary ☒ AT TIME OF DRILLING 2.00 ft / E ev 4.80 ft
LOGGED BY BB CHECKED BY Tha Nguyen AT END OF DRILLING _____
NOTES DR 15 R g CME55 Automat c Hammer AFTER DRILLING _____

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0							
	SS 1		1 1 1 3 (2)		SP SM		(SP SM) dark brown f ne gra ned quartz SAND w th s t
	SS 2		33 36 50/5"				2 0 4 8 very pa e brown LIMESTONE, sandy, s ty, we ndurated
	SS 3		28 50/2"	dr ng fu d ntroduced at 4'			
5	SS 4		50/3"				
	RC 1	80 (67)					
10	RC 2	80 (30)					
	SS 5		30 50/5"				12 0 -5 2 very pa e brown LIMESTONE, sandy, s ty, we ndurated
15	RC 3	61 (39)					
	SS 6		8 7 9 (16)				sandy, s ty, poor y ndurated
	SS 7		16 21 8 (29)				ndurated
20							

(Continued Next Page)



CLIENT Duke Energy

PROJECT NAME Energy Plant Home Site

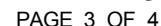
PROJECT NUMBER 300743x2

PROJECT LOCATION Crystalline River

GENERAL BH / P / WELL - G N S DUS LAB GD - 12/13/13 16 22 - C \ HA CRYSTAL RIVER (2) GPJ

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	REMARKS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
20							very pale brown LIMESTONE, sandy, slightly weathers (continued)
25	SS 8		2 15 20 (35)				indurated
30	SS 9		10 12 8 (20)				poorly indurated
35	SS 10		50/5"				some gravel, weathers
40	SS 11		0 0 0 0 (0)	loss of drilling fluid circulation at 38.5'	ML		(ML) greenish gray SILT, variably sandy

(Continued Next Page)



PROJECT LOCATION Crysta River

GENERAL BH/ P /WELL -GN S DUS LABGD -12/13/13 16 22 - C \ HA \CRY S AL R VER\300743X2 CRY S AL R VER (2)GPJ

(Continued Next Page)

CLIENT Duke Energy **PROJECT NAME** Energy Plant Hockmest

PROJECT NUMBER 300743x2 **PROJECT LOCATION** Crysta River

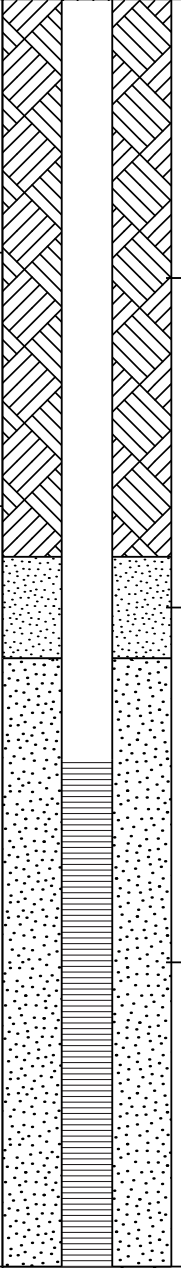
[illegible]

Bottom of borehole at 63.9 feet.

-57 1

PROJECT NUMBER FR3131/02/02	DRILLING DATE 10/30/2017	COORDINATES 28.971029, -82.668276
PROJECT NAME Crystal River CCCP	TOTAL DEPTH 25 ft bls	COORD SYS NAD83
CLIENT Duke Energy Florida	DIAMETER 2"	COMPLETION Above-ground
DRILLING COMPANY Cascade Drilling	CASING Schedule 40 PVC	SURFACE ELEVATION 9.4
DRILLERS C. Turner	SCREEN Schedule 40 PVC w/ 0.010" slot	WELL TOC 12.24

COMMENTS Hand augered up to 5 ft BLS, remainder with rota-sonic drill rig with 4-inch core barrel
LOGGED BY M. Noto
 followed by 6-inch temporary steel casing. **CHECKED BY** C. Cannon

Depth (ft)	Material Description	Run/Recovery	Well Diagram
1	Fill SAND with limestone, 7.5YR 5/4, brown, well-sorted, with limestone chunks (1/4 - 1/8"), dry	60/60	
2			
3			Portland Cement Type I/II
4	SAND, fine-grained quartz, 10YR 6/1, gray, very well-sorted, subrounded, dry		
5	LIMESTONE, 10YR 8/1, white, weathered limestone with iron oxidation staining, moist	60/50	Seal (30/65 sand)
6			
7	Same as above- wet, less weathered		Filter pack (20/30 sand)
8			
9			
10	Same as above- more competent limestone		
11			
12			
13			
14			
15	Same as above		
16			
17			
18			
19			
20	Same as above- fossiliferous very competent limestone, bivalves and gastropods		
21			
22			
23	Calcareous mud- clayey weathered limestone, wet, 10YR 6/6		
24			
25	Termination Depth at: 25 ft		
26			

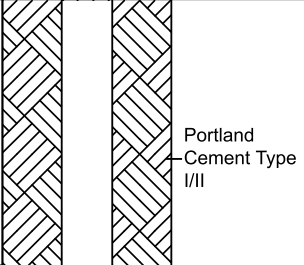
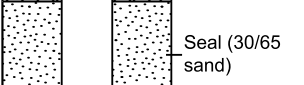
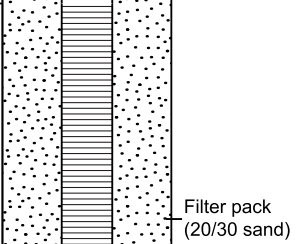
PROJECT NUMBER FR3131/02/02	DRILLING DATE 9/24/2017	COORDINATES 28.969353, -82.676960
PROJECT NAME Crystal River CCCP	TOTAL DEPTH 20.3 ft bls	COORD SYS NAD83
CLIENT Duke Energy Florida	DIAMETER 2"	COMPLETION Above-ground
DRILLING COMPANY EDS	CASING Schedule 40 PVC	SURFACE ELEVATION 11.4
DRILLERS K. Rogers	SCREEN Schedule 40 PVC w/ 0.010" slot	WELL TOC 14.57

COMMENTS Hand augered up to 5 ft BLS, remainder with rota-sonic drill rig with 4-inch core barrel followed by 6-inch steel temporary casing. **LOGGED BY** M. Noto
CHECKED BY C. Cannon

Depth (ft)	Material Description	Run/Recovery	Well Diagram
1	SAND/fill, 10YR 4/4, dark yellowish brown, fine-grained, well-sorted, dry, loose	60/60	
2	Fill SAND, 10YR 2/2, very dark brown, very fine-grained, subrounded, dry, loose, quartz sand with 15-20% (1/4 - 1/8") gravel		
3			
4			
5	Same as above	60/42	
6			
7			
8			
9	SAND, 10YR 5/6, yellowish brown, moist, very well-sorted, firm, sub-rounded, fine-grained quartz sand		
10	Same as above- wet	60/42	
11	LIMESTONE, 10YR 8/1, white, wet, moderately friable, fossiliferous (bivalves), moderately competent; drilling slowed, more water used, less weathered competent rock		
12			
13			
14			
15	SAND, 10YR 5/6, yellowish-brown, wet, loose, well-sorted, rounded fine-grained quartz sand with 40% calcareous (bivalve) shell fragments	60/51	
16			
17			
18	LIMESTONE, 10YR 8/11, white, wet, fossiliferous (bivalves), very competent		
19	Sandy LIMESTONE with clay, 10YR 8/1, white, low plasticity, limestone mud, with competent limestone gravel, 8" size; increased drilling speed		
20			
21	Termination Depth at: 20.3 ft		
22			
23			
24			

PROJECT NUMBER FR3131/02/02	DRILLING DATE 9/24/2017	COORDINATES 28.969802, -82.677681
PROJECT NAME Crystal River CCCP	TOTAL DEPTH 20.1 ft bls	COORD SYS NAD83
CLIENT Duke Energy Florida	DIAMETER 2"	COMPLETION Above-ground
DRILLING COMPANY EDS	CASING Schedule 40 PVC	SURFACE ELEVATION 10.5
DRILLERS K. Rogers	SCREEN Schedule 40 PVC w/ 0.010" slot	WELL TOC 13.52

COMMENTS Hand augered up to 5 ft BLS, remainder with rota-sonic drill rig with 4-inch core barrel followed by 6-inch steel temporary casing. **LOGGED BY** M. Noto
CHECKED BY C. Cannon

Depth (ft)	Material Description	Run/Recovery	Well Diagram
1	Fill SAND with gravel, 10YR 3/4, dry, poorly sorted, fine-grained sand with gravel (1/4-4")(20-25%) limestone (weathered), very soft	60/60	 Portland Cement Type I/II
2			
3	Fill SAND, 10YR 3/4, with limestone, 60-70% limestone, friable, with bivalves (fossils)(7-8")		
4	Silty SAND, 10YR 2/2, very dark brown, loose, fine-grained, dry, with 5% gravel (1/4")		
5	LIMESTONE, 10YR 8/2, very pale brown, saturated/wet, friable, with fossils	60/44	 Seal (30/65 sand)
6	▽		
7			
8	Same as above, 10YR 8/1, white		
9			 Filter pack (20/30 sand)
10	Sandy LIMESTONE, same as above, 10YR 8/2; increased drilling speed (more weathered limestone)	60/37	
11			
12			
13	LIMESTONE, 10YR 8/1, white, same as above; decreased drilling speed		
14			
15	Same as above, more competent	60/40	
16	Void		
17			
18	Sandy LIMESTONE, moist, increased friability, 10YR 8/1, white		
19			
20			
21	Termination Depth at: 20.1 ft		
22			
23			
24			

PROJECT NUMBER FR3131/02/02	DRILLING DATE 10/31/2017	COORDINATES 28.969273, -82.678076
PROJECT NAME Crystal River CCCP	TOTAL DEPTH 25 ft bls	COORD SYS NAD83
CLIENT Duke Energy Florida	DIAMETER 2"	COMPLETION Above-ground
DRILLING COMPANY Cascade Drilling	CASING Schedule 40 PVC	SURFACE ELEVATION 8.5
DRILLERS C. Turner	SCREEN Schedule 40 PVC w/ 0.010" slot	WELL TOC 11.26

COMMENTS Hand augered up to 5 ft BLS, remainder with rota-sonic drill rig with 4-inch core barrel followed by 6-inch steel temporary casing. **LOGGED BY** M. Noto
CHECKED BY C. Cannon

Depth (ft)	Material Description	Run/Recovery	Well Diagram
1	Fill SAND, 10YR 4/4, well-sorted, dry, soft fine-grained quartz sand, not natural, fill on pad	60/36	
2			
3	LIMESTONE, 10YR 8/1, white, very weathered friable limestone		
4			
5	Same as above, wet at 5'	60/24	
6			
7			
8			
9			
10	Same as above, saturated	60/48	
11			
12			
13			
14			
15	Same as above	60/60	
16			
17	SAND, 5YR 3/3, dark reddish brown, fine-grained, well-sorted, wet quartz sand, sub-rounded		
18	SAND, 10YR 8/1- 5YR 7/6, white to reddish brown, extremely fine sand with veins of reddish brown fine-grained iron-stained sand, extremely well-sorted		
19			
20	Same as above, moist		
21			
22			
23	GLEYS, Gley 5/1, greenish gray with iron staining, dry, with >2" ribbons		
24	Sandy SILT, 10YR 8/6, yellow, very fine, well-graded, dry silt with rounded grains <5% throughout, chalky texture		
25	Termination Depth at: 25 ft		
26			

Boring No.: MW-5 Project No.: PR2729A Page 1 of 1

Site: Crystal River Date: 6/29/19

Tools and Method: Full size rotasonic Bit Dia.: 4"x6"

Total Depth: 20' Ground Elev.: _____ Groundwater Depth: 4'

Drilling Company: Cascade Rig: _____

Driller: Vernon Scott Logger: DM Reviewer: _____

Page 1 of

Proj.No.:

Site:

Boring:

Elev. (feet)	Top (feet)	Lithology Log	Graphic Log	Depth Scale	Std. Pen. Test			Drilling Log
					Blows /6"	Run/Rec.	N	
1		Fill SAND, well graded, brown, abundant roots and wood fragments, loose, dry.						Start drilling boring @ 1142
2		Weathered LIMESTONE, white, 1"-2" pieces of competent limestone, fossilized bivalves and gastropods present throughout. Wet.			9.5			Apparent WL @ 2', measured at 4' before grouting
3					10			
4								
5								
6								
7								
8								
9								
10								
11								
12								
13		Highly weathered, coarse sand grain size (LS).			9			
14					10			
15								
16		Higher amount of competent limestone up to 3" in diameter pieces.						
17								
18								
19								
20								End of boring at 20' @ 1155

Boring No.: MW-6 Project No.: PR2729A Page 1 of 1
 Site: Crystal River Date: 6/29/19
 Tools and Method: full size vibrocone Bit Dia.: 4"x6"
 Total Depth: 20' Ground Elev.: Groundwater Depth: 3'
 Drilling Company: Cascade Rig:
 Driller: Vernon Scott Logger: DM Reviewer:

Page 1 of
 Proj. No.:
 Site:
 Boring:

Elev. (feet)	Top (feet)	Lithology Log	Graphic Log	Depth Scale	Std. Pen. Test			Drilling Log
					Blows /ft	Run/Rec.	N	
		Poorly graded med. SAND, abundant organic matter, dry, loose.						Start drilling @ 1005
1		Weathered LIMESTONE,						→ Hand augered to 1', found rock (limestone @ 1')
2		light brown to white, moist (wet at 3'), pieces of 1"-2" of competent limestone, bivalves and gastropods throughout						
3		Pieces up to 3"-4" in diameter of competent limestone						<u> </u> Apparent WL at <u>~ 3'</u> , measured at = 2.5' during development.
4					8/10			
5								
6								
7		Increasing size and amount of competent limestone pieces.						
8								
9								
10								
11		Bedrock, competent LIMESTONE						
12		abundant discs of 3"x2" competent limestone (10%)						
13					9/10			
14								
15								
16								
17								
18								
19		Weathered limestone, only 1"-2" pieces of competent LS disseminated						
20								→ End of boring @ 1041 @ 20'



AERIAL PHOTOGRAPHY PROVIDED BY MICROSOFT BING MAPS DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES	Project Manager: CMA Drawn by: CJH Checked by: SCK Approved by: SCK	Project No. H4155013 Scale: AS SHOWN File Name: CAD Date: 10/12/2015	Terracon 504 E. Tyler St. Tampa, FL 33602	EXPLORATION PLAN Citrus County Combined Cycle Project 15760 W Power Line Street Crystal River, FL	Exhibit A-1
--	---	--	--	---	---------------------------

BORING LOG NO. FP-01

Page 1 of 1

PROJECT: Citrus County Combined Cycle Project

CLIENT: Fluor Enterprises, Inc.
Charlotte, NC

SITE: Citrus County, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 28.9675687° Longitude: -82.6716731°	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
DEPTH					
	POORLY GRADED SAND WITH SILT (SP-SM) , fine grained, reddish-brown, loose				
1.0					1-2-12-21 N=14
	HIGHLY WEATHERED LIMESTONE light brown				
2.0					50/4"
	LIMESTONE light brown				
	white				50/4"
		5			50/3"
8.0					
	WEATHERED LIMESTONE white				23-33-39-47 N=72
					41-27-20-17 N=47
		10			17-25-20 N=45
13.5					
	Boring Terminated at 13.5 Feet				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix B for description of laboratory procedures and additional data (if any).

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

 Groundwater initially observed at a depth of 2.85'.

Terracon
504 East Tyler Street
Tampa, Florida

Boring Started: 10/1/2015

Boring Completed: 10/1/2015

Drill Rig: CME-45

Driller: R. Swint, Sr.

Project No.: H4155013

Exhibit: A-3

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H4155013 PERMEABILITY BORING LOGS.GPJ TERRACON2015.GDT 10/15/15

BORING LOG NO. FP-02

Page 1 of 1

PROJECT: Citrus County Combined Cycle Project

CLIENT: Fluor Enterprises, Inc.
Charlotte, NC

SITE: Citrus County, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 28.9680172° Longitude: -82.6716759°	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
DEPTH					
	POORLY GRADED SAND WITH CLAY (SP-SC) , fine grained, reddish-brown, loose, with limestone brown				2-4-3-2 N=7
4.0					WOH/6"-1-2-5 N=3
	HIGHLY WEATHERED LIMESTONE yellowish-brown	5			2-7-11-19 N=18
6.0					32-34-43-28 N=77
	WEATHERED LIMESTONE light brown white				20-19-21-14 N=40
10.0		10			9-7-8-9 N=15
	HIGHLY WEATHERED LIMESTONE white				8-19-7 N=26
12.0					
	WEATHERED LIMESTONE white				
13.5					
	Boring Terminated at 13.5 Feet				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix B for description of laboratory procedures and additional data (if any).

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

 Groundwater initially observed at a depth of 3.34'.

Terracon
504 East Tyler Street
Tampa, Florida

Boring Started: 10/1/2015

Boring Completed: 10/1/2015

Drill Rig: CME-45

Driller: R. Swint, Sr.

Project No.: H4155013

Exhibit: A-4

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H4155013 PERMEABILITY BORING LOGS.GPJ TERRACON2015.GDT 10/15/15

BORING LOG NO. FP-03

Page 1 of 1

PROJECT: Citrus County Combined Cycle Project

CLIENT: Fluor Enterprises, Inc.
Charlotte, NC

SITE: Citrus County, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 28.9684646° Longitude: -82.6716788°	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
DEPTH					
	POORLY GRADED SAND WITH CLAY (SP-SC) , fine grained, reddish-brown, loose, with roots				1-2-2-1 N=4
2.0	WEATHERED LIMESTONE , yellowish-brown				6-16-21-21 N=37
	light brown	5			27-23-33-27 N=56
					20-24-14-19 N=38
	white	10			21-16-20-23 N=36
					5-10-17-50/5" N=27
					21-48-19-29 N=67
14.0	Boring Terminated at 14 Feet				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix B for description of laboratory procedures and additional data (if any).

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

 Groundwater initially observed at a depth of 2.81'.

Terracon
504 East Tyler Street
Tampa, Florida

Boring Started: 9/30/2015

Boring Completed: 9/30/2015

Drill Rig: CME-45

Driller: R. Swint, Sr.

Project No.: H4155013

Exhibit: A-5

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H4155013 PERMEABILITY BORING LOGS.GPJ TERRACON2015.GDT 10/15/15

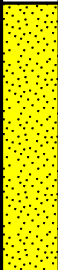
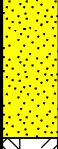
BORING LOG NO. FP-04

Page 1 of 1

PROJECT: Citrus County Combined Cycle Project

CLIENT: Fluor Enterprises, Inc.
Charlotte, NC

SITE: Citrus County, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 28.9689126° Longitude: -82.671701°	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
DEPTH					
	POORLY GRADED SAND (SP) , fine grained, brown, loose very loose				WOH/6"-1-2-2 N=3
					1/12"-1/12" N=1
	HIGHLY WEATHERED LIMESTONE yellowish-brown	5			1-3-1-1 N=4
	CLAYEY SAND (SC) , fine grained, brown, loose, calcareous, with limestone				1-2-3-3 N=5
	POORLY GRADED SAND (SP) , fine grained, white, loose, calcareous				2-1-2-2 N=3
	HIGHLY WEATHERED LIMESTONE white	10			4-11-7 N=18
	Boring Terminated at 11.5 Feet				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix B for description of laboratory
procedures and additional data (if any).

See Appendix C for explanation of symbols and
abbreviations.

WATER LEVEL OBSERVATIONS

 Groundwater initially observed at a depth of 0.50'.

Terracon
504 East Tyler Street
Tampa, Florida

Boring Started: 9/30/2015

Boring Completed: 9/30/2015

Drill Rig: CME-45

Driller: R. Swint, Sr.

Project No.: H4155013

Exhibit: A-6

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H4155013 PERMEABILITY BORING LOGS.GPJ TERRACON2015.GDT 10/15/15

BORING LOG NO. FP-05

Page 1 of 1

PROJECT: Citrus County Combined Cycle Project

CLIENT: Fluor Enterprises, Inc.
Charlotte, NC

SITE: Citrus County, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 28.9675612° Longitude: -82.6733594°	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
DEPTH					
	POORLY GRADED SAND WITH CLAY (SP-SC) , fine grained, brown, medium dense				
1.0	HIGHLY WEATHERED LIMESTONE light brown				2-5-16-47 N=21
2.0	LIMESTONE white				50/3"
4.0	HIGHLY WEATHERED LIMESTONE yellowish-brown				
	white				
		5			2-4-3-7 N=7
					9-14-15-13 N=29
					6-8-9-11 N=17
		10			2-6-8 N=14
					11-8-12 N=20
13.0	Boring Terminated at 13 Feet				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix B for description of laboratory procedures and additional data (if any).

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

 Groundwater initially observed at a depth of 1.77'.

Terracon
504 East Tyler Street
Tampa, Florida

Boring Started: 10/1/2015

Boring Completed: 10/1/2015

Drill Rig: CME-45

Driller: R. Swint, Sr.

Project No.: H4155013

Exhibit: A-7

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H4155013 PERMEABILITY BORING LOGS.GPJ TERRACON2015.GDT 10/15/15

BORING LOG NO. FP-06

Page 1 of 1

PROJECT: Citrus County Combined Cycle Project

CLIENT: Fluor Enterprises, Inc.
Charlotte, NC

SITE: Citrus County, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 28.9680088° Longitude: -82.6733623°	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
DEPTH					
	WEATHERED LIMESTONE , light brown				3-6-23-20 N=29
	white				17-15-16-22 N=31
		5			19-26-20-13 N=46
	yellowish-brown				8-14-18-24 N=32
	8.0				
	HIGHLY WEATHERED LIMESTONE , light brown				3-5-7-17 N=12
		10			10-7-10 N=17
					15-9-10 N=19
	13.0				
	Boring Terminated at 13 Feet				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix B for description of laboratory procedures and additional data (if any).

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

 Groundwater initially observed at a depth of 2.80'.

Terracon
504 East Tyler Street
Tampa, Florida

Boring Started: 10/2/2015

Boring Completed: 10/2/2015

Drill Rig: CME-45

Driller: R. Swint, Sr.

Project No.: H4155013

Exhibit: A-8

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H4155013 PERMEABILITY BORING LOGS.GPJ TERRACON2015.GDT 10/15/15

BORING LOG NO. FP-07

Page 1 of 1

PROJECT: Citrus County Combined Cycle Project

CLIENT: Fluor Enterprises, Inc.
Charlotte, NC

SITE: Citrus County, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 28.9684561° Longitude: -82.6733652°	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
	DEPTH				
	POORLY GRADED SAND WITH CLAY (SP-SC) , fine grained, brown, loose				
	1.0				1-4-6-7 N=10
	HIGHLY WEATHERED LIMESTONE light brown				5-4-1-3 N=5
	yellowish-brown	5			6-13-7-7 N=20
					10-14-8-5 N=22
	white				24-8-2-13 N=10
		10			22-7-3-10 N=10
					
					
					
					
					
					
					
					
					
					
					
					
					
					
					
					
					
	Boring Terminated at 12 Feet				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix B for description of laboratory procedures and additional data (if any).

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

 Groundwater initially observed at a depth of 1.95'.

Terracon
504 East Tyler Street
Tampa, Florida

Boring Started: 10/1/2015

Boring Completed: 10/1/2015

Drill Rig: CME-45

Driller: R. Swint, Sr.

Project No.: H4155013

Exhibit: A-9

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H4155013 PERMEABILITY BORING LOGS.GPJ TERRACON2015.GDT 10/15/15

BORING LOG NO. FP-08

Page 1 of 1

PROJECT: Citrus County Combined Cycle Project

CLIENT: Fluor Enterprises, Inc.
Charlotte, NC

SITE: Citrus County, Florida

GRAPHIC LOG	LOCATION	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
	See Exhibit A-4 Latitude: 28.9689042° Longitude: -82.6733951°				
	DEPTH				
	POORLY GRADED SAND WITH CLAY (SP-SC) , fine grained, orange-brown, loose				1-6-7-4 N=13
	HIGHLY WEATHERED LIMESTONE white				2-11-5-6 N=16
	WEATHERED LIMESTONE , white				7-21-17-13 N=38
	LIMESTONE , light brown				15-31-50/5"
	WEATHERED LIMESTONE , white				16-32-9-18 N=41
	HIGHLY WEATHERED LIMESTONE light brown				9-10-13 N=23
	Boring Terminated at 11.5 Feet				
Stratification lines are approximate. In-situ, the transition may be gradual.					
Hammer Type: Automatic					
Advancement Method: Mud Rotary		See Exhibit A-5 for description of field procedures See Appendix B for description of laboratory procedures and additional data (if any). See Appendix C for explanation of symbols and abbreviations.		Notes:	
Abandonment Method: Borings backfilled with soil cuttings upon completion.					
WATER LEVEL OBSERVATIONS  Groundwater initially observed at a depth of 0.62'.				Boring Started: 10/1/2015 Boring Completed: 10/1/2015	
		Drill Rig: CME-45		Driller: R. Swint, Sr.	
		Project No.: H4155013		Exhibit: A-10	

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H4155013 PERMEABILITY BORING LOGS.GPJ TERRACON2015.GDT 10/15/15

BORING LOG NO. FP-09

Page 1 of 1

PROJECT: Citrus County Combined Cycle Project

CLIENT: Fluor Enterprises, Inc.
Charlotte, NC

SITE: Citrus County, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4		DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
	Latitude: 28.9697239° Longitude: -82.6774241°					
DEPTH						
	0.3	POORLY GRADED SAND WITH SILT (SP-SM) , fine grained, brown, loose	5			2-6-8-5 N=14
		HIGHLY WEATHERED LIMESTONE light brown				4-6-9-12 N=15
	4.0	WEATHERED LIMESTONE , yellowish-brown				9-8-21-11 N=29
	6.0	Boring Terminated at 6 Feet				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix B for description of laboratory
procedures and additional data (if any).

See Appendix C for explanation of symbols and
abbreviations.

WATER LEVEL OBSERVATIONS

 Groundwater initially observed at a depth of 1.67'.

Terracon
504 East Tyler Street
Tampa, Florida

Boring Started: 9/29/2015

Boring Completed: 9/29/2015

Drill Rig: CME-45

Driller: R. Swint, Sr.

Project No.: H4155013

Exhibit: A-11

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H4155013 PERMEABILITY BORING LOGS.GPJ TERRACON2015.GDT 10/15/15

BORING LOG NO. FP-10

Page 1 of 1

PROJECT: Citrus County Combined Cycle Project

CLIENT: Fluor Enterprises, Inc.
Charlotte, NC

SITE: Citrus County, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 28.9702368° Longitude: -82.6774275°	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
	DEPTH				
	POORLY GRADED SAND WITH SILT (SP-SM) , fine grained, orange-brown, very loose	0.8			
	HIGHLY WEATHERED LIMESTONE	2.0			WOH/6"-2-19-16 N=21
	WEATHERED LIMESTONE , light brown				11-6-23-17 N=29
					17-20-22-22 N=42
					16-17-9 N=26
					
					
					
					
					
					
					
					
					
					
					
					
					
					
					
					
					
					
					
					
					
	Boring Terminated at 7.5 Feet				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix B for description of laboratory
procedures and additional data (if any).

See Appendix C for explanation of symbols and
abbreviations.

WATER LEVEL OBSERVATIONS

 Groundwater initially observed at a depth of 2.30'.

Terracon
504 East Tyler Street
Tampa, Florida

Boring Started: 9/30/2015

Boring Completed: 9/30/2015

Drill Rig: CME-45

Driller: R. Swint, Sr.

Project No.: H4155013

Exhibit: A-12

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H4155013 PERMEABILITY BORING LOGS.GPJ TERRACON2015.GDT 10/15/15

BORING LOG NO. PB-01

Page 1 of 1

PROJECT: Citrus County Combined Cycle Project

CLIENT: Fluor Enterprises, Inc.
Charlotte, NC

SITE: Citrus County, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 28.9699906° Longitude: -82.6774259°	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
DEPTH					
	POORLY GRADED SAND WITH SILT (SP-SM) , fine grained, brown, loose				
1.0					1-2-12-14 N=14
	HIGHLY WEATHERED LIMESTONE light brown				
2.0					
	WEATHERED LIMESTONE , light brown				23-10-23-10 N=33
	white	5			14-27-20-12 N=47
6.0					20-7-8-5 N=15
	HIGHLY WEATHERED LIMESTONE white				WOR/18"=2 N=0
					7-22-41-28 N=63
10.0		10			8-30-35-28 N=65
	WEATHERED LIMESTONE , white				14-11-16-11 N=27
		15			
16.0					
	Boring Terminated at 16 Feet				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix B for description of laboratory
procedures and additional data (if any).

See Appendix C for explanation of symbols and
abbreviations.

WATER LEVEL OBSERVATIONS

 Groundwater initially observed at a depth of 2.40'.

Terracon
504 East Tyler Street
Tampa, Florida

Boring Started: 9/30/2015

Boring Completed: 9/30/2015

Drill Rig: CME-45

Driller: R. Swint, Sr.

Project No.: H4155013

Exhibit: A-13

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H4155013 PERMEABILITY BORING LOGS.GPJ TERRACON2015.GDT 10/15/15

APPENDIX B

Groundwater Modeling Evaluation

Citrus Combined Cycle Plant

Prepared for



Duke Energy Florida, Inc.
Citrus Combined Cycle Project
14385 N. Access Road
Crystal River, FL 34428

GROUNDWATER MODELING EVALUATION- REVISION 1

**Citrus Combined Cycle Plant
14385 N. Access Road
Crystal River, FL**

Prepared by



12802 Tampa Oaks Boulevard, Suite 151
Tampa, Florida 33637

April 2019

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY	1
2. INTRODUCTION	2
2.1 Terms of Reference	2
2.2 Objectives	2
2.3 Report Organization	2
3. SITE DESCRIPTION	3
3.1 Site Location	3
3.2 Site Process Review	3
4.0 REGIONAL GEOLOGY AND HYDROGEOLOGY	5
4.1 Regional Geology	5
4.2 Regional Hydrogeology	5
5.0 SITE GEOLOGY AND HYDROGEOLOGY	6
5.1 Site Geology	6
5.2 Site Hydrogeology	7
6.0 GROUNDWATER MODELING	8
6.1 Model Development	8
6.2 Simulations	9
6.3 Results	10
6.4 Conclusions	11
7.0 REFERENCES	12

LIST OF TABLES

Table 1:	Hydraulic Conductivity Summary
Table 2:	Model Layer Parameter Values
Table 3:	Extraction Well Location and Pumping Rates
Table 4:	Measured Surface Water and Groundwater Elevations
Table 5:	Observed and Computed Groundwater Elevations at CCCP November 2018
Table 6:	Monitor Well Construction Details

TABLE OF CONTENTS, Cont.

LIST OF FIGURES

- Figure 1: Site Location Map
- Figure 2: Proposed Site Layout
- Figure 3: Regional Hydrogeologic Framework
- Figure 4: Soil Borings and Geologic Cross Section Transects
- Figure 5: Geologic Cross Section A-A' (Southwest-Northeast)
- Figure 6: Geologic Cross Section B-B' (Northwest-Southeast)
- Figure 7: Geologic Cross Section C-C' (Southwest-Northeast)
- Figure 8: Model Boundary Conditions
- Figure 9: Model Grid
- Figure 10: Model Recharge Zones and Extraction Wells
- Figure 11: CCCP Site Groundwater Monitoring Network
- Figure 12: Modeled Groundwater Elevations November 2018
- Figure 13: Modeled Groundwater Mounding From Current Pond with 3 Feet of Freeboard
- Figure 14: Modeled Groundwater Mounding From Current Pond with 3 Feet of Freeboard
- Figure 15: Modeled Groundwater Mounding From Proposed North Pond with 3 Feet of Freeboard
- Figure 16: Modeled Groundwater Mounding From North and South Pond Half Full

LIST OF APPENDICES

- Appendix A: Lithologic Logs

1. EXECUTIVE SUMMARY

Geosyntec Consultants (Geosyntec) performed groundwater modeling to evaluate the groundwater flow around the current and proposed percolation pond for the Citrus Combined Cycle Plant (CCCP). The modeled groundwater flow was used to estimate the placement of intermediate, compliance, and background monitoring wells per the requirements of the groundwater monitoring plan being prepared according to Florida Administrative Code (F.A.C.) Rule 62-520.600. The model was used to assess the mounding associated with use of the current pond, the proposed northern pond, and the current pond and proposed pond utilized concurrently.

Geosyntec utilized previously reported geotechnical and hydrogeologic information to evaluate the pond area. This information included soil borings, lithology, hydraulic conductivity, and infiltrometer testing data. Additionally, it was necessary to use data and maps provided by governmental sources (United States Geologic Society (USGS), Southwest Florida Water Management District (SWFWMD), etc.). Geosyntec used the information to develop a three-dimensional, finite difference groundwater flow model. The model was calibrated to groundwater and surface water elevations collected during the industrial waste water (IWW) quarterly sampling in November 2018 associated with the currently operating IWW percolation pond. The model was used to evaluate mounding associated with the current percolation pond and proposed northern percolation pond when they are operating separately at maximum capacity (3 feet of freeboard). Also, the model was used to evaluate the mounding associated with the current and proposed percolation ponds are operating half full of water concurrently.

Simulation results indicate that groundwater flow in the proposed percolation pond area prior to construction is generally to the southwest. Additionally, the modeling indicates that groundwater mounding of 0.1 foot could be expected to occur approximately 2,000 feet downgradient of the IWW percolation pond when it is operated at maximum capacity.

2. INTRODUCTION

2.1 Terms of Reference

This groundwater modeling contained in this report has been completed in support of the Groundwater Monitoring Plan (GWMP) for the proposed Duke Energy Florida, Inc. (Duke) Citrus Combined Cycle Plant (“CCCP” or “Site”). The GWMP was prepared in accordance with Florida Administrative Code (F.A.C.) Rule 62-520.600 to ensure compliance with applicable groundwater quality standards at the Site.

2.2 Objectives

The objective of the Groundwater Modeling Evaluation is to perform a hydraulic mounding analysis of an appropriately sized industrial wastewater (IWW) percolation pond proposed for the CCCP. The model was used to evaluate mounding associated with the current percolation pond and proposed northern percolation pond when they are operating separately at maximum capacity (3 feet of freeboard). Also, the model was used to evaluate the mounding associated with the current and proposed percolation ponds are operating half full of water concurrently. These scenarios were then used to select locations for intermediate, compliance, and background monitoring wells.

2.3 Report Organization

The Groundwater Modeling Evaluation is organized as follows:

- **Section 3** - identifies the site location and planned operations at the CCCP;
- **Section 4** - briefly describes the regional geology and hydrogeology near the CCCP and create the regional conceptual model;
- **Section 5** - briefly describes the site geology and hydrogeology of the CCCP used to create the site conceptual model;
- **Section 6** - provides a summary of the groundwater model input parameters, model domain creation, model calibration, parameter sensitivity analysis, and results.

3. SITE DESCRIPTION

3.1 Site Location

The Site is adjacent to the eastern boundary of Duke’s existing Crystal River Energy Complex (CREC) located at 14385 North Access Road, Crystal River, (Citrus County) FL 34428 (**Figure 1**) and consists of approximately 400 acres. The Site is located in Section 22, Township 17 south, and Range 16 east, near latitude 28° 57’ 54” N and longitude 82° 39’ 50” W. The facility consists of two combined cycle generation units using a natural gas fuel source to produce approximately 800 megawatts each for a total of 1,600 megawatts.

3.2 Site Process Review

Construction activities for the CCCP began in early 2016. Commercial operation began in May 2018 for the first unit and December 2018 for the second unit. The power plant consists of two combined cycle generating units. Each unit consists of two advanced combustion turbine generators, two heat recovery steam generators, and one steam turbine generator (**Figure 2**). The condenser cooling system is a closed-loop, recirculating system consisting of a new mechanical draft cooling tower system for each combined cycle unit. Cooling tower makeup water consists of seawater withdrawn from the existing CREC intake canal through the existing Crystal River Unit 3 intake structure. Groundwater use is minimized through the use of seawater for cooling water. Cooling tower blowdown is discharged via the existing CREC discharge canal through a discharge structure. Process and potable freshwater needs for the Site include demineralized water for steam cycle makeup, plant service water, wash water, fire protection water, and potable water. The freshwater needs are provided through the current groundwater withdrawals using the existing water use permit (WUP) for the CREC.

Industrial wastewater (IWW) discharges include low-volume waste streams as defined in 40 CFR Part 423. These discharges include, but are not limited to, flows from plant service water systems and floor drains, blowdown from the heat recovery steam generators (HRSGs), raw water treatment filter backwash, neutralized condensate polisher regeneration wastes, and other residual waters from the demineralized water treatment systems. Discharges from these sources are treated, as appropriate, and discharged to the appropriately sized on-Site percolation pond. With the exception of cooling tower blowdown, IWWs are not discharged to surface waters. The percolation pond system will be designed in accordance with all applicable nonprocedural requirements for IWW percolation ponds (ECT, 2014).

The wastewater from floor and equipment drains throughout the plant may be exposed to oily products and, therefore, will be collected and treated through oil/water separators. Residual water from the demineralized water system is neutralized. Infrequent HRSG and pipe cleaning that produces metal cleaning wastes is collected and disposed off-Site by a licensed vendor (ECT, 2014). Sanitary wastewater is sent to an onsite, appropriately sized, package domestic wastewater treatment plant and the treated effluent is discharged to the proposed IWW pond.

A stormwater management system has been designed to handle and treat the 25-year, 24-hour storm event in accordance with all applicable nonprocedural requirements, including the requirements in Chapter 62-330, F.A.C. Potential contact stormwater runoff from the power block and equipment areas is treated through oil/water separators and routed to the on-Site IWW percolation pond system. Noncontact stormwater runoff is collected and routed to the stormwater detention ponds.

The Site also includes associated facilities, such as closed-cycle mechanical draft cooling towers, administration/warehouse building and parking, auxiliary boiler, emergency diesel generators, firewater pump, water treatment and storage tank facilities, switchyard, stormwater management system and detention ponds (ECT, 2014).

4.0 REGIONAL GEOLOGY AND HYDROGEOLOGY

Historical documents provided by Duke were reviewed to evaluate regional and site-specific geologic and hydrogeologic features. These documents were used to develop the site conceptual model and to develop the model domain.

4.1 Regional Geology

The Site lies within the Coastal Swamps physiographic region and near the boundary of the Gulf Coastal Lowland physiographic region (Knochenmus and Yobi, 2001). The general hydrogeologic units that form the hydrogeologic framework in the region include the discontinuous, siliciclastic Surficial Aquifer System (SAS) and the limestone and dolostone of the Upper Floridan Aquifer System (UFAS).

Sediments within the SAS are characterized as undifferentiated surficial deposits (USDs) and are comprised of a discontinuous veneer of sands, clayey sands, and shell. Thicknesses vary considerably due to the irregular surface of the underlying limestone (Spencer, 1984). A component of the USDs is comprised of residual and reworked Hawthorn formation derived from the fluctuation of sea level (Faulkner, 1973).

Regionally, the UFAS is comprised of (in descending order) the Suwannee Limestone, the Ocala Group Limestone (including the Crystal River, Williston, and Inglis Formations), and the Avon Park Limestone (Spencer, 1984). A generalized regional cross-section is included in **Figure 3**.

4.2 Regional Hydrogeology

Groundwater in the area occurs in the unconsolidated SAS and porous limestone of the UFAS. In the vicinity of the CCCP, the UFAS is unconfined due to the absence of well developed, low permeability sediments between the SAS and UFAS (Spencer, 1984). The predominant regional groundwater flow is generally from northeast to southwest toward the Gulf of Mexico with variability attributable to topography and lithology.

Regional groundwater quality data indicates that historic withdrawal of groundwater within the UFAS has resulted in saltwater intrusion along much of Florida's Gulf Coast (Guvanasen, 2000). Prior data from two USGS wells located at the CREC indicates that the upper transmissive zone of the Inglis Formation has a higher concentration of chlorides (200 to 1,800 milligrams per liter [mg/L]) than the lower transmissive zone (approximately less than 20 mg/L) (ESE, 1984) providing some evidence of saltwater encroachment near the CREC.

5.0 SITE GEOLOGY AND HYDROGEOLOGY

5.1 Site Geology

The geologic and hydrogeologic units, in order of increasing depth below land surface, at the Site are summarized below.

- *Undifferentiated Surficial Deposits (USDs)* - The USDs are comprised of brown to grey silty sands to sandy clays with muck ranging in thickness from 0 to 20 ft below land surface (BLS) (AMEC, 2013 and Terracon, 2015). The thickness of the USDs is variable as a result of the irregular surface of the underlying limestone. Due to the limited extent of the USDs, the SAS is only locally present at the Site where saturated unconsolidated sediments are present.
- *Inglis Formation of the Ocala Group* - Encountered between land surface and 20 ft BLS, this white, fossiliferous, and friable limestone is the uppermost hydrogeologic unit of the UFA. The Inglis Formation is cavernous with solution channels and cavities. Permeable zones within the Inglis Formation are present at depths of less than 30 ft BLS and between 40 and 60 ft BLS (the base of the Inglis Formation).
- *Avon Park Formation* - Encountered between 45 and 70 ft BLS, the Avon Park Formation is comprised of an occasionally dolomitized limestone and well indurated limestone (AMEC, 2013 and Spencer, 1984). The Avon Park Formation is the formation utilized for water supply for CREC operations.

Two geotechnical investigations were completed at the Site in November 2013, by AMEC and in October 2015 by Terracon. AMEC completed 25 standard penetration test (SPT) soil borings within the footprint of the proposed Site facilities that ranged in depths from 26 ft BLS to approximately 100 ft BLS (AMEC, 2013). **Figure 4** shows the locations of the completed SPTs along with the transects of three cross-sections prepared using lithologic information from the boring logs. The cross-sections are included as **Figures 5** through **Figure 7**. The report indicates several “weak” locations where the SPT was driven by the weight of the drilling rod without hammering. Most of the “weak” locations only occurred over an interval of several feet and can be attributed to weathered limestone lenses or small solution cavities. However, at boring B-15, a weak zone that was approximately 23 ft deep was encountered and the boring had to be abandoned due to unsafe drilling conditions.

Terracon completed several shallow SPT borings across the Site to evaluate the potential locations of several large diameter circulation water pipes and the proposed percolation pond. The borings were completed to depths of between 6 and 16 ft BLS and were logged for soil type and density. In addition, Geosyntec installed four IWW monitoring wells associated with the previous GWMP (Geosyntec, 2016). The reported lithologic logs are included in **Appendix A**. Lithologic descriptions are comparable to the AMEC report and similar geology is apparent across the Site.

5.2 Site Hydrogeology

The UFA and the SAS (where present) have similar flow patterns with groundwater predominantly flowing from northeast to southwest at the Site. Flow directions may vary due to the complex subsurface character of the UFAS caused by solution cavities, tidal fluctuations, and surface water features.

Terracon completed several in-situ, down-hole permeability tests and double ring infiltrometer (DRI) tests during the geotechnical investigation in October 2015 (Terracon, 2015). The down-hole permeability tests were conducted by pumping the un-cased portion of a test boring and measuring the recovery time between two set water level indicators after the pump was shut off. The calculated permeabilities range from 0.3 feet per day (ft/day) to 51 ft/day with an average of 12.8 ft/day. A summary of the calculated permeabilities are included in **Table 1**. It should be noted that these permeabilities may be biased low due to the small volume of aquifer perturbed during the testing. Additional hydraulic conductivity data collected during previous evaluations at the CREC indicate that hydraulic conductivities range from 7.9 to 170 feet per day in the shallow part of the UFA.

Two DRI tests were performed in the proposed storm water retention area of the Site. The DRI test procedure consisted of installing a 12-inch diameter steel ring and a 24-inch diameter steel ring concentrically into the ground. Water was then added to a desired head level of approximately 12 inches in both casings and held constant. The amount of infiltration observed in the inner ring versus time was then recorded. The results of the DRI tests indicate an average infiltration rate of 4.9 inches per hour (Terracon, 2015).

6.0 GROUNDWATER MODELING

The sections below document the design of the groundwater model.

6.1 Model Development

The model was conceptualized as a nine layer equivalent porous media flow system. The model layers and corresponding stratigraphy are described below. Parameter values assigned to the model layers are presented in **Table 2**.

- Layer 1: Surficial aquifer system (land surface extending to midpoint between land surface and UFA). It should be noted that the land surface in the area of the proposed percolation pond was altered to reflect a proposed berm crest height of 15.0 feet NGVD 29 with a 1 foot vertical to 4 feet horizontal berm slope. The effective base of the current percolation pond was set at an elevation of 5.5 ft NGVD 29, the bottom of the proposed northern percolation pond was set to 6.5 feet NGVD, and the bottom of the storm water ditch located north of the percolation pond was set at an elevation of 6.5 ft NGVD29.
- Layer 2: Surficial aquifer system (midpoint between land surface and UFA and UFA)
- Layer 3: higher hydraulic conductivity zone of Ocala Limestone (top of UFA to -20 ft NGVD 29)
- Layer 4: lower hydraulic conductivity zone of Ocala Limestone (-20 to -30 ft NGVD29)
- Layer 5: higher hydraulic conductivity zone of Ocala Limestone (-30 to -50 ft NGVD 29)
- Layer 6: lower hydraulic conductivity zone of Avon Park formation (-50 to -60 ft NGVD29)
- Layer 7: higher hydraulic conductivity zone of Avon Park formation (-60 to -130 ft NGVD 29)
- Layer 8: higher hydraulic conductivity zone of Avon Park formation (-130 to -200 ft NGVD 29)
- Layer 9: lower hydraulic conductivity zone of Avon Park formation (-200 to -590 ft NGVD29)

The model was constructed in GMS v. 10.2 which is a pre-processor for the USGS modular finite difference modeling program MODFLOW (McDonald and Harbaugh,

2005). The finite-difference grid consists of 450 rows and 815 columns of computational cells. The largest cells were 2,000 ft by 2,000 ft in the distal areas and the smallest were 10 ft by 10 ft in the immediate vicinity of the ponds, near the coal combustion residual materials at the CREC and near Site production wells¹.

Several types of boundary conditions were utilized in the simulation to constrain the numerical solution along the periphery of the model domain. Dirichlet-type (constant head) boundaries set to a specified head of -1.98 ft NGVD29 were placed along the western domain edge to simulate the Gulf of Mexico shoreline and hydraulically connected intake and discharge canals as reported on 16 October 2012 at low tide (Saltwater Tides, 2012). Additional constant head boundary conditions were placed at the CREC facility based on staff gauge measurements, where available, and LIDAR data (FGDL, 2015). Constant head type boundary conditions were also placed along various streams, rivers, and quarry surfaces as indicated by USGS topographic maps and LIDAR (FGDL, 2015). **Figure 8** presents the location of the boundary conditions and **Figure 9** presents the model grid.

The von Neumann-type (specified flux) boundaries of recharge were applied across the model domain within the ranges estimated by the Southwest Florida Water Management District (SWFWMD) data set (FGDL 2015). This resulted in three recharge zones. Closest to the coast there was no recharge as groundwater generally discharges in these areas. Further inland, the recharge was set at 5 inches per year and furthest to the east, the recharge was set at 7.5 inches per year. Additionally, several industrial and commercial water extraction wells are present within the model domain. **Figure 10** shows the location of the recharge zones and extraction wells in the model domain and **Table 3** summarizes the locations and extraction rates of individual wells.

The current and proposed percolation ponds were simulated at steady state conditions and at maximum capacity of three feet of freeboard (i.e. elevation 12 feet NGVD29). This was accomplished through the use of a constant head boundary condition.

6.2 Simulations

Groundwater and surface water elevations collected during 2017 and 2018 near the current IWW percolation pond are shown in **Table 4**. The original IWW percolation pond was not operational until 2018. The locations of these wells are shown on **Figure 11**. The modeled November 2018 groundwater and surface water elevations were compared against those computed in the model as shown on **Table 5**.

¹ It should be noted that this groundwater model was initially developed for the CREC and modified to evaluate the CCCP. The model developed for the CREC was properly calibrated and will be documented in a separate report.

The average daily discharge to the IWW percolation pond plus the average daily precipitation directly to the percolation pond were simulated as recharge to the pond to simulate the conditions in November 2018. The measured groundwater and surface water elevations at the site ranged from 3.97 to 11.40 feet NGVD29. The normalized root mean square error (NRMSE) was approximately 5.8%. Typically, it is desirable for the NRMSE to be less than 10%. As derived from **Table 5**, the average residual is -0.29 feet. This indicates the model is reasonably well calibrated in the vicinity of the current CCCP IWW percolation pond. The modeled groundwater flow field from the November 2018 sampling event is shown on **Figure 12**.

6.3 Results

The calibrated groundwater model simulations indicate that prior to development of the CCCP facility, groundwater flow is to the southwest. This is the same as was reported in Section 4.2. Additionally, simulations were performed to show the steady state groundwater mounding associated with keeping three feet of freeboard in the current percolation pond (**Figures 13 and 14**) and proposed northern percolation pond (**Figure 14**) separately. Another simulation was conducted to evaluate the groundwater mounding associated with operating both ponds half full of water (**Figure 15**). The results of the model showed that groundwater mounding of up to 0.1 feet due to the presence of the IWW pond exists at distances up to 2,000 feet from the IWW pond. It showed similar mounding in the proposed IWW pond to be constructed immediately north of the current IWW pond.

Current groundwater quality at the CCCP is based on wells installed as part of the current GWMP. These IWW wells include MWB-1, MW-2, MW-3, and MW-4. Based on review of this recalibrated model, it is proposed that MWB-1 remain a background monitoring well, but the remaining wells (MW-2, MW-3, and MW-4) become intermediate wells. Since the use of the proposed northern IWW pond is predicted to cause mounding to the north, an intermediate well is proposed (MW-5) to be located no more than 100 feet north of the proposed northern IWW pond. Additionally, the groundwater mounding associated with the current IWW pond and the proposed northern IWW is predicted to cause groundwater mounding of 0.1 feet approximately 2,000 feet downgradient of the current and IWW pond. Therefore, it is proposed that a well designed to monitor the edge of the ZOD (MW-6) be placed approximately 2,000 feet to the southeast of the IWW Ponds. The locations of the current and proposed groundwater monitoring wells are shown on **Figure 14** and well construction details are summarized in **Table 6**.

A sensitivity analysis was performed on the steady-state simulation. The horizontal hydraulic conductivity of the first four layers (i.e. those representing the surficial aquifer system and UFA) were increased. The ability of the model to match the surface water in the pond was greatly dependent on the hydraulic conductivity of the material directly

beneath the pond in layer 2. The ability to match the groundwater elevations in the IWW wells (MWB-1, MW-2, MW-3, and MW-4) was most sensitive to the hydraulic conductivities in layers 3 and 4 (UFA). from 14.2 to 75 feet per day and the horizontal hydraulic conductivity to vertical hydraulic conductivity ratio was maintained at three. The greater than 5 time increase in hydraulic conductivity lowered the predicted steady state stage of the proposed percolation pond during normal operations from 7.3 ft to 6.9 ft NGVD29.

6.4 Conclusions

The results of the model showed that groundwater mounding of up to 0.1 feet due to the presence of the IWW pond exists at distances up to 2,000 feet from the IWW pond. It showed similar mounding in the proposed IWW pond to be constructed immediately north of the current IWW pond. Based on this the current wells surrounding the IWW percolation pond should be considered intermediate wells, an additional intermediate well should be placed north of the proposed northern percolation pond, and a compliance well should be placed at the edge of the ZOD approximately 2,000 feet downgradient of the proposed percolation ponds.

7.0 REFERENCES

- AMEC, 2013. Site Characterization and Preliminary Geotechnical Design Recommendations. Lakeland, FL. December 2013.
- McDonald, M.G., and Harbaugh, A.W. 2005. The U.S. Geological Survey Modular Ground-Water Model – The Groundwater Flow Process: U.S. Geological Survey Techniques and Methods 6-A16.
- ESE, Proposed Ground Water Monitoring Plan for Crystal River Energy Complex, Gainesville, FL, February 1984
- ECT, 2014. Duke Energy Florida, Inc. Citrus Combined Cycle Project Site Verification Application, Gainesville, FL. August 2014.
- Faulkner, G.L. 1973. Geohydrology of the Cross-Florida Barge Canal with special reference to the Ocala vicinity. U.S. Geological Survey Water-Resources Investigations 1-73.
- FDGL, 2015 <http://www.fgdl.org/metadataexplorer/explorer.jsp>
- Guvanasen, V., Wade, S. C. and Barcelo, M. D. (2000), Simulation of Regional Ground Water Flow and Salt Water Intrusion in Hernando County, Florida. Groundwater, 38: 772–783.
- Knochenmus, L.A. and D.K. Yobbi. 2001. Hydrology of the Coastal Springs Ground-Water Basin and Adjacent Parts of Pasco, Hernando, and Citrus Counties, Florida. US Geological Survey Water-Resources Investigations Report 01-4230.
- Spencer, Steven M., “Geology of Citrus County, Florida”, Florida Geological Survey, Open file Report No. 5, Tallahassee, Florida, 1984
- Saltwater Tides, 2012 <http://www.saltwatertides.com/dynamic.dir/floridagulfsites.html>
- Terracon, 2015. Geotechnical Engineering Report Citrus County Combined Cycle Project, Charlotte, NC. October 15, 2015.

TABLES

Table 1: Hydraulic Conductivity Summary

Citrus Combined Cycle Plant
Crystal River, FL

Boring No.	Trial No.	k (cm/sec)	k (ft/day)
FP-01	1	7.70E-03	21.8
	2	7.10E-03	20.1
	3	7.40E-03	21.0
FP-02	1	3.80E-04	1.1
	2	2.70E-04	0.8
	3	3.30E-04	0.9
	4	3.60E-04	1.0
FP-03	1	4.00E-03	11.3
	2	4.00E-03	11.3
	3	4.10E-03	11.6
FP-04	1	5.00E-04	1.4
	2	5.60E-04	1.6
	3	5.10E-04	1.4
FP-05	1	1.70E-02	48.2
	2	1.80E-02	51.0
	3	1.60E-02	45.4
FP-06	1	5.90E-03	16.7
	2	5.80E-03	16.4
	3	6.20E-03	17.6
FP-07	1	5.80E-03	16.4
	2	5.90E-03	16.7
	3	5.70E-03	16.2
FP-08	1	8.50E-03	24.1
	2	7.50E-03	21.3
	3	7.80E-03	22.1
FP-09	1	9.60E-05	0.3
	2	1.80E-04	0.5
	3	2.30E-04	0.7
	4	2.80E-04	0.8
	5	2.50E-04	0.7
FP-10	1	1.50E-04	0.4
	2	1.80E-04	0.5
	3	1.80E-04	0.5
Geometric Mean		1.61E-03	4.6

Notes:

No. = number

k = permeability

cm = centimeter

sec = second

ft = feet

Source: Geotechnical Engineering Report, Terracon
Consultants, Inc., 2015

Table 2: Preconstruction Groundwater Quality Data

Citrus Combined Cycle Plant
Crystal River, FL

Location	Date	pH (S.U.)	Temp (°C)	Specific Conductance (µmhos/cm)	Turbidity (NTUs)	Chloride (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TDS (mg/L)	Arsenic (ug/L)	Cadmium (ug/L)	Chromium (ug/L)	Lead (ug/L)
	Compliance Limit	6.5 - 8.5	Report	Report	Report	250	10	250	500	10	5	100	15
MWC-12R	4/24/2013	7.04	21.70	893	5.14	68.2	0.120 U	17.3	393	5 U	0.5 U	2.5 U	5 U
	7/16/2013	6.60	24.01	720	1.34	72.7	0.025 U	19.0	592	5 U	0.5 U	2.5 U	5 U
	10/2/2013	7.03	23.04	787	1.37	79.4	0.043 U	17.1	401	5 U	0.5 U	2.5 U	5 U
	1/10/2014	6.60	21.53	832	1.17	81.7	0.059	17.8	350	5 U	0.5 U	2.5 U	5 U
	4/17/2014	6.56	20.20	791	1.67	86.4	0.450	17.1	466	5 U	0.5 U	2.5 U	5 U
	7/17/2014	5.93	23.10	802	0.34	87.4	-	20.6	454	5 U	0.5 U	2.5 U	5 U
	10/10/2014	5.80	22.68	821	0.82	87.5	0.025 U	20.1	435	5 U	0.5 U	2.5 U	5 U
	4/10/2015	7.04	21.16	806	0.67	87.6	0.025	19.5	485	5 U	0.5 U	2.5 U	5 U
	7/15/2015	6.66	19.85	825	0.17	88.4	0.050 U	19.7	416	5	0.5 U	2.5 U	5 U
	10/9/2015	6.41	21.46	896	0.9	91.5	0.050 U	28.2	441	5 U	0.5 U	2.5 U	5 U
	1/14/2016	7.03	18.05	844	0.58	85.5	0.050 U	23.5	425	5 U	0.5 U	2.5 U	5 U
	4/8/2016	7.11	18.67	975	0.76	87.6	0.027 I	25.6	465	5 U	0.5 U	2.5 U	5 U
	7/11/2016	6.72	21.95	808	0.33	89.1	0.050 U	25	414	5 U	0.5 U	2.5 U	5 U
	10/11/2016	7.56	23.01	811	1.4	85.5	0.050 U	26.7	430	5 U	0.5 U	2.5 U	5 U
	1/10/2017	7.01	21.57	739	0.33	86.5	0.043	26.1	438	5 U	0.5 U	2.5 U	5 U
	4/5/2017	7.08	22.76	746	0.69	84.1	0.031 J	26.6	476	5 U	0.5 U	2.5 U	5 U
	7/12/2017	6.81	24.25	741	1.24	88.6	0.025 U	30.3	438	5 U	0.5 U	2.5 U	5 U
	10/13/2017	-	-	-	-	84.8	0.025 U	25.6	391	5 U	0.5 U	2.5 U	5 U
	1/5/2018	7.07	19.3	733	1.11	84	0.041 J	24.8	424	5 U	0.5 U	2.5 U	5 U
	4/12/2018	6.91	22.9	759	3.52	85.7	0.042 J	27.5	476	5 U	0.5 U	2.5 U	5 U
	10/8/2018	7.04	24.4	792	6.38	88.2	0.025 U	26.5	436	0.62	0.33 U	1.7 U	0.5 U
	1/7/2019	7.12	22.1	838	0.41	86.9	0.026 J	31.4	469	0.78	0.33 U	1.7 U	0.5 U

Table 2: Preconstruction Groundwater Quality Data

Citrus Combined Cycle Plant
Crystal River, FL

Location	Date	pH (S.U.)	Temp (°C)	Specific Conductance (µmhos/cm)	Turbidity (NTUs)	Chloride (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TDS (mg/L)	Arsenic (ug/L)	Cadmium (ug/L)	Chromium (ug/L)	Lead (ug/L)				
	Compliance Limit	6.5 - 8.5	Report	Report	Report	250	10	250	500	10	5	100	15				
MWB-30R	4/24/2013	7.56	20.05	637	2.59	5.9	0.560	11.3	520	5	U	0.5	U	2.5	U	5	U
	7/17/2013	6.27	23.55	494	1.03	5.4	0.590	13.6	252	5	U	0.5	U	2.5	U	5	U
	10/16/2013	7.79	22.26	715	0.65	8.2	0.560	-	176	5	U	0.5	U	2.5	U	5	U
	1/10/2014	7.30	20.73	393	0.63	5.4	0.230	13.1	219	5	U	0.5	U	2.5	U	5	U
	4/17/2014	7.52	18.56	346	0.52	6.8	0.330	11.2	178	5	U	0.5	U	2.5	U	5	U
	7/17/2014	7.12	21.16	320	0.29	7.2	-	10.8	155	5	U	0.5	U	2.5	U	5	U
	10/10/2014	6.99	22.13	356	0.71	7.0	0.320	11.5	189	5	U	0.5	U	2.5	U	5	U
	1/13/2015	6.84	18.31	378	0.25	5.5	0.140	-	185	5	U	0.5	U	2.5	U	5	U
	1/29/2015	6.84	16.29	363	0.16	-	-	-	-	-	-	-	-	-	-	-	-
	4/10/2015	7.58	18.21	329	0.45	7.2	0.410	9.2	196	5	U	0.5	U	2.5	U	5	U
	7/15/2015	6.82	20.29	367	0.29	6.7	0.37	10.9	187	5	U	0.5	U	2.5	U	5	U
	10/9/2015	7.42	20.61	362	0.69	7	0.39	9.4	150	5	U	0.5	U	2.5	U	5	U
	1/14/2016	7.52	18.58	359	0.44	7.1	0.36	10.3	184	5	U	0.5	U	2.5	U	5	U
	4/8/2016	7.66	17.4	685	0.93	6.2	0.25	13.9	197	5	U	0.5	U	2.5	U	5	U
	7/11/2016	6.94	19.92	344	0.33	6.6	0.29	13	171	5	U	0.5	U	2.5	U	5	U
	10/11/2016	7.55	24.49	352	1.5	5	0.13	15.1	183	5	U	0.5	U	2.5	U	5	U
	1/10/2017	7.26	23.14	328	0.27	5.1	0.19	14.1	207	5	U	0.5	U	2.5	U	5	U
	4/5/2017	7.77	22.66	491	0.42	23.8	0.17	15.5	282	5	U	0.5	U	2.5	U	5	U
	7/10/2017	6.3	25.19	1160	0.79	254	0.12	21.9	658	5	U	0.5	U	2.5	U	5	U
	8/17/2017	6.78	25.69	1186	0.83	221	0.12	21.9	702	5	U	0.5	U	2.5	U	5	U
	10/13/2017	7.2	25.9	1418	0.42	281	0.11	23.6	722	5	U	0.5	U	2.5	U	5	U
	1/5/2018	7.15	22.9	903	0.53	170	0.11	23.9	476	5	U	0.5	U	2.5	U	5	U
	4/12/2018	7.14	22.2	806	0.54	153	0.14	22.5	525	5	U	0.5	U	2.5	U	5	U
	7/13/2018	7.2	24.3	686	0.61	104	0.42	21.6	454	5	U	0.5	U	2.5	U	5	U
	10/8/2018	7.18	25.1	1090	4.53	194	0.13	20.2	631	0.5	U	0.33	U	1.7	U	0.5	U
	1/7/2019	7.33	22.6	699	0.12	97.2	0.31	17.7	402	0.5	U	0.33	U	1.7	U	0.5	U

Table 2: Preconstruction Groundwater Quality Data

Citrus Combined Cycle Plant
Crystal River, FL

Location	Date	pH (S.U.)	Temp (°C)	Specific Conductance (µmhos/cm)	Turbidity (NTUs)	Chloride (mg/L)	Nitrate (mg/L)	Sulfate (mg/L)	TDS (mg/L)	Arsenic (ug/L)	Cadmium (ug/L)	Chromium (ug/L)	Lead (ug/L)
	Compliance Limit	6.5 - 8.5	Report	Report	Report	250	10	250	500	10	5	100	15
MWB-1	11/1/2017	6.88	24.4	587	16.09	12.1	0.200 U	16.2	356	3.9	0.2 U	1 U	1 U
	2/27/2018	7.12	22.7	765	2.4	7.3	0.010 U	14.0	266	6.3	0.2 U	1 U	1 U
	5/17/2018	6.91	22.9	550	7.51	8.2	0.010 U	20.8	272	6.6	0.2 U	1.2 I	1 U
	8/27/2018	7.35	24.9	621	3.3	8.4	0.010 U	29.3	346	7.9	0.2 U	1 U	1 U
	11/13/2018	7.07	24.8	684	5.15	8.9	0.010 U	34.8	762	6.5	0.2 U	1 U	1 U
MW-2	11/1/2017	6.85	25.7	791	17.74	68.9	0.200	19.9	438	7.88	0.2 U	1 U	1 U
	2/27/2018	6.97	22.8	710	11.58	45.4	0.011 I	24.9	366	10.9	0.2 U	2	1 U
	5/17/2018	6.93	23.4	837	8.24	73.6	0.010 U	31.2	438	13.2	0.2 U	2.4	1 U
	8/27/2018	7.24	26.0	1,091	7.49	156.3	0.010 U	54.7	608	13.9	0.2 U	1.2 I	1 U
	11/13/2018	7.18	29.4	806	12.83	78.5	0.010 U	37.6	808	23.7	0.2 U	2.2	1 U
MW-3	11/1/2017	6.73	25.3	1,302	13.78	215.1	0.200 U	39.2	790	3.9	0.2 U	1 U	1 U
	2/27/2018	6.85	23.6	1,268	3.77	182.5	0.010 U	34.0	692	1 U	0.2 U	1 U	1 U
	5/17/2018	6.83	23.3	1,150	14.29	145.9	0.049	34.9	578	2.6	0.2 U	1.9 I	1 U
	8/27/2018	7.08	24.8	1,289	3.96	186.3	0.010 U	45.5	702	5.2	0.2 U	1.1 I	1 U
	11/13/2018	6.92	26.2	1,136	1.78	132.5	0.011 I	57.2	556	7.6	0.2 U	1 U	1 U
MW-4	11/1/2017	6.94	25.2	834	19.33	110.5	0.200 U	23.1	506	2.3	0.2 U	1 U	1 U
	2/27/2018	7.02	22.7	765	4.47	77.1	0.010 U	20.4	414	15.1	0.2 U	1 U	1 U
	5/17/2018	7.00	22.9	838	4.14	86.5	0.010 U	26.0	446	10.1	0.2 U	1.3 I	1 U
	8/27/2018	7.29	24.9	888	7.09	105.8	0.010 U	27.2	502	4	0.2 U	1 U	1 U
	11/13/2018	7.10	25.0	974	8.14	117.7	0.010 U	35.7	502	4.3	0.2 U	1 U	1 U
CCCP IWW Pond	2/27/2018	9.22	20.3	475	1.58	8.6	0.055	32.4	252	4.7	0.2 U	1 U	1 U
	5/17/2018	7.52	26.6	298	6.85	10.1	0.0362	21.6	224	9.5	1.1 U	2.7	1.1 U
	8/27/2018	7.78	31.0	766	9.27	13.9	0.010 U	31.8	340	7.8	0.2 U	1 U	1 U
	11/13/2018	8.08	36.1	1,224	5.92	194.0	0.014 I	59.1	598	10.1	0.2 U	1.1 I	1 U

Notes:

S.U. = Standard units

°C = degrees Celsius

NTU = Nephelometric Turbidity Unit

µmhos/cm = micromhos per centimeter

mg/L = milligrams per liter

ug/L = micrograms per liter

TDS = Total Dissolved Solids

Table 3: Extraction Well Location and Pumping Rates

Citrus Combined Cycle Plant
Crystal River, FL

Well Name	Easting (ft)	Northing (ft)	Flow Rate (ft ³ /d)	Top of Screen Interval (ft)	Bottom of Screen Interval (ft)
WELL #1	455,520.23	1,678,840.60	-133.68	3.59	-166.41
SEVEN RIVERS WELL # 2	456,817.65	1,679,542.82	-13,769.14	5.63	-171.37
SEVEN RIVERS WELL	455,737.13	1,680,057.98	-1,470.49	4.27	-341.73
WELL #5	451,539.56	1,682,267.69	-38,099.09	-24.83	-61.83
WELL #4	452,687.92	1,682,376.04	-38,099.09	-26.89	-114.89
WELL #3	453,718.28	1,682,366.51	-50,798.78	-25.00	-79.00
WELL #1	454,780.28	1,682,413.94	-57,602.95	-24.50	-189.50
WELL #2	455,288.84	1,682,428.32	-57,602.95	-36.05	-189.05
WELL #3	455,792.07	1,682,462.02	-57,602.95	-50.50	-190.50
WELL #4	456,291.60	1,682,461.56	-57,602.95	-31.07	-190.07
WELL #5	456,791.82	1,682,469.83	-57,602.95	-24.78	-189.78
WELL #6	457,288.77	1,682,466.12	-57,602.95	-39.96	-189.96
WELL #7	457,812.43	1,682,493.19	-57,602.95	-40.23	-190.23
WELL #8	458,316.39	1,682,485.46	-57,602.95	-39.20	-189.20
WELL #9	458,810.22	1,682,496.34	-57,602.95	-37.94	-187.94
WELL #10	459,313.25	1,682,491.17	-57,602.95	-39.58	-189.58
PW-1A1B	432,532.33	1,683,279.58	-6,684.03	2.17	-32.66
SPRINGHORN W S WELL	459,293.18	1,680,724.03	-200.52	5.92	-186.08
CAST AWAYS WELL #1	457,277.39	1,675,125.20	-133.68	3.42	-166.58
CEDAR LAKE ESTATES WELL	458,080.71	1,676,009.34	-200.52	2.82	-72.18
THUNDERBIRD MHP WELL #1	460,392.60	1,669,256.71	-2,205.74	2.41	-32.59
SHAMROCK INDUSTRIAL PARK	473,052.70	1,682,401.82	-1,470.49	17.61	-152.39
CITRONELLE DOLLAR GENERAL	474,364.33	1,688,949.18	-133.68	21.68	-148.32
J & D TEXACO FOOD MART	474,698.58	1,688,441.40	-133.68	17.15	-152.85
CITRONELLE PARK	475,141.89	1,688,670.91	-133.68	15.35	-154.65
WELL #1	475,946.12	1,690,832.48	-200.52	17.05	-107.95

Notes:

Data retrieved from WMIS database (www18.swfwmd.state.fl.us/erp/erp/search/ERPSearch.aspx)

Pumping rates for CREC production wells (Well #1 through #10 and PW-1A1B provided by Duke)

Table 4: Measured Surface Water and Groundwater Elevations

Citrus Combined Cycle Plant
Crystal River, FL

Dates	Water Elevations (ft., NGVD29)				
	MWB-1	MW-2	MW-3	MW-4	IWW Percolation Ponds
11/1/2017	4.16	3.95	3.88	3.81	-
2/27/2018	4.58	4.13	4.03	4.00	-
5/17/2018	3.17	2.91	2.87	2.87	-
8/27/2018	6.60	6.04	5.86	5.61	10.17
11/13/2018	4.19	4.31	4.20	3.97	12.20
2/14/2019	6.10	5.79	5.74	5.41	10.90

Table 5: Observed and Computed Groundwater Elevations at CCCP 13 November 2018

Citrus Combined Cycle Plant
Crystal River, FL

Monitoring Well Location	Observed Groundwater Elevation (ft)	Computed Groundwater Elevation (ft)	Residual (ft)	Absolute Residual (ft)
MWB-1	4.19	4.96	-0.78	0.78
MW-2	4.31	4.55	-0.25	0.25
MW-3	4.20	4.53	-0.33	0.33
MW-4	3.97	4.31	-0.35	0.35
IWW Percolation Pond	11.40	11.18	0.23	0.23

Notes

Min. measured value = 3.97 ft

Max. measured value = 11.40 ft

Root mean squared error =0.43

Normalized root mean square error = 0.058

Average absolute residual = 0.39 ft

Elevations are referenced to NGVD29

Table 6: Monitor Well Construction Details

Citrus Combined Cycle Plant
Crystal River, FL

Well ID	Designation	Diameter (in)	Total Depth (ft bls)	Screen Interval (ft bls)
MWB-1	Background	2	25	15 - 25
MW-2	Monitoring	2	20	10 - 20
MW-3	Monitoring	2	20	10 - 20
MW-4	Monitoring	2	25	15 - 25
MW-5*	Monitoring	2	20	10 - 20
MW-6*	Monitoring	2	20	10 - 20

Notes:

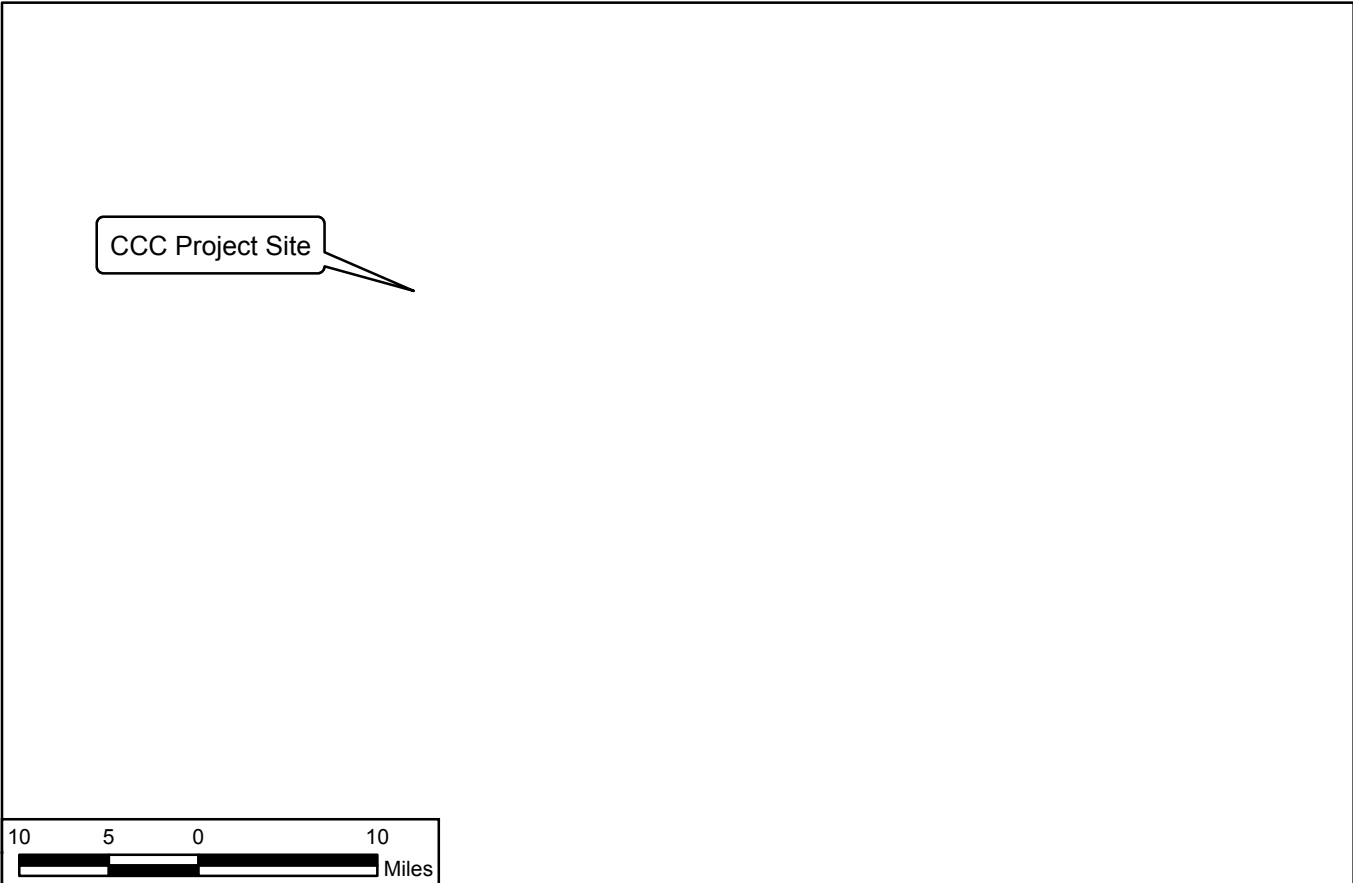
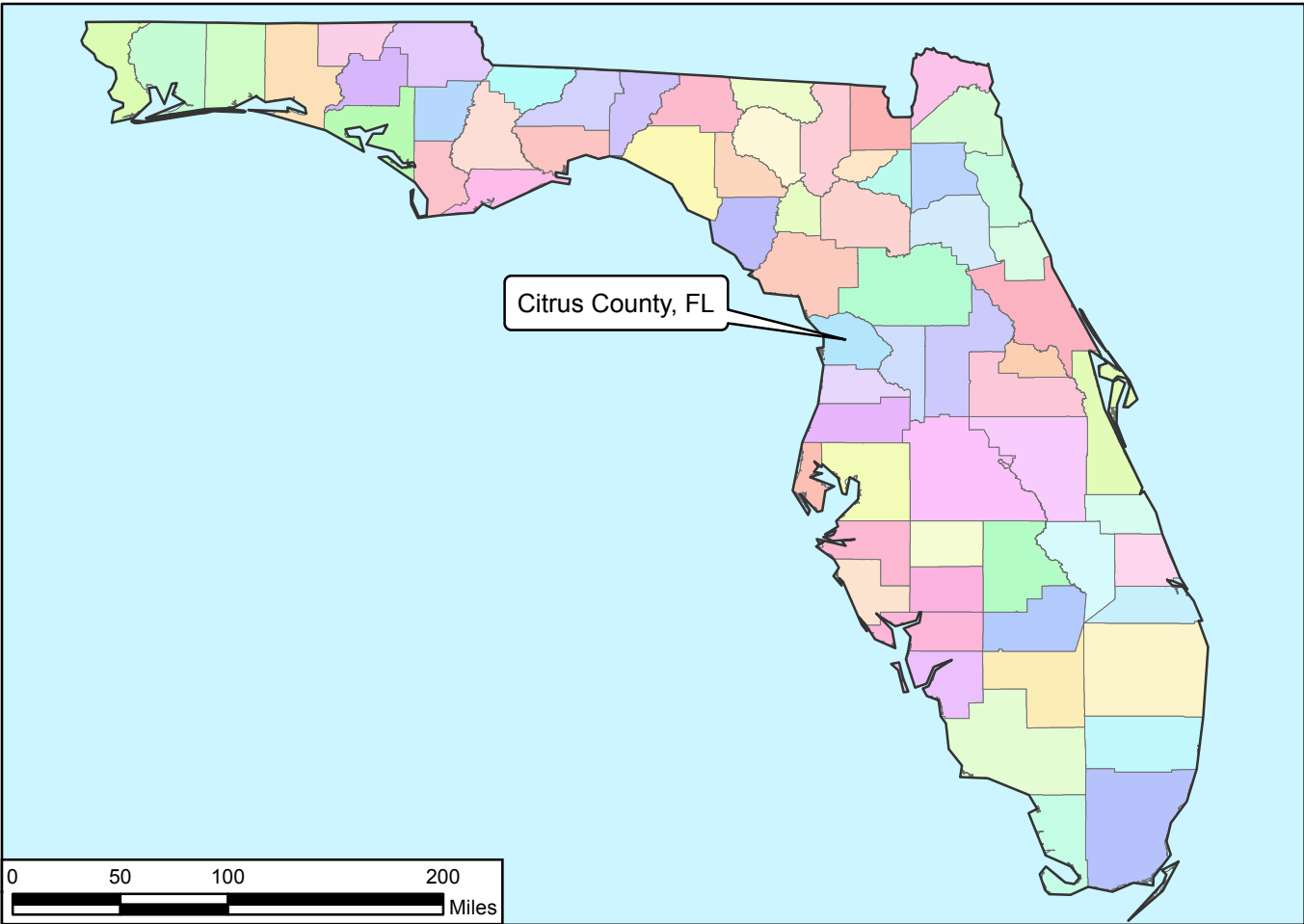
in = inches

ft = feet

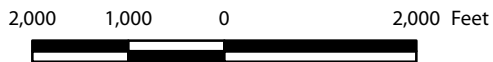
bls = below land surface

* = Proposed monitoring well

FIGURES



Note:
World Street Map Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community.



Legend

-  CCC Project Footprint
-  CCC Project Site

- Notes:
1. CCC Project footprint obtained from Duke Energy Florida, Inc. Citrus Combined Cycle Project Site Certification Application, ECT, 2014.
 2. Property boundary obtained from the Citrus County Property appraiser's office.
 3. 2013 World Imagery Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community.

Site Location Map

Citrus Combined Cycle Plant
14385 N. Access Road
Crystal River, FL 34428

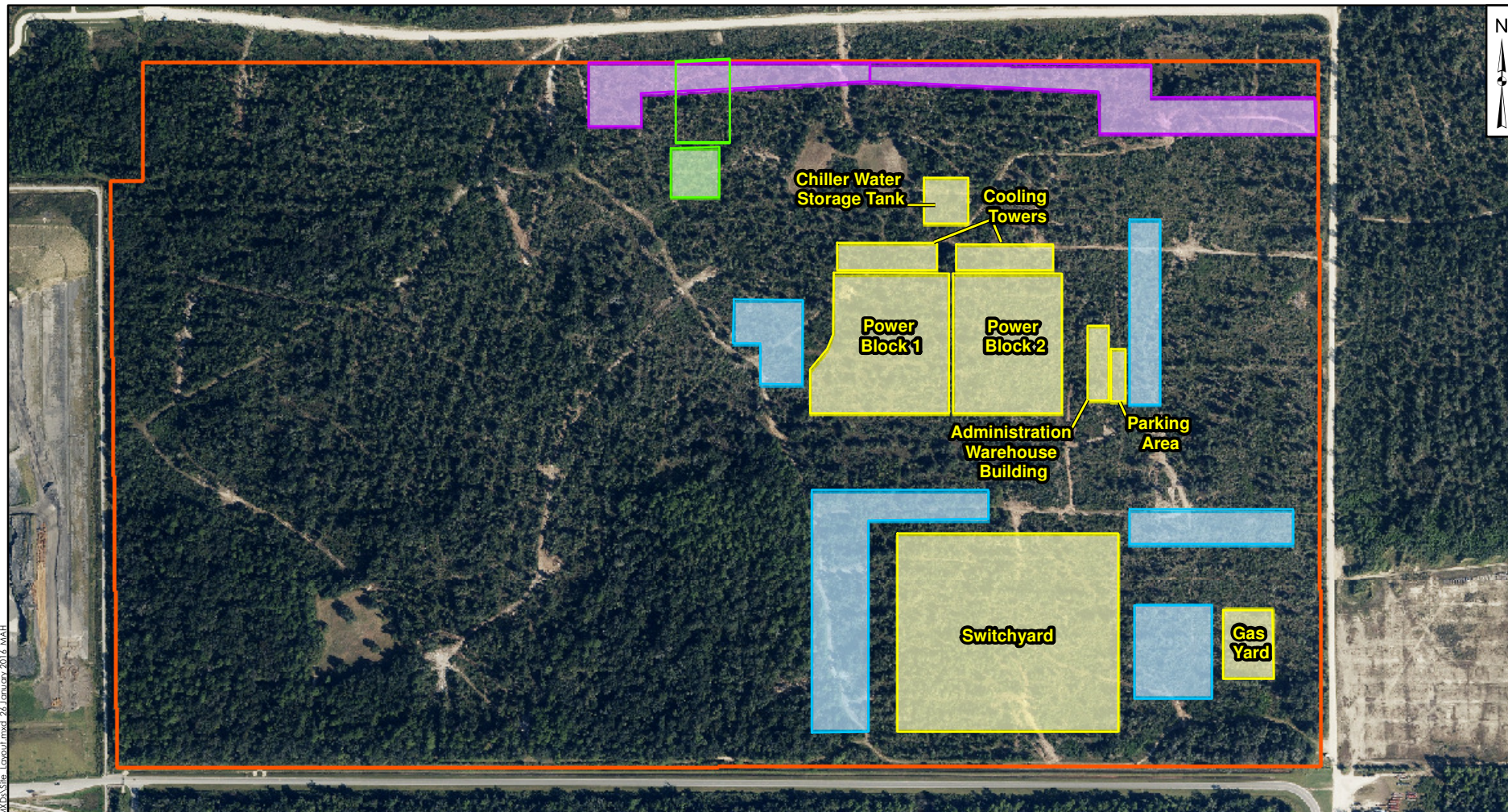


Tampa, FL December 2015

Figure

1

Path: \\floridacounty\GIS\DATA\Projects\2014\CCC\CCC Project Site Certification Application\MapDocs\Site Layout.mxd 26 January 2016 MAH



Legend

-  Construction Stormwater Detention Pond
-  Stormwater Detention Ponds
-  Current IWW Percolation Pond
-  Facility Layout
-  CCC Project Site
-  Proposed IWW Percolation Pond

Notes:

1. CCC Project footprint obtained from Duke Energy Florida, Inc. Citrus Combined Cycle Project Site Certification Application, ECT, 2014.
2. Property boundary obtained from the Citrus County Property appraiser's office.
3. 2014 aerial image source: Florida Department of Transportation, Office of Surveying and Mapping website.

700 350 0 700 Feet



Proposed Site Layout

Citrus Combined Cycle Plant
14385 N. Access Road
Crystal River, FL 34428

Geosyntec
consultants

Tampa, FL

March 2019 -

Figure

2

Path: (Thrufile-01) \DATA\1\UGS\DUke, Confidential, GIS\F2729_Duke, CrystalRiver\XCD\Regional_Hydro.mxd 11 December 2015 .RIB

SURFACE BEDS	Era	System	Series	Formation	
SUB-SURFACE BEDS	Cenozoic	Quaternary	Recent	Sand, peat and clay, unnamed	
			Pleistocene	Lake Flirt marl, of late Wisconsin glacial stage	
				Pamlico formation, of Peorian age	
				Wicomico formation, of Sangamon age	
				Okefenokee formation, of Yarmouth age	
				Coharie formation, of Aftonian age	
		Tertiary	Miocene	Alachua formation Terrestrial	
				Hawthorn formation Marine	
			Oligocene	Suwannee limestone	
			Eocene	Ocala limestone, of Jackson age	
				Moody Branch formation Jackson age	Williston member
					Inglis member
				Avon Park limestone, of Claiborne age	
				Lake City limestone, of Claiborne age	
				Oldsmar limestone, of Wilcox age	
			Paleocene	Cedar Keys formation, of Midway age	
				Lawson limestone, of Navarro age	
	Mesozoic	Cretaceous	Gulf	Beds of Taylor age	
				Beds of Austin age	
				Atkinson formation	Beds of Eagle Ford age
					Beds of Woodbine age
			Comanche?	Undifferentiated shale and sand, "red beds"	
Paleozoic		Triassic?		Quartz diabase, possible sill?	
		Lower Devonian or Upper Silurian ?.....?.....? Lower Ordovician		Possible fault contact	

Vernon, R.O. 1951. Geology of Citrus and Levy Counties, Florida. US Geological Survey Bulletin No. 33:17, 186-224.

System	Series	Stratigraphic Unit	General Lithology	Hydrogeologic Unit	
Quaternary	Holocene and Pleistocene	Alluvium and terrace deposits	Sands and clays	Surficial aquifer system	
Tertiary	Pliocene	Alachua Formation	Phosphatic sands and clays	(Of limited areal extent in study area)	
	Miocene	Hawthorn ¹ Group	Phosphatic sands, and clays		
	Eocene	Ocala Limestone	Limestone, fossiliferous to micritic	Floridan aquifer system	Upper S
		Avon Park Formation	Upper part, limestone and dolostone		Floridan D
			Lower part, dolomite with intergranular gypsum; some bedded gypsum, peat and chert		aquifer
		Oldsmar Formation	Limestone and dolomite; some evaporites and chert		Middle confining unit
	Paleocene	Cedar Keys Formation	Dolomite with evaporites		Lower Floridan aquifer

¹ Based on nomenclature of Scott (1988)

Typical open intervals of shallow (S) and deep (D) wells

Sacks, L.A. 1995. Geochemical and Isotopic Composition of Ground Water with Emphasis on Sources of Sulfate in the Upper Floridan Aquifer in Parts of Marion, Sumter, and Citrus Counties, Florida. US Geological Survey Water-Resources Investigations Report 95-4251.

Regional Hydrogeologic Framework

Citrus Combined Cycle Plant
14385 N. Access Road
Crystal River, FL 34428

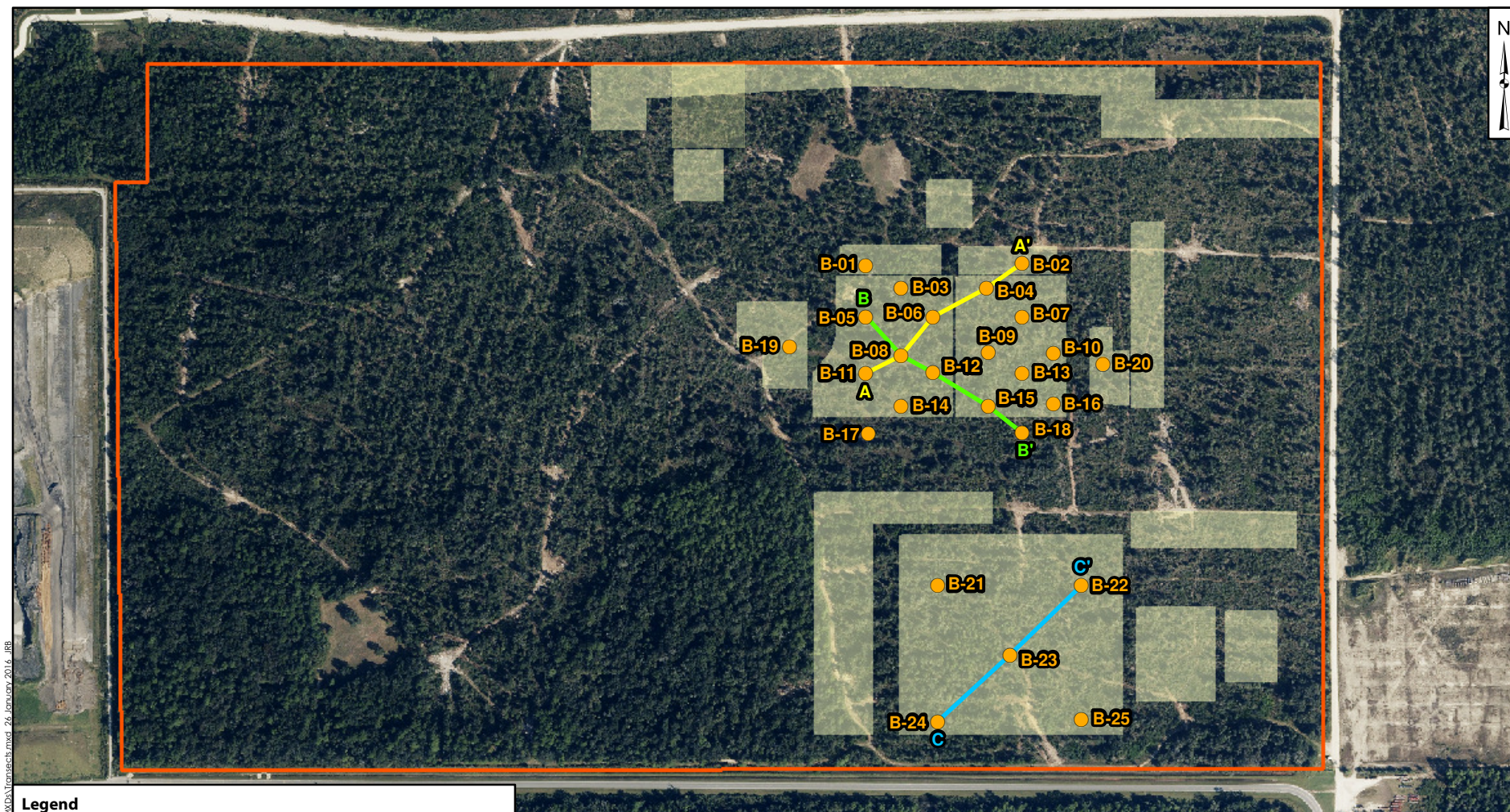
Geosyntec

consultants

Tampa, FL

December 2015

Figure
3



Legend

- Soil Boring Location
- A-A' Transect
- B-B' Transect
- C-C' Transect
- CCC Project Footprint
- CCC Project Site

Notes:

1. CCC Project footprint and soil boring locations obtained from Duke Energy Florida, Inc. Citrus Combined Cycle Project Site Certification Application, ECT, 2014.
2. Property boundary obtained from the Citrus County Property appraiser's office.
3. 2014 aerial image source: Florida Department of Transportation, Office of Surveying and Mapping website.

700 350 0 700 Feet



Soil Borings and Geologic Cross Section Transects

Citrus Combined Cycle Plant
14385 N. Access Road
Crystal River, FL 34428

Geosyntec
consultants

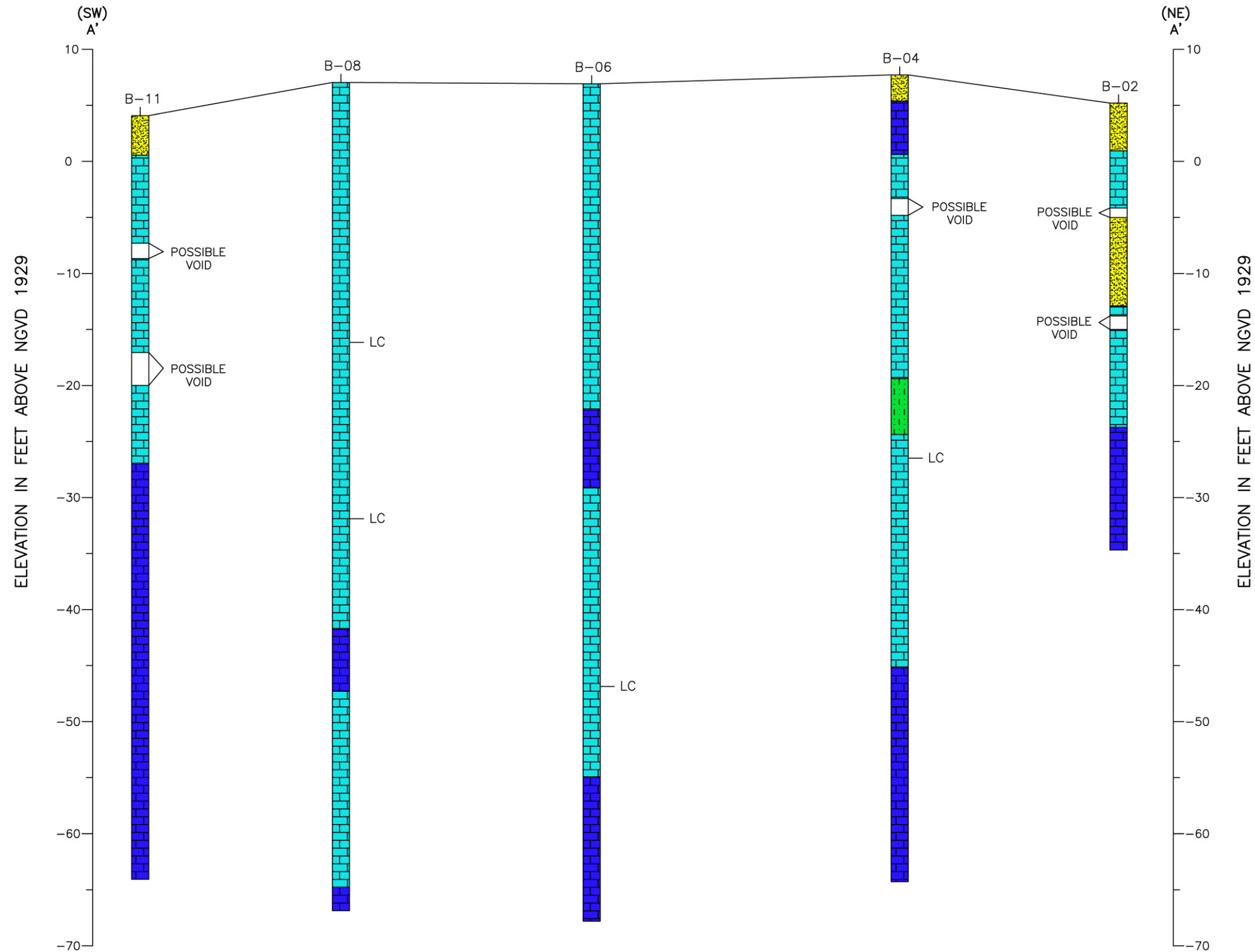
Tampa, FL

March 2019

Figure

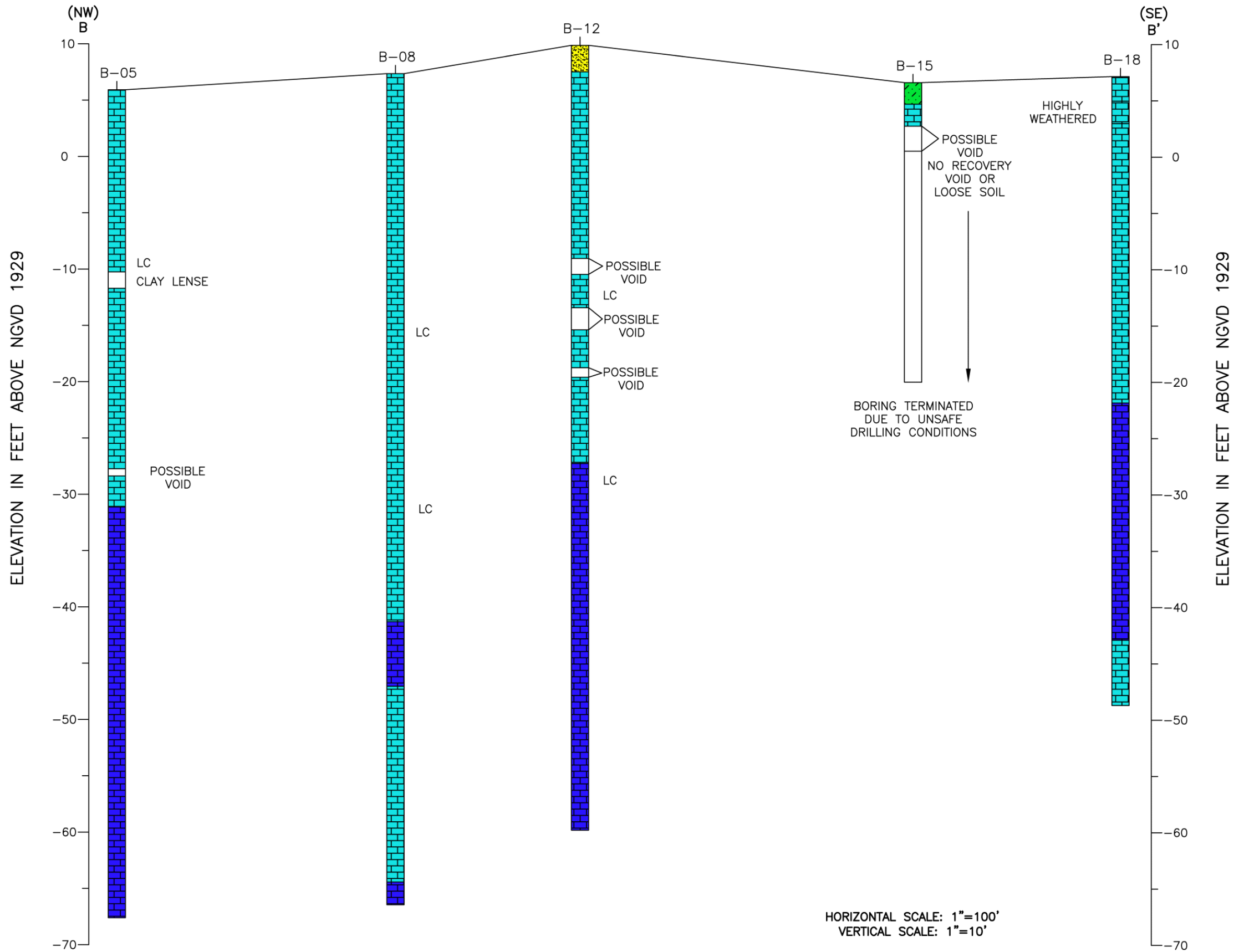
4

Path: (T:\w\01\DATA)\UGS\DUke_Confidential_GIS\F2729_Duke_CrystalRiver\A-A_CrossSection_11x17.mxd 11 December 2015 JRB

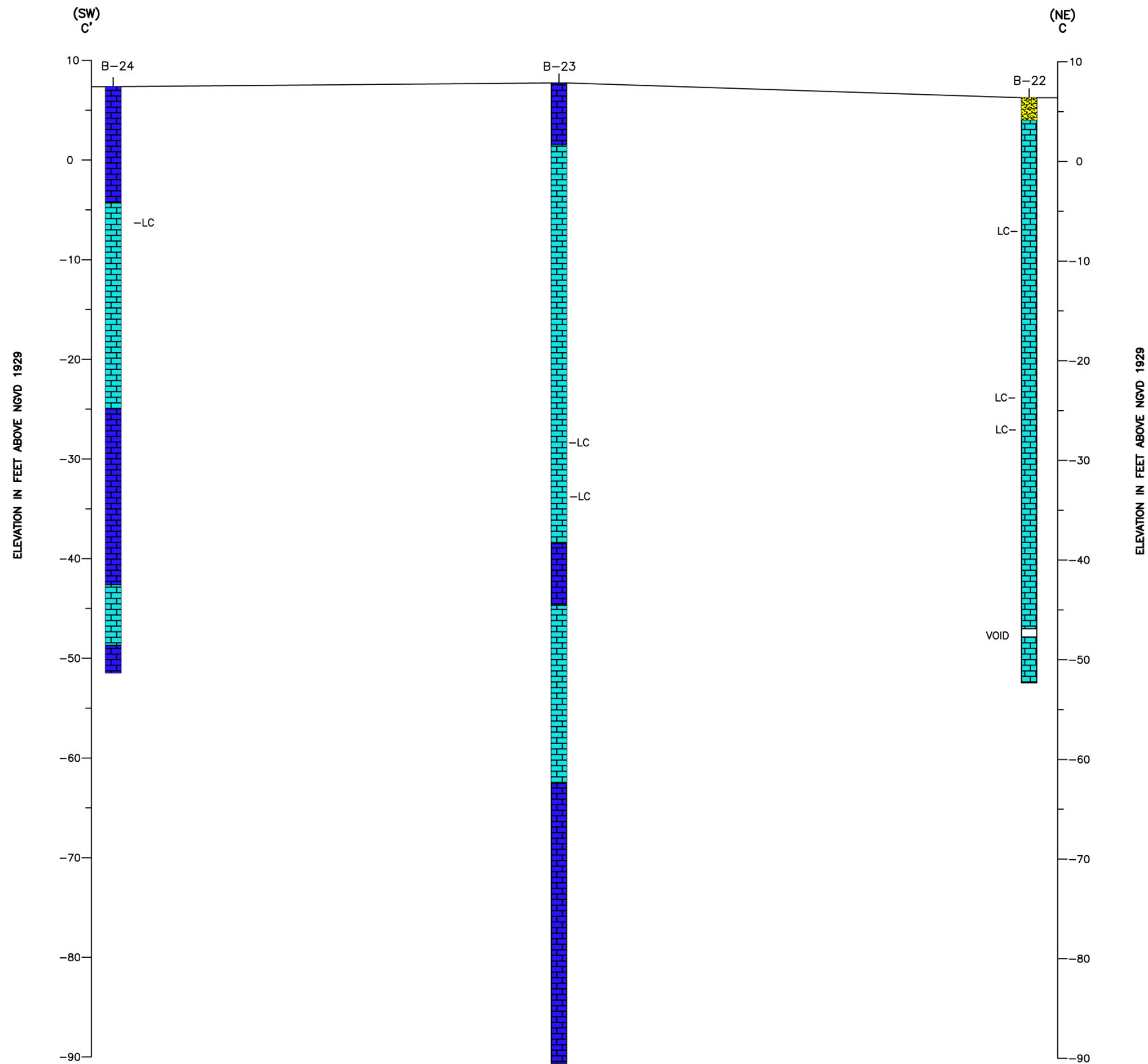


LEGEND SAND LIMESTONE – WEATHERED –POORLY TO MODERATELY INDURATED LIMESTONE – WELL INDURATED – MODERATELY TO WELL INDURATED SILT LC = LOSS OF CIRCULATION OF DRILLING FLUID HORIZONTAL SCALE: 1"=100' VERTICAL SCALE: 1"=10' Obtained from Duke Energy Florida, Inc. Citrus Combined Cycle Project Site Certification Application, ECT, 2014.	
Geologic Cross Section A-A' (Southwest - Northeast) Citrus Combined Cycle Plant 14385 N. Access Road Crystal River, FL 34428	
Geosyntec consultants	Figure 5
Tampa, FL	
December 2015	

Path: (T:\w\01\DATA)\UGS\DUke, Confidential_GIS\F2729_Duke_CrystalRiver\WAXD\B & C\crossSection_11x17.mxd 11 December 2015 jrb



Path: (T:\w\01\DATA)\LOGS\Borehole\Confidential_GIS\F2729_Duke_CrystalRiver\XDX\C.C.CrossSection_1x17.mxd 11 December 2015 JRB



LEGEND

-  SAND
-  LIMESTONE - WEATHERED - POORLY TO MODERATELY INDURATED
-  LIMESTONE - WELL INDURATED - MODERATELY TO WELL INDURATED
- LC = LOSS OF CIRCULATION OF DRILLING FLUID

HORIZONTAL SCALE: 1"=130'
VERTICAL SCALE: 1"=10'

Obtained from Duke Energy Florida, Inc. Citrus Combined Cycle Project Site Certification Application, ECT, 2014.

Geologic Cross Section C-C' (Southwest - Northeast)

Citrus Combined Cycle Plant
14385 N. Access Road
Crystal River, FL 34428

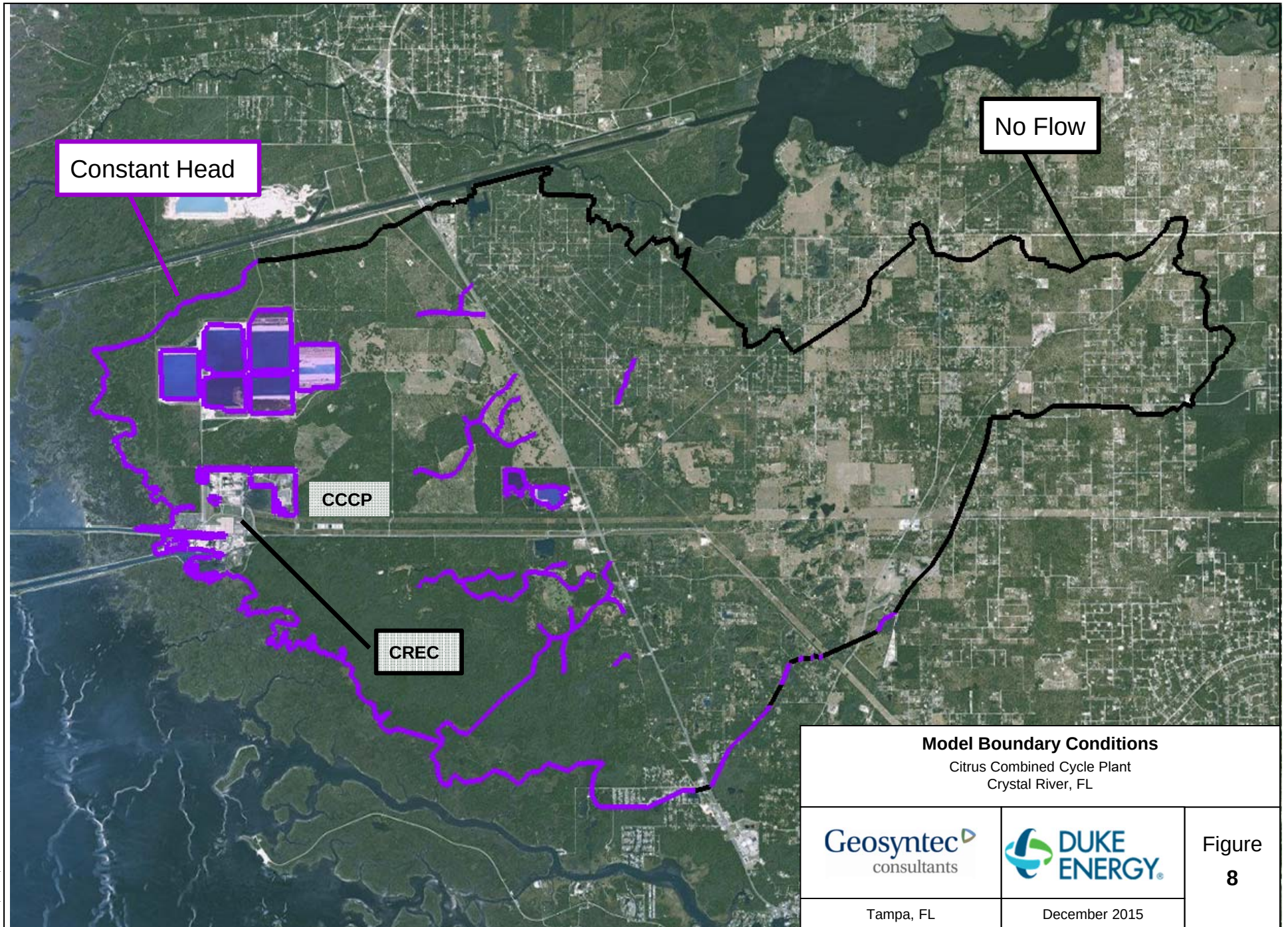
Geosyntec
consultants

Figure

7

Tampa, FL

December 2015



Model Boundary Conditions

Citrus Combined Cycle Plant
Crystal River, FL

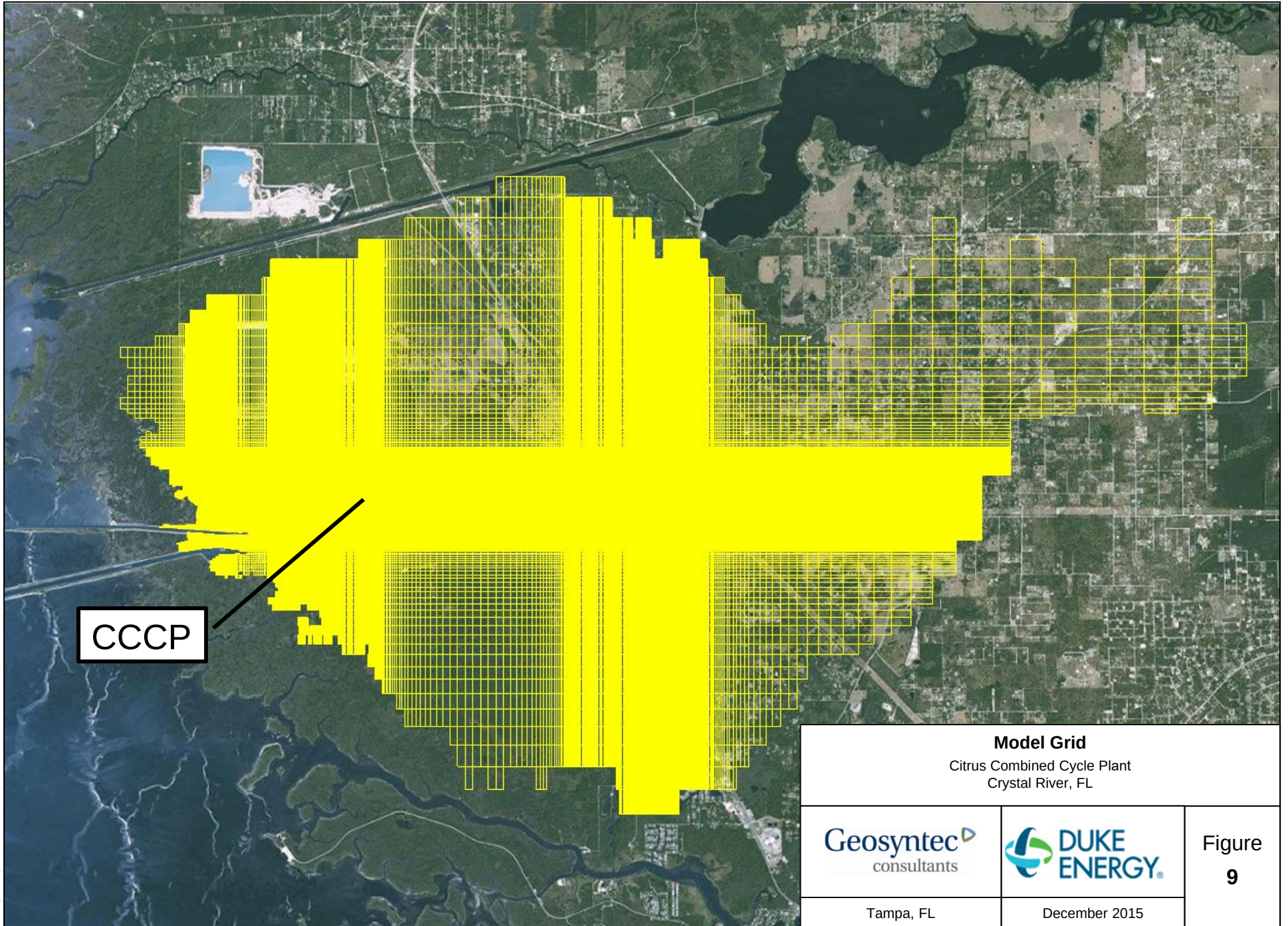
Geosyntec
consultants

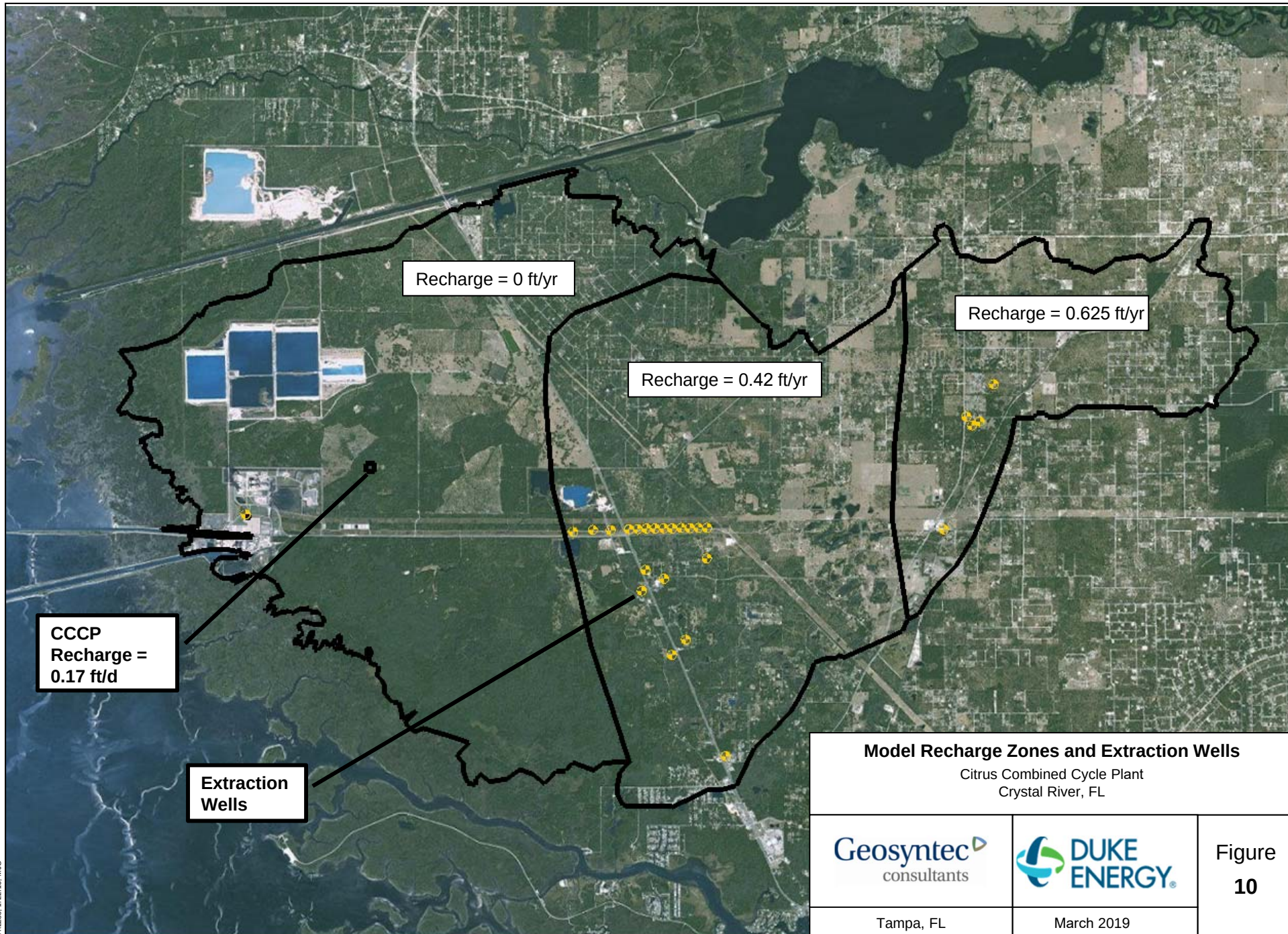


Figure
8

Tampa, FL

December 2015





Model Recharge Zones and Extraction Wells

Citrus Combined Cycle Plant
Crystal River, FL

Geosyntec
consultants

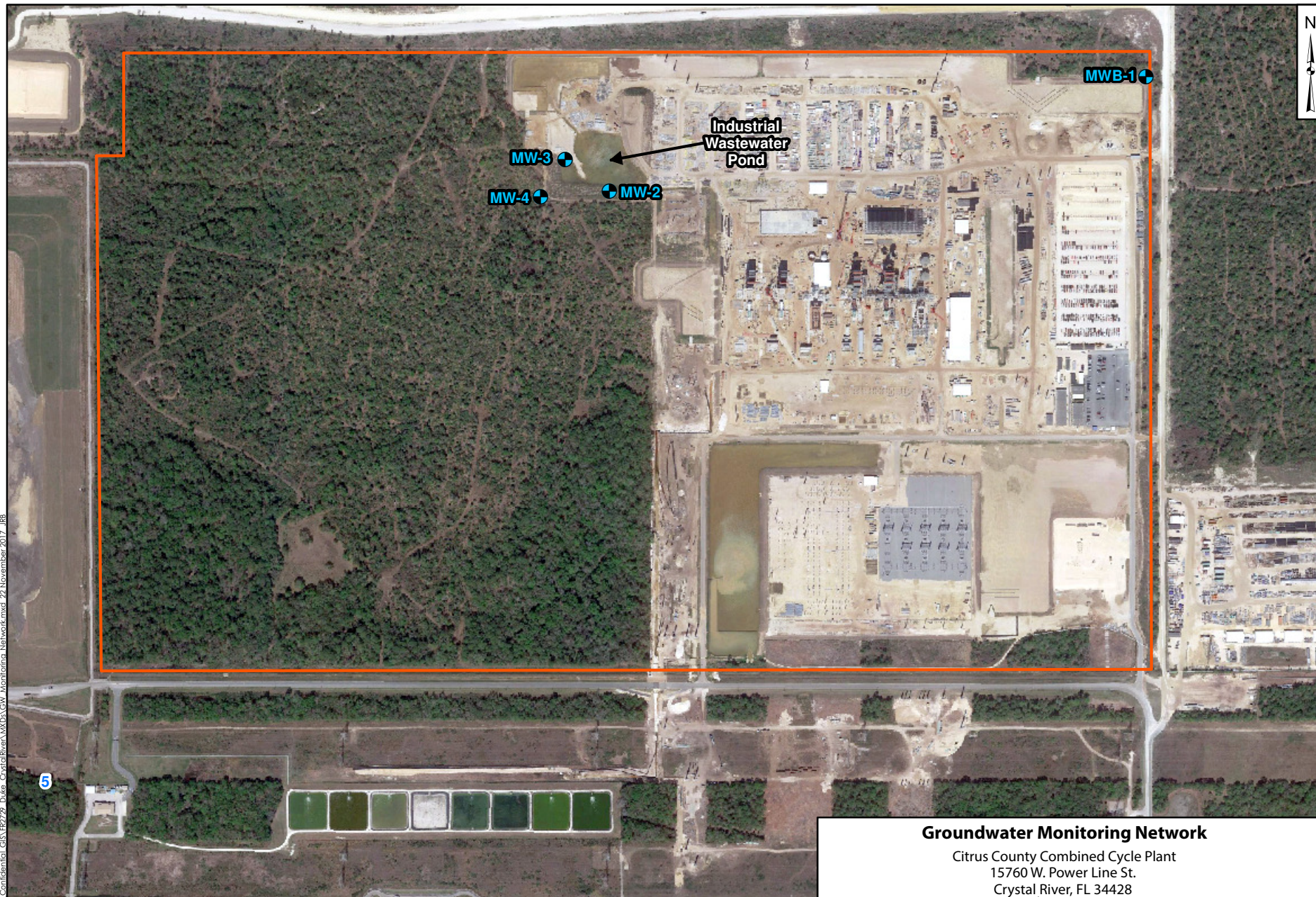


Tampa, FL

March 2019

Figure
10

Path: (U:\wfiles\0\DATA\1\1\ Duke Confidential\GIS\F02729 Duke_CrystalRiver\WDB\GW_Monitoring_Network.mxd 22 November 2017 1:08



Legend

-  Monitoring Well Location
-  CCC Project Site

Notes:

1. CCC Project footprint obtained from Duke Energy Florida, Inc. Citrus Combined Cycle Project Site Certification Application, ECT, 2014.
2. Property boundary obtained from the Citrus County Property appraiser's office.
3. 2017 aerial image source: Google Earth Pro.

Groundwater Monitoring Network

Citrus County Combined Cycle Plant
15760 W. Power Line St.
Crystal River, FL 34428

Geosyntec
consultants

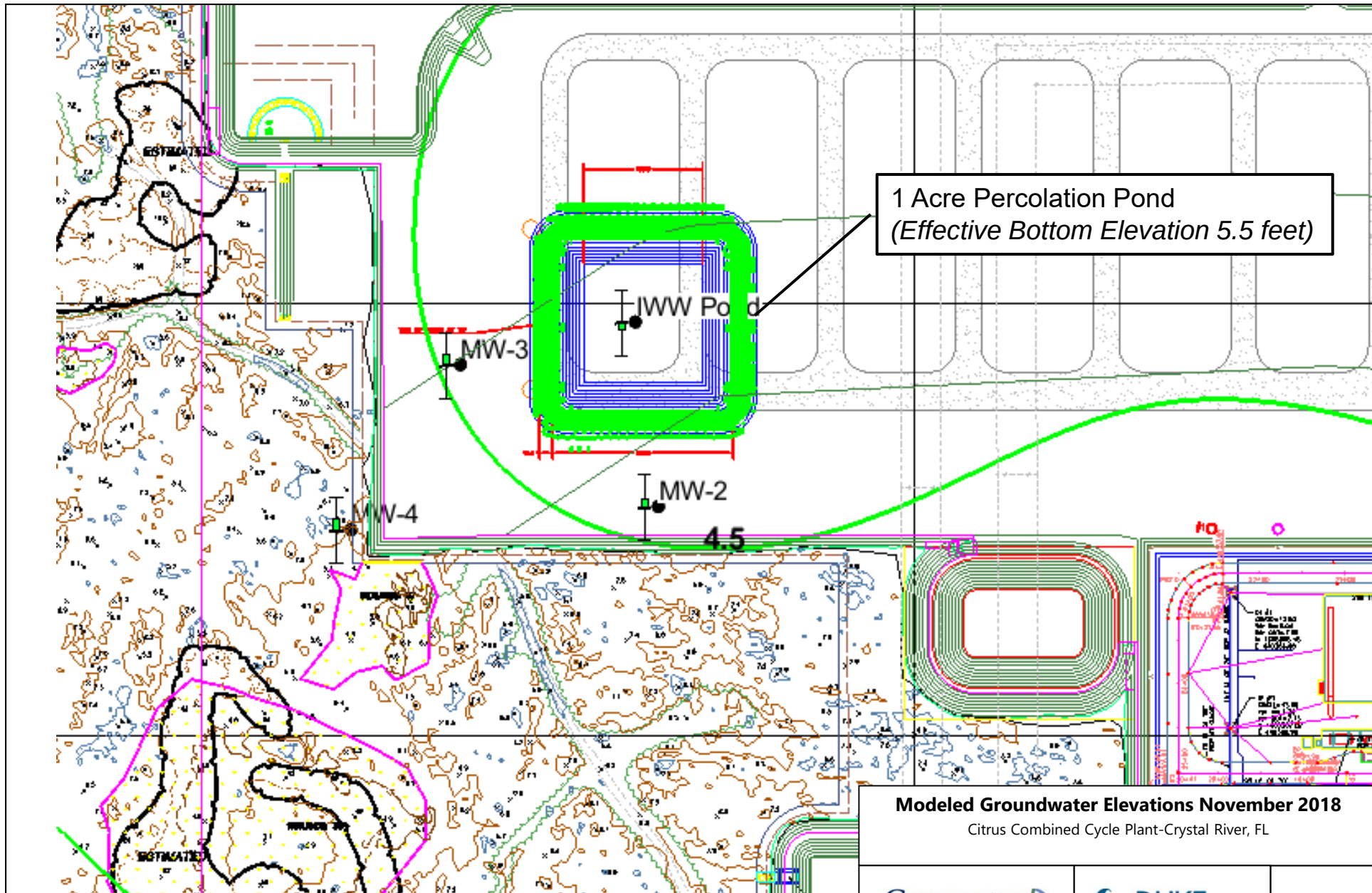
Tampa, FL

DUKE
ENERGY
PROGRESS

March 2019

Figure

11

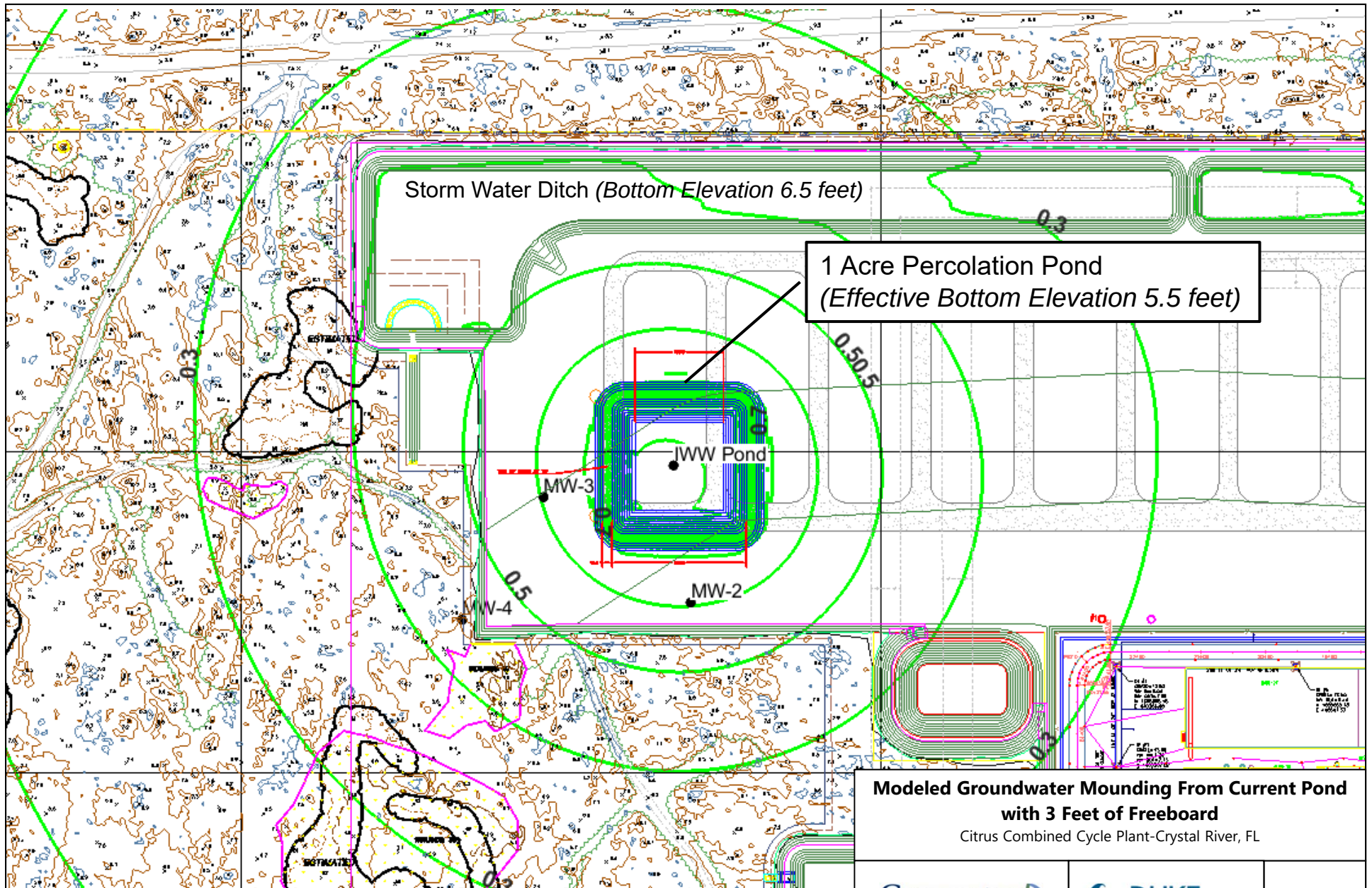


1 Acre Percolation Pond
(Effective Bottom Elevation 5.5 feet)

Legend:	
	Groundwater Elevation (ft., NGVD29)
	Ground Surface Elevation with 1 Foot Contour Interval (NGVD29)
[Note: Crest of Berm at 15 ft]	

Modeled Groundwater Elevations November 2018 Citrus Combined Cycle Plant-Crystal River, FL	
Tampa, FL	March 2019

Figure
12



Legend:

- Groundwater Mounding (ft)
 - Proposed Ground Surface Elevation with 1 Foot Contour Interval (NGVD29)
- [Note: Crest of Berm at 15 ft]

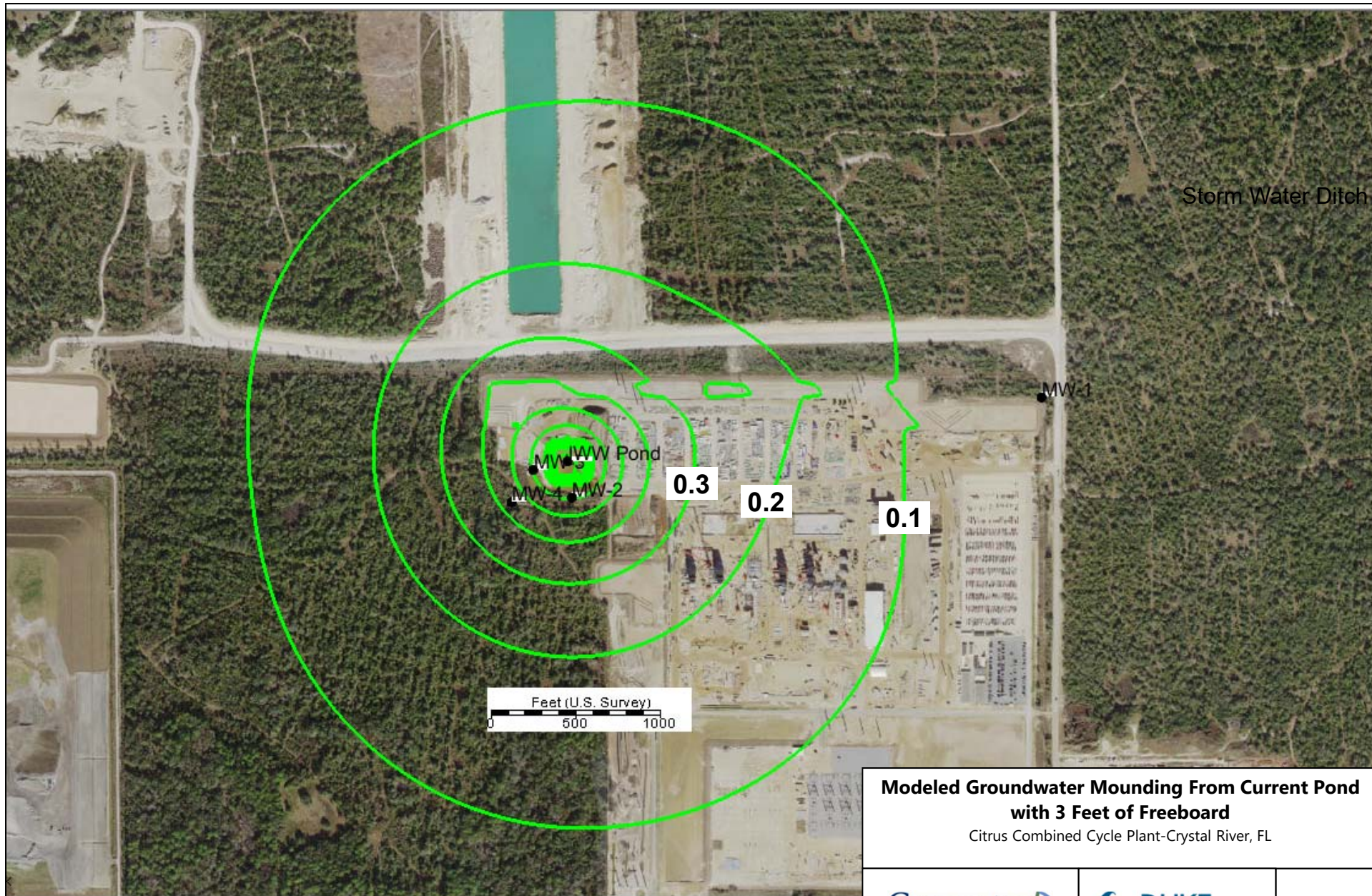
Geosyntec
consultants



Figure
13

Tampa, FL

March 2019



Legend:

Groundwater Mounding (ft)

**Modeled Groundwater Mounding From Current Pond
with 3 Feet of Freeboard**

Citrus Combined Cycle Plant-Crystal River, FL

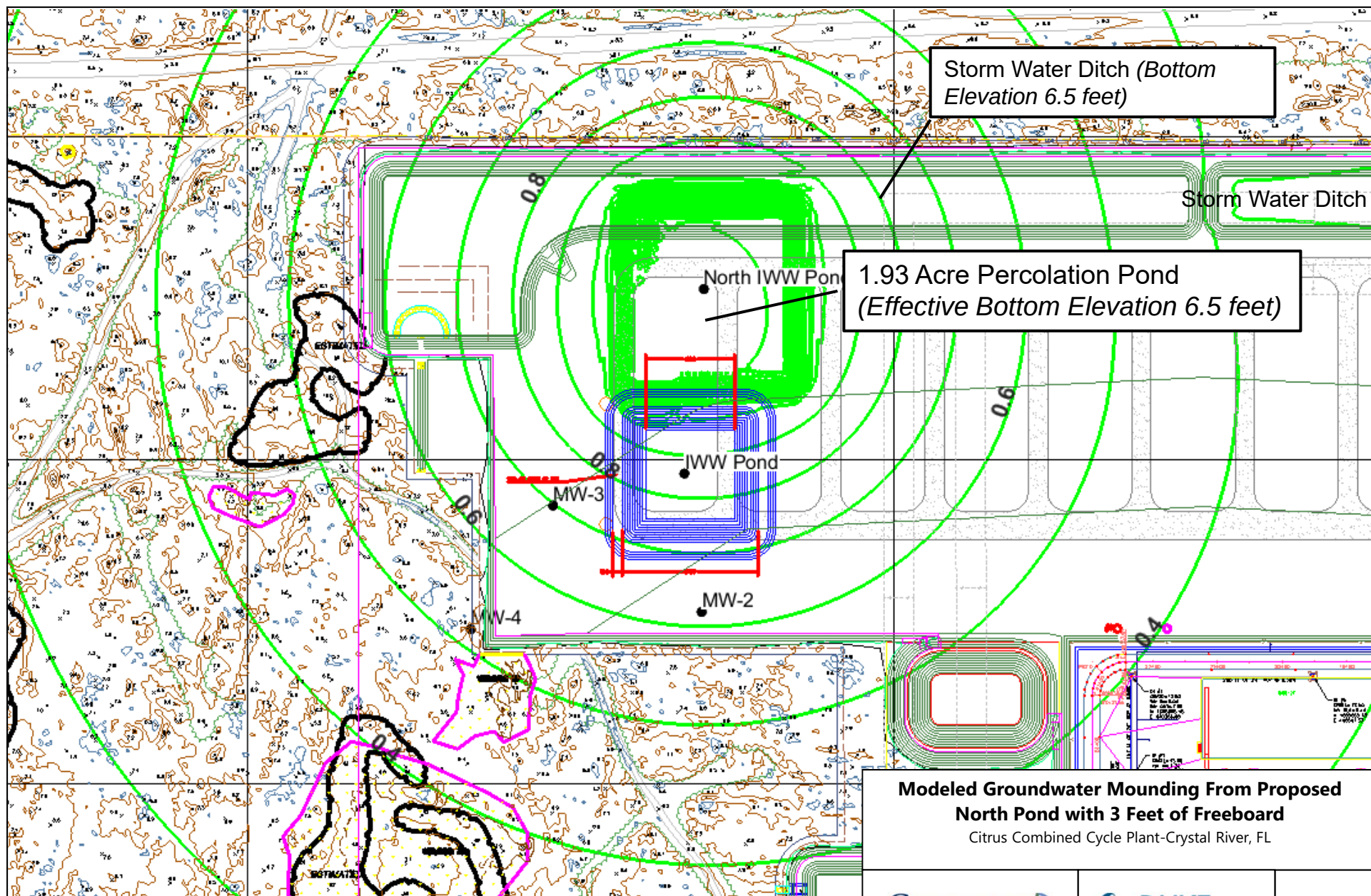
Geosyntec
consultants

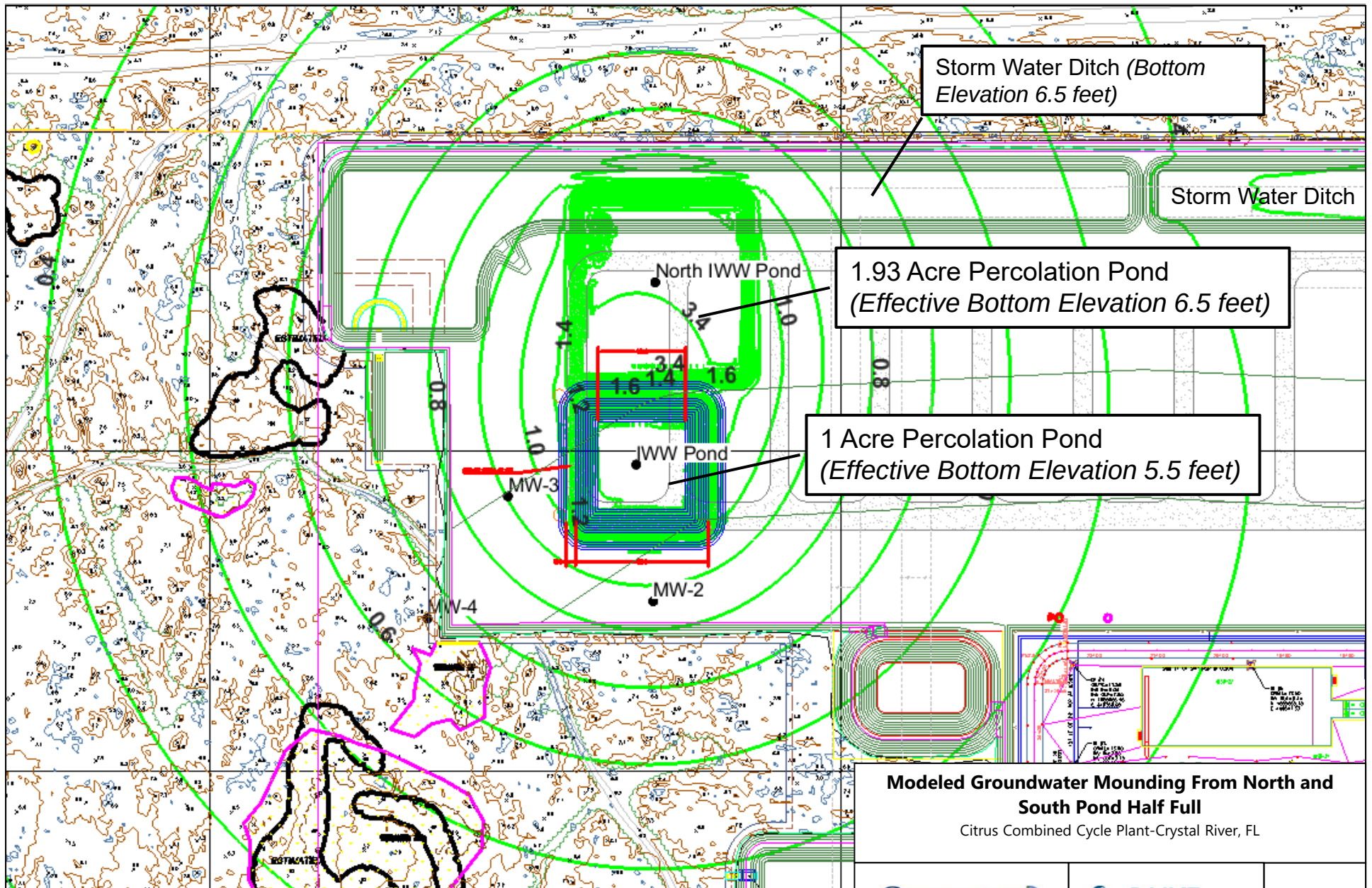
DUKE
ENERGY®

Figure
14

Tampa, FL

March 2019



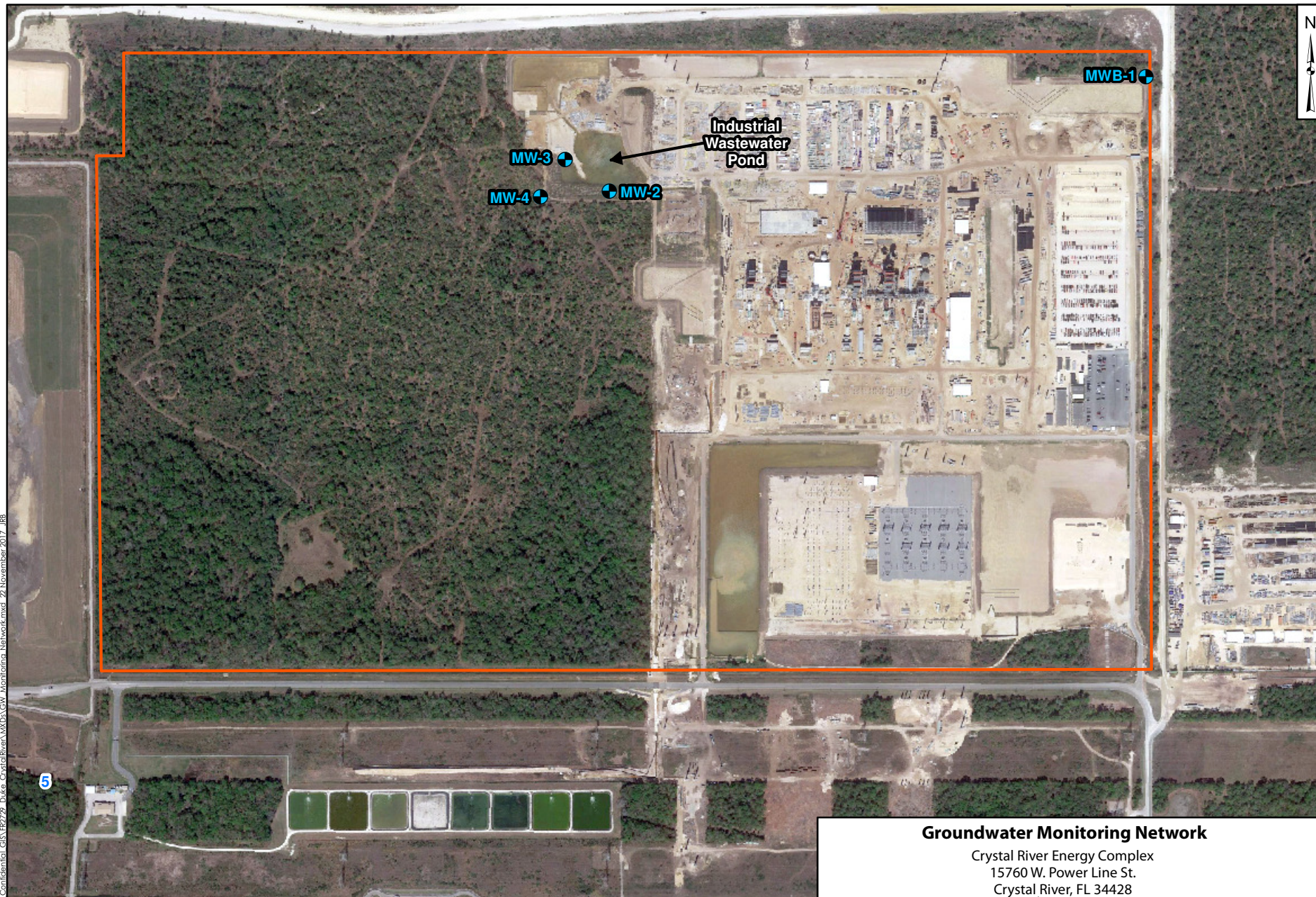


Legend:

- Groundwater Mounding (ft)
- Ground Surface Elevation with 1 Foot Contour Interval (NGVD29)
- [Note: Crest of Berm at 15 ft]

APPENDIX A

Lithologic Logs



Legend

-  Monitoring Well Location
-  CCC Project Site

Notes:

1. CCC Project footprint obtained from Duke Energy Florida, Inc. Citrus Combined Cycle Project Site Certification Application, ECT, 2014.
2. Property boundary obtained from the Citrus County Property appraiser's office.
3. 2017 aerial image source: Google Earth Pro.

Groundwater Monitoring Network

Crystal River Energy Complex
15760 W. Power Line St.
Crystal River, FL 34428

Geosyntec
consultants

Tampa, FL

DUKE ENERGY
PROGRESS

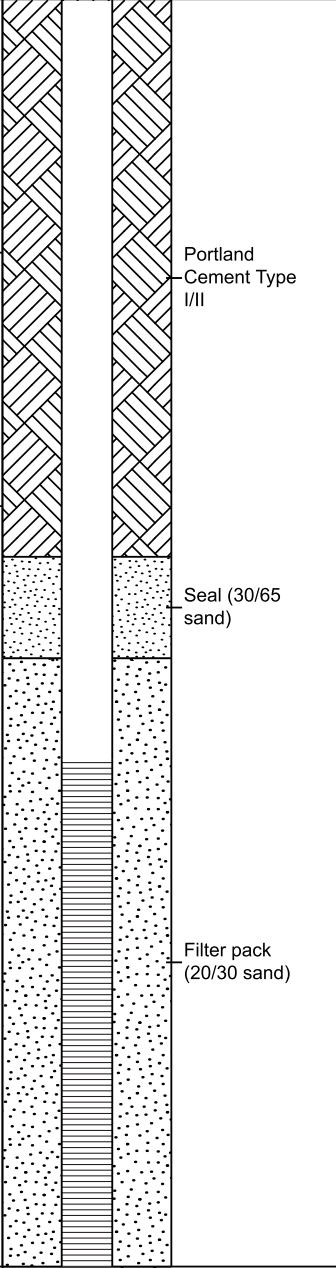
November 2017

Figure

1

PROJECT NUMBER FR3131/02/02	DRILLING DATE 10/30/2017	COORDINATES 28.971029, -82.668276
PROJECT NAME Crystal River CCCP	TOTAL DEPTH 25 ft bls	COORD SYS NAD83
CLIENT Duke Energy Florida	DIAMETER 2"	COMPLETION Above-ground
DRILLING COMPANY Cascade Drilling	CASING Schedule 40 PVC	SURFACE ELEVATION 9.4
DRILLERS C. Turner	SCREEN Schedule 40 PVC w/ 0.010" slot	WELL TOC 12.24

COMMENTS Hand augered up to 5 ft BLS, remainder with rota-sonic drill rig with 4-inch core barrel
LOGGED BY M. Noto
 followed by 6-inch temporary steel casing. **CHECKED BY** C. Cannon

Depth (ft)	Material Description	Run/Recovery	Well Diagram
1	Fill SAND with limestone, 7.5YR 5/4, brown, well-sorted, with limestone chunks (1/4 - 1/8"), dry	60/60	
2			
3			
4	SAND, fine-grained quartz, 10YR 6/1, gray, very well-sorted, subrounded, dry		
5	LIMESTONE, 10YR 8/1, white, weathered limestone with iron oxidation staining, moist	60/50	
6			
7	Same as above- wet, less weathered		
8			
9			
10	Same as above- more competent limestone		
11			
12			
13			
14			
15	Same as above		
16			
17			
18			
19			
20	Same as above- fossiliferous very competent limestone, bivalves and gastropods		
21			
22			
23	Calcareous mud- clayey weathered limestone, wet, 10YR 6/6		
24			
25	Termination Depth at: 25 ft		
26			

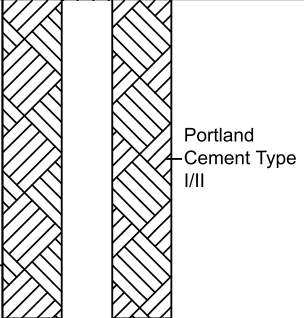
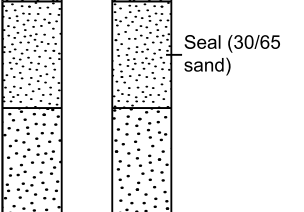
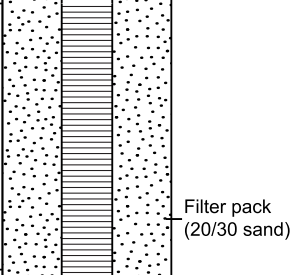
PROJECT NUMBER FR3131/02/02	DRILLING DATE 9/24/2017	COORDINATES 28.969353, -82.676960
PROJECT NAME Crystal River CCCP	TOTAL DEPTH 20.3 ft bls	COORD SYS NAD83
CLIENT Duke Energy Florida	DIAMETER 2"	COMPLETION Above-ground
DRILLING COMPANY EDS	CASING Schedule 40 PVC	SURFACE ELEVATION 11.4
DRILLERS K. Rogers	SCREEN Schedule 40 PVC w/ 0.010" slot	WELL TOC 14.57

COMMENTS Hand augered up to 5 ft BLS, remainder with rota-sonic drill rig with 4-inch core barrel followed by 6-inch steel temporary casing. **LOGGED BY** M. Noto
CHECKED BY C. Cannon

Depth (ft)	Material Description	Run/Recovery	Well Diagram
1	SAND/fill, 10YR 4/4, dark yellowish brown, fine-grained, well-sorted, dry, loose	60/60	
2	Fill SAND, 10YR 2/2, very dark brown, very fine-grained, subrounded, dry, loose, quartz sand with 15-20% (1/4 - 1/8") gravel		
3			
4			
5	Same as above	60/42	
6			
7			
8			
9	SAND, 10YR 5/6, yellowish brown, moist, very well-sorted, firm, sub-rounded, fine-grained quartz sand		
10	Same as above- wet	60/42	
11	LIMESTONE, 10YR 8/1, white, wet, moderately friable, fossiliferous (bivalves), moderately competent; drilling slowed, more water used, less weathered competent rock		
12			
13			
14			
15	SAND, 10YR 5/6, yellowish-brown, wet, loose, well-sorted, rounded fine-grained quartz sand with 40% calcareous (bivalve) shell fragments	60/51	
16			
17			
18	LIMESTONE, 10YR 8/11, white, wet, fossiliferous (bivalves), very competent		
19	Sandy LIMESTONE with clay, 10YR 8/1, white, low plasticity, limestone mud, with competent limestone gravel, 8" size; increased drilling speed		
20			
21	Termination Depth at: 20.3 ft		
22			
23			
24			

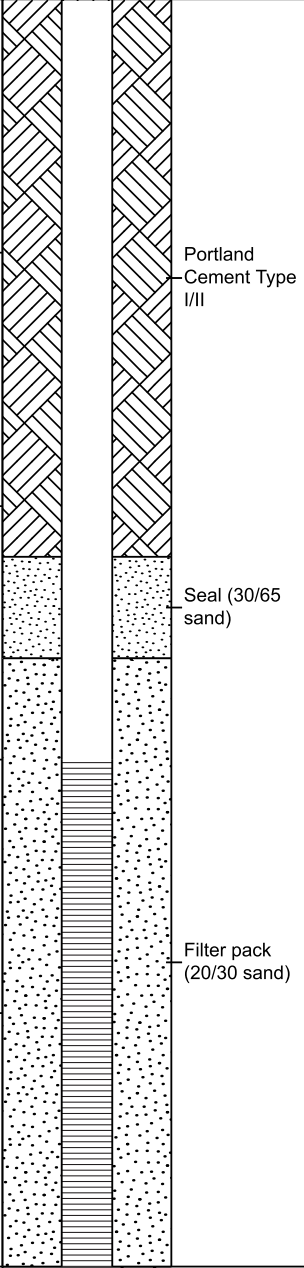
PROJECT NUMBER FR3131/02/02	DRILLING DATE 9/24/2017	COORDINATES 28.969802, -82.677681
PROJECT NAME Crystal River CCCP	TOTAL DEPTH 20.1 ft bls	COORD SYS NAD83
CLIENT Duke Energy Florida	DIAMETER 2"	COMPLETION Above-ground
DRILLING COMPANY EDS	CASING Schedule 40 PVC	SURFACE ELEVATION 10.5
DRILLERS K. Rogers	SCREEN Schedule 40 PVC w/ 0.010" slot	WELL TOC 13.52

COMMENTS Hand augered up to 5 ft BLS, remainder with rota-sonic drill rig with 4-inch core barrel followed by 6-inch steel temporary casing. **LOGGED BY** M. Noto
CHECKED BY C. Cannon

Depth (ft)	Material Description	Run/Recovery	Well Diagram
1	Fill SAND with gravel, 10YR 3/4, dry, poorly sorted, fine-grained sand with gravel (1/4-4")(20-25%) limestone (weathered), very soft	60/60	 Portland Cement Type I/II
2			
3	Fill SAND, 10YR 3/4, with limestone, 60-70% limestone, friable, with bivalves (fossils)(7-8")		
4	Silty SAND, 10YR 2/2, very dark brown, loose, fine-grained, dry, with 5% gravel (1/4")		
5	LIMESTONE, 10YR 8/2, very pale brown, saturated/wet, friable, with fossils	60/44	 Seal (30/65 sand)
6	▽		
7			
8	Same as above, 10YR 8/1, white		
9			 Filter pack (20/30 sand)
10	Sandy LIMESTONE, same as above, 10YR 8/2; increased drilling speed (more weathered limestone)	60/37	
11			
12			
13	LIMESTONE, 10YR 8/1, white, same as above; decreased drilling speed		
14			
15	Same as above, more competent	60/40	
16	Void		
17			
18	Sandy LIMESTONE, moist, increased friability, 10YR 8/1, white		
19			
20			
21	Termination Depth at: 20.1 ft		
22			
23			
24			

PROJECT NUMBER FR3131/02/02	DRILLING DATE 10/31/2017	COORDINATES 28.969273, -82.678076
PROJECT NAME Crystal River CCCP	TOTAL DEPTH 25 ft bls	COORD SYS NAD83
CLIENT Duke Energy Florida	DIAMETER 2"	COMPLETION Above-ground
DRILLING COMPANY Cascade Drilling	CASING Schedule 40 PVC	SURFACE ELEVATION 8.5
DRILLERS C. Turner	SCREEN Schedule 40 PVC w/ 0.010" slot	WELL TOC 11.26

COMMENTS Hand augered up to 5 ft BLS, remainder with rota-sonic drill rig with 4-inch core barrel followed by 6-inch steel temporary casing. **LOGGED BY** M. Noto
CHECKED BY C. Cannon

Depth (ft)	Material Description	Run/Recovery	Well Diagram
1	Fill SAND, 10YR 4/4, well-sorted, dry, soft fine-grained quartz sand, not natural, fill on pad	60/36	
2			
3	LIMESTONE, 10YR 8/1, white, very weathered friable limestone		
4			
5	Same as above, wet at 5'	60/24	
6			
7			
8			
9			
10	Same as above, saturated	60/48	
11			
12			
13			
14			
15	Same as above	60/60	
16			
17	SAND, 5YR 3/3, dark reddish brown, fine-grained, well-sorted, wet quartz sand, sub-rounded		
18	SAND, 10YR 8/1- 5YR 7/6, white to reddish brown, extremely fine sand with veins of reddish brown fine-grained iron-stained sand, extremely well-sorted		
19			
20	Same as above, moist		
21			
22			
23	GLEYS, Gley 5/1, greenish gray with iron staining, dry, with >2" ribbons		
24	Sandy SILT, 10YR 8/6, yellow, very fine, well-graded, dry silt with rounded grains <5% throughout, chalky texture		
25	Termination Depth at: 25 ft		
26			



AERIAL PHOTOGRAPHY PROVIDED BY MICROSOFT BING MAPS DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES	Project Manager: CMA Drawn by: CJH Checked by: SCK Approved by: SCK	Project No. H4155013 Scale: AS SHOWN File Name: CAD Date: 10/12/2015	Terracon 504 E. Tyler St. Tampa, FL 33602	EXPLORATION PLAN Citrus County Combined Cycle Project 15760 W Power Line Street Crystal River, FL	Exhibit A-1
--	---	--	--	---	---------------------------

BORING LOG NO. FP-01

Page 1 of 1

PROJECT: Citrus County Combined Cycle Project

CLIENT: Fluor Enterprises, Inc.
Charlotte, NC

SITE: Citrus County, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 28.9675687° Longitude: -82.6716731°	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
DEPTH					
	POORLY GRADED SAND WITH SILT (SP-SM) , fine grained, reddish-brown, loose				
1.0					1-2-12-21 N=14
	HIGHLY WEATHERED LIMESTONE light brown				
2.0					50/4"
	LIMESTONE light brown				
	white				50/4"
		5			50/3"
8.0					
	WEATHERED LIMESTONE white				23-33-39-47 N=72
					41-27-20-17 N=47
		10			17-25-20 N=45
13.5					
	Boring Terminated at 13.5 Feet				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix B for description of laboratory procedures and additional data (if any).

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

 Groundwater initially observed at a depth of 2.85'.

Terracon
504 East Tyler Street
Tampa, Florida

Boring Started: 10/1/2015

Boring Completed: 10/1/2015

Drill Rig: CME-45

Driller: R. Swint, Sr.

Project No.: H4155013

Exhibit: A-3

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H4155013 PERMEABILITY BORING LOGS.GPJ TERRACON2015.GDT 10/15/15

BORING LOG NO. FP-02

Page 1 of 1

PROJECT: Citrus County Combined Cycle Project

CLIENT: Fluor Enterprises, Inc.
Charlotte, NC

SITE: Citrus County, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 28.9680172° Longitude: -82.6716759°	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
DEPTH					
	POORLY GRADED SAND WITH CLAY (SP-SC) , fine grained, reddish-brown, loose, with limestone brown				2-4-3-2 N=7
4.0					WOH/6"-1-2-5 N=3
	HIGHLY WEATHERED LIMESTONE yellowish-brown	5			2-7-11-19 N=18
6.0					32-34-43-28 N=77
	WEATHERED LIMESTONE light brown white	10			20-19-21-14 N=40
10.0					9-7-8-9 N=15
	HIGHLY WEATHERED LIMESTONE white	12.0			8-19-7 N=26
12.0					
	WEATHERED LIMESTONE white	13.5			
13.5					
	Boring Terminated at 13.5 Feet				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix B for description of laboratory procedures and additional data (if any).

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

 Groundwater initially observed at a depth of 3.34'.

Terracon
504 East Tyler Street
Tampa, Florida

Boring Started: 10/1/2015

Boring Completed: 10/1/2015

Drill Rig: CME-45

Driller: R. Swint, Sr.

Project No.: H4155013

Exhibit: A-4

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H4155013 PERMEABILITY BORING LOGS.GPJ TERRACON2015.GDT 10/15/15

BORING LOG NO. FP-03

Page 1 of 1

PROJECT: Citrus County Combined Cycle Project

CLIENT: Fluor Enterprises, Inc.
Charlotte, NC

SITE: Citrus County, Florida

GRAPHIC LOG	LOCATION	DEPTH (ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
	See Exhibit A-4 Latitude: 28.9684646° Longitude: -82.6716788°				
	DEPTH				
	POORLY GRADED SAND WITH CLAY (SP-SC) , fine grained, reddish-brown, loose, with roots				1-2-2-1 N=4
	2.0				
	WEATHERED LIMESTONE , yellowish-brown				6-16-21-21 N=37
	light brown				27-23-33-27 N=56
		5			20-24-14-19 N=38
					21-16-20-23 N=36
	white				5-10-17-50/5" N=27
		10			21-48-19-29 N=67
	14.0				
	Boring Terminated at 14 Feet				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix B for description of laboratory procedures and additional data (if any).

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

Groundwater initially observed at a depth of 2.81'.

Terracon
504 East Tyler Street
Tampa, Florida

Boring Started: 9/30/2015

Boring Completed: 9/30/2015

Drill Rig: CME-45

Driller: R. Swint, Sr.

Project No.: H4155013

Exhibit: A-5

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H4155013 PERMEABILITY BORING LOGS.GPJ TERRACON2015.GDT 10/15/15

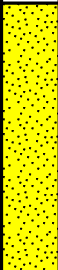
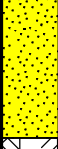
BORING LOG NO. FP-04

Page 1 of 1

PROJECT: Citrus County Combined Cycle Project

CLIENT: Fluor Enterprises, Inc.
Charlotte, NC

SITE: Citrus County, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 28.9689126° Longitude: -82.671701°	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
DEPTH					
	POORLY GRADED SAND (SP) , fine grained, brown, loose very loose				WOH/6"-1-2-2 N=3
					1/12"-1/12" N=1
	HIGHLY WEATHERED LIMESTONE yellowish-brown	5			1-3-1-1 N=4
	CLAYEY SAND (SC) , fine grained, brown, loose, calcareous, with limestone				1-2-3-3 N=5
	POORLY GRADED SAND (SP) , fine grained, white, loose, calcareous				2-1-2-2 N=3
	HIGHLY WEATHERED LIMESTONE white	10			4-11-7 N=18
	Boring Terminated at 11.5 Feet				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix B for description of laboratory procedures and additional data (if any).

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

 Groundwater initially observed at a depth of 0.50'.

Terracon
504 East Tyler Street
Tampa, Florida

Boring Started: 9/30/2015

Boring Completed: 9/30/2015

Drill Rig: CME-45

Driller: R. Swint, Sr.

Project No.: H4155013

Exhibit: A-6

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H4155013 PERMEABILITY BORING LOGS.GPJ TERRACON2015.GDT 10/15/15

BORING LOG NO. FP-05

Page 1 of 1

PROJECT: Citrus County Combined Cycle Project

CLIENT: Fluor Enterprises, Inc.
Charlotte, NC

SITE: Citrus County, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 28.9675612° Longitude: -82.6733594°	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
DEPTH					
	POORLY GRADED SAND WITH CLAY (SP-SC) , fine grained, brown, medium dense				
1.0	HIGHLY WEATHERED LIMESTONE light brown				2-5-16-47 N=21
2.0	LIMESTONE white				50/3"
4.0	HIGHLY WEATHERED LIMESTONE yellowish-brown				
	white				2-4-3-7 N=7
					9-14-15-13 N=29
					6-8-9-11 N=17
					2-6-8 N=14
					11-8-12 N=20
13.0	Boring Terminated at 13 Feet				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix B for description of laboratory procedures and additional data (if any).

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

 Groundwater initially observed at a depth of 1.77'.

Terracon
504 East Tyler Street
Tampa, Florida

Boring Started: 10/1/2015

Boring Completed: 10/1/2015

Drill Rig: CME-45

Driller: R. Swint, Sr.

Project No.: H4155013

Exhibit: A-7

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H4155013 PERMEABILITY BORING LOGS.GPJ TERRACON2015.GDT 10/15/15

BORING LOG NO. FP-06

Page 1 of 1

PROJECT: Citrus County Combined Cycle Project

CLIENT: Fluor Enterprises, Inc.
Charlotte, NC

SITE: Citrus County, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 28.9680088° Longitude: -82.6733623°	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
DEPTH					
	WEATHERED LIMESTONE , light brown				3-6-23-20 N=29
	white				17-15-16-22 N=31
	yellowish-brown	5			19-26-20-13 N=46
	HIGHLY WEATHERED LIMESTONE , light brown				8-14-18-24 N=32
8.0					3-5-7-17 N=12
		10			10-7-10 N=17
					15-9-10 N=19
13.0	Boring Terminated at 13 Feet				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix B for description of laboratory procedures and additional data (if any).

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

 Groundwater initially observed at a depth of 2.80'.

Terracon
504 East Tyler Street
Tampa, Florida

Boring Started: 10/2/2015

Boring Completed: 10/2/2015

Drill Rig: CME-45

Driller: R. Swint, Sr.

Project No.: H4155013

Exhibit: A-8

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H4155013 PERMEABILITY BORING LOGS.GPJ TERRACON2015.GDT 10/15/15

BORING LOG NO. FP-07

Page 1 of 1

PROJECT: Citrus County Combined Cycle Project

CLIENT: Fluor Enterprises, Inc.
Charlotte, NC

SITE: Citrus County, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 28.9684561° Longitude: -82.6733652°	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
	DEPTH				
	POORLY GRADED SAND WITH CLAY (SP-SC) , fine grained, brown, loose				
1.0	HIGHLY WEATHERED LIMESTONE light brown				1-4-6-7 N=10
	yellowish-brown	5			5-4-1-3 N=5
	white	10			6-13-7-7 N=20
					10-14-8-5 N=22
					24-8-2-13 N=10
					22-7-3-10 N=10
12.0	Boring Terminated at 12 Feet				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix B for description of laboratory procedures and additional data (if any).

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

 Groundwater initially observed at a depth of 1.95'.

Terracon
504 East Tyler Street
Tampa, Florida

Boring Started: 10/1/2015

Boring Completed: 10/1/2015

Drill Rig: CME-45

Driller: R. Swint, Sr.

Project No.: H4155013

Exhibit: A-9

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H4155013 PERMEABILITY BORING LOGS.GPJ TERRACON2015.GDT 10/15/15

BORING LOG NO. FP-08

Page 1 of 1

PROJECT: Citrus County Combined Cycle Project

CLIENT: Fluor Enterprises, Inc.
Charlotte, NC

SITE: Citrus County, Florida

GRAPHIC LOG	LOCATION	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
	See Exhibit A-4 Latitude: 28.9689042° Longitude: -82.6733951°				
DEPTH					
	POORLY GRADED SAND WITH CLAY (SP-SC) , fine grained, orange-brown, loose				1-6-7-4 N=13
	HIGHLY WEATHERED LIMESTONE white				2-11-5-6 N=16
	WEATHERED LIMESTONE , white				7-21-17-13 N=38
	LIMESTONE , light brown				15-31-50/5"
	WEATHERED LIMESTONE , white				16-32-9-18 N=41
	HIGHLY WEATHERED LIMESTONE light brown				9-10-13 N=23
	Boring Terminated at 11.5 Feet				
Stratification lines are approximate. In-situ, the transition may be gradual.					
Hammer Type: Automatic					
Advancement Method: Mud Rotary		See Exhibit A-5 for description of field procedures See Appendix B for description of laboratory procedures and additional data (if any). See Appendix C for explanation of symbols and abbreviations.		Notes:	
Abandonment Method: Borings backfilled with soil cuttings upon completion.					
WATER LEVEL OBSERVATIONS  Groundwater initially observed at a depth of 0.62'.				Boring Started: 10/1/2015 Boring Completed: 10/1/2015 Drill Rig: CME-45 Driller: R. Swint, Sr. Project No.: H4155013 Exhibit: A-10	

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H4155013 PERMEABILITY BORING LOGS.GPJ TERRACON2015.GDT 10/15/15

BORING LOG NO. FP-09

Page 1 of 1

PROJECT: Citrus County Combined Cycle Project

CLIENT: Fluor Enterprises, Inc.
Charlotte, NC

SITE: Citrus County, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4		DEPTH (ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
	Latitude: 28.9697239° Longitude: -82.6774241°					
	DEPTH					
	0.3	POORLY GRADED SAND WITH SILT (SP-SM) , fine grained, brown, loose	5			2-6-8-5 N=14
		HIGHLY WEATHERED LIMESTONE light brown				4-6-9-12 N=15
	4.0	WEATHERED LIMESTONE , yellowish-brown				9-8-21-11 N=29
6.0	Boring Terminated at 6 Feet					

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix B for description of laboratory
procedures and additional data (if any).

See Appendix C for explanation of symbols and
abbreviations.

WATER LEVEL OBSERVATIONS

 Groundwater initially observed at a depth of 1.67'.

Terracon
504 East Tyler Street
Tampa, Florida

Boring Started: 9/29/2015

Boring Completed: 9/29/2015

Drill Rig: CME-45

Driller: R. Swint, Sr.

Project No.: H4155013

Exhibit: A-11

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H4155013 PERMEABILITY BORING LOGS.GPJ TERRACON2015.GDT 10/15/15

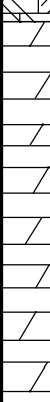
BORING LOG NO. FP-10

Page 1 of 1

PROJECT: Citrus County Combined Cycle Project

CLIENT: Fluor Enterprises, Inc.
Charlotte, NC

SITE: Citrus County, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 28.9702368° Longitude: -82.6774275°	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
	DEPTH				
	POORLY GRADED SAND WITH SILT (SP-SM) , fine grained, orange-brown, very loose	0.8			
	HIGHLY WEATHERED LIMESTONE	2.0			WOH/6"-2-19-16 N=21
	WEATHERED LIMESTONE , light brown				11-6-23-17 N=29
					17-20-22-22 N=42
					16-17-9 N=26
	Boring Terminated at 7.5 Feet	7.5			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix B for description of laboratory procedures and additional data (if any).

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

 Groundwater initially observed at a depth of 2.30'.

Terracon
504 East Tyler Street
Tampa, Florida

Boring Started: 9/30/2015

Boring Completed: 9/30/2015

Drill Rig: CME-45

Driller: R. Swint, Sr.

Project No.: H4155013

Exhibit: A-12

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H4155013 PERMEABILITY BORING LOGS.GPJ TERRACON2015.GDT 10/15/15

BORING LOG NO. PB-01

Page 1 of 1

PROJECT: Citrus County Combined Cycle Project

CLIENT: Fluor Enterprises, Inc.
Charlotte, NC

SITE: Citrus County, Florida

GRAPHIC LOG	LOCATION See Exhibit A-4 Latitude: 28.9699906° Longitude: -82.6774259°	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS
DEPTH					
	POORLY GRADED SAND WITH SILT (SP-SM) , fine grained, brown, loose				
1.0	HIGHLY WEATHERED LIMESTONE light brown				1-2-12-14 N=14
2.0	WEATHERED LIMESTONE , light brown				23-10-23-10 N=33
	white	5			14-27-20-12 N=47
6.0	HIGHLY WEATHERED LIMESTONE white				20-7-8-5 N=15
					WOR/18"=2 N=0
10.0	WEATHERED LIMESTONE , white	10			7-22-41-28 N=63
					8-30-35-28 N=65
		15			14-11-16-11 N=27
16.0	Boring Terminated at 16 Feet				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary

See Exhibit A-5 for description of field procedures

Notes:

Abandonment Method:
Borings backfilled with soil cuttings upon completion.

See Appendix B for description of laboratory procedures and additional data (if any).

See Appendix C for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

 Groundwater initially observed at a depth of 2.40'.

Terracon
504 East Tyler Street
Tampa, Florida

Boring Started: 9/30/2015

Boring Completed: 9/30/2015

Drill Rig: CME-45

Driller: R. Swint, Sr.

Project No.: H4155013

Exhibit: A-13

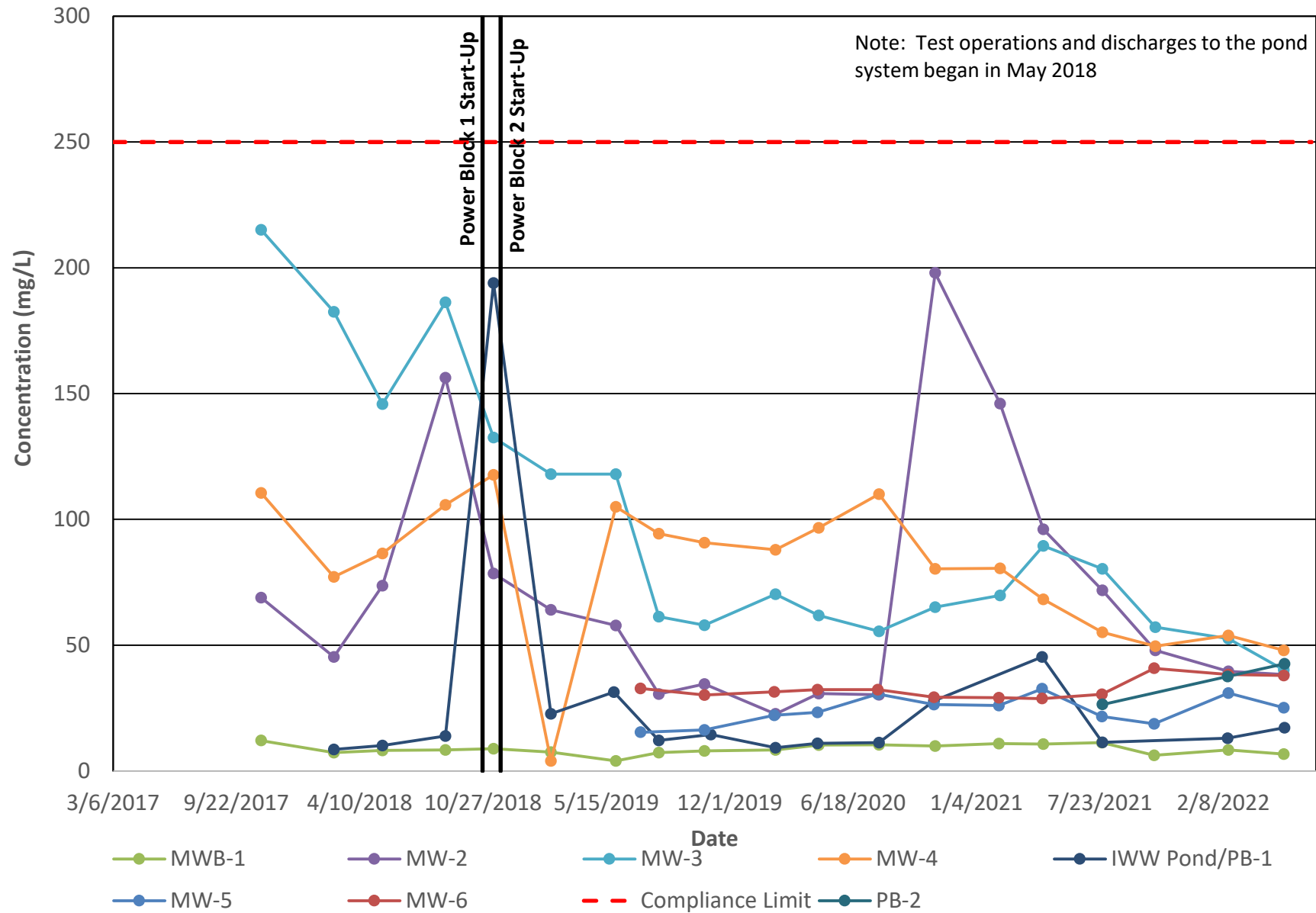
THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H4155013 PERMEABILITY BORING LOGS.GPJ TERRACON2015.GDT 10/15/15

APPENDIX C

Groundwater Quality Graphs

Chloride

Note: Test operations and discharges to the pond system began in May 2018



CCC Project Background Water Quality

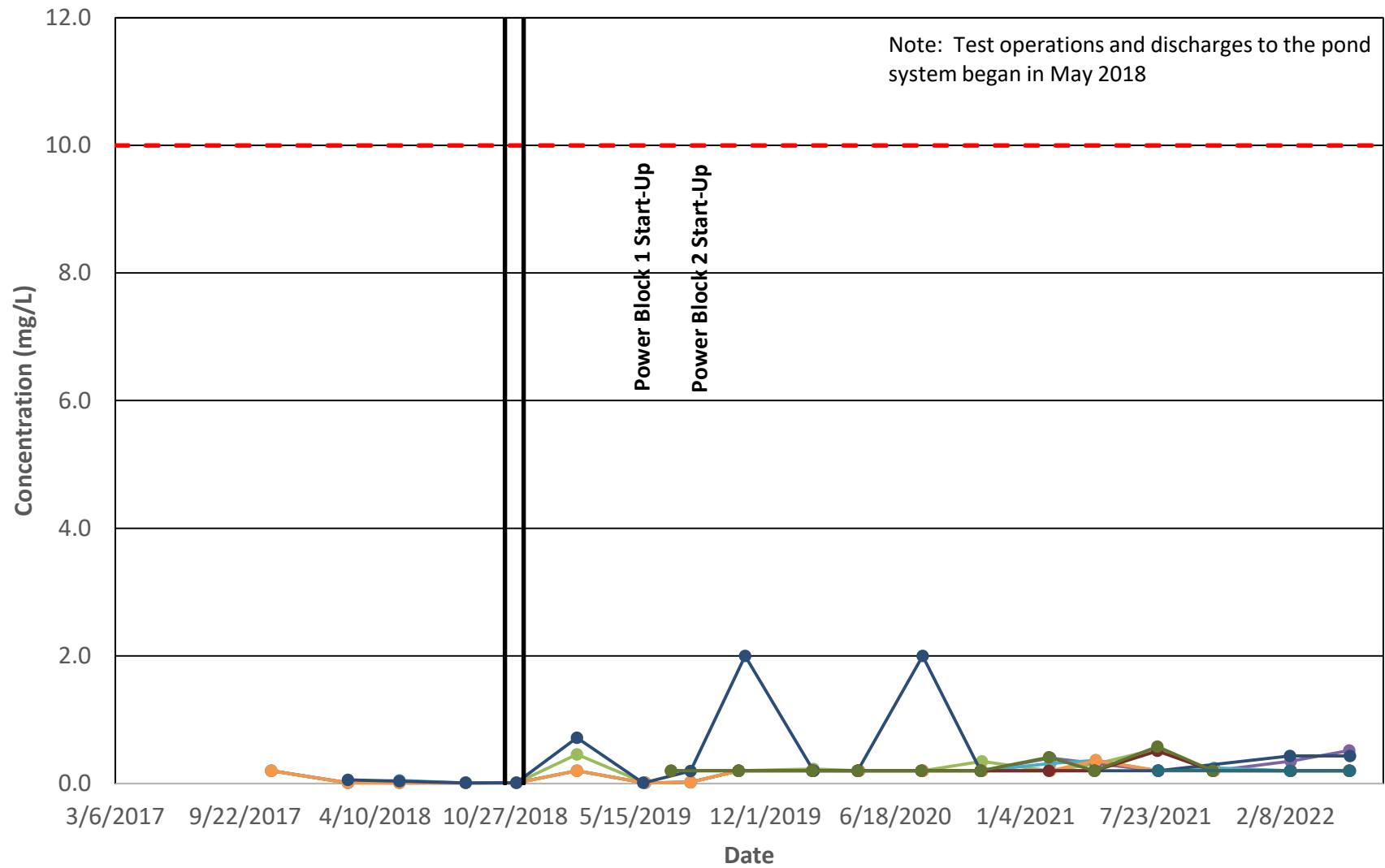
Geosyntec
consultants

Tampa, Florida

July 2022

Appendix
C-1

Nitrate



MWB-1 MW-2 MW-3 MW-4 IWW Pond/PB-1
 MW-5 MW-6 Compliance Limit PB-2

CCC Project Background Water Quality

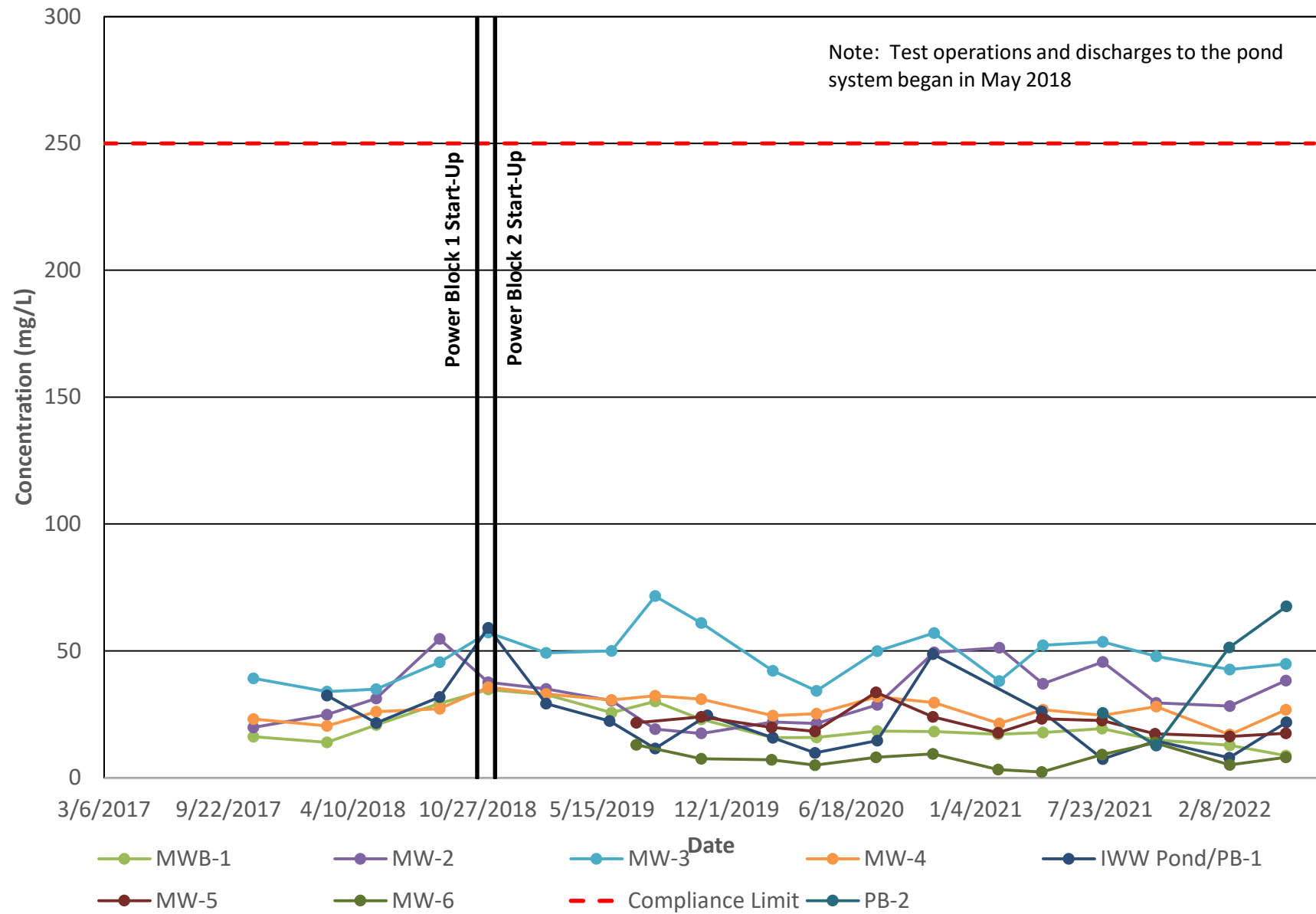
Geosyntec
consultants

Tampa, Florida

July 2022

Appendix
C-2

Sulfate



CCC Project Background Water Quality

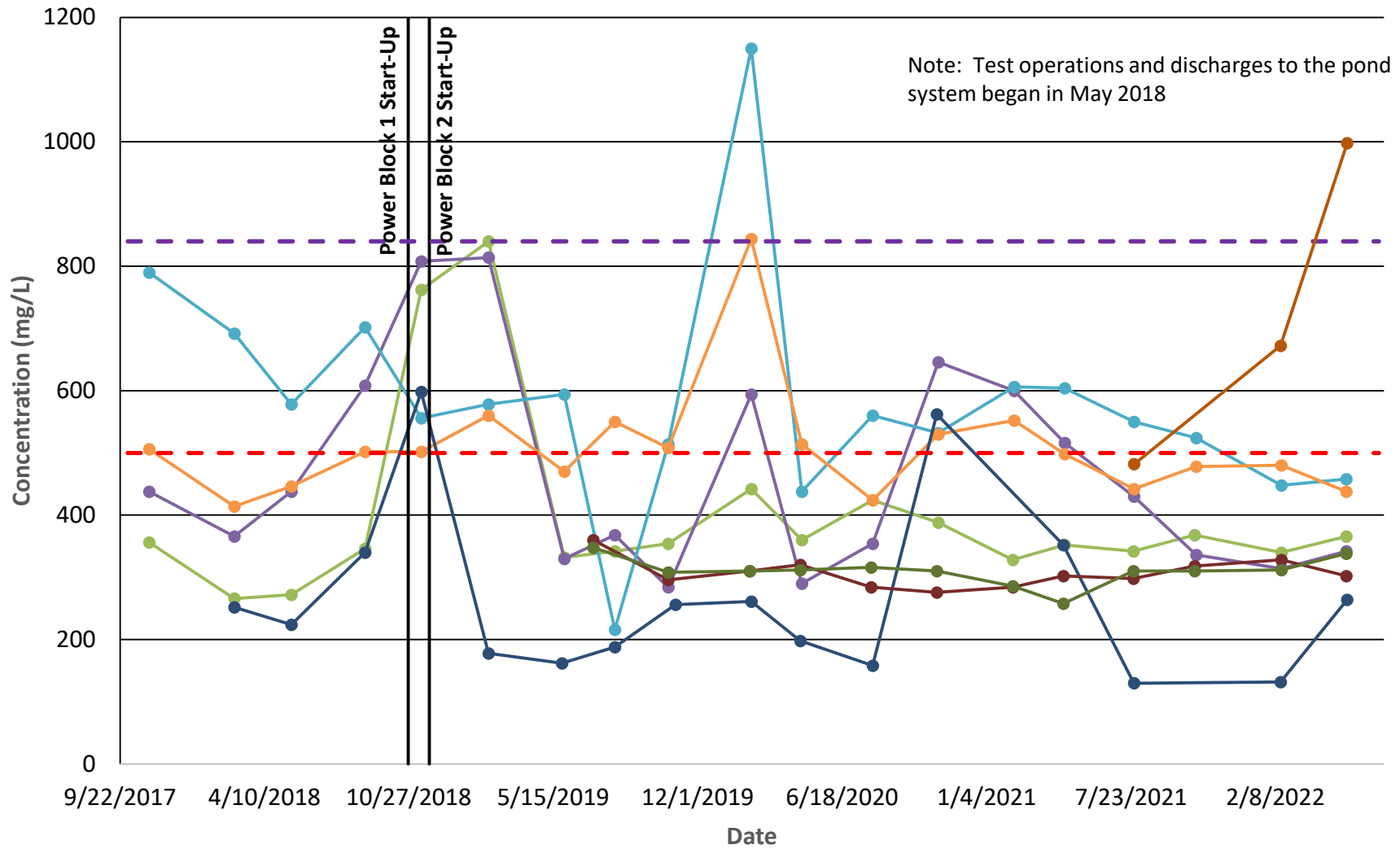
Geosyntec
consultants

Tampa, Florida

July 2022

Appendix
C-3

Total Dissolved Solids (TDS)



- MWB-1
- MW-2
- MW-3
- MW-4
- IWW Pond/PB-1
- MW-5
- MW-6
- Compliance Limit
- New Background Concentration
- PB-2

CCC Project Background Water Quality

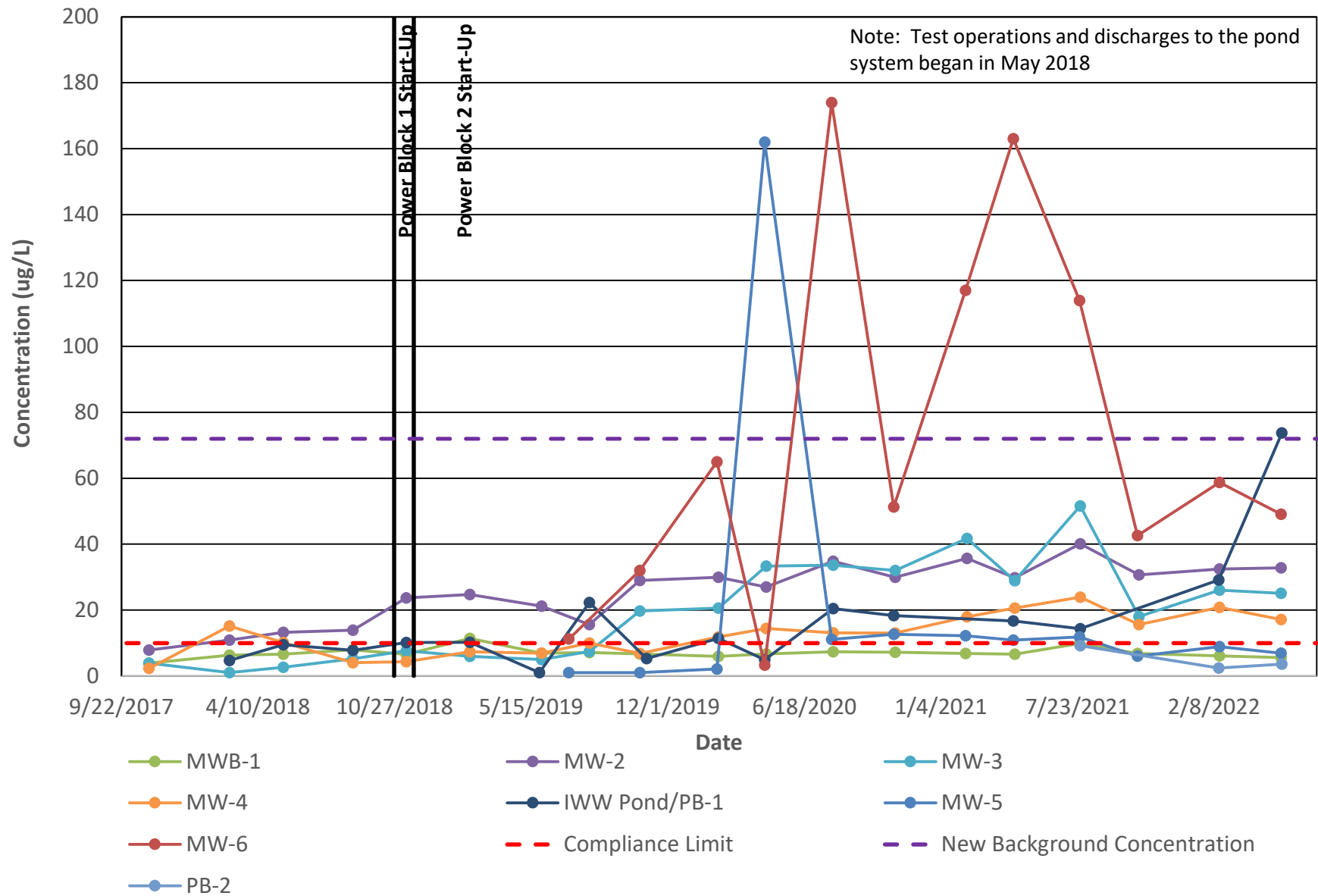
Geosyntec
consultants

Tampa, Florida

July 2022

Appendix
C-4

Arsenic



CCC Project Background Water Quality

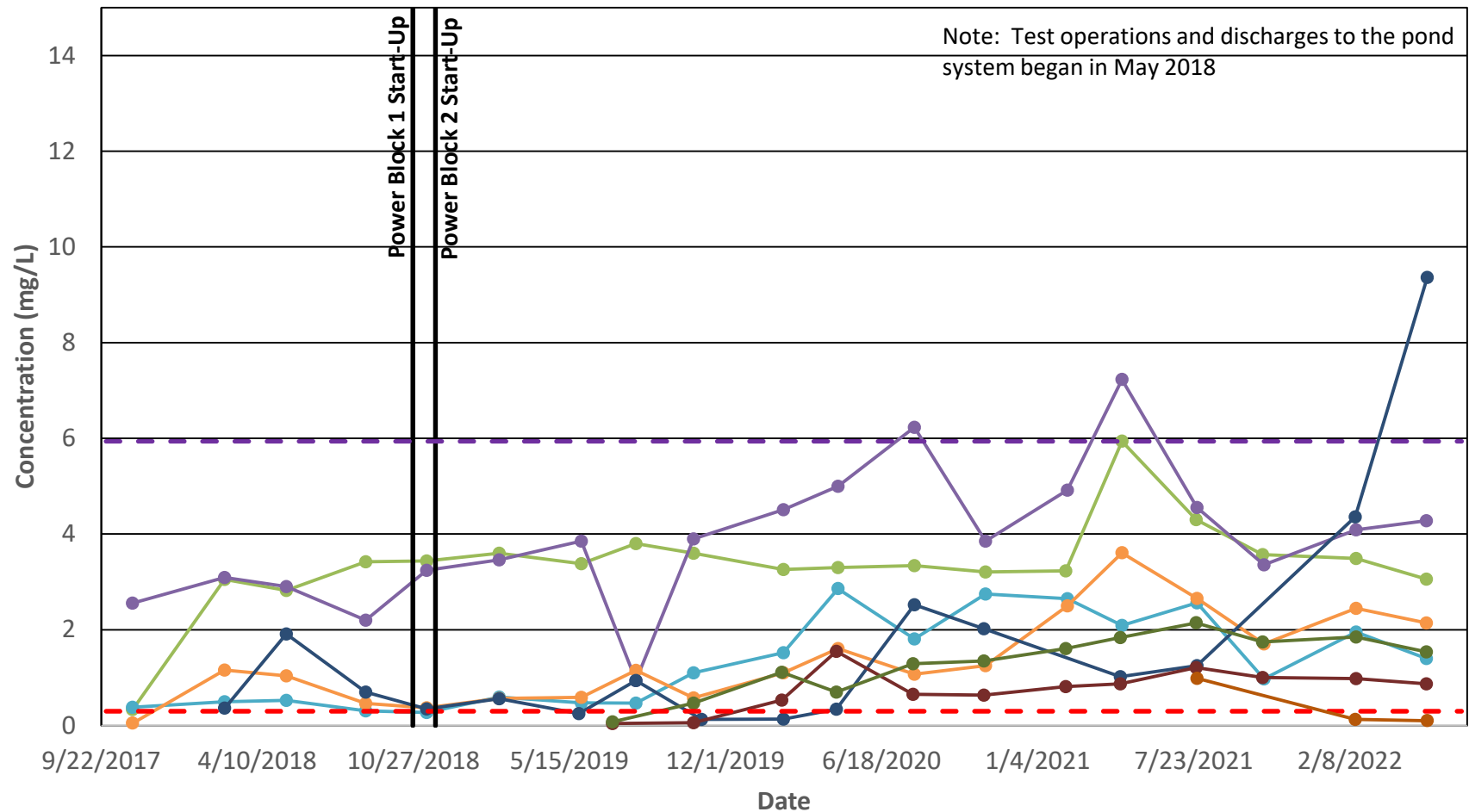
Geosyntec
consultants

Tampa, Florida

July 2022

Appendix
C-5

Iron



MWB-1

MW-4

MW-6

PB-2

MW-2

IWW Pond/PB-1

Compliance Limit

MW-3

MW-5

New Background Concentration

CCC Project Background Water Quality

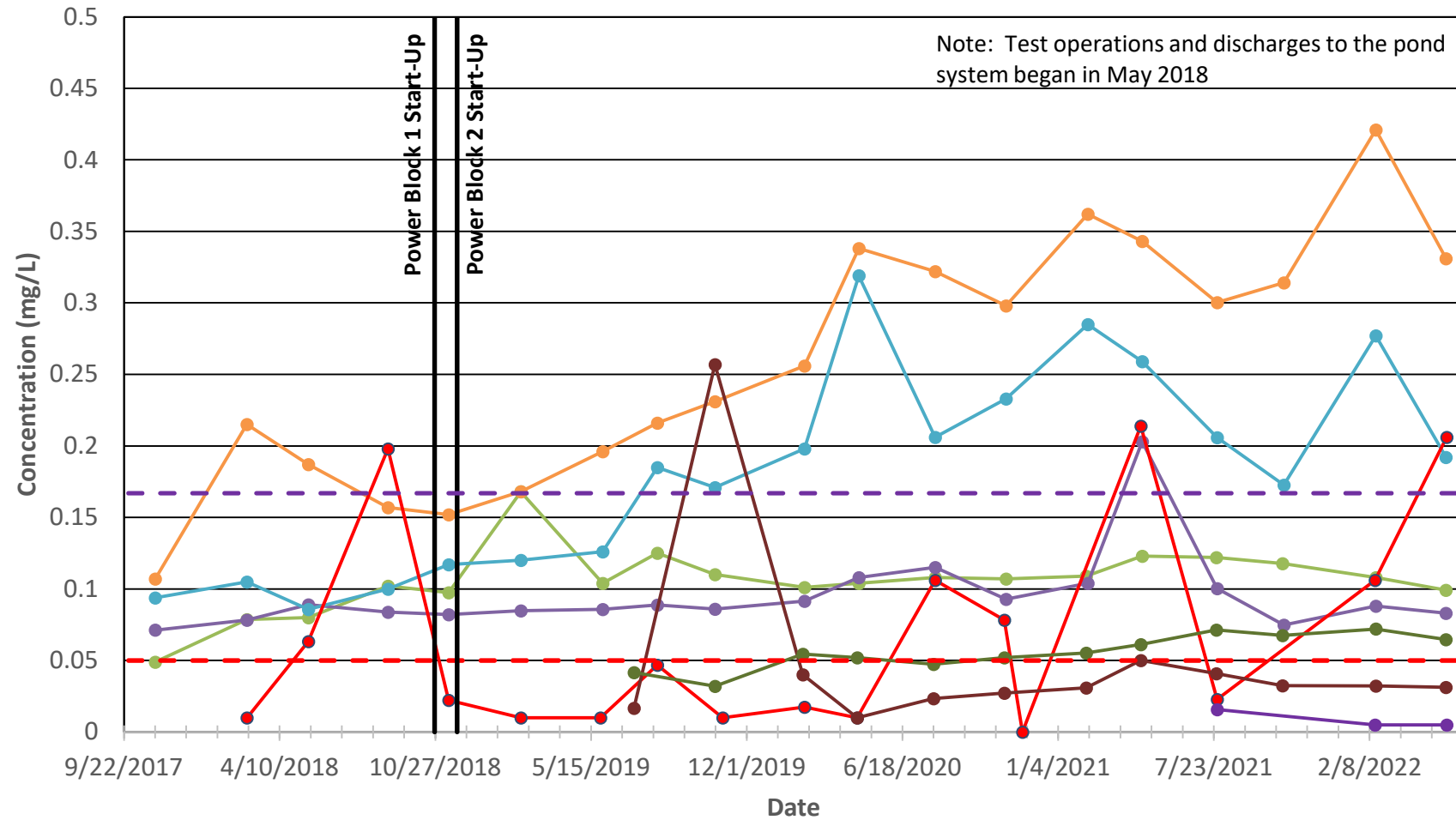
Geosyntec
consultants

Tampa, Florida

July 2022

Appendix
C-6

Manganese



CCC Project Background Water Quality

Geosyntec
consultants

Tampa, Florida

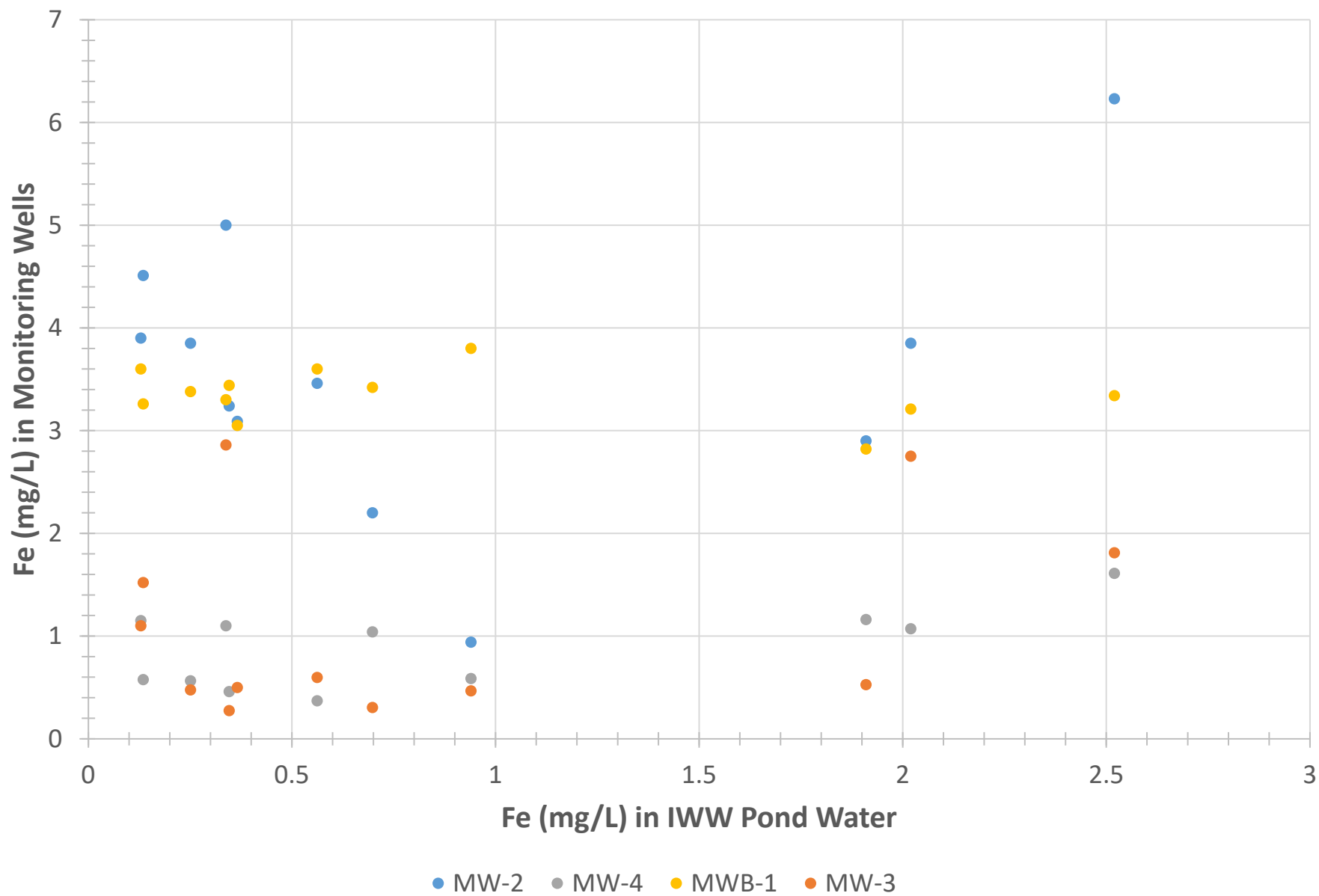
July 2022

Appendix
C-7

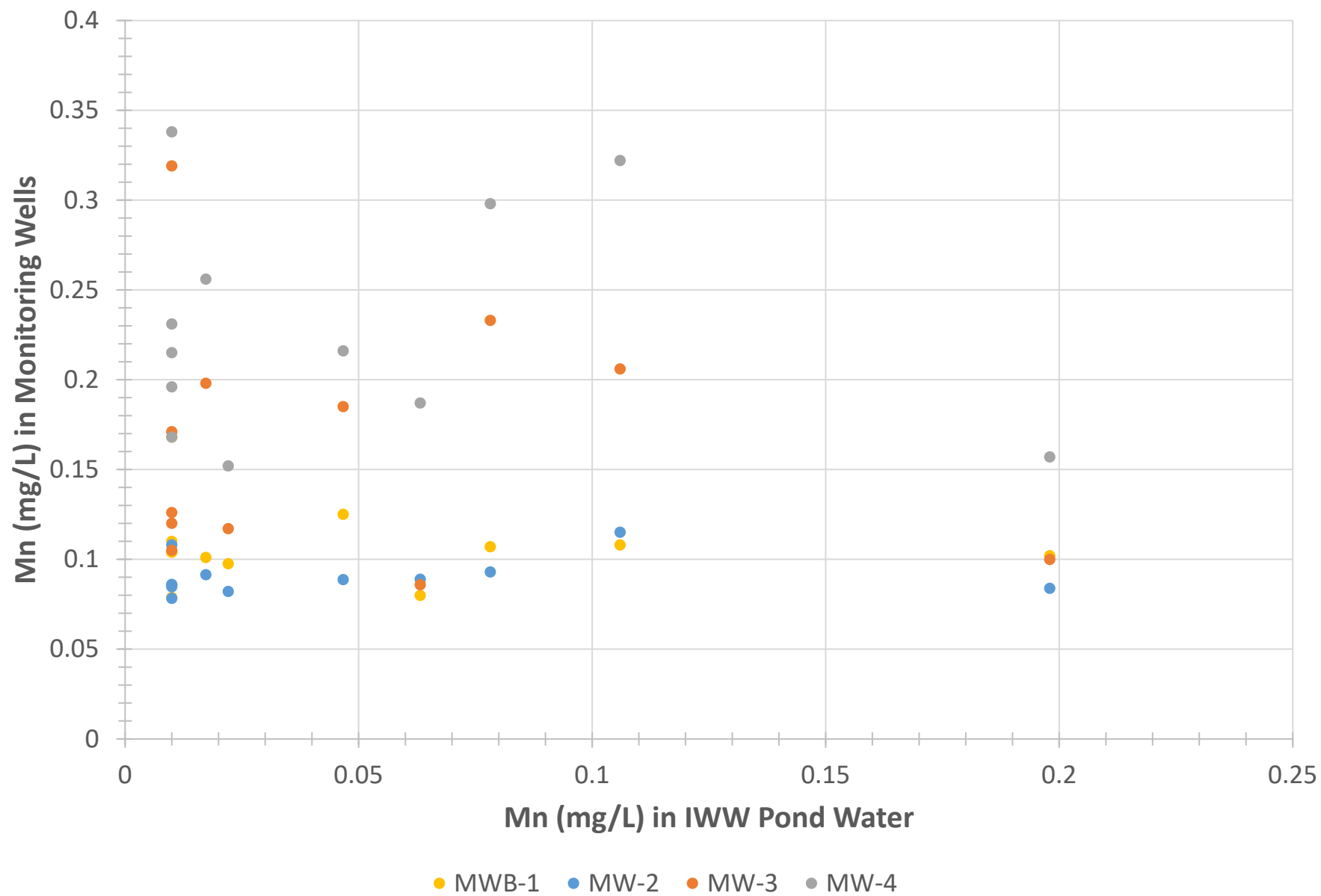
APPENDIX D

Correlation of IWW Pond System and Groundwater Well Measured Constituents

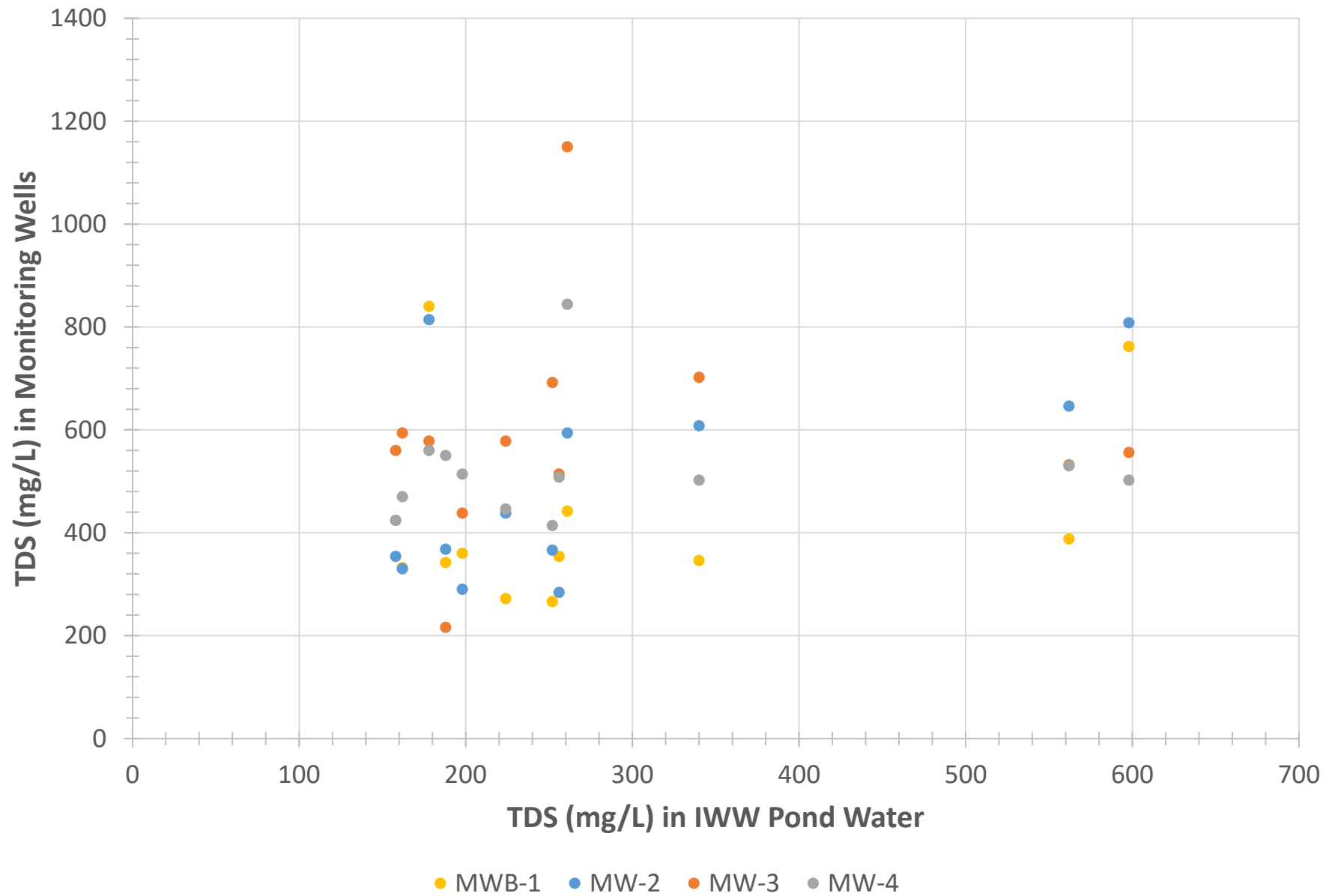
Pond Water vs. Groundwater Fe Concentrations



Pond Water vs. Groundwater Mn Concentrations



Pond Water vs. Groundwater TDS Concentrations



APPENDIX E

Groundwater Sampling Parameters

TABLE 1
MAXIMUM CONTAMINANT LEVELS FOR INORGANIC COMPOUNDS

FEDERAL CONTAMINANT ID NUMBER	CONTAMINANT	MCL (mg/L)
1074	Antimony	0.006
1005	Arsenic	0.05 through 12/31/2004 0.010 on and after 01/01/2005
1094	Asbestos	7 MFL
1010	Barium	2
1075	Beryllium	0.004
1015	Cadmium	0.005
1020	Chromium	0.1
1024	Cyanide (as free Cyanide)	0.2
1025	Fluoride	4.0
1030	Lead	0.015
1035	Mercury	0.002
1036	Nickel	0.1
1040	Nitrate	10 (as N)
1041	Nitrite	1 (as N)
	Total Nitrate and Nitrite	10 (as N)
1045	Selenium	0.05
1052	Sodium	160
1085	Thallium	0.002

Abbreviations Used: MCL = maximum contaminant level;
MFL = million fibers per liter (longer than 10 micrometers);
mg/L = milligrams per liter.

TABLE 4
MAXIMUM CONTAMINANT LEVELS FOR VOLATILE ORGANIC CONTAMINANTS

FEDERAL CONTAMINANT ID NUMBER	CONTAMINANT & (CAS NUMBER)	MCL (mg/L)
2977	1,1-Dichloroethylene (75-35-4)	0.007
2981	1,1,1-Trichloroethane (71-55-6)	0.2
2985	1,1,2-Trichloroethane (79-00-5)	0.005
2980	1,2-Dichloroethane (107-06-2)	0.003
2983	1,2-Dichloropropane (78-87-5)	0.005
2378	1,2,4-Trichlorobenzene (120-82-1)	0.07
2990	Benzene (71-43-2)	0.001
2982	Carbon tetrachloride (56-23-5)	0.003
2380	cis-1,2-Dichloroethylene (156-59-2)	0.07
2964	Dichloromethane (75-09-2)	0.005
2992	Ethylbenzene (100-41-4)	0.7
2989	Monochlorobenzene (108-90-7)	0.1
2968	o-Dichlorobenzene (95-50-1)	0.6
2969	para-Dichlorobenzene (106-46-7)	0.075
2996	Styrene (100-42-5)	0.1
2987	Tetrachloroethylene (127-18-4)	0.003
2991	Toluene (108-88-3)	1

2979	trans-1,2-Dichloroethylene (156-60-5)	0.1
2984	Trichloroethylene (79-01-6)	0.003
2976	Vinyl chloride (75-01-4)	0.001
2955	Xylenes (total) (1330-20-7)	10

Abbreviations used: CAS Number = Chemical Abstract System Number;
MCL = maximum contaminant level;
mg/L = milligrams per liter.

TABLE 5
MAXIMUM CONTAMINANT LEVELS FOR SYNTHETIC ORGANIC CONTAMINANTS

FEDERAL CONTAMINANT ID NUMBER	CONTAMINANT & (CAS NUMBER)	MCL (mg/L)	Regulatory Detection Limit (mg/L)
2063	2,3,7,8-TCDD (Dioxin) (1746-01-6)	3 X 10 ⁻⁸	5 x 10 ⁻⁹
2105	2,4-D (94-75-7)	0.07	0.0001
2110	2,4,5-TP (Silvex) (93-72-1)	0.05	0.0002
2051	Alachlor (15972-60-8)	0.002	0.0002
2050	Atrazine (1912-24-9)	0.003	0.0001
2306	Benzo(a)pyrene (50-32-8)	0.0002	0.00002
2046	Carbofuran (1563-66-2)	0.04	0.0009
2959	Chlordane (57-74-9)	0.002	0.0002
2031	Dalapon (75-99-0)	0.2	0.001
2035	Di(2-ethylhexyl)adipate (103-23-1)	0.4	0.0006
2039	Di(2-ethylhexyl)phthalate (117-81-7)	0.006	0.0006
2931	Dibromochloropropane (DBCP) (96-12-8)	0.0002	0.00002
2041	Dinoseb (88-85-7)	0.007	0.0002
2032	Diquat (85-00-7)	0.02	0.0004
2033	Endothall (145-73-3)	0.1	0.009
2005	Endrin (72-20-8)	0.002	0.00001
2946	Ethylene dibromide (EDB) (106-93-4)	0.00002	0.00001
2034	Glyphosate (1071-83-6)	0.7	0.006
2065	Heptachlor (76-44-8)	0.0004	0.00004
2067	Heptachlor epoxide (1024-57-3)	0.0002	0.00002
2274	Hexachlorobenzene (118-74-1)	0.001	0.0001
2042	Hexachlorocyclopentadiene (77-47-4)	0.05	0.0001
2010	Lindane (58-89-9)	0.0002	0.00002
2015	Methoxychlor (72-43-5)	0.04	0.0001
2036	Oxamyl (vydate) (23135-22-0)	0.2	0.002
2326	Pentachlorophenol (87-86-5)	0.001	0.00004
2040	Picloram (1918-02-1)	0.5	0.0001
2383	Polychlorinated biphenyls (PCBs)	0.0005	0.0001
2037	Simazine (122-34-9)	0.004	0.00007
2020	Toxaphene (8001-35-2)	0.003	0.001

Abbreviations used: CAS Number = Chemical Abstract System Number;
MCL = maximum contaminant level;
mg/L = milligrams per liter.

NOTE: The Detection Limits listed in this table become effective January 22, 2004.

TABLE 6
SECONDARY DRINKING WATER STANDARDS

FEDERAL CONTAMINANT ID NUMBER	CONTAMINANT	SMCL (mg/L)*
1002	Aluminum	0.2
1017	Chloride	250
1022	Copper	1
1025	Fluoride	2.0
1028	Iron	0.3
1032	Manganese	0.05
1050	Silver	0.1
1055	Sulfate	250
1095	Zinc	5
1905	Color	15 color units
1920	Odor**	3 (threshold odor number)
1925	pH	6.5 - 8.5
1930	Total Dissolved Solids	500
2905	Foaming Agents	0.5

Abbreviations Used:

SMCL = maximum contaminant level;
mg/L = milligrams per liter.

* Except color, odor, and pH.

** For purpose of compliance with ground water quality secondary standards, as referenced in Chapter 62-520, F.A.C., levels of ethylbenzene exceeding 30 micrograms per liter, toluene exceeding 40 micrograms per liter, or xylenes exceeding 20 micrograms per liter shall be considered equivalent to exceeding the drinking water secondary standard for odor.

APPENDIX F

Statistical Analysis Summary

Appendix F

Statistical Analysis Summary

Prepared for

Duke Energy Florida, LLC

14385 N. Access Road
Crystal River, Florida 34428

Prepared by

*Geosyntec Consultants, Inc.
130 Stone Road West
Guelph, Ontario N1G 3Z2*

Project Number FR7631A

July 21, 2022

TABLE OF CONTENTS

1.	Introduction	1
2.	Background data sets	2
2.1	Regional Data Review and Preparation	2
2.1.1	Spatial Evaluation and Determination of Spatial Extent for Regional Background	2
2.2	Production Wells Dataset.....	3
2.3	Site Background Well Dataset	3
3.	Statistical evaluation.....	4
3.1	Data Preparation.....	4
3.2	Temporal Trend Analysis.....	4
3.2.1	Temporal Trend Analysis Results.....	4
3.2.2	Final Datasets	5
3.3	Determination of Background Threshold Values	5
3.3.1	Determination of Statistical Distributions.....	6
3.3.2	Determination of UTLs	6
4.	Selection of a Background Threshold Value.....	7
4.1	Arsenic	7
4.2	Iron	7
4.3	Manganese	7
4.4	TDS	7
5.	Summary.....	8
6.	References	9

LIST OF TABLES

Table F-1	Regional Arsenic Concentration Dataset
Table F-2	Regional Iron Concentration Dataset
Table F-3	Regional Manganese Concentration Dataset
Table F-4	TDS Background Data from Site Production Wells
Table F-5	Concentration Dataset from Background Well MWB-1 Used in Statistical Evaluation
Table F-6	Mann-Kendall Results
Table F-7	Background Threshold Statistical Evaluation Summary

LIST OF FIGURES

- Figure F-1 Lognormal q-q Plots of Regional Arsenic Concentrations Binned by Distance
- Figure F-2 Lognormal q-q Plots of Regional Iron Concentrations Binned by Distance
- Figure F-3 Lognormal q-q Plots of Regional Manganese Concentrations Binned by Distance

ACRONYMS AND ABBREVIATIONS

CCCP	Citrus Combined Cycle Plant
CREC	Crystal River Energy Complex
DEF	Duke Energy Florida
FDEP	Florida Department of Environmental Protections
FDOH	Florida Department of Health
GCTL	Groundwater Cleanup Target Levels
µg/L	micrograms per liter
mg/L	milligrams per liter
PWS	public water supply
TDS	total dissolved solids
UTL	upper tolerance level

1. INTRODUCTION

This appendix describes the statistical evaluation of background concentrations of arsenic, iron, manganese, and total dissolved solids in the vicinity of the Citrus Combined Cycle Plant (CCCP, site) adjacent to the eastern boundary of Duke Energy Florida, LLC (DEF)'s Crystal River Energy Complex (CREC) located at 14385 North Access Road, Crystal River, FL. This study was undertaken due to exceedances of Florida Groundwater Cleanup Target Levels (GCTLs) in baseline sampling prior to operation of the IWW percolation pond system for iron, manganese, and total dissolved solids (TDS). The goal of this study was to identify whether regional background of these parameters exceeds GCTLs and calculate appropriate background concentration thresholds for arsenic, iron, manganese, and TDS, if warranted.

2. BACKGROUND DATA SETS

The background data sets that were compiled from wells located upgradient or side gradient to the site and screened in the Upper Floridian Aquifer. Regional data sets were compiled for arsenic, iron, and manganese from offsite wells in Citrus County using public data sources, which were combined with site baseline sampling data in the case of iron and manganese. A site production wells data set was compiled for TDS in place of a regional dataset because regional data largely came from high volume production wells, which often had increasing temporal trends. Site background well data sets were prepared for iron, manganese, and TDS using results from background well MWB-1.

2.1 Regional Data Review and Preparation

The concentrations of arsenic, iron, and manganese were collected from water quality data for public and private water supply wells in the Upper Floridian Aquifer within Citrus County from the following sources:

- Florida Department and Environmental Protection (FDEP) Public Water Supply (PWS) database (Citrus County data); and
- Florida Department of Health (FDOH) Well Surveillance Program database (Citrus County data).

Compiled background data from groundwater wells at the Site and at nearby wells was filtered based on the following criteria:

- Wells located upgradient or side gradient to the Site; and
- Wells screen interval are comparable to onsite wells – screened in the same aquifer.

The distance of the wells from the Site was determined using Geographical Information System (GIS) techniques and the wells were binned based on distance from the Site. For each location, average concentrations of the parameters of interest were calculated and mapped (Figures 16 to 18 in primary report).

For iron and manganese, there were limited regional data available from FDEP and FDOH, so concentrations from the Site baseline sampling event were also included in the regional datasets for iron and manganese.

Statistical analyses were conducted using ProUCL version 5.1 (U.S. Environmental Protection Agency, 2016) and R (R Core Team, 2021).

2.1.1 Spatial Evaluation and Determination of Spatial Extent for Regional Background

Lognormal quantile-quantile (q-q) plots were constructed for the regional datasets for each analyte with the points colored based on distance bins from the site (Figures F-1 to F-3). These were examined together with the maps (Figures 16 to 18 in primary report) to determine that the

collected dataset from within 5 miles of the site appeared to be part of a single background population for each of the three parameters. Therefore, locations within 5 miles of the site were included in the evaluation of background concentrations based on regional datasets. As shown in Figures 16 to 18 (in the primary report) spatial coverage of samples was generally better within 5 miles than outside 5 miles.

2.2 Production Wells Dataset

Data from onsite production wells was evaluated as an alternative source of background data for TDS because available TDS data associated with Water Use Permits (WUPs) in Citrus County were found to originate from high volume pumping wells showing evidence of increasing trends in TDS. Available TDS data for 10 production wells in background areas as described above were collected.

2.3 Site Background Well Dataset

As an alternative to the regional and production well datasets for iron, manganese, and TDS, water quality data for these parameters from the site background well MWB-1 were considered as an alternative data source for determining an alternate background threshold value for these parameters. This dataset included seventeen sampling events at MWB-1 from November 2017 to October 2021.

3. STATISTICAL EVALUATION

The objective of the statistical evaluation was to determine background threshold value for each dataset in the form of an upper tolerance limit (UTL). The statistical analysis was carried out in the following steps:

1. Data preparation, which included handling duplicate and nondetect results;
2. Temporal trend analysis using the Mann-Kendall test, examination of time trend plots, and selection of the final background data sets based on these tests and assessment;
3. Determining summary statistics for the data sets (e.g.: minimum, maximum, and mean values), which can be used in a simple method for determining a background threshold;
4. Testing the final data sets to determine if they appear to have a particular statistical distribution; and
5. Determining an appropriate upper tolerance limit (UTL) for each data set appropriate to the statistical data distribution.

3.1 Data Preparation

The datasets included either all results detected above the associated detection limits or, in the case of the regional public data, results of 0 without the associated detection limit. Where the datasets obtained from FDEP and FDOH included non-detect concentrations denoted by a value of zero, because the relevant detection limits were not provided, these data were excluded from further analysis. The proportion of raw data with values of 0 ranged from 4.2% for arsenic to 42% for manganese. Where duplicate values were available for a location, date, and analyte, the maximum value was used in the statistical analysis.

3.2 Temporal Trend Analysis

Tests for trend were conducted using the Mann-Kendall test at 95% significance level (procedure presented in Section 17.3.2 of EPA's Unified Guidance) for individual locations using R (R Core Team 2021) and the Kendall package (McLeod, 2011). As these tests require a minimum of four sampling events per location, these tests were conducted only for the arsenic regional dataset, the production well TDS dataset, and the MWB-1 datasets. The arsenic regional background dataset was limited to include only those locations with four or more data points, which is enough data to conduct a Mann-Kendall test for trend. The regional iron and magnesium datasets were too limited to allow for temporal trend analysis on enough of the data to move forward with the background evaluation. Therefore, the regional iron and magnesium datasets were not evaluated for temporal trends.

3.2.1 Temporal Trend Analysis Results

Results of the Mann-Kendall tests for trend are shown in Table F-6. For the regional arsenic dataset, 129 of 174 wells did not show evidence of a statistically significant trend, 39 showed

decreasing trends with 90% confidence, and six showed increasing trends with 90% confidence. The time series for those wells with trends identified were examined and did not show increases or decreases of a large magnitude, so all 174 wells were included in the background threshold value determination.

For the production wells TDS dataset, 6 of 10 wells did not show evidence of a statistically significant trend, while 3 showed increasing trends, and one well a decreasing trend. Visual inspection of the time series for production wells with increasing or decreasing trends did not show evidence of changes in TDS concentration of a large magnitude over time. Therefore, all 10 production wells were included in the dataset for background threshold determination for TDS.

For the dataset from MWB-1, there was not evidence of a statistically significant trend for TDS, while for iron and manganese the Mann-Kendall test indicated significant increasing trends. However, manganese concentrations have been stable at this well since the May 2019 sampling event and the iron trend appears stable (Figure C-6 to C-7 in Appendix C). Therefore, the data from MWB-1 were used in determining background threshold values for manganese and iron.

3.2.2 Final Datasets

The final datasets used for determining background threshold values are included for regional arsenic (Table F-1), regional iron (Table F-2), regional manganese (Table F-3), production well TDS (Table F-4), and MWB-1 data (Table F-5).

3.3 Determination of Background Threshold Values

One method that was looked at for determining background threshold values was the Simple Method described in Guidance for Comparing Background and Site Chemical Concentrations in Groundwater (FDEP, 2013). In this method statistical tests are not required, and background is determined using the lower of the maximum concentration in background wells or two times the mean concentration in background wells. These values for each dataset are included in Table F-6.

The second method for determining background threshold values based on the Unified Guidance (EPA, 2009) is the determination of an upper tolerance limits (UTLs) for the data. The UTL constructed on background data is designed to cover all but a small percentage of the background population measurements. The UTL is a confidence limit constructed on an upper percentile of the background dataset, for example, 95th percentile, also known as coverage. The coverage defines the proportion of background population that the limit is supposed to contain, typically 95% or 99%. Confidence level defines the confidence level with which the limit contains that proportion of the background, typically 95%. For example, a UTL with 95% confidence and 99% coverage is denoted as 95-99 UTL and would contain 99% of the background population with 95% confidence. UTLs were derived using parametric or nonparametric methods depending on the underlying distribution determined for each dataset. The determinations of statistical distributions and UTLs were performed using proUCL 5.1.

3.3.1 Determination of Statistical Distributions

To determine whether a parametric statistical method (i.e., one that assumes that the data follow a known probability distribution) or non-parametric statistical method (i.e., one that does not assume a particular distribution of the data) is selected to establish LCLs, the data was tested against one of three discernible probability distributions; normal, lognormal and Gamma. All tests were conducted at the 95% significance level. All the background datasets except the two manganese datasets did not have a discernable distribution, while the regional manganese concentrations had a Gamma distribution and the MWB-1 manganese data had a normal distribution (Table F-7).

3.3.2 Determination of UTLs

Based on the statistical distribution determinations described above, an appropriate UTL was determined for each dataset. The values of the UTLs and the type of UTL used are described in Table F-7. For the data without a discernable distribution, nonparametric 95-99 UTLs were determined. For manganese, 95-95 UTLs appropriate to the determined statistical distribution were determined.

4. SELECTION OF A BACKGROUND THRESHOLD VALUE

4.1 Arsenic

The nonparametric 95-99 UTL for arsenic based on the regional background dataset of 72 µg/L was selected at the background threshold value. The regional dataset for arsenic was large and indicative of widespread background arsenic in the UFA in Citrus County.

4.2 Iron

The regional background dataset for iron was limited and did not allow for evaluation of within well temporal trends in iron concentrations, while the nonparametric 95-99 UTL based on regional data was equal to the maximum value of 14.9 mg/L. Therefore, the nonparametric 95-99 UTL based on regional data of 5.94 mg/L was selected as the background threshold value. This background threshold value would also be selected as the background threshold value for iron when using the Simple Method (FDEP, 2013).

4.3 Manganese

The manganese regional background dataset for manganese was also limited and did not enable evaluation of within well temporal trends. However, the Gamma 95-95 UTL determined with the regional manganese background data of 0.18 mg/L was similar to the normal 95-95 UTL of 0.168 mg/L determined with the MWB-1 data. This gives additional confidence in selected in normal 95-95 UTL of 0.168 mg/L as the background threshold value for manganese.

4.4 TDS

Since the production wells in some cases showed increasing trends, and could perhaps cause upconing of saline water, the nonparametric 95-99 UTL for TDS based on the MWB-1 data was selected as the background threshold value. This gives a background threshold value of 840 mg/L.

5. SUMMARY

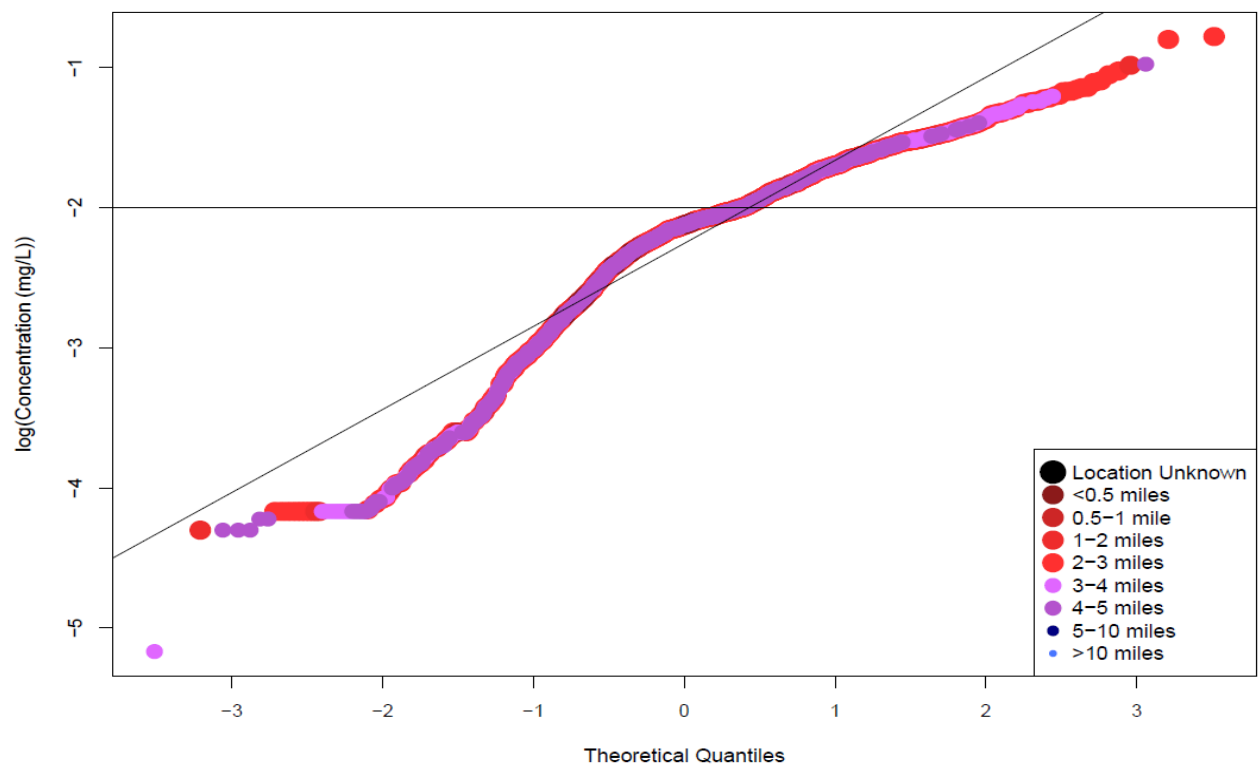
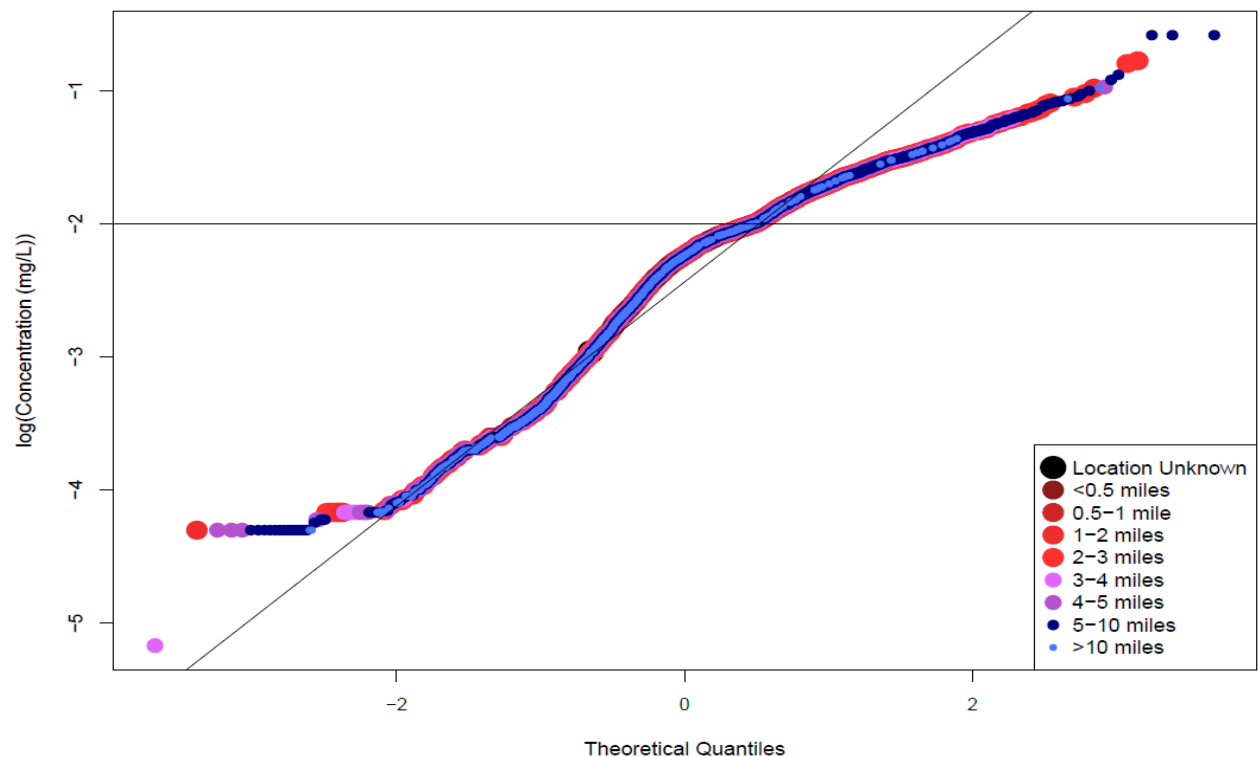
Background concentration of arsenic, iron, manganese, and TDS were found to be elevated in the vicinity of CCCP. Therefore, alternate background threshold values were determined using UTLs. The recommended background threshold values are:

- 72 µg/L for arsenic based on regional data obtained from FDEP and FDOH;
- 5.94 mg/L for iron based on concentrations in on-site background well MWB-1;
- 0.168 mg/L for manganese based on concentrations in on-site background well MWB-1;
and
- 840 mg/L for TDS based on concentrations in on-site background well MWB-1

These background threshold values are necessary due to regionally elevated background concentrations of arsenic that are evident in the regional data sets obtained from FDEP and FDOH and elevated background concentrations of iron, manganese and TDS that are present in the regional datasets and Site background well MWB-1.

6. REFERENCES

- A.I. McLeod (2011). Kendall: Kendall rank correlation and Mann-Kendall trend test. R package version 2.2. <https://CRAN.R-project.org/package=Kendall>
- Florida Department of Environmental Protection, 2013. Guidance for Comparing Background and Site Chemical Concentrations in Groundwater. Division of Waste Management, Tallahassee, FL.
- R Core Team (2021). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. URL <https://www.R-project.org/>.
- U.S. Environmental Protection Agency, 2009. Statistical Analysis of Groundwater at RCRA Facilities. March 2009.
- U.S. Environmental Protection Agency, 2016. ProUCL 5.1 Software. Last updated 6/20/2016. URL <https://www.epa.gov/land-research/proucl-software>.



Notes:

1. Top quantile-quantile (q-q) plot includes samples at all distances from the site (CCCP).
2. Bottom q-q plot includes only samples collected within 5 miles of the site.
3. Diagonal line shows where the points would fall for a lognormal distribution.
4. Horizontal line shows the GCTL for arsenic at 0.01 mg/L.
mg/L - milligrams per liter

Lognormal q-q Plots of Regional Arsenic Concentrations Binned by Distance

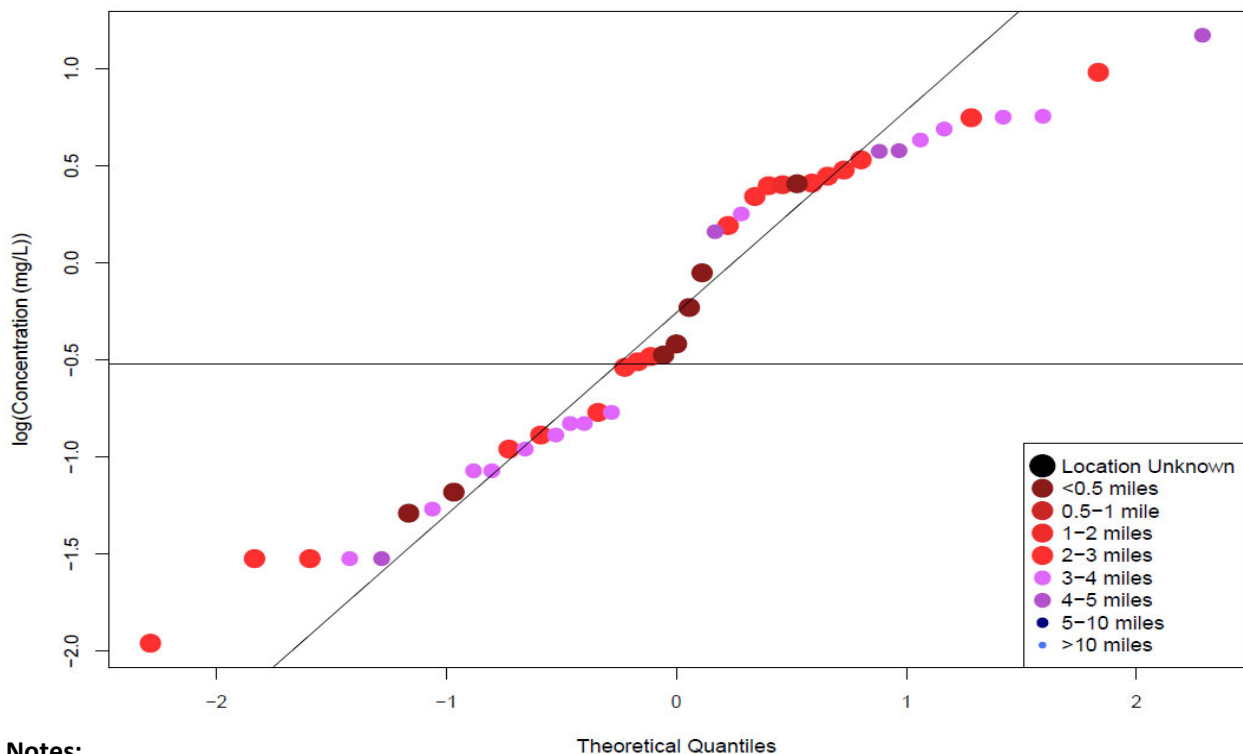
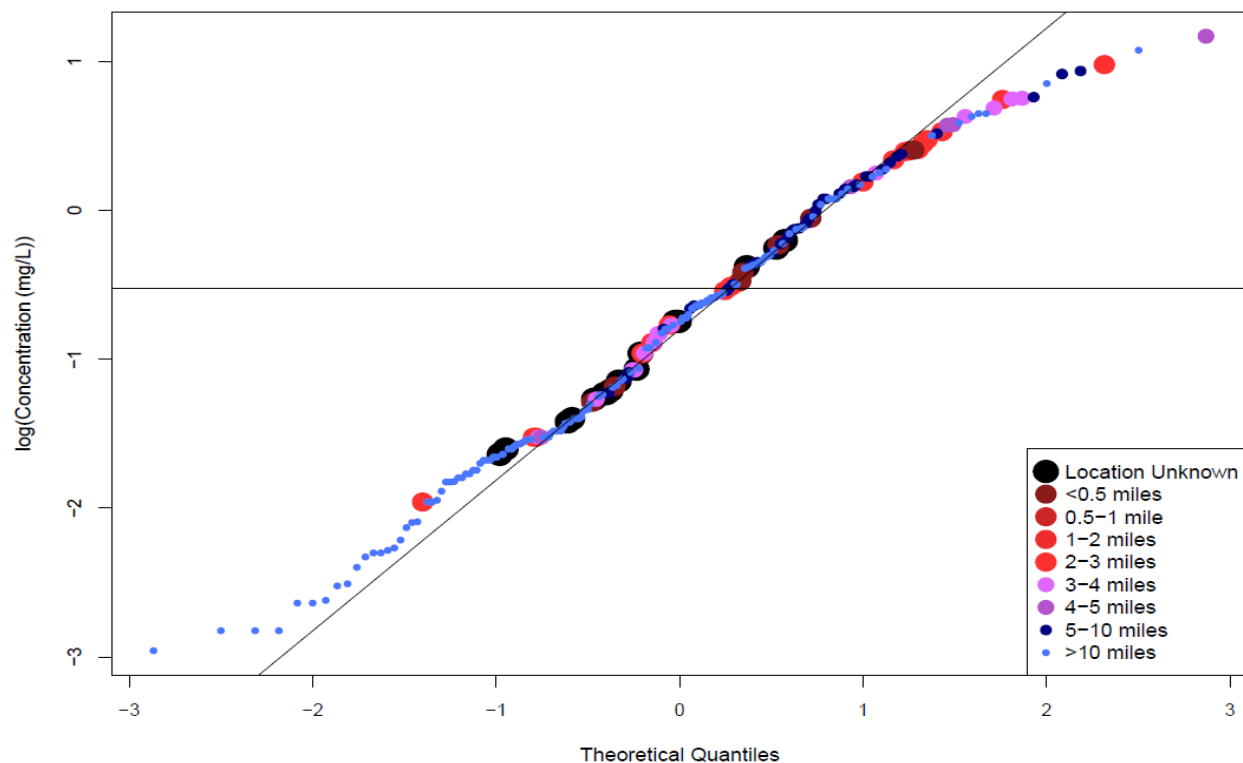
Geosyntec
consultants

Figure

F-1

Guelph

July 2022



Notes:

1. Top quantile-quantile (q-q) plot includes samples at all distances from the site (CCCP).
2. Bottom q-q plot includes only samples collected within 5 miles of the site.
3. Diagonal line shows where the points would fall for a lognormal distribution.
4. Horizontal line shows the GCTL for iron at 0.3 mg/L.
mg/L - milligrams per liter

Lognormal q-q Plots of Regional Iron Concentrations Binned by Distance

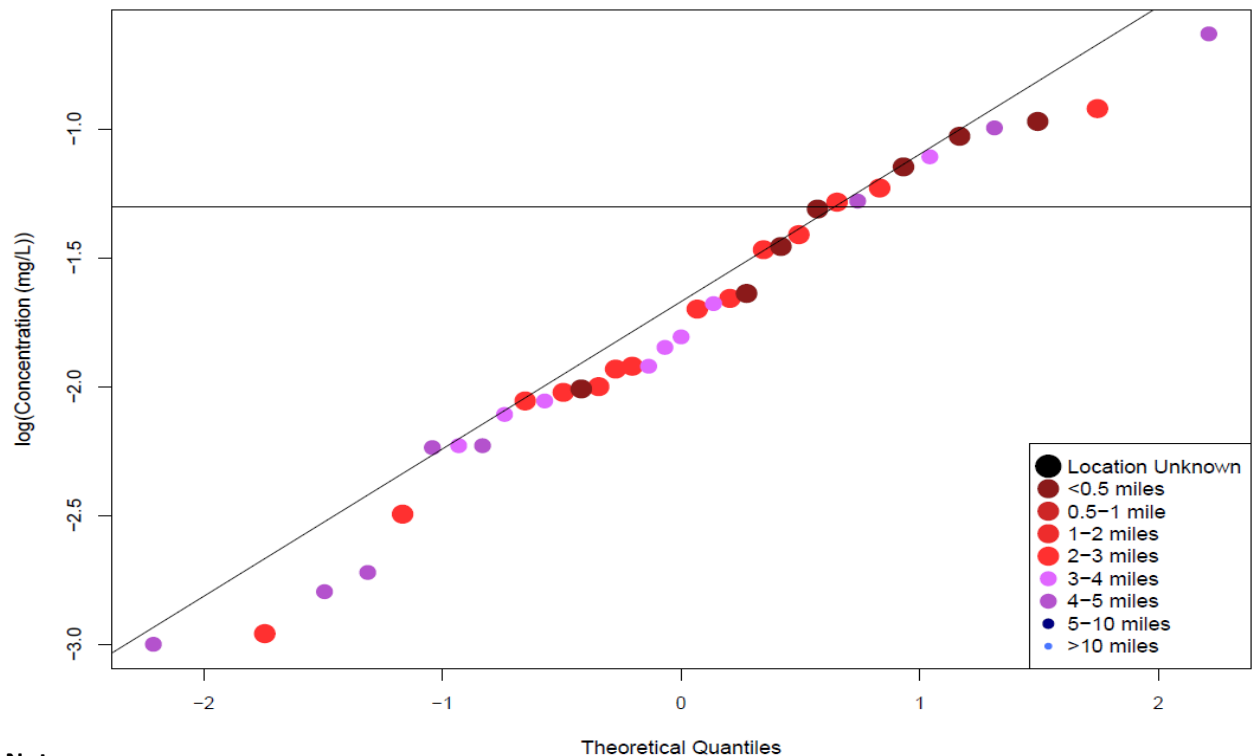
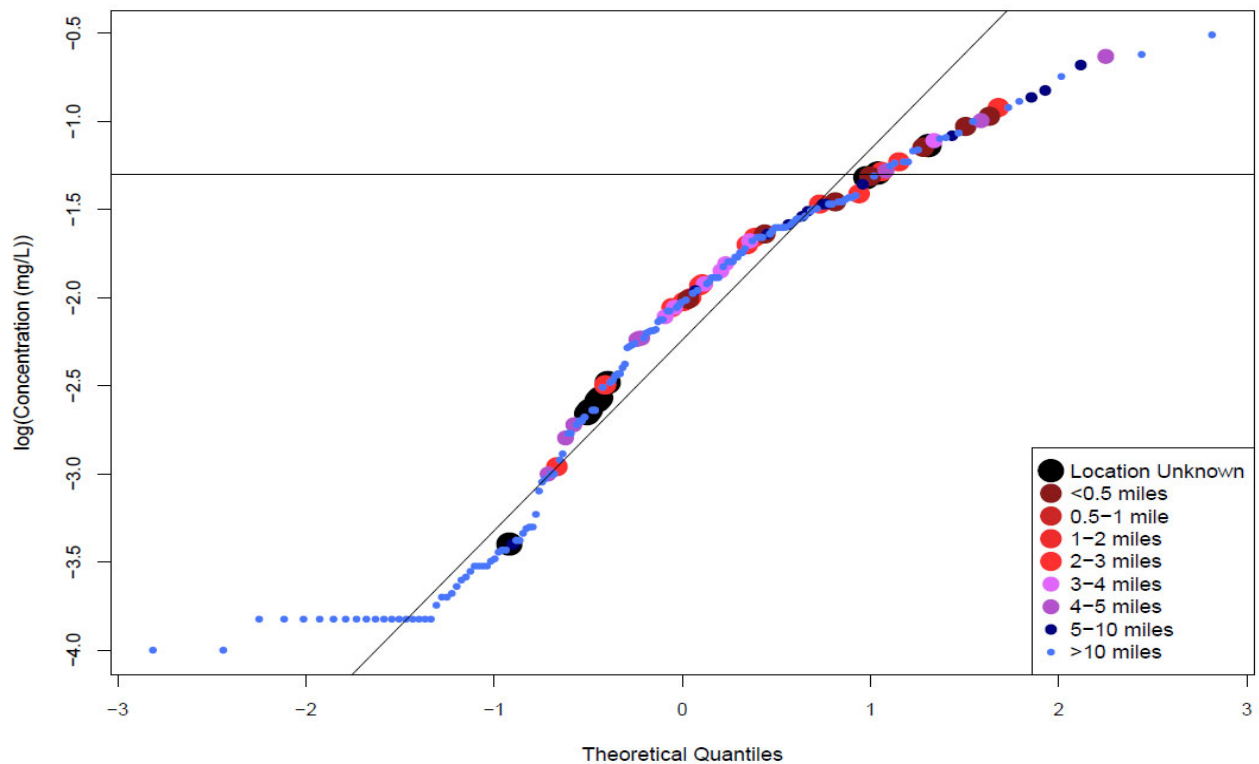
Geosyntec
consultants

Figure

F-2

Guelph

July 2022



Notes:

1. Top quantile-quantile (q-q) plot includes samples at all distances from the site (CCCP).
2. Bottom q-q plot includes only samples collected within 5 miles of the site.
3. Diagonal line shows where the points would fall for a lognormal distribution.
4. Horizontal line shows the GCTL for manganese at 0.05 mg/L.
mg/L - milligrams per liter

Lognormal q-q Plots of Regional Manganese Concentrations Binned by Distance

Geosyntec
consultants

Figure

F-3

Guelph

July 2022

Table F-1
Regional Arsenic Concentration Dataset
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	Arsenic Concentration (µg/L) ¹	Source	Longitude	Latitude
6092326	8/8/2006	2.10	DEP	-82.61978	28.946827
6092326	7/30/2009	1.90	DEP	-82.61978	28.946827
6092326	7/30/2012	1.80	DEP	-82.61978	28.946827
6092326	9/3/2015	3.10	DEP	-82.61978	28.946827
6092326	8/13/2018	2.90	DEP	-82.61978	28.946827
6094523	11/21/2006	2.30	DEP	-82.6217	28.95517
6094523	3/8/2010	3.00	DEP	-82.6217	28.95517
6094523	5/21/2012	0.40	DEP	-82.6217	28.95517
6094523	8/19/2015	3.50	DEP	-82.6217	28.95517
6095093	3/2/2018	4.80	DEP	-82.67224	28.966194
6095093	5/22/2018	1.70	DEP	-82.67224	28.966194
6095093	8/7/2018	7.60	DEP	-82.67224	28.966194
6095093	11/8/2018	2.10	DEP	-82.67224	28.966194
AAC7366 6094956	7/8/2004	5.10	DEP	-82.62975	28.960365
AAC7366 6094956	7/20/2007	6.00	DEP	-82.62975	28.960365
AAC7366 6094956	7/21/2010	4.00	DEP	-82.62975	28.960365
AAC7366 6094956	7/23/2013	2.50	DEP	-82.62975	28.960365
AAC7366 6094956	7/12/2016	1.70	DEP	-82.62975	28.960365
AAC7366 6094956	7/18/2019	2.60	DEP	-82.62975	28.960365
AAE6717	4/21/2008	167	DOH	-82.62737	28.950542
AAE6717	5/5/2008	81	DOH	-82.62737	28.950542
AAE6717	1/28/2009	95	DOH	-82.62737	28.950542
AAE6717	2/23/2009	28	DOH	-82.62737	28.950542
AAE6717	6/1/2009	32	DOH	-82.62737	28.950542
AAE6717	9/10/2009	26	DOH	-82.62737	28.950542
AAE6717	12/10/2009	31	DOH	-82.62737	28.950542
AAE6717	3/15/2010	48	DOH	-82.62737	28.950542
AAE6717	6/4/2010	32	DOH	-82.62737	28.950542
AAE6717	9/3/2010	30	DOH	-82.62737	28.950542
AAE6717	12/1/2010	27	DOH	-82.62737	28.950542
AAE6717	2/24/2011	27	DOH	-82.62737	28.950542
AAE6717	5/19/2011	31	DOH	-82.62737	28.950542
AAE6717	8/11/2011	28	DOH	-82.62737	28.950542
AAE6717	11/28/2011	60	DOH	-82.62737	28.950542
AAE6717	2/22/2012	159	DOH	-82.62737	28.950542
AAE6717	5/18/2012	28	DOH	-82.62737	28.950542
AAE6717	8/6/2012	30	DOH	-82.62737	28.950542
AAE6717	10/31/2012	61	DOH	-82.62737	28.950542
AAE6717	1/31/2013	40	DOH	-82.62737	28.950542
AAE6717	4/10/2013	36	DOH	-82.62737	28.950542
AAE6717	7/30/2013	28	DOH	-82.62737	28.950542
AAE6717	10/30/2013	31	DOH	-82.62737	28.950542

Table F-1
Regional Arsenic Concentration Dataset
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	Arsenic Concentration (µg/L) ¹	Source	Longitude	Latitude
AAE6717	3/5/2014	30	DOH	-82.62737	28.950542
AAE6717	9/16/2014	47	DOH	-82.62737	28.950542
AAE6717	12/29/2014	24	DOH	-82.62737	28.950542
AAE6717	8/12/2015	28	DOH	-82.62737	28.950542
AAE6717	1/6/2016	20	DOH	-82.62737	28.950542
AAE6717	4/4/2016	20	DOH	-82.62737	28.950542
AAE6717	7/21/2016	36	DOH	-82.62737	28.950542
AAE6717	10/24/2016	17	DOH	-82.62737	28.950542
AAE6717	2/16/2017	37	DOH	-82.62737	28.950542
AAE6717	6/26/2017	43	DOH	-82.62737	28.950542
AAE6717	11/3/2017	51	DOH	-82.62737	28.950542
AAE6717	2/12/2018	20	DOH	-82.62737	28.950542
AAE6717	5/31/2018	17	DOH	-82.62737	28.950542
AAE6717	9/14/2018	19	DOH	-82.62737	28.950542
AAE6717	12/10/2018	20	DOH	-82.62737	28.950542
AAE6717	3/4/2019	22	DOH	-82.62737	28.950542
AAE6717	5/30/2019	48	DOH	-82.62737	28.950542
AAE6717	9/11/2019	39	DOH	-82.62737	28.950542
AAE6717	12/9/2019	22	DOH	-82.62737	28.950542
AAE6717	3/9/2020	64	DOH	-82.62737	28.950542
AAE6717	6/18/2020	23	DOH	-82.62737	28.950542
AAE6717	9/22/2020	20	DOH	-82.62737	28.950542
AAE6717	12/21/2020	19	DOH	-82.62737	28.950542
AAE6718 6092186	2/9/2004	18	DEP	-82.62419	28.952482
AAE6718 6092186	4/4/2007	20	DEP	-82.62419	28.952482
AAE6718 6092186	6/20/2007	16	DEP	-82.62419	28.952482
AAE6718 6092186	7/11/2007	20	DEP	-82.62419	28.952482
AAE6718 6092186	9/5/2007	11	DEP	-82.62419	28.952482
AAE6718 6092186	11/7/2007	19	DEP	-82.62419	28.952482
AAE6718 6092186	3/5/2008	15	DEP	-82.62419	28.952482
AAE6718 6092186	5/21/2008	13	DEP	-82.62419	28.952482
AAE6718 6092186	9/3/2008	18	DEP	-82.62419	28.952482
AAE6718 6092186	2/4/2009	14	DEP	-82.62419	28.952482
AAE6718 6092186	3/3/2009	14	DEP	-82.62419	28.952482
AAE6718 6092186	5/6/2009	39	DEP	-82.62419	28.952482
AAE6718 6092186	8/5/2009	17	DEP	-82.62419	28.952482
AAE6718 6092186	11/3/2009	26	DEP	-82.62419	28.952482
AAE6718 6092186	2/17/2010	2.50	DEP	-82.62419	28.952482
AAE6718 6092186	5/19/2010	3.40	DEP	-82.62419	28.952482
AAE6718 6092186	7/6/2010	3.30	DEP	-82.62419	28.952482
AAE6718 6092186	10/20/2010	3.60	DEP	-82.62419	28.952482
AAE6718 6092186	5/7/2013	1.30	DEP	-82.62419	28.952482

Table F-1
Regional Arsenic Concentration Dataset
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	Arsenic Concentration (µg/L) ¹	Source	Longitude	Latitude
AAE6718 6092186	8/2/2016	1.20	DEP	-82.62419	28.952482
AAE6718 6092186	8/15/2019	1.00	DEP	-82.62419	28.952482
AAE6720	5/5/2008	16	DOH	-82.62598	28.948852
AAE6720	2/19/2013	15	DOH	-82.62598	28.948852
AAE6720	3/30/2016	3.94	DOH	-82.62598	28.948852
AAE6720	6/27/2016	17	DOH	-82.62598	28.948852
AAE6720	5/2/2019	16	DOH	-82.62598	28.948852
AAF7127	5/12/2008	7.12	DOH	-82.63164	28.9541
AAF7127	5/28/2010	6.39	DOH	-82.63164	28.9541
AAF7127	9/1/2010	9.97	DOH	-82.63164	28.9541
AAF7127	12/2/2010	4.59	DOH	-82.63164	28.9541
AAF7127	3/11/2011	7.68	DOH	-82.63164	28.9541
AAF7127	9/13/2011	1.10	DOH	-82.63164	28.9541
AAF7127	10/3/2012	11	DOH	-82.63164	28.9541
AAF7127	1/19/2016	1.25	DOH	-82.63164	28.9541
AAF7127	2/12/2018	6.89	DOH	-82.63164	28.9541
AAF7127	3/5/2020	9.16	DOH	-82.63164	28.9541
AAJ7226	1/23/2007	13	DOH	-82.63597	28.991677
AAJ7226	2/13/2007	13	DOH	-82.63597	28.991677
AAJ7226	4/26/2012	13	DOH	-82.63597	28.991677
AAJ7226	8/18/2015	13	DOH	-82.63597	28.991677
AAJ7226	8/1/2018	15	DOH	-82.63597	28.991677
AAK5204	9/28/2007	8.37	DOH	-82.6279	28.98712
AAK5204	11/1/2007	13	DOH	-82.6279	28.98712
AAK5204	3/19/2014	10	DOH	-82.6279	28.98712
AAK5204	7/22/2015	19	DOH	-82.6279	28.98712
AAK5204	8/1/2018	6.14	DOH	-82.6279	28.98712
AAK5204	10/9/2018	7.74	DOH	-82.6279	28.98712
AAK5204	2/4/2019	5.20	DOH	-82.6279	28.98712
AAK5204	5/2/2019	5.39	DOH	-82.6279	28.98712
AAK5204	7/22/2020	8.56	DOH	-82.6279	28.98712
AAK5206	9/27/2007	8.50	DOH	-82.64218	28.988157
AAK5206	11/1/2007	27	DOH	-82.64218	28.988157
AAK5206	1/25/2008	6.24	DOH	-82.64218	28.988157
AAK5206	10/20/2008	13	DOH	-82.64218	28.988157
AAK5206	12/2/2008	1.39	DOH	-82.64218	28.988157
AAK5206	5/4/2012	13	DOH	-82.64218	28.988157
AAK5206	5/26/2016	1.39	DOH	-82.64218	28.988157
AAK5206	10/5/2016	8.67	DOH	-82.64218	28.988157
AAK5206	6/27/2017	0.25	DOH	-82.64218	28.988157
AAK5206	8/15/2017	104	DOH	-82.64218	28.988157
AAK5206	3/7/2018	9.68	DOH	-82.64218	28.988157

Table F-1
Regional Arsenic Concentration Dataset
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	Arsenic Concentration (µg/L) ¹	Source	Longitude	Latitude
AAK5206	8/1/2018	7.63	DOH	-82.64218	28.988157
AAK5206	10/9/2018	8.52	DOH	-82.64218	28.988157
AAK5206	5/2/2019	9.49	DOH	-82.64218	28.988157
AAK5206	12/6/2019	8.90	DOH	-82.64218	28.988157
AAK5206	5/7/2020	5.37	DOH	-82.64218	28.988157
AAK5206	7/22/2020	7.21	DOH	-82.64218	28.988157
AAK5206	10/20/2020	3.41	DOH	-82.64218	28.988157
AAK5225	8/31/2007	7.89	DOH	-82.63161	28.989904
AAK5225	6/6/2008	7.03	DOH	-82.63161	28.989904
AAK5225	7/12/2010	7.22	DOH	-82.63161	28.989904
AAK5225	7/7/2011	7.67	DOH	-82.63161	28.989904
AAK5225	4/9/2014	6.78	DOH	-82.63161	28.989904
AAK5227	8/30/2007	10	DOH	-82.63248	28.986606
AAK5227	11/1/2007	13	DOH	-82.63248	28.986606
AAK5227	7/26/2012	9.00	DOH	-82.63248	28.986606
AAK5227	9/10/2014	11	DOH	-82.63248	28.986606
AAK5227	8/12/2015	12	DOH	-82.63248	28.986606
AAK5228	8/30/2007	9.58	DOH	-82.63199	28.987301
AAK5228	11/1/2007	9.15	DOH	-82.63199	28.987301
AAK5228	1/28/2008	9.41	DOH	-82.63199	28.987301
AAK5228	6/6/2008	7.01	DOH	-82.63199	28.987301
AAK5228	7/29/2010	7.89	DOH	-82.63199	28.987301
AAK5228	2/23/2011	8.15	DOH	-82.63199	28.987301
AAK5228	6/2/2011	11	DOH	-82.63199	28.987301
AAK5228	9/10/2014	11	DOH	-82.63199	28.987301
AAK5228	8/12/2015	9.69	DOH	-82.63199	28.987301
AAK5228	9/21/2016	9.42	DOH	-82.63199	28.987301
AAK5228	6/21/2017	0.89	DOH	-82.63199	28.987301
AAK5228	9/27/2017	8.04	DOH	-82.63199	28.987301
AAK5228	2/19/2018	10	DOH	-82.63199	28.987301
AAK5228	12/20/2018	9.71	DOH	-82.63199	28.987301
AAK5228	2/22/2019	9.17	DOH	-82.63199	28.987301
AAK5228	7/19/2019	9.69	DOH	-82.63199	28.987301
AAK5228	3/5/2020	10	DOH	-82.63199	28.987301
AAK5228	7/22/2020	9.78	DOH	-82.63199	28.987301
AAK5229	8/30/2007	11	DOH	-82.63223	28.987968
AAK5229	12/28/2011	12	DOH	-82.63223	28.987968
AAK5229	7/22/2015	4.79	DOH	-82.63223	28.987968
AAK5229	2/1/2016	12	DOH	-82.63223	28.987968
AAK5229	2/19/2018	4.89	DOH	-82.63223	28.987968
AAK5229	3/5/2020	12	DOH	-82.63223	28.987968
AAK5267	7/20/2007	14	DOH	-82.63401	28.98655

Table F-1
Regional Arsenic Concentration Dataset
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	Arsenic Concentration (µg/L)¹	Source	Longitude	Latitude
AAK5267	8/14/2007	13	DOH	-82.63401	28.98655
AAK5267	7/26/2012	9.50	DOH	-82.63401	28.98655
AAK5267	9/10/2014	12	DOH	-82.63401	28.98655
AAK5267	9/27/2017	3.13	DOH	-82.63401	28.98655
AAK5267	2/19/2018	11	DOH	-82.63401	28.98655
AAK5268	7/20/2007	14	DOH	-82.63688	28.995459
AAK5268	8/14/2007	13	DOH	-82.63688	28.995459
AAK5268	1/25/2013	15	DOH	-82.63688	28.995459
AAK5268	6/30/2016	13	DOH	-82.63688	28.995459
AAK5278	6/5/2007	6.97	DOH	-82.63969	28.992702
AAK5278	10/14/2008	7.78	DOH	-82.63969	28.992702
AAK5278	5/26/2009	8.04	DOH	-82.63969	28.992702
AAK5278	8/10/2009	5.43	DOH	-82.63969	28.992702
AAK5278	8/5/2010	5.39	DOH	-82.63969	28.992702
AAK5278	7/11/2011	7.12	DOH	-82.63969	28.992702
AAK5278	8/15/2013	4.70	DOH	-82.63969	28.992702
AAK5278	9/4/2015	3.77	DOH	-82.63969	28.992702
AAK5278	8/15/2017	0.96	DOH	-82.63969	28.992702
AAK5286	4/24/2007	11	DOH	-82.63633	28.994743
AAK5286	5/4/2012	10	DOH	-82.63633	28.994743
AAK5286	5/26/2016	5.92	DOH	-82.63633	28.994743
AAK5286	9/21/2016	12	DOH	-82.63633	28.994743
AAK5286	7/9/2019	14	DOH	-82.63633	28.994743
AAK5289	4/24/2007	11	DOH	-82.63363	28.990437
AAK5289	6/5/2007	9.53	DOH	-82.63363	28.990437
AAK5289	4/26/2012	12	DOH	-82.63363	28.990437
AAK5289	5/26/2016	7.41	DOH	-82.63363	28.990437
AAK5289	9/21/2016	7.43	DOH	-82.63363	28.990437
AAK5289	12/15/2016	7.62	DOH	-82.63363	28.990437
AAK5289	5/20/2017	8.92	DOH	-82.63363	28.990437
AAK5289	2/19/2018	10	DOH	-82.63363	28.990437
AAK5289	8/1/2018	9.47	DOH	-82.63363	28.990437
AAK5289	2/4/2019	10	DOH	-82.63363	28.990437
AAK5289	7/19/2019	9.96	DOH	-82.63363	28.990437
AAK5289	3/23/2020	9.81	DOH	-82.63363	28.990437
AAK5289	7/22/2020	10	DOH	-82.63363	28.990437
AAK5291	3/27/2007	10	DOH	-82.63392	28.990445
AAK5291	4/24/2007	11	DOH	-82.63392	28.990445
AAK5291	6/5/2007	12	DOH	-82.63392	28.990445
AAK5291	4/26/2012	8.60	DOH	-82.63392	28.990445
AAK5291	9/21/2016	9.50	DOH	-82.63392	28.990445
AAK5291	6/21/2017	13	DOH	-82.63392	28.990445

Table F-1
Regional Arsenic Concentration Dataset
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	Arsenic Concentration (µg/L)¹	Source	Longitude	Latitude
AAK5295	3/27/2007	10	DOH	-82.63713	28.990777
AAK5295	4/24/2007	12	DOH	-82.63713	28.990777
AAK5295	7/12/2012	0.76	DOH	-82.63713	28.990777
AAK5295	8/17/2015	9.41	DOH	-82.63713	28.990777
AAK5295	9/24/2016	0.24	DOH	-82.63713	28.990777
AAK5295	10/9/2018	0.63	DOH	-82.63713	28.990777
AAK5295	10/20/2020	0.72	DOH	-82.63713	28.990777
AAL3900	3/3/2008	15	DOH	-82.60317	29.00916
AAL3900	5/22/2012	15	DOH	-82.60317	29.00916
AAL3900	9/24/2016	11	DOH	-82.60317	29.00916
AAL3900	7/23/2019	12	DOH	-82.60317	29.00916
AAL3901	3/3/2008	15	DOH	-82.62647	28.943952
AAL3901	6/30/2014	19	DOH	-82.62647	28.943952
AAL3901	7/21/2015	3.51	DOH	-82.62647	28.943952
AAL3901	8/31/2015	18	DOH	-82.62647	28.943952
AAL3901	1/19/2016	0.85	DOH	-82.62647	28.943952
AAL3902	3/3/2008	26	DOH	-82.62867	28.946619
AAL3902	9/29/2014	31	DOH	-82.62867	28.946619
AAL3902	1/5/2016	5.73	DOH	-82.62867	28.946619
AAL3902	4/4/2016	5.57	DOH	-82.62867	28.946619
AAL3902	7/21/2016	7.27	DOH	-82.62867	28.946619
AAL3902	10/24/2016	17	DOH	-82.62867	28.946619
AAL3902	2/16/2017	8.37	DOH	-82.62867	28.946619
AAL3902	6/26/2017	17	DOH	-82.62867	28.946619
AAL3902	11/17/2017	1.87	DOH	-82.62867	28.946619
AAL3902	2/12/2018	8.15	DOH	-82.62867	28.946619
AAL3902	5/31/2018	8.17	DOH	-82.62867	28.946619
AAL3902	9/14/2018	1.57	DOH	-82.62867	28.946619
AAL3902	12/10/2018	7.12	DOH	-82.62867	28.946619
AAL3902	3/4/2019	7.84	DOH	-82.62867	28.946619
AAL3902	5/30/2019	8.20	DOH	-82.62867	28.946619
AAL3902	9/11/2019	9.16	DOH	-82.62867	28.946619
AAL3902	12/11/2019	9.24	DOH	-82.62867	28.946619
AAL3902	6/24/2020	7.98	DOH	-82.62867	28.946619
AAL3902	9/29/2020	8.43	DOH	-82.62867	28.946619
AAL3902	1/7/2021	8.27	DOH	-82.62867	28.946619
AAL3903	3/3/2008	20	DOH	-82.61027	28.957024
AAL3903	2/6/2013	23	DOH	-82.61027	28.957024
AAL3903	3/30/2016	7.64	DOH	-82.61027	28.957024
AAL3903	3/23/2020	18	DOH	-82.61027	28.957024
AAL3905	2/28/2008	25	DOH	-82.62868	28.943742
AAL3905	5/22/2012	24	DOH	-82.62868	28.943742

Table F-1
Regional Arsenic Concentration Dataset
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	Arsenic Concentration (µg/L) ¹	Source	Longitude	Latitude
AAL3905	6/23/2017	1.78	DOH	-82.62868	28.943742
AAL3905	9/26/2017	1.13	DOH	-82.62868	28.943742
AAL3905	3/7/2018	22	DOH	-82.62868	28.943742
AAL3905	3/23/2020	1.79	DOH	-82.62868	28.943742
AAL3905	8/7/2020	1.42	DOH	-82.62868	28.943742
AAL3905	11/18/2020	22	DOH	-82.62868	28.943742
AAL3906	2/28/2008	9.45	DOH	-82.62423	28.941733
AAL3906	7/9/2008	13	DOH	-82.62423	28.941733
AAL3906	5/5/2014	3.82	DOH	-82.62423	28.941733
AAL3906	8/31/2015	6.92	DOH	-82.62423	28.941733
AAL3906	9/27/2016	5.24	DOH	-82.62423	28.941733
AAL3919	2/11/2008	15	DOH	-82.62947	28.943139
AAL3919	5/22/2012	14	DOH	-82.62947	28.943139
AAL3919	7/23/2015	13	DOH	-82.62947	28.943139
AAL3919	7/11/2018	9.76	DOH	-82.62947	28.943139
AAL3919	1/31/2019	8.14	DOH	-82.62947	28.943139
AAL3919	7/23/2019	14	DOH	-82.62947	28.943139
AAL3920	2/11/2008	9.29	DOH	-82.62443	28.942506
AAL3920	6/9/2008	9.15	DOH	-82.62443	28.942506
AAL3920	9/29/2008	10	DOH	-82.62443	28.942506
AAL3920	2/26/2009	8.38	DOH	-82.62443	28.942506
AAL3920	6/5/2009	9.31	DOH	-82.62443	28.942506
AAL3920	7/21/2009	12	DOH	-82.62443	28.942506
AAL3920	5/3/2012	15	DOH	-82.62443	28.942506
AAL3920	8/31/2015	6.25	DOH	-82.62443	28.942506
AAL3920	9/27/2016	1.76	DOH	-82.62443	28.942506
AAL3920	8/20/2018	28	DOH	-82.62443	28.942506
AAL3920	8/5/2020	6.46	DOH	-82.62443	28.942506
AAL3921	2/11/2008	19	DOH	-82.62789	28.943802
AAL3921	5/22/2012	14	DOH	-82.62789	28.943802
AAL3921	1/19/2016	18	DOH	-82.62789	28.943802
AAL3921	1/31/2019	19	DOH	-82.62789	28.943802
AAL3922	2/11/2008	16	DOH	-82.62601	28.944521
AAL3922	5/22/2012	17	DOH	-82.62601	28.944521
AAL3922	8/31/2015	14	DOH	-82.62601	28.944521
AAL3922	9/21/2016	14	DOH	-82.62601	28.944521
AAL3922	9/25/2019	13	DOH	-82.62601	28.944521
AAL3923	2/4/2008	33	DOH	-82.62865	28.944314
AAL3923	5/3/2012	29	DOH	-82.62865	28.944314
AAL3923	5/16/2017	63	DOH	-82.62865	28.944314
AAL3923	7/31/2017	34	DOH	-82.62865	28.944314
AAL3923	7/11/2018	34	DOH	-82.62865	28.944314

Table F-1
Regional Arsenic Concentration Dataset
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	Arsenic Concentration (µg/L) ¹	Source	Longitude	Latitude
AAL3923	7/23/2019	32	DOH	-82.62865	28.944314
AAL3923	8/7/2020	30	DOH	-82.62865	28.944314
AAL3925	2/4/2008	15	DOH	-82.62966	28.944527
AAL3925	5/3/2012	14	DOH	-82.62966	28.944527
AAL3925	3/28/2016	6.98	DOH	-82.62966	28.944527
AAL3925	3/2/2018	1.12	DOH	-82.62966	28.944527
AAL3925	4/9/2018	14	DOH	-82.62966	28.944527
AAL3926	2/4/2008	20	DOH	-82.62963	28.944533
AAL3926	5/3/2012	21	DOH	-82.62963	28.944533
AAL3926	1/19/2016	2.47	DOH	-82.62963	28.944533
AAL3926	6/27/2016	11	DOH	-82.62963	28.944533
AAL3926	1/24/2017	0.88	DOH	-82.62963	28.944533
AAL3926	6/27/2017	0.42	DOH	-82.62963	28.944533
AAL3926	9/26/2017	2.60	DOH	-82.62963	28.944533
AAL3926	3/2/2018	16	DOH	-82.62963	28.944533
AAL3927	2/4/2008	20	DOH	-82.62907	28.944639
AAL3927	5/3/2012	26	DOH	-82.62907	28.944639
AAL3927	6/23/2017	20	DOH	-82.62907	28.944639
AAL3927	5/2/2019	19	DOH	-82.62907	28.944639
AAL3929	2/4/2008	15	DOH	-82.6258	28.943935
AAL3929	5/22/2012	10	DOH	-82.6258	28.943935
AAL3929	3/28/2016	0.55	DOH	-82.6258	28.943935
AAL3929	6/27/2016	0.64	DOH	-82.6258	28.943935
AAL3929	9/21/2016	0.70	DOH	-82.6258	28.943935
AAL3929	10/26/2016	11	DOH	-82.6258	28.943935
AAL3929	11/19/2019	0.98	DOH	-82.6258	28.943935
AAL3929	3/23/2020	0.74	DOH	-82.6258	28.943935
AAL3929	4/10/2020	0.67	DOH	-82.6258	28.943935
AAL3930	2/4/2008	12	DOH	-82.62746	28.943922
AAL3930	11/19/2019	15	DOH	-82.62746	28.943922
AAL3930	2/6/2020	16	DOH	-82.62746	28.943922
AAL3930	7/14/2020	17	DOH	-82.62746	28.943922
AAL3931	2/4/2008	22	DOH	-82.62745	28.943766
AAL3931	5/3/2012	68	DOH	-82.62745	28.943766
AAL3931	3/22/2013	22	DOH	-82.62745	28.943766
AAL3931	9/2/2014	1.18	DOH	-82.62745	28.943766
AAL3931	8/31/2015	19	DOH	-82.62745	28.943766
AAL3931	3/28/2016	2.36	DOH	-82.62745	28.943766
AAL3931	6/27/2016	33	DOH	-82.62745	28.943766
AAL3931	6/27/2017	1.92	DOH	-82.62745	28.943766
AAL3931	9/26/2017	0.94	DOH	-82.62745	28.943766
AAL3931	3/2/2018	0.86	DOH	-82.62745	28.943766

Table F-1
Regional Arsenic Concentration Dataset
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	Arsenic Concentration (µg/L) ¹	Source	Longitude	Latitude
AAL3931	5/1/2018	23	DOH	-82.62745	28.943766
AAL3931	5/13/2020	19	DOH	-82.62745	28.943766
AAL3933	1/28/2008	24	DOH	-82.60257	29.009418
AAL3933	5/16/2012	14	DOH	-82.60257	29.009418
AAL3933	7/22/2015	4.87	DOH	-82.60257	29.009418
AAL3933	2/1/2016	9.69	DOH	-82.60257	29.009418
AAL3933	9/24/2016	11	DOH	-82.60257	29.009418
AAL3933	7/23/2019	29	DOH	-82.60257	29.009418
AAL3935	1/18/2008	8.29	DOH	-82.61286	28.957624
AAL3935	6/6/2008	7.73	DOH	-82.61286	28.957624
AAL3935	9/9/2008	7.81	DOH	-82.61286	28.957624
AAL3935	12/8/2008	7.87	DOH	-82.61286	28.957624
AAL3935	5/15/2009	8.52	DOH	-82.61286	28.957624
AAL3935	7/21/2009	7.84	DOH	-82.61286	28.957624
AAL3935	10/22/2009	7.85	DOH	-82.61286	28.957624
AAL3935	3/1/2010	7.26	DOH	-82.61286	28.957624
AAL3935	6/17/2010	5.36	DOH	-82.61286	28.957624
AAL3935	9/1/2010	6.94	DOH	-82.61286	28.957624
AAL3935	1/27/2011	6.71	DOH	-82.61286	28.957624
AAL3935	7/11/2011	6.62	DOH	-82.61286	28.957624
AAL3935	12/4/2013	4.53	DOH	-82.61286	28.957624
AAL3935	9/24/2014	8.17	DOH	-82.61286	28.957624
AAL3935	12/14/2016	1.93	DOH	-82.61286	28.957624
AAL3935	11/30/2018	4.94	DOH	-82.61286	28.957624
AAL3936	1/18/2008	20	DOH	-82.61356	28.949031
AAL3936	3/10/2008	2.59	DOH	-82.61356	28.949031
AAL3936	4/30/2014	22	DOH	-82.61356	28.949031
AAL3936	6/27/2016	3.71	DOH	-82.61356	28.949031
AAL3936	10/5/2016	0.98	DOH	-82.61356	28.949031
AAL3936	6/27/2017	4.40	DOH	-82.61356	28.949031
AAL3936	9/26/2017	0.52	DOH	-82.61356	28.949031
AAL3936	8/20/2018	24	DOH	-82.61356	28.949031
AAL3936	8/2/2019	26	DOH	-82.61356	28.949031
AAL3937	1/18/2008	18	DOH	-82.61927	28.954295
AAL3937	7/31/2012	9.90	DOH	-82.61927	28.954295
AAL3937	8/25/2014	12	DOH	-82.61927	28.954295
AAL3937	9/26/2017	0.25	DOH	-82.61927	28.954295
AAL3937	12/18/2019	2.38	DOH	-82.61927	28.954295
AAL3938	1/18/2008	14	DOH	-82.62033	28.988607
AAL3938	5/9/2012	12	DOH	-82.62033	28.988607
AAL3938	2/7/2014	20	DOH	-82.62033	28.988607
AAL3938	3/29/2016	9.07	DOH	-82.62033	28.988607

Table F-1
Regional Arsenic Concentration Dataset
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	Arsenic Concentration (µg/L) ¹	Source	Longitude	Latitude
AAL3938	7/26/2017	5.92	DOH	-82.62033	28.988607
AAL3938	9/24/2019	12	DOH	-82.62033	28.988607
AAL3941	1/4/2008	26	DOH	-82.62606	28.943308
AAL3941	5/26/2009	26	DOH	-82.62606	28.943308
AAL3941	2/19/2013	22	DOH	-82.62606	28.943308
AAL3941	3/28/2016	18	DOH	-82.62606	28.943308
AAL3941	3/1/2019	19	DOH	-82.62606	28.943308
AAL3946	12/17/2007	17	DOH	-82.62397	28.954529
AAL3946	7/31/2012	33	DOH	-82.62397	28.954529
AAL3946	8/27/2013	29	DOH	-82.62397	28.954529
AAL3946	9/26/2016	9.39	DOH	-82.62397	28.954529
AAL3946	6/22/2017	9.41	DOH	-82.62397	28.954529
AAL3946	2/12/2018	31	DOH	-82.62397	28.954529
AAL3946	1/31/2019	32	DOH	-82.62397	28.954529
AAL3946	3/23/2020	31	DOH	-82.62397	28.954529
AAL3947	12/17/2007	20	DOH	-82.62066	28.953222
AAL3947	5/18/2012	7.10	DOH	-82.62066	28.953222
AAL3947	8/15/2013	5.46	DOH	-82.62066	28.953222
AAL3947	7/21/2015	5.38	DOH	-82.62066	28.953222
AAL3947	11/16/2015	1.80	DOH	-82.62066	28.953222
AAL3947	12/13/2016	15	DOH	-82.62066	28.953222
AAL3947	2/17/2017	3.95	DOH	-82.62066	28.953222
AAL3947	6/27/2017	2.18	DOH	-82.62066	28.953222
AAL3955	11/28/2007	57	DOH	-82.61642	28.957047
AAL3955	6/11/2008	0.17	DOH	-82.61642	28.957047
AAL3955	9/9/2008	42	DOH	-82.61642	28.957047
AAL3955	9/24/2008	34	DOH	-82.61642	28.957047
AAL3955	12/2/2008	22	DOH	-82.61642	28.957047
AAL3955	1/12/2009	54	DOH	-82.61642	28.957047
AAL3955	4/23/2009	49	DOH	-82.61642	28.957047
AAL3955	6/1/2009	51	DOH	-82.61642	28.957047
AAL3955	9/10/2009	14	DOH	-82.61642	28.957047
AAL3955	12/10/2009	12	DOH	-82.61642	28.957047
AAL3955	3/15/2010	29	DOH	-82.61642	28.957047
AAL3955	6/4/2010	11	DOH	-82.61642	28.957047
AAL3955	10/27/2010	49	DOH	-82.61642	28.957047
AAL3955	1/20/2011	31	DOH	-82.61642	28.957047
AAL3955	4/15/2011	20	DOH	-82.61642	28.957047
AAL3955	7/7/2011	42	DOH	-82.61642	28.957047
AAL3955	10/6/2011	19	DOH	-82.61642	28.957047
AAL3955	1/5/2012	23	DOH	-82.61642	28.957047
AAL3955	4/9/2012	19	DOH	-82.61642	28.957047

Table F-1
Regional Arsenic Concentration Dataset
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	Arsenic Concentration (µg/L)¹	Source	Longitude	Latitude
AAL3955	7/5/2012	35	DOH	-82.61642	28.957047
AAL3955	9/26/2012	14	DOH	-82.61642	28.957047
AAL3955	12/27/2012	11	DOH	-82.61642	28.957047
AAL3955	4/3/2013	8.66	DOH	-82.61642	28.957047
AAL3955	7/30/2013	4.68	DOH	-82.61642	28.957047
AAL3955	10/28/2013	23	DOH	-82.61642	28.957047
AAL3955	3/5/2014	19	DOH	-82.61642	28.957047
AAL3955	9/4/2014	6.33	DOH	-82.61642	28.957047
AAL3955	12/8/2014	28	DOH	-82.61642	28.957047
AAL3955	6/19/2015	30	DOH	-82.61642	28.957047
AAL3955	9/14/2015	4.49	DOH	-82.61642	28.957047
AAL3955	1/6/2016	20	DOH	-82.61642	28.957047
AAL3955	4/5/2016	35	DOH	-82.61642	28.957047
AAL3955	7/21/2016	23	DOH	-82.61642	28.957047
AAL3955	10/24/2016	8.66	DOH	-82.61642	28.957047
AAL3955	2/16/2017	38	DOH	-82.61642	28.957047
AAL3955	6/26/2017	25	DOH	-82.61642	28.957047
AAL3955	11/3/2017	32	DOH	-82.61642	28.957047
AAL3955	2/12/2018	32	DOH	-82.61642	28.957047
AAL3955	6/8/2018	21	DOH	-82.61642	28.957047
AAL3955	9/20/2018	14	DOH	-82.61642	28.957047
AAL3955	11/30/2018	23	DOH	-82.61642	28.957047
AAL3955	3/1/2019	19	DOH	-82.61642	28.957047
AAL3955	5/30/2019	19	DOH	-82.61642	28.957047
AAL3955	9/12/2019	28	DOH	-82.61642	28.957047
AAL3956	11/16/2007	2.56	DOH	-82.61568	28.955802
AAL3956	5/5/2008	3.07	DOH	-82.61568	28.955802
AAL3956	8/25/2014	2.13	DOH	-82.61568	28.955802
AAL3956	12/29/2014	2.62	DOH	-82.61568	28.955802
AAL3956	3/2/2018	2.37	DOH	-82.61568	28.955802
AAL3957	11/16/2007	14	DOH	-82.62103	28.955721
AAL3957	8/25/2014	13	DOH	-82.62103	28.955721
AAL3957	9/2/2015	8.42	DOH	-82.62103	28.955721
AAL3957	7/25/2016	1.82	DOH	-82.62103	28.955721
AAL3957	9/26/2017	1.40	DOH	-82.62103	28.955721
AAL3957	12/16/2019	18	DOH	-82.62103	28.955721
AAL3963	11/2/2007	38	DOH	-82.61917	28.954919
AAL3963	7/12/2012	15	DOH	-82.61917	28.954919
AAL3963	3/30/2016	20	DOH	-82.61917	28.954919
AAL3963	2/12/2018	12	DOH	-82.61917	28.954919
AAL3964	11/1/2007	20	DOH	-82.62203	28.957224
AAL3964	11/9/2011	19	DOH	-82.62203	28.957224

Table F-1
Regional Arsenic Concentration Dataset
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	Arsenic Concentration (µg/L) ¹	Source	Longitude	Latitude
AAL3964	9/2/2015	7.54	DOH	-82.62203	28.957224
AAL3964	9/27/2016	3.63	DOH	-82.62203	28.957224
AAL3964	12/13/2016	12	DOH	-82.62203	28.957224
AAL3964	12/9/2019	16	DOH	-82.62203	28.957224
AAL3965	11/1/2007	21	DOH	-82.62227	28.956335
AAL3965	5/22/2012	19	DOH	-82.62227	28.956335
AAL3965	5/26/2016	2.87	DOH	-82.62227	28.956335
AAL3965	9/27/2016	2.36	DOH	-82.62227	28.956335
AAL3965	12/13/2016	1.27	DOH	-82.62227	28.956335
AAL3965	5/16/2017	14	DOH	-82.62227	28.956335
AAL3965	5/7/2020	0.22	DOH	-82.62227	28.956335
AAL3965	9/22/2020	6.56	DOH	-82.62227	28.956335
AAL3967	11/1/2007	8.32	DOH	-82.63337	28.987978
AAL3967	1/28/2008	6.84	DOH	-82.63337	28.987978
AAL3967	6/6/2008	6.04	DOH	-82.63337	28.987978
AAL3967	8/5/2010	4.47	DOH	-82.63337	28.987978
AAL3967	5/7/2014	11	DOH	-82.63337	28.987978
AAL3967	10/9/2014	14	DOH	-82.63337	28.987978
AAL3967	8/18/2015	11	DOH	-82.63337	28.987978
AAL3967	3/30/2016	4.29	DOH	-82.63337	28.987978
AAL3969	10/16/2007	72	DOH	-82.62196	28.954525
AAL3969	11/28/2007	1.09	DOH	-82.62196	28.954525
AAL3969	6/9/2008	22	DOH	-82.62196	28.954525
AAL3969	1/28/2009	8.36	DOH	-82.62196	28.954525
AAL3969	3/29/2013	13	DOH	-82.62196	28.954525
AAL3969	9/10/2015	11	DOH	-82.62196	28.954525
AAL3969	9/10/2015	7.44	DOH	-82.62196	28.954525
AAL3969	12/10/2018	9.90	DOH	-82.62196	28.954525
AAL3969	12/10/2018	5.78	DOH	-82.62196	28.954525
AAL3972	10/15/2007	72	DOH	-82.62159	28.955292
AAL3972	6/11/2008	24	DOH	-82.62159	28.955292
AAL3972	9/9/2008	57	DOH	-82.62159	28.955292
AAL3972	9/24/2008	13	DOH	-82.62159	28.955292
AAL3972	12/8/2008	38	DOH	-82.62159	28.955292
AAL3972	1/12/2009	48	DOH	-82.62159	28.955292
AAL3972	4/23/2009	38	DOH	-82.62159	28.955292
AAL3972	6/4/2009	40	DOH	-82.62159	28.955292
AAL3972	9/10/2009	2.10	DOH	-82.62159	28.955292
AAL3972	6/17/2010	20	DOH	-82.62159	28.955292
AAL3972	9/22/2010	25	DOH	-82.62159	28.955292
AAL3972	1/3/2011	26	DOH	-82.62159	28.955292
AAL3972	4/7/2011	46	DOH	-82.62159	28.955292

Table F-1
Regional Arsenic Concentration Dataset
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	Arsenic Concentration (µg/L)¹	Source	Longitude	Latitude
AAL3972	7/5/2011	21	DOH	-82.62159	28.955292
AAL3972	10/4/2011	24	DOH	-82.62159	28.955292
AAL3972	1/3/2012	26	DOH	-82.62159	28.955292
AAL3972	4/2/2012	32	DOH	-82.62159	28.955292
AAL3972	7/5/2012	31	DOH	-82.62159	28.955292
AAL3972	7/30/2013	32	DOH	-82.62159	28.955292
AAL3972	10/30/2013	30	DOH	-82.62159	28.955292
AAL3972	3/5/2014	34	DOH	-82.62159	28.955292
AAL3972	9/16/2014	35	DOH	-82.62159	28.955292
AAL3972	12/16/2014	37	DOH	-82.62159	28.955292
AAL3972	6/19/2015	20	DOH	-82.62159	28.955292
AAL3972	9/14/2015	22	DOH	-82.62159	28.955292
AAL3972	1/6/2016	23	DOH	-82.62159	28.955292
AAL3972	4/5/2016	22	DOH	-82.62159	28.955292
AAL3972	7/21/2016	68	DOH	-82.62159	28.955292
AAL3972	10/24/2016	24	DOH	-82.62159	28.955292
AAL3972	2/16/2017	35	DOH	-82.62159	28.955292
AAL3972	6/26/2017	1.90	DOH	-82.62159	28.955292
AAL3972	11/3/2017	3.68	DOH	-82.62159	28.955292
AAL3972	2/12/2018	30	DOH	-82.62159	28.955292
AAL3972	6/8/2018	35	DOH	-82.62159	28.955292
AAL3972	9/20/2018	34	DOH	-82.62159	28.955292
AAL3972	11/30/2018	33	DOH	-82.62159	28.955292
AAL3972	3/4/2019	38	DOH	-82.62159	28.955292
AAL3972	5/30/2019	21	DOH	-82.62159	28.955292
AAL3972	9/11/2019	22	DOH	-82.62159	28.955292
AAL3972	12/11/2019	23	DOH	-82.62159	28.955292
AAL3972	3/9/2020	41	DOH	-82.62159	28.955292
AAL3972	6/18/2020	42	DOH	-82.62159	28.955292
AAL3972	9/22/2020	24	DOH	-82.62159	28.955292
AAL3972	12/21/2020	27	DOH	-82.62159	28.955292
AAL3973	10/15/2007	19	DOH	-82.62101	28.953717
AAL3973	8/8/2014	2.15	DOH	-82.62101	28.953717
AAL3973	12/29/2014	4.67	DOH	-82.62101	28.953717
AAL3973	5/7/2015	2.21	DOH	-82.62101	28.953717
AAL3973	9/2/2015	6.08	DOH	-82.62101	28.953717
AAL3973	11/16/2015	5.90	DOH	-82.62101	28.953717
AAL3975	10/15/2007	18	DOH	-82.62197	28.953463
AAL3975	8/25/2014	13	DOH	-82.62197	28.953463
AAL3975	9/2/2015	1.97	DOH	-82.62197	28.953463
AAL3975	10/22/2015	22	DOH	-82.62197	28.953463
AAL3975	12/20/2018	12	DOH	-82.62197	28.953463

Table F-1
Regional Arsenic Concentration Dataset
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	Arsenic Concentration (µg/L) ¹	Source	Longitude	Latitude
AAL3976	10/15/2007	30	DOH	-82.62465	28.952847
AAL3976	9/29/2008	30	DOH	-82.62465	28.952847
AAL3976	2/6/2013	24	DOH	-82.62465	28.952847
AAL3976	3/15/2016	15	DOH	-82.62465	28.952847
AAL3976	3/4/2019	19	DOH	-82.62465	28.952847
AAL3977	10/15/2007	7.40	DOH	-82.62431	28.954687
AAL3977	1/28/2008	7.40	DOH	-82.62431	28.954687
AAL3977	6/6/2008	4.73	DOH	-82.62431	28.954687
AAL3977	9/9/2008	5.66	DOH	-82.62431	28.954687
AAL3977	10/15/2009	5.45	DOH	-82.62431	28.954687
AAL3977	10/26/2010	5.36	DOH	-82.62431	28.954687
AAL3977	10/25/2011	3.91	DOH	-82.62431	28.954687
AAL3977	8/20/2018	5.59	DOH	-82.62431	28.954687
AAL3978	10/15/2007	7.58	DOH	-82.62323	28.953709
AAL3978	7/9/2008	7.13	DOH	-82.62323	28.953709
AAL3978	2/18/2009	14	DOH	-82.62323	28.953709
AAL3978	5/18/2012	2.60	DOH	-82.62323	28.953709
AAL3978	8/15/2013	9.91	DOH	-82.62323	28.953709
AAL3978	3/15/2016	2.41	DOH	-82.62323	28.953709
AAL3978	6/27/2016	1.80	DOH	-82.62323	28.953709
AAL3978	9/26/2017	0.68	DOH	-82.62323	28.953709
AAL3978	1/31/2019	2.19	DOH	-82.62323	28.953709
AAL7311	7/16/2008	70	DOH	-82.63463	28.977833
AAL7311	1/28/2009	78	DOH	-82.63463	28.977833
AAL7311	3/27/2009	30	DOH	-82.63463	28.977833
AAL7311	7/13/2009	23	DOH	-82.63463	28.977833
AAL7311	10/15/2009	14	DOH	-82.63463	28.977833
AAL7311	1/15/2010	26	DOH	-82.63463	28.977833
AAL7311	5/5/2010	19	DOH	-82.63463	28.977833
AAL7311	7/12/2010	29	DOH	-82.63463	28.977833
AAL7311	10/8/2010	27	DOH	-82.63463	28.977833
AAL7311	1/3/2011	28	DOH	-82.63463	28.977833
AAL7311	3/30/2011	20	DOH	-82.63463	28.977833
AAL7311	7/14/2011	22	DOH	-82.63463	28.977833
AAL7311	10/17/2011	31	DOH	-82.63463	28.977833
AAL7311	1/18/2012	29	DOH	-82.63463	28.977833
AAL7311	4/18/2012	39	DOH	-82.63463	28.977833
AAL7311	7/20/2012	46	DOH	-82.63463	28.977833
AAL7311	10/16/2012	56	DOH	-82.63463	28.977833
AAL7311	1/9/2013	58	DOH	-82.63463	28.977833
AAL7311	4/10/2013	22	DOH	-82.63463	28.977833
AAL7311	7/30/2013	23	DOH	-82.63463	28.977833

Table F-1
Regional Arsenic Concentration Dataset
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	Arsenic Concentration (µg/L)¹	Source	Longitude	Latitude
AAL7311	10/30/2013	23	DOH	-82.63463	28.977833
AAL7311	3/4/2014	25	DOH	-82.63463	28.977833
AAL7311	1/5/2016	30	DOH	-82.63463	28.977833
AAL7311	4/4/2016	16	DOH	-82.63463	28.977833
AAL7311	7/21/2016	32	DOH	-82.63463	28.977833
AAL7311	10/24/2016	16	DOH	-82.63463	28.977833
AAL7311	2/16/2017	30	DOH	-82.63463	28.977833
AAL7311	6/26/2017	18	DOH	-82.63463	28.977833
AAL7311	11/20/2017	18	DOH	-82.63463	28.977833
AAL7311	2/12/2018	18	DOH	-82.63463	28.977833
AAL7311	6/8/2018	17	DOH	-82.63463	28.977833
AAL7311	9/20/2018	21	DOH	-82.63463	28.977833
AAL7311	12/20/2018	19	DOH	-82.63463	28.977833
AAL7311	4/3/2019	21	DOH	-82.63463	28.977833
AAL7311	6/13/2019	26	DOH	-82.63463	28.977833
AAL7311	9/24/2019	26	DOH	-82.63463	28.977833
AAL7311	12/27/2019	30	DOH	-82.63463	28.977833
AAL7311	3/26/2020	30	DOH	-82.63463	28.977833
AAL7311	6/24/2020	33	DOH	-82.63463	28.977833
AAL7311	9/29/2020	16	DOH	-82.63463	28.977833
AAL7330	6/16/2008	6.11	DOH	-82.63405	28.998031
AAL7330	10/14/2008	6.46	DOH	-82.63405	28.998031
AAL7330	5/5/2010	5.53	DOH	-82.63405	28.998031
AAL7330	4/22/2011	7.02	DOH	-82.63405	28.998031
AAL7330	4/18/2012	7.10	DOH	-82.63405	28.998031
AAL7330	7/23/2015	6.99	DOH	-82.63405	28.998031
AAL7330	6/27/2018	6.56	DOH	-82.63405	28.998031
AAL7334	6/16/2008	15	DOH	-82.59945	29.011299
AAL7334	9/20/2012	12	DOH	-82.59945	29.011299
AAL7334	8/16/2017	27	DOH	-82.59945	29.011299
AAL7334	9/24/2019	2.88	DOH	-82.59945	29.011299
AAL7334	5/7/2020	2.51	DOH	-82.59945	29.011299
AAL7334	7/31/2020	0.96	DOH	-82.59945	29.011299
AAL7334	11/5/2020	1.88	DOH	-82.59945	29.011299
AAL7335	6/9/2008	24	DOH	-82.60959	28.982497
AAL7335	4/9/2014	24	DOH	-82.60959	28.982497
AAL7335	7/23/2015	15	DOH	-82.60959	28.982497
AAL7335	7/25/2018	30	DOH	-82.60959	28.982497
AAL7336	6/9/2008	7.52	DOH	-82.64294	29.006303
AAL7336	10/20/2008	8.63	DOH	-82.64294	29.006303
AAL7336	1/21/2009	8.42	DOH	-82.64294	29.006303
AAL7336	5/26/2009	8.51	DOH	-82.64294	29.006303

Table F-1
Regional Arsenic Concentration Dataset
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	Arsenic Concentration (µg/L)¹	Source	Longitude	Latitude
AAL7336	7/29/2010	9.02	DOH	-82.64294	29.006303
AAL7336	10/18/2010	7.03	DOH	-82.64294	29.006303
AAL7336	4/7/2011	7.30	DOH	-82.64294	29.006303
AAL7336	10/25/2011	5.11	DOH	-82.64294	29.006303
AAL7336	4/9/2012	7.20	DOH	-82.64294	29.006303
AAL7336	7/23/2015	2.29	DOH	-82.64294	29.006303
AAL7336	6/27/2018	8.19	DOH	-82.64294	29.006303
AAL7336	9/24/2018	9.94	DOH	-82.64294	29.006303
AAL7336	12/20/2018	7.66	DOH	-82.64294	29.006303
AAL7336	3/1/2019	7.62	DOH	-82.64294	29.006303
AAL7336	4/29/2019	7.56	DOH	-82.64294	29.006303
AAL7336	11/18/2019	7.43	DOH	-82.64294	29.006303
AAL7336	4/9/2020	7.60	DOH	-82.64294	29.006303
AAL7336	11/2/2020	8.12	DOH	-82.64294	29.006303
AAL7344	5/5/2008	5.68	DOH	-82.63806	28.997912
AAL7344	10/16/2009	5.86	DOH	-82.63806	28.997912
AAL7344	5/10/2010	6.09	DOH	-82.63806	28.997912
AAL7344	4/22/2011	6.23	DOH	-82.63806	28.997912
AAL7344	4/18/2012	10	DOH	-82.63806	28.997912
AAL7344	12/27/2012	6.20	DOH	-82.63806	28.997912
AAL7344	8/8/2014	4.98	DOH	-82.63806	28.997912
AAL7346	5/5/2008	19	DOH	-82.62749	28.949106
AAL7346	6/9/2008	24	DOH	-82.62749	28.949106
AAL7346	9/29/2008	31	DOH	-82.62749	28.949106
AAL7346	8/31/2015	22	DOH	-82.62749	28.949106
AAL7355	4/21/2008	8.58	DOH	-82.62672	28.953889
AAL7355	7/9/2008	3.86	DOH	-82.62672	28.953889
AAL7355	1/15/2009	18	DOH	-82.62672	28.953889
AAL7355	12/19/2011	8.57	DOH	-82.62672	28.953889
AAL7355	2/19/2013	30	DOH	-82.62672	28.953889
AAL7355	6/4/2013	23	DOH	-82.62672	28.953889
AAL7355	8/30/2013	14	DOH	-82.62672	28.953889
AAL7355	12/2/2013	26	DOH	-82.62672	28.953889
AAL7355	3/4/2014	19	DOH	-82.62672	28.953889
AAL7355	9/16/2014	29	DOH	-82.62672	28.953889
AAL7355	12/16/2014	27	DOH	-82.62672	28.953889
AAL7355	6/19/2015	28	DOH	-82.62672	28.953889
AAL7355	9/23/2015	20	DOH	-82.62672	28.953889
AAL7355	1/6/2016	22	DOH	-82.62672	28.953889
AAL7355	4/5/2016	31	DOH	-82.62672	28.953889
AAL7355	7/21/2016	29	DOH	-82.62672	28.953889
AAL7355	12/5/2016	39	DOH	-82.62672	28.953889

Table F-1
Regional Arsenic Concentration Dataset
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	Arsenic Concentration (µg/L) ¹	Source	Longitude	Latitude
AAL7355	4/18/2017	46	DOH	-82.62672	28.953889
AAL7355	8/11/2017	56	DOH	-82.62672	28.953889
AAL7355	2/12/2018	58	DOH	-82.62672	28.953889
AAL7355	5/31/2018	22	DOH	-82.62672	28.953889
AAL7355	9/14/2018	23	DOH	-82.62672	28.953889
AAL7355	12/10/2018	23	DOH	-82.62672	28.953889
AAL7355	3/4/2019	25	DOH	-82.62672	28.953889
AAL7355	5/30/2019	30	DOH	-82.62672	28.953889
AAL7355	9/11/2019	16	DOH	-82.62672	28.953889
AAL7355	12/11/2019	32	DOH	-82.62672	28.953889
AAL7355	3/9/2020	16	DOH	-82.62672	28.953889
AAL7355	6/18/2020	30	DOH	-82.62672	28.953889
AAL7355	9/22/2020	18	DOH	-82.62672	28.953889
AAL7355	1/7/2021	18	DOH	-82.62672	28.953889
AAL7369	3/28/2008	15	DOH	-82.6588	28.955495
AAL7369	7/20/2012	11	DOH	-82.6588	28.955495
AAL7369	9/10/2015	2.17	DOH	-82.6588	28.955495
AAL7369	9/23/2015	0.25	DOH	-82.6588	28.955495
AAL7369	1/5/2016	2.98	DOH	-82.6588	28.955495
AAL7369	4/4/2016	2.49	DOH	-82.6588	28.955495
AAL7369	11/15/2019	5.16	DOH	-82.6588	28.955495
AAL7369	3/24/2020	4.32	DOH	-82.6588	28.955495
AAL7369	6/24/2020	5.13	DOH	-82.6588	28.955495
AAL7369	9/29/2020	4.85	DOH	-82.6588	28.955495
AAL7369	1/7/2021	5.34	DOH	-82.6588	28.955495
AAL7372	3/27/2008	10	DOH	-82.60142	29.009854
AAL7372	6/6/2008	9.42	DOH	-82.60142	29.009854
AAL7372	9/29/2008	8.22	DOH	-82.60142	29.009854
AAL7372	2/26/2009	9.60	DOH	-82.60142	29.009854
AAL7372	6/16/2009	8.89	DOH	-82.60142	29.009854
AAL7372	1/22/2010	3.04	DOH	-82.60142	29.009854
AAL7372	7/22/2015	1.31	DOH	-82.60142	29.009854
AAL7372	8/16/2017	3.75	DOH	-82.60142	29.009854
AAL7372	7/31/2020	1.53	DOH	-82.60142	29.009854
AAL7372	11/2/2020	5.51	DOH	-82.60142	29.009854
AAL7377	3/24/2008	24	DOH	-82.60083	29.010112
AAL7377	6/8/2012	8.60	DOH	-82.60083	29.010112
AAL7377	10/18/2013	16	DOH	-82.60083	29.010112
AAL7377	9/24/2016	0.070	DOH	-82.60083	29.010112
AAL7377	10/28/2016	5.43	DOH	-82.60083	29.010112
AAL7377	6/27/2017	2.52	DOH	-82.60083	29.010112
AAL7377	9/24/2018	12	DOH	-82.60083	29.010112

Table F-1
Regional Arsenic Concentration Dataset
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	Arsenic Concentration (µg/L)¹	Source	Longitude	Latitude
AAL7377	9/22/2020	0.060	DOH	-82.60083	29.010112
AAL7378	3/17/2008	15	DOH	-82.62733	28.949338
AAL7378	6/9/2008	14	DOH	-82.62733	28.949338
AAL7378	9/29/2008	26	DOH	-82.62733	28.949338
AAL7378	8/28/2014	9.80	DOH	-82.62733	28.949338
AAL7378	12/29/2014	17	DOH	-82.62733	28.949338
AAL7378	8/31/2015	14	DOH	-82.62733	28.949338
AAL7388	3/10/2008	11	DOH	-82.60306	29.00895
AAL7388	9/24/2012	11	DOH	-82.60306	29.00895
AAL7388	2/19/2013	14	DOH	-82.60306	29.00895
AAL7388	3/29/2016	6.04	DOH	-82.60306	29.00895
AAL7388	6/30/2016	5.51	DOH	-82.60306	29.00895
AAL7388	9/24/2016	17	DOH	-82.60306	29.00895
AAL7388	9/25/2019	13	DOH	-82.60306	29.00895
AAL7397	3/3/2008	17	DOH	-82.60239	29.009561
AAL7397	5/16/2012	20	DOH	-82.60239	29.009561
AAL7397	10/28/2016	23	DOH	-82.60239	29.009561
AAL7397	10/9/2018	23	DOH	-82.60239	29.009561
AAL7398	3/3/2008	29	DOH	-82.60107	29.009133
AAL7398	5/16/2012	18	DOH	-82.60107	29.009133
AAL7398	5/26/2016	8.67	DOH	-82.60107	29.009133
AAL7398	10/28/2016	17	DOH	-82.60107	29.009133
AAL7398	11/18/2019	14	DOH	-82.60107	29.009133
AAL7602	8/5/2008	34	DOH	-82.6028	29.007293
AAL7602	8/15/2013	19	DOH	-82.6028	29.007293
AAL7602	8/8/2014	21	DOH	-82.6028	29.007293
AAL7602	5/7/2015	2.79	DOH	-82.6028	29.007293
AAL7602	8/17/2015	23	DOH	-82.6028	29.007293
AAL7602	8/16/2017	0.51	DOH	-82.6028	29.007293
AAL7603	8/5/2008	8.64	DOH	-82.64013	28.998037
AAL7603	12/22/2008	8.17	DOH	-82.64013	28.998037
AAL7603	6/4/2009	6.59	DOH	-82.64013	28.998037
AAL7603	8/13/2010	7.22	DOH	-82.64013	28.998037
AAL7603	1/20/2011	6.38	DOH	-82.64013	28.998037
AAL7603	8/2/2011	6.89	DOH	-82.64013	28.998037
AAL7603	1/5/2012	4.98	DOH	-82.64013	28.998037
AAL7603	8/30/2013	7.23	DOH	-82.64013	28.998037
AAL7603	8/17/2017	2.06	DOH	-82.64013	28.998037
AAL7606	8/14/2008	30	DOH	-82.62217	28.95396
AAL7606	9/29/2008	11	DOH	-82.62217	28.95396
AAL7606	9/20/2012	5.70	DOH	-82.62217	28.95396
AAL7606	2/6/2013	1.80	DOH	-82.62217	28.95396

Table F-1
Regional Arsenic Concentration Dataset
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	Arsenic Concentration (µg/L) ¹	Source	Longitude	Latitude
AAL7606	8/15/2013	0.88	DOH	-82.62217	28.95396
AAL7606	9/17/2014	11	DOH	-82.62217	28.95396
AAL7606	3/2/2018	3.73	DOH	-82.62217	28.95396
AAL7606	5/16/2018	3.63	DOH	-82.62217	28.95396
AAL7606	9/24/2018	3.95	DOH	-82.62217	28.95396
AAL7606	12/10/2018	3.15	DOH	-82.62217	28.95396
AAL7606	8/2/2019	3.24	DOH	-82.62217	28.95396
AAL7610	8/14/2008	33	DOH	-82.61995	28.986147
AAL7610	7/6/2012	26	DOH	-82.61995	28.986147
AAL7610	2/1/2016	0.85	DOH	-82.61995	28.986147
AAL7610	3/7/2018	26	DOH	-82.61995	28.986147
AAL7610	3/23/2020	26	DOH	-82.61995	28.986147
AAL7611	8/14/2008	31	DOH	-82.62157	28.986054
AAL7611	7/9/2012	26	DOH	-82.62157	28.986054
AAL7611	5/26/2016	26	DOH	-82.62157	28.986054
AAL7611	6/8/2018	25	DOH	-82.62157	28.986054
AAL7611	4/10/2020	16	DOH	-82.62157	28.986054
AAL7626	9/8/2008	12	DOH	-82.62871	28.973235
AAL7626	6/7/2012	6.60	DOH	-82.62871	28.973235
AAL7626	8/30/2013	7.62	DOH	-82.62871	28.973235
AAL7626	2/1/2016	1.68	DOH	-82.62871	28.973235
AAL7626	5/26/2016	89	DOH	-82.62871	28.973235
AAL7626	6/14/2016	4.24	DOH	-82.62871	28.973235
AAL7626	12/12/2016	3.59	DOH	-82.62871	28.973235
AAL7626	6/20/2017	13	DOH	-82.62871	28.973235
AAL7626	4/9/2020	1.72	DOH	-82.62871	28.973235
AAL7626	7/22/2020	1.84	DOH	-82.62871	28.973235
AAL7626	10/20/2020	5.17	DOH	-82.62871	28.973235
AAL7630	9/10/2008	25	DOH	-82.61987	28.987024
AAL7630	12/5/2014	19	DOH	-82.61987	28.987024
AAL7630	3/29/2016	15	DOH	-82.61987	28.987024
AAL7630	2/4/2019	14	DOH	-82.61987	28.987024
AAL7632	9/15/2008	15	DOH	-82.62155	28.983009
AAL7632	7/25/2012	15	DOH	-82.62155	28.983009
AAL7632	3/29/2016	13	DOH	-82.62155	28.983009
AAL7632	5/2/2019	11	DOH	-82.62155	28.983009
AAL7638	9/22/2008	8.16	DOH	-82.62773	28.979255
AAL7638	11/10/2008	8.31	DOH	-82.62773	28.979255
AAL7638	5/15/2009	7.75	DOH	-82.62773	28.979255
AAL7638	10/20/2009	7.49	DOH	-82.62773	28.979255
AAL7638	1/11/2010	9.17	DOH	-82.62773	28.979255
AAL7638	5/28/2010	8.00	DOH	-82.62773	28.979255

Table F-1
Regional Arsenic Concentration Dataset
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	Arsenic Concentration (µg/L)¹	Source	Longitude	Latitude
AAL7638	3/11/2011	7.07	DOH	-82.62773	28.979255
AAL7638	8/11/2011	7.18	DOH	-82.62773	28.979255
AAL7638	9/3/2013	7.74	DOH	-82.62773	28.979255
AAL7638	2/1/2016	8.18	DOH	-82.62773	28.979255
AAL7638	6/30/2016	9.38	DOH	-82.62773	28.979255
AAL7638	10/5/2016	9.22	DOH	-82.62773	28.979255
AAL7638	4/18/2017	3.16	DOH	-82.62773	28.979255
AAL7638	2/12/2018	8.05	DOH	-82.62773	28.979255
AAL7638	1/31/2019	8.23	DOH	-82.62773	28.979255
AAL7638	3/23/2020	7.37	DOH	-82.62773	28.979255
AAL7641	9/26/2008	14	DOH	-82.62003	28.98513
AAL7641	5/9/2012	14	DOH	-82.62003	28.98513
AAL7641	3/29/2016	11	DOH	-82.62003	28.98513
AAL7641	2/4/2019	15	DOH	-82.62003	28.98513
AAL7642	9/29/2008	20	DOH	-82.62142	28.985188
AAL7642	7/9/2012	19	DOH	-82.62142	28.985188
AAL7642	5/26/2016	9.40	DOH	-82.62142	28.985188
AAL7642	10/28/2016	18	DOH	-82.62142	28.985188
AAL7642	12/6/2019	27	DOH	-82.62142	28.985188
AAL7645	9/29/2008	8.31	DOH	-82.62027	28.98304
AAL7645	11/10/2008	6.66	DOH	-82.62027	28.98304
AAL7645	1/22/2010	5.63	DOH	-82.62027	28.98304
AAL7645	5/10/2010	8.40	DOH	-82.62027	28.98304
AAL7645	8/6/2010	7.59	DOH	-82.62027	28.98304
AAL7645	2/23/2011	6.37	DOH	-82.62027	28.98304
AAL7645	1/18/2012	8.47	DOH	-82.62027	28.98304
AAL7645	10/30/2013	7.25	DOH	-82.62027	28.98304
AAL7645	12/5/2014	7.15	DOH	-82.62027	28.98304
AAL7645	2/1/2016	4.64	DOH	-82.62027	28.98304
AAL7651	10/2/2008	17	DOH	-82.62736	28.978917
AAL7651	6/7/2012	14	DOH	-82.62736	28.978917
AAL7651	7/22/2015	14	DOH	-82.62736	28.978917
AAL7651	6/8/2018	24	DOH	-82.62736	28.978917
AAL7651	5/7/2020	13	DOH	-82.62736	28.978917
AAL7654	10/6/2008	11	DOH	-82.61585	28.987703
AAL7654	5/9/2012	10	DOH	-82.61585	28.987703
AAL7654	2/1/2016	6.91	DOH	-82.61585	28.987703
AAL7654	6/30/2016	13	DOH	-82.61585	28.987703
AAL7654	5/2/2019	10	DOH	-82.61585	28.987703
AAL7654	12/27/2019	7.95	DOH	-82.61585	28.987703
AAL7654	4/23/2020	10	DOH	-82.61585	28.987703
AAL7676	11/4/2008	9.88	DOH	-82.60906	28.923673

Table F-1
Regional Arsenic Concentration Dataset
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	Arsenic Concentration (µg/L)¹	Source	Longitude	Latitude
AAL7676	1/21/2009	9.07	DOH	-82.60906	28.923673
AAL7676	5/13/2009	10	DOH	-82.60906	28.923673
AAL7676	7/15/2009	11	DOH	-82.60906	28.923673
AAL7676	4/30/2012	10	DOH	-82.60906	28.923673
AAL7676	1/19/2016	9.06	DOH	-82.60906	28.923673
AAL7676	9/10/2016	9.64	DOH	-82.60906	28.923673
AAL7676	5/15/2017	9.39	DOH	-82.60906	28.923673
AAL7676	7/28/2017	0.25	DOH	-82.60906	28.923673
AAL7676	2/22/2019	8.82	DOH	-82.60906	28.923673
AAL7682	11/10/2008	34	DOH	-82.62598	28.973711
AAL7682	1/25/2013	30	DOH	-82.62598	28.973711
AAL7682	4/9/2014	25	DOH	-82.62598	28.973711
AAL7682	6/27/2016	7.29	DOH	-82.62598	28.973711
AAL7682	9/21/2016	4.15	DOH	-82.62598	28.973711
AAL7682	12/12/2016	5.49	DOH	-82.62598	28.973711
AAL7682	6/20/2017	4.03	DOH	-82.62598	28.973711
AAL7682	6/8/2018	30	DOH	-82.62598	28.973711
AAL7682	7/11/2018	27	DOH	-82.62598	28.973711
AAL7682	5/2/2019	24	DOH	-82.62598	28.973711
AAL7691	11/20/2008	11	DOH	-82.61726	28.972621
AAL7691	5/30/2012	48	DOH	-82.61726	28.972621
AAL7691	4/9/2014	16	DOH	-82.61726	28.972621
AAL7691	6/27/2017	8.55	DOH	-82.61726	28.972621
AAM1373	10/1/2008	9.39	DOH	-82.70606	29.029192
AAM1373	1/20/2009	8.10	DOH	-82.70606	29.029192
AAM1373	5/26/2009	8.86	DOH	-82.70606	29.029192
AAM1373	8/10/2009	9.74	DOH	-82.70606	29.029192
AAM1373	2/16/2010	13	DOH	-82.70606	29.029192
AAM1373	6/7/2012	1.10	DOH	-82.70606	29.029192
AAM1373	9/3/2013	7.18	DOH	-82.70606	29.029192
AAM1373	9/16/2014	9.89	DOH	-82.70606	29.029192
AAM1373	2/1/2016	9.46	DOH	-82.70606	29.029192
AAM1373	6/30/2016	13	DOH	-82.70606	29.029192
AAM1373	4/29/2019	11	DOH	-82.70606	29.029192
AAM5501	4/30/2009	7.08	DOH	-82.5915	28.937039
AAM5501	11/16/2018	36	DOH	-82.5915	28.937039
AAM5501	1/30/2019	28	DOH	-82.5915	28.937039
AAM5501	8/2/2019	25	DOH	-82.5915	28.937039
AAM5514	4/3/2009	15	DOH	-82.63042	28.984343
AAM5514	5/1/2012	21	DOH	-82.63042	28.984343
AAM5514	6/27/2017	2.76	DOH	-82.63042	28.984343
AAM5514	9/26/2017	11	DOH	-82.63042	28.984343

Table F-1
Regional Arsenic Concentration Dataset
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	Arsenic Concentration (µg/L)¹	Source	Longitude	Latitude
AAM5514	12/6/2019	9.21	DOH	-82.63042	28.984343
AAM5524	3/27/2009	28	DOH	-82.62211	28.954006
AAM5524	5/18/2012	24	DOH	-82.62211	28.954006
AAM5524	10/20/2012	30	DOH	-82.62211	28.954006
AAM5524	10/22/2015	1.10	DOH	-82.62211	28.954006
AAM5524	3/30/2016	0.43	DOH	-82.62211	28.954006
AAM5524	6/27/2016	2.32	DOH	-82.62211	28.954006
AAM5524	6/8/2018	24	DOH	-82.62211	28.954006
AAM5534	3/9/2009	15	DOH	-82.59938	28.940357
AAM5534	8/4/2014	1.43	DOH	-82.59938	28.940357
AAM5534	4/16/2015	0.83	DOH	-82.59938	28.940357
AAM5534	6/21/2017	13	DOH	-82.59938	28.940357
AAM5535	3/9/2009	8.62	DOH	-82.59826	28.937731
AAM5535	5/13/2009	5.89	DOH	-82.59826	28.937731
AAM5535	10/13/2010	6.40	DOH	-82.59826	28.937731
AAM5535	11/28/2011	3.43	DOH	-82.59826	28.937731
AAM5536	3/9/2009	50	DOH	-82.62436	28.973665
AAM5536	4/27/2009	35	DOH	-82.62436	28.973665
AAM5536	6/7/2012	43	DOH	-82.62436	28.973665
AAM5536	4/9/2014	38	DOH	-82.62436	28.973665
AAM5536	4/16/2015	34	DOH	-82.62436	28.973665
AAM5536	6/30/2016	6.64	DOH	-82.62436	28.973665
AAM5536	10/5/2016	0.25	DOH	-82.62436	28.973665
AAM5536	6/22/2017	3.57	DOH	-82.62436	28.973665
AAM5536	9/26/2017	3.55	DOH	-82.62436	28.973665
AAM5536	10/26/2018	34	DOH	-82.62436	28.973665
AAM5539	2/27/2009	13	DOH	-82.60894	28.924933
AAM5539	5/13/2009	8.19	DOH	-82.60894	28.924933
AAM5539	11/3/2009	7.73	DOH	-82.60894	28.924933
AAM5539	5/28/2010	7.05	DOH	-82.60894	28.924933
AAM5539	2/24/2011	7.09	DOH	-82.60894	28.924933
AAM5539	11/9/2011	7.18	DOH	-82.60894	28.924933
AAM5539	4/30/2012	8.20	DOH	-82.60894	28.924933
AAM5539	8/28/2014	7.26	DOH	-82.60894	28.924933
AAM5548	2/19/2009	7.72	DOH	-82.6092	28.924424
AAM5548	5/26/2009	9.48	DOH	-82.6092	28.924424
AAM5548	7/15/2009	8.49	DOH	-82.6092	28.924424
AAM5548	11/3/2009	7.78	DOH	-82.6092	28.924424
AAM5548	2/16/2010	7.39	DOH	-82.6092	28.924424
AAM5551	2/17/2009	10	DOH	-82.60019	28.939736
AAM5551	5/13/2009	8.45	DOH	-82.60019	28.939736
AAM5551	11/12/2009	5.27	DOH	-82.60019	28.939736

Table F-1
Regional Arsenic Concentration Dataset
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	Arsenic Concentration (µg/L)¹	Source	Longitude	Latitude
AAM5551	5/17/2010	1.18	DOH	-82.60019	28.939736
AAM5551	12/30/2014	8.19	DOH	-82.60019	28.939736
AAM5551	12/1/2015	7.63	DOH	-82.60019	28.939736
AAM5551	5/30/2019	8.62	DOH	-82.60019	28.939736
AAM5552	2/17/2009	5.09	DOH	-82.59533	28.938693
AAM5552	1/19/2010	5.25	DOH	-82.59533	28.938693
AAM5552	1/12/2011	4.87	DOH	-82.59533	28.938693
AAM5552	11/16/2018	3.87	DOH	-82.59533	28.938693
AAM5553	2/9/2009	20	DOH	-82.62307	28.970711
AAM5553	4/9/2014	17	DOH	-82.62307	28.970711
AAM5553	6/30/2016	5.03	DOH	-82.62307	28.970711
AAM5553	10/5/2016	0.25	DOH	-82.62307	28.970711
AAM5553	6/22/2017	15	DOH	-82.62307	28.970711
AAM5553	5/13/2020	15	DOH	-82.62307	28.970711
AAM5558	1/15/2009	7.32	DOH	-82.64325	29.00073
AAM5558	5/15/2009	8.09	DOH	-82.64325	29.00073
AAM5558	5/5/2010	7.20	DOH	-82.64325	29.00073
AAM5558	8/5/2010	7.02	DOH	-82.64325	29.00073
AAM5558	10/26/2010	7.36	DOH	-82.64325	29.00073
AAM5558	1/20/2011	7.26	DOH	-82.64325	29.00073
AAM5558	7/15/2011	6.43	DOH	-82.64325	29.00073
AAM5558	1/5/2012	6.28	DOH	-82.64325	29.00073
AAM5558	6/1/2012	6.10	DOH	-82.64325	29.00073
AAM5558	7/22/2015	5.72	DOH	-82.64325	29.00073
AAM5558	7/9/2019	6.72	DOH	-82.64325	29.00073
AAM5565	1/9/2009	8.99	DOH	-82.5992	28.938426
AAM5565	5/13/2009	9.15	DOH	-82.5992	28.938426
AAM5565	8/19/2009	10	DOH	-82.5992	28.938426
AAM5565	10/16/2009	8.62	DOH	-82.5992	28.938426
AAM5565	3/16/2010	7.57	DOH	-82.5992	28.938426
AAM5565	3/11/2011	9.46	DOH	-82.5992	28.938426
AAM5565	7/21/2011	8.02	DOH	-82.5992	28.938426
AAM5565	1/6/2012	8.71	DOH	-82.5992	28.938426
AAM5565	4/24/2012	9.00	DOH	-82.5992	28.938426
AAM5565	8/4/2014	8.73	DOH	-82.5992	28.938426
AAM5565	12/1/2015	8.28	DOH	-82.5992	28.938426
AAM5565	12/14/2016	7.38	DOH	-82.5992	28.938426
AAM5565	3/26/2018	8.19	DOH	-82.5992	28.938426
AAM5565	11/16/2018	9.19	DOH	-82.5992	28.938426
AAM5565	1/30/2019	9.12	DOH	-82.5992	28.938426
AAM5565	5/21/2019	13	DOH	-82.5992	28.938426
AAM5565	6/13/2019	13	DOH	-82.5992	28.938426

Table F-1
Regional Arsenic Concentration Dataset
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	Arsenic Concentration (µg/L)¹	Source	Longitude	Latitude
AAM5570	12/31/2008	14	DOH	-82.60147	28.935822
AAM5570	7/20/2012	17	DOH	-82.60147	28.935822
AAM5570	9/26/2016	5.44	DOH	-82.60147	28.935822
AAM5570	12/15/2016	1.05	DOH	-82.60147	28.935822
AAM5570	5/1/2017	0.46	DOH	-82.60147	28.935822
AAM5570	9/26/2017	3.69	DOH	-82.60147	28.935822
AAM5584	12/12/2008	8.12	DOH	-82.59615	28.939547
AAM5584	4/30/2009	8.68	DOH	-82.59615	28.939547
AAM5584	8/7/2009	8.84	DOH	-82.59615	28.939547
AAM5584	10/16/2009	7.71	DOH	-82.59615	28.939547
AAM5584	1/19/2010	7.25	DOH	-82.59615	28.939547
AAM5584	4/28/2010	7.92	DOH	-82.59615	28.939547
AAM5584	7/22/2010	9.51	DOH	-82.59615	28.939547
AAM5584	9/3/2014	7.23	DOH	-82.59615	28.939547
AAM5584	9/26/2016	9.45	DOH	-82.59615	28.939547
AAM5584	1/23/2017	1.46	DOH	-82.59615	28.939547
AAM5584	6/27/2017	9.97	DOH	-82.59615	28.939547
AAM5584	9/26/2017	5.73	DOH	-82.59615	28.939547
AAM5584	11/16/2018	25	DOH	-82.59615	28.939547
AAM5584	1/30/2019	17	DOH	-82.59615	28.939547
AAM5584	8/2/2019	8.16	DOH	-82.59615	28.939547
AAM5584	10/29/2019	7.11	DOH	-82.59615	28.939547
AAM6801	10/5/2009	7.66	DOH	-82.59915	28.929532
AAM6801	1/19/2010	7.56	DOH	-82.59915	28.929532
AAM6801	5/17/2010	5.33	DOH	-82.59915	28.929532
AAM6801	6/9/2011	8.46	DOH	-82.59915	28.929532
AAM6801	8/5/2011	8.63	DOH	-82.59915	28.929532
AAM6801	11/10/2011	10	DOH	-82.59915	28.929532
AAM6801	2/28/2012	10	DOH	-82.59915	28.929532
AAM6801	4/24/2012	9.60	DOH	-82.59915	28.929532
AAM6801	7/13/2012	12	DOH	-82.59915	28.929532
AAM6801	9/26/2017	0.25	DOH	-82.59915	28.929532
AAM6811	9/16/2009	10	DOH	-82.6025	28.930325
AAM6811	12/14/2009	3.95	DOH	-82.6025	28.930325
AAM6811	3/16/2010	8.33	DOH	-82.6025	28.930325
AAM6811	7/25/2012	8.00	DOH	-82.6025	28.930325
AAM6811	8/23/2013	8.39	DOH	-82.6025	28.930325
AAM6811	9/29/2014	9.39	DOH	-82.6025	28.930325
AAM6811	12/1/2015	4.15	DOH	-82.6025	28.930325
AAM6811	5/16/2018	9.67	DOH	-82.6025	28.930325
AAM6811	8/20/2018	8.67	DOH	-82.6025	28.930325
AAM6811	11/30/2018	8.94	DOH	-82.6025	28.930325

Table F-1
Regional Arsenic Concentration Dataset
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	Arsenic Concentration (µg/L)¹	Source	Longitude	Latitude
AAM6811	1/30/2019	9.99	DOH	-82.6025	28.930325
AAM6811	5/2/2019	9.99	DOH	-82.6025	28.930325
AAM6811	7/23/2019	9.33	DOH	-82.6025	28.930325
AAM6825	8/28/2009	6.81	DOH	-82.64764	29.007414
AAM6825	8/13/2010	3.75	DOH	-82.64764	29.007414
AAM6825	4/26/2012	6.60	DOH	-82.64764	29.007414
AAM6825	7/10/2017	4.29	DOH	-82.64764	29.007414
AAM6826	8/28/2009	5.05	DOH	-82.64151	29.006942
AAM6826	7/29/2010	11	DOH	-82.64151	29.006942
AAM6826	5/5/2014	4.58	DOH	-82.64151	29.006942
AAM6826	9/4/2015	19	DOH	-82.64151	29.006942
AAM6826	10/26/2018	9.69	DOH	-82.64151	29.006942
AAM6827	8/27/2009	7.70	DOH	-82.62566	28.986529
AAM6827	10/16/2009	8.43	DOH	-82.62566	28.986529
AAM6827	2/4/2010	9.69	DOH	-82.62566	28.986529
AAM6827	5/10/2010	13	DOH	-82.62566	28.986529
AAM6827	8/6/2010	9.04	DOH	-82.62566	28.986529
AAM6827	2/23/2011	12	DOH	-82.62566	28.986529
AAM6827	6/27/2017	8.87	DOH	-82.62566	28.986529
AAM6827	3/1/2018	8.55	DOH	-82.62566	28.986529
AAM6827	8/1/2018	8.68	DOH	-82.62566	28.986529
AAM6829	8/24/2009	16	DOH	-82.62234	28.987179
AAM6829	7/9/2012	15	DOH	-82.62234	28.987179
AAM6829	6/20/2017	12	DOH	-82.62234	28.987179
AAM6829	4/10/2020	12	DOH	-82.62234	28.987179
AAM6835	8/19/2009	10	DOH	-82.62367	28.98634
AAM6835	10/16/2009	29	DOH	-82.62367	28.98634
AAM6835	5/7/2014	17	DOH	-82.62367	28.98634
AAM6835	6/30/2016	15	DOH	-82.62367	28.98634
AAM6844	8/11/2009	5.85	DOH	-82.59332	28.94217
AAM6844	7/22/2010	6.53	DOH	-82.59332	28.94217
AAM6844	7/15/2011	6.37	DOH	-82.59332	28.94217
AAM6844	8/21/2013	6.06	DOH	-82.59332	28.94217
AAM6844	5/1/2018	6.72	DOH	-82.59332	28.94217
AAM6846	8/10/2009	5.88	DOH	-82.60573	28.941484
AAM6846	7/30/2010	9.29	DOH	-82.60573	28.941484
AAM6846	10/8/2010	4.92	DOH	-82.60573	28.941484
AAM6846	12/6/2011	6.40	DOH	-82.60573	28.941484
AAM6846	8/15/2013	0.85	DOH	-82.60573	28.941484
AAM6846	2/1/2016	0.44	DOH	-82.60573	28.941484
AAM6849	8/4/2009	12	DOH	-82.61886	28.985642
AAM6849	7/9/2012	10	DOH	-82.61886	28.985642

Table F-1
Regional Arsenic Concentration Dataset
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	Arsenic Concentration (µg/L)¹	Source	Longitude	Latitude
AAM6849	8/8/2014	24	DOH	-82.61886	28.985642
AAM6849	9/21/2016	13	DOH	-82.61886	28.985642
AAM6849	7/19/2019	12	DOH	-82.61886	28.985642
AAM6867	7/24/2009	21	DOH	-82.60615	28.933715
AAM6867	5/24/2012	7.10	DOH	-82.60615	28.933715
AAM6867	8/4/2014	1.57	DOH	-82.60615	28.933715
AAM6867	12/1/2015	1.03	DOH	-82.60615	28.933715
AAM6867	3/30/2016	1.36	DOH	-82.60615	28.933715
AAM6867	6/27/2017	4.75	DOH	-82.60615	28.933715
AAM6868	7/24/2009	5.82	DOH	-82.60711	28.93347
AAM6868	7/30/2010	6.42	DOH	-82.60711	28.93347
AAM6868	7/14/2011	5.78	DOH	-82.60711	28.93347
AAM6868	8/15/2013	3.00	DOH	-82.60711	28.93347
AAM6869	7/22/2009	9.29	DOH	-82.62098	28.970647
AAM6869	1/11/2010	6.97	DOH	-82.62098	28.970647
AAM6869	5/10/2010	8.13	DOH	-82.62098	28.970647
AAM6869	7/12/2010	7.44	DOH	-82.62098	28.970647
AAM6869	3/11/2011	7.03	DOH	-82.62098	28.970647
AAM6869	10/17/2011	8.92	DOH	-82.62098	28.970647
AAM6869	2/8/2012	7.45	DOH	-82.62098	28.970647
AAM6869	4/30/2012	7.10	DOH	-82.62098	28.970647
AAM6869	10/29/2012	8.80	DOH	-82.62098	28.970647
AAM6869	11/8/2013	7.18	DOH	-82.62098	28.970647
AAM6869	10/9/2014	7.63	DOH	-82.62098	28.970647
AAM6869	2/1/2016	7.02	DOH	-82.62098	28.970647
AAM7611	10/20/2009	37	DOH	-82.61512	28.995755
AAM7611	5/1/2012	36	DOH	-82.61512	28.995755
AAM7611	1/31/2014	36	DOH	-82.61512	28.995755
AAM7611	7/22/2015	32	DOH	-82.61512	28.995755
AAM7611	9/21/2016	45	DOH	-82.61512	28.995755
AAM7611	9/27/2017	28	DOH	-82.61512	28.995755
AAM7612	10/20/2009	16	DOH	-82.61691	28.993902
AAM7612	5/1/2012	6.10	DOH	-82.61691	28.993902
AAM7612	8/17/2015	8.52	DOH	-82.61691	28.993902
AAM7612	9/21/2016	5.09	DOH	-82.61691	28.993902
AAM7612	10/26/2016	10	DOH	-82.61691	28.993902
AAM7612	6/20/2017	6.17	DOH	-82.61691	28.993902
AAM7612	9/27/2017	4.06	DOH	-82.61691	28.993902
AAM7612	10/26/2018	6.53	DOH	-82.61691	28.993902
AAM7612	10/20/2020	7.19	DOH	-82.61691	28.993902
AAM7613	10/20/2009	9.35	DOH	-82.61791	28.993299
AAM7613	1/14/2010	7.12	DOH	-82.61791	28.993299

Table F-1
Regional Arsenic Concentration Dataset
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	Arsenic Concentration (µg/L)¹	Source	Longitude	Latitude
AAM7613	5/28/2010	9.32	DOH	-82.61791	28.993299
AAM7613	3/11/2011	8.05	DOH	-82.61791	28.993299
AAM7613	10/25/2011	7.29	DOH	-82.61791	28.993299
AAM7613	5/1/2012	9.30	DOH	-82.61791	28.993299
AAM7613	9/16/2013	0.69	DOH	-82.61791	28.993299
AAM7613	11/7/2013	8.89	DOH	-82.61791	28.993299
AAM7613	10/15/2014	9.42	DOH	-82.61791	28.993299
AAM7613	2/1/2016	3.80	DOH	-82.61791	28.993299
AAM7613	7/10/2017	8.20	DOH	-82.61791	28.993299
AAM7613	3/1/2018	8.53	DOH	-82.61791	28.993299
AAM7613	4/9/2018	8.17	DOH	-82.61791	28.993299
AAM7613	8/1/2018	7.94	DOH	-82.61791	28.993299
AAM7613	10/26/2018	8.57	DOH	-82.61791	28.993299
AAM7620	10/27/2009	27	DOH	-82.62743	28.984268
AAM7620	5/1/2012	31	DOH	-82.62743	28.984268
AAM7620	6/27/2017	23	DOH	-82.62743	28.984268
AAM7620	5/2/2019	24	DOH	-82.62743	28.984268
AAM7638	11/17/2009	13	DOH	-82.6283	28.999181
AAM7638	5/1/2012	11	DOH	-82.6283	28.999181
AAM7638	3/29/2016	6.04	DOH	-82.6283	28.999181
AAM7638	6/30/2016	9.43	DOH	-82.6283	28.999181
AAM7638	10/28/2016	8.58	DOH	-82.6283	28.999181
AAM7638	6/27/2017	9.12	DOH	-82.6283	28.999181
AAM7638	3/1/2018	9.73	DOH	-82.6283	28.999181
AAM7638	8/1/2018	9.78	DOH	-82.6283	28.999181
AAM7638	2/1/2019	10	DOH	-82.6283	28.999181
AAM7640	11/17/2009	7.41	DOH	-82.62884	28.986918
AAM7640	5/10/2010	0.44	DOH	-82.62884	28.986918
AAM7640	10/18/2010	3.66	DOH	-82.62884	28.986918
AAM7640	5/21/2019	6.46	DOH	-82.62884	28.986918
AAM7642	11/18/2009	29	DOH	-82.61927	28.987632
AAM7642	7/26/2012	18	DOH	-82.61927	28.987632
AAM7642	3/1/2018	26	DOH	-82.61927	28.987632
AAM7642	3/23/2020	42	DOH	-82.61927	28.987632
AAM7642	7/30/2020	19	DOH	-82.61927	28.987632
AAM7642	11/2/2020	20	DOH	-82.61927	28.987632
AAM7647	12/8/2009	33	DOH	-82.61609	28.993291
AAM7647	6/8/2012	27	DOH	-82.61609	28.993291
AAM7647	3/29/2016	38	DOH	-82.61609	28.993291
AAM7647	6/27/2017	37	DOH	-82.61609	28.993291
AAM7647	6/27/2018	33	DOH	-82.61609	28.993291
AAM7647	9/24/2018	35	DOH	-82.61609	28.993291

Table F-1
Regional Arsenic Concentration Dataset
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	Arsenic Concentration (µg/L)¹	Source	Longitude	Latitude
AAM7647	7/19/2019	32	DOH	-82.61609	28.993291
AAM7647	8/28/2020	31	DOH	-82.61609	28.993291
AAM7649	12/10/2009	9.33	DOH	-82.61886	29.005345
AAM7649	2/4/2010	8.54	DOH	-82.61886	29.005345
AAM7649	5/28/2010	2.19	DOH	-82.61886	29.005345
AAM7649	4/7/2011	1.98	DOH	-82.61886	29.005345
AAM7649	8/15/2013	2.09	DOH	-82.61886	29.005345
AAM7649	8/17/2015	1.65	DOH	-82.61886	29.005345
AAM7652	12/14/2009	47	DOH	-82.61509	28.99417
AAM7652	1/25/2013	55	DOH	-82.61509	28.99417
AAM7652	8/1/2013	34	DOH	-82.61509	28.99417
AAM7652	10/9/2014	48	DOH	-82.61509	28.99417
AAM7652	2/1/2016	40	DOH	-82.61509	28.99417
AAM7652	7/10/2017	18	DOH	-82.61509	28.99417
AAM7667	1/25/2010	18	DOH	-82.6262	28.985397
AAM7667	6/1/2012	15	DOH	-82.6262	28.985397
AAM7667	6/27/2017	17	DOH	-82.6262	28.985397
AAM7667	4/10/2020	18	DOH	-82.6262	28.985397
AAN0228	12/7/2010	9.05	DOH	-82.60077	28.927718
AAN0228	3/7/2011	6.20	DOH	-82.60077	28.927718
AAN0228	1/6/2012	12	DOH	-82.60077	28.927718
AAN0228	3/15/2016	1.96	DOH	-82.60077	28.927718
AAN0228	6/22/2016	13	DOH	-82.60077	28.927718
AAN0605	9/16/2010	8.66	DOH	-82.63869	29.009191
AAN0605	1/20/2011	5.42	DOH	-82.63869	29.009191
AAN0605	1/5/2012	7.00	DOH	-82.63869	29.009191
AAN0605	5/22/2012	7.50	DOH	-82.63869	29.009191
AAN0605	8/8/2014	5.89	DOH	-82.63869	29.009191
AAN0605	6/30/2016	5.24	DOH	-82.63869	29.009191
AAN0605	5/18/2020	5.94	DOH	-82.63869	29.009191
AAN0614	9/3/2010	16	DOH	-82.63674	28.992952
AAN0614	8/29/2014	20	DOH	-82.63674	28.992952
AAN0614	10/5/2016	1.49	DOH	-82.63674	28.992952
AAN0614	5/15/2017	4.15	DOH	-82.63674	28.992952
AAN0614	9/27/2017	8.51	DOH	-82.63674	28.992952
AAN0614	2/19/2018	22	DOH	-82.63674	28.992952
AAN0614	3/24/2020	20	DOH	-82.63674	28.992952
AAN0644	8/6/2010	14	DOH	-82.62641	28.983903
AAN0644	1/7/2013	15	DOH	-82.62641	28.983903
AAN0644	8/15/2013	14	DOH	-82.62641	28.983903
AAN0644	6/22/2017	0.46	DOH	-82.62641	28.983903
AAN0644	8/2/2019	17	DOH	-82.62641	28.983903

Table F-1
Regional Arsenic Concentration Dataset
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	Arsenic Concentration (µg/L)¹	Source	Longitude	Latitude
AAN0678	5/21/2010	8.28	DOH	-82.62489	29.002575
AAN0678	7/29/2010	8.63	DOH	-82.62489	29.002575
AAN0678	2/24/2011	9.81	DOH	-82.62489	29.002575
AAN0678	6/2/2011	9.78	DOH	-82.62489	29.002575
AAN0678	8/10/2011	8.81	DOH	-82.62489	29.002575
AAN0678	11/7/2011	9.09	DOH	-82.62489	29.002575
AAN0678	11/25/2013	9.95	DOH	-82.62489	29.002575
AAN0678	12/5/2014	10	DOH	-82.62489	29.002575
AAN0678	7/22/2015	2.78	DOH	-82.62489	29.002575
AAN0678	10/26/2016	8.92	DOH	-82.62489	29.002575
AAN0678	5/20/2017	9.68	DOH	-82.62489	29.002575
AAN0678	9/26/2017	11	DOH	-82.62489	29.002575
AAN0678	3/1/2018	9.77	DOH	-82.62489	29.002575
AAN0678	4/9/2018	9.25	DOH	-82.62489	29.002575
AAN0678	8/1/2018	9.59	DOH	-82.62489	29.002575
AAN0678	10/26/2018	9.82	DOH	-82.62489	29.002575
AAN0678	2/1/2019	10	DOH	-82.62489	29.002575
AAN0678	4/29/2019	10	DOH	-82.62489	29.002575
AAN8100	8/16/2011	7.19	DOH	-82.60153	28.992063
AAN8100	10/25/2011	15	DOH	-82.60153	28.992063
AAN8100	8/14/2015	9.87	DOH	-82.60153	28.992063
AAN8100	9/24/2016	18	DOH	-82.60153	28.992063
AAN8100	7/9/2019	8.49	DOH	-82.60153	28.992063
AAN8100	3/24/2020	8.66	DOH	-82.60153	28.992063
AAN8100	8/28/2020	14	DOH	-82.60153	28.992063
AAN8101	8/16/2011	7.57	DOH	-82.59535	28.940719
AAN8101	1/6/2012	7.04	DOH	-82.59535	28.940719
AAN8101	5/9/2012	8.30	DOH	-82.59535	28.940719
AAN8101	3/19/2014	7.88	DOH	-82.59535	28.940719
AAN8101	1/2/2015	7.74	DOH	-82.59535	28.940719
AAN8101	9/26/2016	5.09	DOH	-82.59535	28.940719
AAN8101	8/20/2018	8.37	DOH	-82.59535	28.940719
AAN8101	11/16/2018	8.46	DOH	-82.59535	28.940719
AAN8101	3/1/2019	7.79	DOH	-82.59535	28.940719
AAN8101	5/21/2019	8.76	DOH	-82.59535	28.940719
AAN8101	9/11/2019	8.57	DOH	-82.59535	28.940719
AAN8132	7/22/2011	8.57	DOH	-82.62134	28.929609
AAN8132	11/28/2011	8.21	DOH	-82.62134	28.929609
AAN8132	2/10/2012	7.21	DOH	-82.62134	28.929609
AAN8132	5/3/2012	8.30	DOH	-82.62134	28.929609
AAN8132	2/21/2013	8.30	DOH	-82.62134	28.929609
AAN8132	8/31/2015	6.08	DOH	-82.62134	28.929609

Table F-1
Regional Arsenic Concentration Dataset
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	Arsenic Concentration (µg/L) ¹	Source	Longitude	Latitude
AAN8132	10/26/2016	6.55	DOH	-82.62134	28.929609
AAN8133	7/22/2011	8.02	DOH	-82.61937	28.92676
AAN8133	10/24/2011	6.96	DOH	-82.61937	28.92676
AAN8133	2/10/2012	6.11	DOH	-82.61937	28.92676
AAN8133	10/3/2012	6.00	DOH	-82.61937	28.92676
AAN8133	1/19/2016	0.29	DOH	-82.61937	28.92676
AAN8134	7/20/2011	23	DOH	-82.62889	28.974211
AAN8134	9/1/2015	28	DOH	-82.62889	28.974211
AAN8134	2/12/2018	30	DOH	-82.62889	28.974211
AAN8134	1/31/2019	33	DOH	-82.62889	28.974211
AAN8134	4/23/2020	29	DOH	-82.62889	28.974211
AAN8137	7/20/2011	7.18	DOH	-82.62172	28.930026
AAN8137	5/3/2012	6.70	DOH	-82.62172	28.930026
AAN8137	8/8/2014	6.27	DOH	-82.62172	28.930026
AAN8137	9/24/2018	7.65	DOH	-82.62172	28.930026
AAN8137	12/9/2020	6.93	DOH	-82.62172	28.930026
AAN8148	6/16/2011	24	DOH	-82.62298	28.98815
AAN8148	9/1/2015	16	DOH	-82.62298	28.98815
AAN8148	10/9/2018	26	DOH	-82.62298	28.98815
AAN8148	10/20/2020	18	DOH	-82.62298	28.98815
AAN8161	6/2/2011	13	DOH	-82.62768	28.944727
AAN8161	1/19/2016	14	DOH	-82.62768	28.944727
AAN8161	3/2/2018	9.41	DOH	-82.62768	28.944727
AAN8161	2/6/2020	10	DOH	-82.62768	28.944727
AAN8161	8/11/2020	8.85	DOH	-82.62768	28.944727
AAN8161	11/18/2020	9.17	DOH	-82.62768	28.944727
AAN8173	4/29/2011	12	DOH	-82.62662	28.933328
AAN8173	5/23/2011	5.58	DOH	-82.62662	28.933328
AAN8173	10/17/2011	8.72	DOH	-82.62662	28.933328
AAN8173	2/10/2012	5.73	DOH	-82.62662	28.933328
AAN8173	5/3/2012	8.60	DOH	-82.62662	28.933328
AAN8173	8/15/2013	13	DOH	-82.62662	28.933328
AAN8173	8/8/2014	8.13	DOH	-82.62662	28.933328
AAN8173	12/29/2014	12	DOH	-82.62662	28.933328
AAN8173	3/7/2018	12	DOH	-82.62662	28.933328
AAN8173	4/9/2018	8.62	DOH	-82.62662	28.933328
AAN8173	8/20/2018	4.32	DOH	-82.62662	28.933328
AAN8173	12/10/2018	3.27	DOH	-82.62662	28.933328
AAN8173	3/18/2019	4.04	DOH	-82.62662	28.933328
AAN8173	6/7/2019	2.90	DOH	-82.62662	28.933328
AAN8173	9/12/2019	5.07	DOH	-82.62662	28.933328
AAN8173	12/17/2019	3.95	DOH	-82.62662	28.933328

Table F-1
Regional Arsenic Concentration Dataset
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	Arsenic Concentration (µg/L) ¹	Source	Longitude	Latitude
AAN8173	3/26/2020	4.91	DOH	-82.62662	28.933328
AAN8173	6/24/2020	4.26	DOH	-82.62662	28.933328
AAN8173	9/29/2020	3.99	DOH	-82.62662	28.933328
AAO0309	2/9/2012	13	DOH	-82.59743	28.993306
AAO0309	8/18/2015	12	DOH	-82.59743	28.993306
AAO0309	9/24/2018	28	DOH	-82.59743	28.993306
AAO0309	11/16/2020	12	DOH	-82.59743	28.993306
AAO0330	3/26/2012	17	DOH	-82.60267	28.990566
AAO0330	9/24/2016	16	DOH	-82.60267	28.990566
AAO0330	7/25/2018	22	DOH	-82.60267	28.990566
AAO0330	7/27/2020	19	DOH	-82.60267	28.990566
AAO0366	7/26/2012	8.30	DOH	-82.62261	28.933654
AAO0366	10/3/2012	2.40	DOH	-82.62261	28.933654
AAO0366	2/21/2013	4.40	DOH	-82.62261	28.933654
AAO0366	8/15/2013	2.47	DOH	-82.62261	28.933654
AAO0388	8/16/2012	8.30	DOH	-82.61352	28.931614
AAO0388	9/25/2012	5.90	DOH	-82.61352	28.931614
AAO0388	2/1/2013	5.70	DOH	-82.61352	28.931614
AAO0388	8/2/2013	8.04	DOH	-82.61352	28.931614
AAO0388	1/19/2016	3.88	DOH	-82.61352	28.931614
AAO0390	8/20/2012	8.10	DOH	-82.61128	28.931091
AAO0390	10/12/2012	7.60	DOH	-82.61128	28.931091
AAO0390	2/1/2013	5.90	DOH	-82.61128	28.931091
AAO0390	8/2/2013	4.24	DOH	-82.61128	28.931091
AAO0390	2/1/2016	3.23	DOH	-82.61128	28.931091
AAO0392	8/29/2012	12	DOH	-82.6264	28.989003
AAO0392	5/7/2014	10	DOH	-82.6264	28.989003
AAO0392	7/22/2015	8.94	DOH	-82.6264	28.989003
AAO0392	9/24/2016	13	DOH	-82.6264	28.989003
AAO0392	8/2/2019	15	DOH	-82.6264	28.989003
AAO0397	9/10/2012	14	DOH	-82.62643	28.986539
AAO0397	5/7/2014	9.19	DOH	-82.62643	28.986539
AAO0397	8/14/2015	9.95	DOH	-82.62643	28.986539
AAO0397	9/24/2016	8.53	DOH	-82.62643	28.986539
AAO0397	7/10/2017	7.52	DOH	-82.62643	28.986539
AAO0397	2/19/2018	8.74	DOH	-82.62643	28.986539
AAO0397	8/1/2018	8.53	DOH	-82.62643	28.986539
AAO0397	7/22/2020	6.49	DOH	-82.62643	28.986539
AAO1021	8/25/2011	21	DOH	-82.63524	28.990646
AAO1021	5/7/2015	19	DOH	-82.63524	28.990646
AAO1021	8/1/2018	20	DOH	-82.63524	28.990646
AAO1021	7/22/2020	28	DOH	-82.63524	28.990646

Table F-1
Regional Arsenic Concentration Dataset
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	Arsenic Concentration (µg/L)¹	Source	Longitude	Latitude
AAO1049	8/31/2011	8.51	DOH	-82.59768	29.003671
AAO1049	11/3/2011	7.31	DOH	-82.59768	29.003671
AAO1049	3/1/2012	6.80	DOH	-82.59768	29.003671
AAO1049	5/31/2012	9.60	DOH	-82.59768	29.003671
AAO1049	9/21/2012	5.60	DOH	-82.59768	29.003671
AAO1049	7/25/2018	8.31	DOH	-82.59768	29.003671
AAO1049	10/9/2018	4.26	DOH	-82.59768	29.003671
AAO1049	2/1/2019	6.69	DOH	-82.59768	29.003671
AAO1049	4/29/2019	9.40	DOH	-82.59768	29.003671
AAO1049	7/19/2019	4.94	DOH	-82.59768	29.003671
AAO1049	3/24/2020	5.60	DOH	-82.59768	29.003671
AAO1049	8/28/2020	8.09	DOH	-82.59768	29.003671
AAO1051	8/31/2011	12	DOH	-82.59788	29.005617
AAO1051	3/22/2013	10	DOH	-82.59788	29.005617
AAO1051	2/17/2016	6.22	DOH	-82.59788	29.005617
AAO1051	6/30/2016	106	DOH	-82.59788	29.005617
AAO1051	9/29/2016	9.35	DOH	-82.59788	29.005617
AAO1051	7/10/2017	8.75	DOH	-82.59788	29.005617
AAO1051	3/1/2018	5.86	DOH	-82.59788	29.005617
AAO1051	4/9/2018	6.03	DOH	-82.59788	29.005617
AAO1051	7/25/2018	4.85	DOH	-82.59788	29.005617
AAO1051	10/9/2018	4.27	DOH	-82.59788	29.005617
AAO1051	2/1/2019	4.49	DOH	-82.59788	29.005617
AAO1051	4/29/2019	5.16	DOH	-82.59788	29.005617
AAO1051	7/23/2019	6.73	DOH	-82.59788	29.005617
AAO1051	11/18/2019	5.41	DOH	-82.59788	29.005617
AAO1051	3/24/2020	4.93	DOH	-82.59788	29.005617
AAO1082	8/22/2011	9.18	DOH	-82.6363	28.989659
AAO1082	10/25/2011	7.74	DOH	-82.6363	28.989659
AAO1082	5/22/2012	11	DOH	-82.6363	28.989659
AAO1082	5/7/2014	9.40	DOH	-82.6363	28.989659
AAO1082	8/18/2015	8.50	DOH	-82.6363	28.989659
AAO1082	10/5/2016	1.10	DOH	-82.6363	28.989659
AAO1082	6/20/2017	9.36	DOH	-82.6363	28.989659
AAO1082	3/1/2018	9.38	DOH	-82.6363	28.989659
AAO1082	8/1/2018	9.35	DOH	-82.6363	28.989659
AAO1082	2/4/2019	9.05	DOH	-82.6363	28.989659
AAO1082	9/24/2019	8.46	DOH	-82.6363	28.989659
AAO1082	3/25/2020	11	DOH	-82.6363	28.989659
AAO1094	8/17/2011	20	DOH	-82.60157	28.990923
AAO1094	7/23/2015	1.09	DOH	-82.60157	28.990923
AAO1094	2/1/2016	1.54	DOH	-82.60157	28.990923

Table F-1
Regional Arsenic Concentration Dataset
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	Arsenic Concentration (µg/L)¹	Source	Longitude	Latitude
AAO1094	6/30/2016	0.57	DOH	-82.60157	28.990923
AAO1094	9/24/2016	0.30	DOH	-82.60157	28.990923
AAO1094	9/26/2017	7.56	DOH	-82.60157	28.990923
AAO1094	9/24/2018	20	DOH	-82.60157	28.990923
AAO1094	7/9/2019	0.93	DOH	-82.60157	28.990923
AAO1094	11/18/2019	0.39	DOH	-82.60157	28.990923
AAO1094	3/24/2020	3.18	DOH	-82.60157	28.990923
AAO1094	6/18/2020	0.34	DOH	-82.60157	28.990923
AAO1094	9/22/2020	5.62	DOH	-82.60157	28.990923
AAO1094	11/18/2020	0.37	DOH	-82.60157	28.990923
AAO1095	8/17/2011	37	DOH	-82.60323	28.990311
AAO1095	7/23/2015	23	DOH	-82.60323	28.990311
AAO1095	9/26/2017	1.90	DOH	-82.60323	28.990311
AAO1095	3/7/2018	40	DOH	-82.60323	28.990311
AAO1095	2/1/2019	38	DOH	-82.60323	28.990311
AAO1095	3/25/2020	32	DOH	-82.60323	28.990311
AAO3550	12/9/2011	8.31	DOH	-82.59583	29.000534
AAO3550	1/19/2012	6.98	DOH	-82.59583	29.000534
AAO3550	5/31/2012	4.20	DOH	-82.59583	29.000534
AAO3550	8/27/2013	6.22	DOH	-82.59583	29.000534
AAO3550	9/17/2014	8.14	DOH	-82.59583	29.000534
AAO3550	11/5/2015	8.42	DOH	-82.59583	29.000534
AAO3550	3/30/2016	7.51	DOH	-82.59583	29.000534
AAO3550	6/30/2016	0.30	DOH	-82.59583	29.000534
AAO3550	9/24/2016	4.76	DOH	-82.59583	29.000534
AAO3550	3/1/2018	5.63	DOH	-82.59583	29.000534
AAO3551	12/1/2011	2.10	DOH	-82.63028	28.944232
AAO3551	1/7/2013	5.60	DOH	-82.63028	28.944232
AAO3551	9/20/2013	56	DOH	-82.63028	28.944232
AAO3551	8/11/2014	0.25	DOH	-82.63028	28.944232
AAO3551	7/23/2015	68	DOH	-82.63028	28.944232
AAO3551	1/6/2016	0.093	DOH	-82.63028	28.944232
AAO3551	4/5/2016	0.25	DOH	-82.63028	28.944232
AAO3551	7/28/2017	0.25	DOH	-82.63028	28.944232
AAO3551	8/20/2018	1.95	DOH	-82.63028	28.944232
AAO3584	10/13/2011	51	DOH	-82.62688	28.99822
AAO3584	11/7/2011	47	DOH	-82.62688	28.99822
AAO3584	6/10/2013	19	DOH	-82.62688	28.99822
AAO3584	9/17/2013	0.38	DOH	-82.62688	28.99822
AAO3584	11/7/2013	61	DOH	-82.62688	28.99822
AAO3584	1/15/2014	39	DOH	-82.62688	28.99822
AAO3584	9/17/2014	52	DOH	-82.62688	28.99822

Table F-1
Regional Arsenic Concentration Dataset
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	Arsenic Concentration (µg/L)¹	Source	Longitude	Latitude
AAO3584	7/22/2015	63	DOH	-82.62688	28.99822
AAO3584	2/1/2016	44	DOH	-82.62688	28.99822
AAO3584	6/23/2017	30	DOH	-82.62688	28.99822
AAO3584	11/21/2017	4.71	DOH	-82.62688	28.99822
AAO3584	3/7/2018	14	DOH	-82.62688	28.99822
AAO3584	6/27/2018	14	DOH	-82.62688	28.99822
AAO3584	9/20/2018	15	DOH	-82.62688	28.99822
AAO3584	12/20/2018	16	DOH	-82.62688	28.99822
AAO3584	4/2/2019	17	DOH	-82.62688	28.99822
AAO3584	7/9/2019	16	DOH	-82.62688	28.99822
AAO3584	10/14/2019	16	DOH	-82.62688	28.99822
AAO3584	2/6/2020	19	DOH	-82.62688	28.99822
AAO3584	5/13/2020	5.02	DOH	-82.62688	28.99822
AAO3584	8/28/2020	5.08	DOH	-82.62688	28.99822
AAO3584	12/3/2020	1.14	DOH	-82.62688	28.99822
AAO3585	10/13/2011	27	DOH	-82.60292	28.988619
AAO3585	7/23/2015	13	DOH	-82.60292	28.988619
AAO3585	7/25/2018	3.97	DOH	-82.60292	28.988619
AAO3585	10/9/2018	6.60	DOH	-82.60292	28.988619
AAO3585	1/31/2019	6.97	DOH	-82.60292	28.988619
AAO3585	4/29/2019	7.59	DOH	-82.60292	28.988619
AAO3585	7/19/2019	6.11	DOH	-82.60292	28.988619
AAO3585	12/6/2019	7.01	DOH	-82.60292	28.988619
AAO3585	3/25/2020	4.39	DOH	-82.60292	28.988619
AAO3585	5/13/2020	5.68	DOH	-82.60292	28.988619
AAO3585	9/22/2020	3.28	DOH	-82.60292	28.988619
AAO3585	12/9/2020	3.88	DOH	-82.60292	28.988619
AAO3804	10/5/2011	25	DOH	-82.60367	28.988784
AAO3804	8/14/2015	20	DOH	-82.60367	28.988784
AAO3804	7/25/2018	24	DOH	-82.60367	28.988784
AAO3804	8/5/2020	21	DOH	-82.60367	28.988784
AAO3805	10/5/2011	14	DOH	-82.60531	28.990316
AAO3805	8/14/2015	20	DOH	-82.60531	28.990316
AAO3805	10/15/2018	26	DOH	-82.60531	28.990316
AAO3805	10/20/2020	23	DOH	-82.60531	28.990316
AAO4825	4/10/2015	10	DOH	-82.63709	28.991441
AAO4825	5/7/2015	10	DOH	-82.63709	28.991441
AAO4825	2/1/2016	13	DOH	-82.63709	28.991441
AAO4825	3/29/2016	9.47	DOH	-82.63709	28.991441
AAO4825	5/26/2016	11	DOH	-82.63709	28.991441
AAO4825	7/10/2017	5.28	DOH	-82.63709	28.991441
AAO4825	7/22/2020	10	DOH	-82.63709	28.991441

Table F-1
Regional Arsenic Concentration Dataset
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	Arsenic Concentration (µg/L)¹	Source	Longitude	Latitude
AAO4844	4/3/2013	10	DOH	-82.63438	28.986978
AAO4844	8/19/2013	9.51	DOH	-82.63438	28.986978
AAO4844	11/8/2013	12	DOH	-82.63438	28.986978
AAO4844	8/8/2014	9.68	DOH	-82.63438	28.986978
AAO4844	8/12/2015	7.40	DOH	-82.63438	28.986978
AAO4844	9/21/2016	11	DOH	-82.63438	28.986978
AAO4844	7/19/2019	10	DOH	-82.63438	28.986978
AAO4844	3/25/2020	9.27	DOH	-82.63438	28.986978
AAO4844	7/22/2020	9.06	DOH	-82.63438	28.986978
AAR1001	12/27/2019	9.77	DOH	-82.59892	28.992647
AAR1001	6/18/2020	8.96	DOH	-82.59892	28.992647
AAR1001	7/30/2020	8.57	DOH	-82.59892	28.992647
AAR1001	11/2/2020	9.28	DOH	-82.59892	28.992647
AAR1004	4/9/2020	9.02	DOH	-82.63252	28.986458
AAR1004	7/22/2020	11	DOH	-82.63252	28.986458
AAR1004	8/28/2020	8.74	DOH	-82.63252	28.986458
AAR1004	12/9/2020	10	DOH	-82.63252	28.986458
AAR1092	5/21/2019	9.75	DOH	-82.64958	29.011892
AAR1092	7/9/2019	9.22	DOH	-82.64958	29.011892
AAR1092	11/18/2019	7.92	DOH	-82.64958	29.011892
AAR1092	3/31/2020	8.75	DOH	-82.64958	29.011892
AAR1092	5/18/2020	7.22	DOH	-82.64958	29.011892
AAR1092	8/5/2020	6.29	DOH	-82.64958	29.011892
AAR1092	11/18/2020	5.92	DOH	-82.64958	29.011892
AAR2446	2/19/2018	17	DOH	-82.63798	28.993108
AAR2446	3/26/2018	17	DOH	-82.63798	28.993108
AAR2446	10/9/2018	22	DOH	-82.63798	28.993108
AAR2446	11/2/2020	20	DOH	-82.63798	28.993108
AAR2450	2/12/2018	14	DOH	-82.61726	28.9726
AAR2450	4/9/2018	2.08	DOH	-82.61726	28.9726
AAR2450	9/24/2018	8.46	DOH	-82.61726	28.9726
AAR2450	11/30/2018	5.74	DOH	-82.61726	28.9726
AAR2450	2/4/2019	18	DOH	-82.61726	28.9726
AAR2450	4/3/2019	1.56	DOH	-82.61726	28.9726
AAR2450	7/19/2019	5.26	DOH	-82.61726	28.9726
AAR2450	12/16/2019	1.94	DOH	-82.61726	28.9726
AAR2450	3/25/2020	7.58	DOH	-82.61726	28.9726
AAR2450	5/18/2020	8.60	DOH	-82.61726	28.9726
AAR2450	11/2/2020	1.70	DOH	-82.61726	28.9726
AAR2563	11/16/2018	10	DOH	-82.60923	28.923953
AAR2563	3/1/2019	9.36	DOH	-82.60923	28.923953
AAR2563	5/21/2019	11	DOH	-82.60923	28.923953

Table F-1
Regional Arsenic Concentration Dataset
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	Arsenic Concentration (µg/L)¹	Source	Longitude	Latitude
AAR2563	6/13/2019	11	DOH	-82.60923	28.923953
AAR2563	3/24/2020	12	DOH	-82.60923	28.923953

Notes:

1. The arsenic concentration is the maximum of any replicates from the same date and location.

DOH - Florida Department of Health

DEP - Florida Department of Environmental Protection

µg/L - micrograms per liter

Table F-2
Regional Iron Concentration Dataset
Citrus Combined Cycle Plant
Crystal River, FL

Locaiton ID	Sample Date	Iron Concentration (mg/L)	Source	Longitude	Latitude
6092326	7/30/2009	0.11	DEP	-82.61978	28.946827
6092326	7/30/2012	0.085	DEP	-82.61978	28.946827
6092326	9/3/2015	0.13	DEP	-82.61978	28.946827
6092326	8/13/2018	0.149	DEP	-82.61978	28.946827
6094523	3/8/2010	0.33	DEP	-82.6217	28.95517
6094523	5/21/2012	0.31	DEP	-82.6217	28.95517
6094523	8/19/2015	0.29	DEP	-82.6217	28.95517
6095093	3/2/2018	0.59	DEP	-82.67224	28.966194
6095093	5/22/2018	0.066	DEP	-82.67224	28.966194
6095093	8/7/2018	0.89	DEP	-82.67224	28.966194
AAC1483 6092331	2/29/2012	0.17	DEP	-82.67752	29.021309
AAC1483 6092331	9/23/2015	0.054	DEP	-82.67752	29.021309
AAE6717	1/28/2009	2.5	DOH	-82.62737	28.950542
AAE6718 6092186	7/6/2010	0.13	DEP	-82.62419	28.952482
AAK5206	3/7/2018	2.53	DOH	-82.64218	28.988157
AAL3923	7/31/2017	2.58	DOH	-82.62865	28.944314
AAL3955	1/12/2009	4.9	DOH	-82.61642	28.957047
AAL3969	1/28/2009	0.011	DOH	-82.62196	28.954525
AAL3972	1/12/2009	3.4	DOH	-82.62159	28.955292
AAL3976	3/15/2016	0.03	DOH	-82.62465	28.952847
AAL3978	3/15/2016	0.03	DOH	-82.62323	28.953709
AAL7311	1/28/2009	2.8	DOH	-82.63463	28.977833
AAL7355	12/19/2011	0.11	DOH	-82.62672	28.953889
AAL7355	12/19/2011	5.6	DOH	-82.62672	28.953889
AAL7356	10/17/2011	9.6	DOH	-82.62658	28.95299
AAM5536	4/27/2009	2.2	DOH	-82.62436	28.973665
AAM7652	8/1/2013	1.79	DOH	-82.61509	28.99417
AAN0228	3/15/2016	3.79	DOH	-82.60077	28.927718
AAO1050	2/17/2016	1.45	DOH	-82.59743	29.001738
AAO1051	2/17/2016	3.76	DOH	-82.59788	29.005617
AAO1051	9/29/2016	14.9	DOH	-82.59788	29.005617
AAO3551	8/11/2014	1.56	DOH	-82.63028	28.944232
AAO3584	11/7/2011	5.7	DOH	-82.62688	28.99822
AAO3584	6/10/2013	4.3	DOH	-82.62688	28.99822
AAO3584	9/17/2013	0.03	DOH	-82.62688	28.99822
AAO3584	1/15/2014	5.64	DOH	-82.62688	28.99822
AAO4816	3/15/2016	3.01	DOH	-82.62328	28.987259
AAO4817	3/15/2016	0.17	DOH	-82.63339	28.984699
AAR1439	3/26/2018	0.03	DOH	-82.59194	28.971452
MW-2	11/1/2017	2.56	Site Baseline	--	--
MW-3	11/1/2017	0.383	Site Baseline	--	--
MW-4	11/1/2017	0.0514	Site Baseline	--	--
MWB-1	11/1/2017	0.336	Site Baseline	--	--

Notes:

1. The manganese concentration is the maximum of any replicates from the same date and location.

DOH - Florida Department of Health

DEP - Florida Department of Environmental Protection

mg/L - milligrams per liter

Table F-3
Regional Manganese Concentration Dataset
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	Manganese Concentration (mg/L) ¹	Source	Longitude	Latitude
6092326	9/3/2015	0.0088	DEP	-82.67752	29.021309
6092326	8/13/2018	0.0156	DEP	-82.67752	29.021309
6092326	7/30/2009	0.0059	DEP	-82.43117	28.962866
6092326	7/30/2012	0.0078	DEP	-82.43117	28.962866
6092331	8/13/2018	0.0142	DEP	-82.55457	28.888038
6094523	8/19/2015	0.01	DEP	-82.6217	28.95517
6094523	3/8/2010	0.012	DEP	-82.5241	28.8555
6094523	5/21/2012	0.0095	DEP	-82.5241	28.8555
6095093	3/2/2018	0.023	DEP	-82.67224	28.966194
6095093	5/22/2018	0.0098	DEP	-82.67224	28.966194
6095093	8/7/2018	0.035	DEP	-82.67224	28.966194
AAC1483 6092331	2/29/2012	0.012	DEP	-82.55457	28.888038
AAC1483 6092331	9/23/2015	0.021	DEP	-82.55457	28.888038
AAC3507 6091816	4/30/2018	0.0058	DEP	-82.62419	28.952482
AAC3507 6091816	2/17/2009	0.0016	DEP	-81.74335	27.984161
AAC3507 6091816	2/29/2012	0.0019	DEP	-81.74335	27.984161
AAC3507 6091816	4/8/2015	0.0059	DEP	-81.74335	27.984161
AAE6717	1/28/2009	0.034	DOH	-82.62737	28.950542
AAE6718 6092186	7/6/2010	0.0032	DEP	-82.62419	28.952482
AAL3955	1/12/2009	0.078	DOH	-82.61642	28.957047
AAL3969	1/28/2009	0.022	DOH	-82.62196	28.954525
AAL3972	1/12/2009	0.052	DOH	-82.62159	28.955292
AAL3976	3/15/2016	0.0011	DOH	-82.62465	28.952847
AAL3978	3/15/2016	0.0117	DOH	-82.62323	28.953709
AAL7311	1/28/2009	0.02	DOH	-82.63463	28.977833
AAL7356	10/17/2011	0.12	DOH	-82.62658	28.95299
AAM5536	4/27/2009	0.059	DOH	-82.62436	28.973665
AAN0228	3/15/2016	0.0525	DOH	-82.60077	28.927718
AAO1050	2/17/2016	0.234	DOH	-82.59743	29.001738
AAO1051	2/17/2016	0.101	DOH	-82.59788	29.005617
AAO4816	3/15/2016	0.0389	DOH	-82.62328	28.987259
AAO4817	3/15/2016	0.0088	DOH	-82.63339	28.984699
AAR1439	3/26/2018	0.001	DOH	-82.59194	28.971452
MWB-1	11/1/2017	0.0489	Site Baseline	--	--
MW-2	11/1/2017	0.0713	Site Baseline	--	--
MW-3	11/1/2017	0.0937	Site Baseline	--	--
MW-4	11/1/2017	0.107	Site Baseline	--	--

Notes:

1. The manganese concentration is the maximum of any replicates from the same date and location.

DOH - Florida Department of Health

DEP - Florida Department of Environmental Protection

mg/L - milligrams per liter

Table F-4
TDS Background Data From Site Production Wells
Citrus Combined Cycle Plant
Cystal River, FL

Location ID	Sample Date	TDS Concentration (mg/L)¹
Production Well ID 615571	1/31/1982	472
Production Well ID 615571	2/28/1982	264
Production Well ID 615571	3/31/1982	598
Production Well ID 615571	4/30/1982	213
Production Well ID 615571	5/31/1982	252
Production Well ID 615571	6/30/1982	220
Production Well ID 615571	7/31/1982	265
Production Well ID 615571	8/31/1982	244
Production Well ID 615571	9/30/1982	240
Production Well ID 615571	10/31/1982	222
Production Well ID 615571	11/30/1982	189
Production Well ID 615571	12/31/1982	203
Production Well ID 615571	1/31/1983	256
Production Well ID 615571	2/28/1983	255
Production Well ID 615571	5/31/1983	242
Production Well ID 615571	1/31/1984	258
Production Well ID 615571	5/31/1984	247
Production Well ID 615571	9/30/1984	255
Production Well ID 615571	5/31/1985	274
Production Well ID 615571	9/30/1985	276
Production Well ID 615571	5/31/1986	252
Production Well ID 615571	9/4/1986	253
Production Well ID 615571	5/1/1987	249
Production Well ID 615571	9/29/1987	268
Production Well ID 615571	5/5/1988	268
Production Well ID 615571	9/14/1988	287
Production Well ID 615571	5/5/1989	266
Production Well ID 615571	9/6/1989	225
Production Well ID 615571	5/10/1990	225
Production Well ID 615571	9/5/1990	305
Production Well ID 615571	5/2/1991	280
Production Well ID 615571	9/12/1991	235
Production Well ID 615571	5/8/1992	235
Production Well ID 615571	9/2/1992	265
Production Well ID 615571	5/7/1993	260
Production Well ID 615571	10/8/1993	255
Production Well ID 615571	5/30/1994	200
Production Well ID 615571	9/9/1994	230
Production Well ID 615571	5/10/1995	225
Production Well ID 615571	9/11/1996	210
Production Well ID 615571	11/30/1996	218
Production Well ID 615571	2/28/1997	231
Production Well ID 615571	5/31/1997	218
Production Well ID 615571	9/17/1997	255

Table F-4
TDS Background Data From Site Production Wells
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	TDS Concentration (mg/L)¹
Production Well ID 615571	5/14/1998	323
Production Well ID 615571	10/13/1998	230
Production Well ID 615571	9/16/1999	241
Production Well ID 615571	9/7/2000	223
Production Well ID 615571	9/20/2001	230
Production Well ID 615571	5/29/2002	248
Production Well ID 615571	9/19/2002	227
Production Well ID 615571	5/13/2004	250
Production Well ID 615571	5/16/2005	240
Production Well ID 615571	5/26/2006	230
Production Well ID 615571	9/29/2006	200
Production Well ID 615571	5/11/2007	220
Production Well ID 615571	9/26/2007	340
Production Well ID 615571	5/22/2008	250
Production Well ID 615571	9/25/2008	250
Production Well ID 615571	10/3/2008	250
Production Well ID 615571	2/17/2009	260
Production Well ID 615571	5/10/2010	240
Production Well ID 615571	8/12/2010	240
Production Well ID 615571	2/7/2011	260
Production Well ID 615571	5/9/2011	250
Production Well ID 615571	8/17/2011	280
Production Well ID 615571	11/21/2011	190
Production Well ID 615571	2/29/2012	270
Production Well ID 615571	5/10/2012	350
Production Well ID 615571	8/13/2012	320
Production Well ID 615571	11/8/2012	280
Production Well ID 615571	2/12/2013	303
Production Well ID 615571	5/16/2013	327
Production Well ID 615571	8/15/2013	311
Production Well ID 615571	11/15/2013	286
Production Well ID 615571	2/11/2014	297
Production Well ID 615571	5/18/2014	317
Production Well ID 615571	8/12/2014	295
Production Well ID 615571	11/11/2014	290
Production Well ID 615571	2/13/2015	244
Production Well ID 615571	5/13/2015	296
Production Well ID 615571	11/11/2015	287
Production Well ID 615571	2/9/2016	274
Production Well ID 615571	5/18/2016	265
Production Well ID 615571	8/31/2016	265
Production Well ID 615571	11/15/2016	278
Production Well ID 615571	2/14/2017	249
Production Well ID 615571	5/17/2017	241

Table F-4
TDS Background Data From Site Production Wells
Citrus Combined Cycle Plant
Cystal River, FL

Location ID	Sample Date	TDS Concentration (mg/L)¹
Production Well ID 615571	8/21/2017	303
Production Well ID 615571	11/14/2017	267
Production Well ID 615571	2/14/2018	280
Production Well ID 615571	5/15/2018	307
Production Well ID 615571	8/14/2018	263
Production Well ID 615571	11/13/2018	287
Production Well ID 615571	2/12/2019	9.8
Production Well ID 615571	5/8/2019	10
Production Well ID 615571	6/1/2019	10
Production Well ID 615571	11/13/2019	271
Production Well ID 615571	1/15/2020	271
Production Well ID 615571	4/14/2020	271
Production Well ID 615571	11/24/2020	262
Production Well ID 615572	1/31/1982	456
Production Well ID 615572	2/28/1982	259
Production Well ID 615572	3/31/1982	645
Production Well ID 615572	4/30/1982	220
Production Well ID 615572	5/31/1982	233
Production Well ID 615572	6/30/1982	259
Production Well ID 615572	7/31/1982	252
Production Well ID 615572	8/31/1982	236
Production Well ID 615572	9/30/1982	234
Production Well ID 615572	10/31/1982	197
Production Well ID 615572	11/30/1982	183
Production Well ID 615572	12/31/1982	198
Production Well ID 615572	1/31/1983	246
Production Well ID 615572	2/28/1983	230
Production Well ID 615572	5/31/1983	223
Production Well ID 615572	1/31/1984	251
Production Well ID 615572	5/31/1984	236
Production Well ID 615572	9/30/1984	232
Production Well ID 615572	5/31/1985	260
Production Well ID 615572	9/30/1985	255
Production Well ID 615572	5/31/1986	243
Production Well ID 615572	9/4/1986	245
Production Well ID 615572	5/1/1987	230
Production Well ID 615572	9/29/1987	251
Production Well ID 615572	5/5/1988	263
Production Well ID 615572	9/14/1988	292
Production Well ID 615572	5/5/1989	228
Production Well ID 615572	9/6/1989	213
Production Well ID 615572	5/10/1990	220
Production Well ID 615572	9/5/1990	295
Production Well ID 615572	5/2/1991	225

Table F-4
TDS Background Data From Site Production Wells
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	TDS Concentration (mg/L)¹
Production Well ID 615572	9/12/1991	240
Production Well ID 615572	5/8/1992	235
Production Well ID 615572	9/2/1992	255
Production Well ID 615572	5/7/1993	240
Production Well ID 615572	10/8/1993	235
Production Well ID 615572	5/30/1994	185
Production Well ID 615572	9/9/1994	230
Production Well ID 615572	5/10/1995	220
Production Well ID 615572	9/11/1996	225
Production Well ID 615572	9/17/1997	243
Production Well ID 615572	5/14/1998	235
Production Well ID 615572	9/10/1998	235
Production Well ID 615572	9/16/1999	222
Production Well ID 615572	5/25/2000	228
Production Well ID 615572	9/7/2000	210
Production Well ID 615572	9/11/2003	240
Production Well ID 615572	5/16/2005	250
Production Well ID 615572	9/29/2006	190
Production Well ID 615572	5/11/2007	230
Production Well ID 615572	9/26/2007	360
Production Well ID 615572	5/22/2008	260
Production Well ID 615572	9/25/2008	230
Production Well ID 615572	10/3/2008	230
Production Well ID 615572	5/13/2009	280
Production Well ID 615572	8/5/2009	220
Production Well ID 615572	11/9/2009	230
Production Well ID 615572	5/10/2010	240
Production Well ID 615572	8/12/2010	250
Production Well ID 615572	2/7/2011	240
Production Well ID 615572	5/9/2011	260
Production Well ID 615572	8/17/2011	270
Production Well ID 615572	11/21/2011	190
Production Well ID 615572	2/29/2012	240
Production Well ID 615572	5/10/2012	240
Production Well ID 615572	8/13/2012	300
Production Well ID 615572	11/8/2012	270
Production Well ID 615572	2/12/2013	300
Production Well ID 615572	5/16/2013	285
Production Well ID 615572	8/15/2013	283
Production Well ID 615572	2/11/2014	287
Production Well ID 615572	5/18/2014	308
Production Well ID 615572	8/12/2014	300
Production Well ID 615572	11/11/2014	283
Production Well ID 615572	2/28/2015	255

Table F-4
TDS Background Data From Site Production Wells
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	TDS Concentration (mg/L)¹
Production Well ID 615572	5/13/2015	285
Production Well ID 615572	11/11/2015	299
Production Well ID 615572	2/9/2016	271
Production Well ID 615572	5/18/2016	269
Production Well ID 615572	8/31/2016	271
Production Well ID 615572	11/15/2016	265
Production Well ID 615572	2/14/2017	277
Production Well ID 615572	5/17/2017	236
Production Well ID 615572	8/15/2017	226
Production Well ID 615572	11/14/2017	289
Production Well ID 615572	2/14/2018	261
Production Well ID 615572	5/15/2018	308
Production Well ID 615572	8/14/2018	262
Production Well ID 615572	11/13/2018	273
Production Well ID 615572	2/12/2019	9.2
Production Well ID 615572	5/8/2019	9.1
Production Well ID 615572	6/1/2019	9.1
Production Well ID 615572	11/13/2019	280
Production Well ID 615572	1/15/2020	280
Production Well ID 615572	4/14/2020	300
Production Well ID 615572	11/23/2020	274
Production Well ID 615573	1/31/1982	437
Production Well ID 615573	2/28/1982	182
Production Well ID 615573	5/31/1982	239
Production Well ID 615573	6/30/1982	251
Production Well ID 615573	7/31/1982	248
Production Well ID 615573	8/31/1982	236
Production Well ID 615573	9/30/1982	244
Production Well ID 615573	10/31/1982	216
Production Well ID 615573	11/30/1982	202
Production Well ID 615573	12/31/1982	198
Production Well ID 615573	9/1/1983	252
Production Well ID 615573	1/31/1984	249
Production Well ID 615573	5/31/1984	238
Production Well ID 615573	9/30/1984	224
Production Well ID 615573	5/31/1985	253
Production Well ID 615573	9/30/1985	260
Production Well ID 615573	5/1/1987	226
Production Well ID 615573	9/29/1987	239
Production Well ID 615573	5/5/1988	255
Production Well ID 615573	9/14/1988	290
Production Well ID 615573	5/5/1989	222
Production Well ID 615573	9/6/1989	178
Production Well ID 615573	5/10/1990	220

Table F-4
TDS Background Data From Site Production Wells
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	TDS Concentration (mg/L)¹
Production Well ID 615573	9/5/1990	270
Production Well ID 615573	5/2/1991	250
Production Well ID 615573	9/12/1991	215
Production Well ID 615573	5/8/1992	220
Production Well ID 615573	9/2/1992	275
Production Well ID 615573	5/7/1993	250
Production Well ID 615573	10/8/1993	215
Production Well ID 615573	5/30/1994	195
Production Well ID 615573	9/9/1994	225
Production Well ID 615573	5/10/1995	240
Production Well ID 615573	9/11/1996	225
Production Well ID 615573	9/17/1997	233
Production Well ID 615573	5/14/1998	225
Production Well ID 615573	9/10/1998	214
Production Well ID 615573	9/16/1999	230
Production Well ID 615573	5/25/2000	229
Production Well ID 615573	9/20/2001	234
Production Well ID 615573	5/29/2002	229
Production Well ID 615573	10/17/2002	234
Production Well ID 615573	9/11/2003	240
Production Well ID 615573	5/13/2004	240
Production Well ID 615573	5/16/2005	240
Production Well ID 615573	5/26/2006	220
Production Well ID 615573	9/29/2006	190
Production Well ID 615573	5/11/2007	240
Production Well ID 615573	9/25/2007	270
Production Well ID 615573	9/25/2008	230
Production Well ID 615573	10/3/2008	230
Production Well ID 615573	2/17/2009	250
Production Well ID 615573	5/13/2009	290
Production Well ID 615573	8/5/2009	210
Production Well ID 615573	11/9/2009	220
Production Well ID 615573	8/12/2010	240
Production Well ID 615573	2/7/2011	230
Production Well ID 615573	5/9/2011	230
Production Well ID 615573	8/17/2011	260
Production Well ID 615573	11/21/2011	180
Production Well ID 615573	2/29/2012	260
Production Well ID 615573	5/10/2012	230
Production Well ID 615573	8/13/2012	260
Production Well ID 615573	11/8/2012	240
Production Well ID 615573	2/12/2013	262
Production Well ID 615573	5/16/2013	273
Production Well ID 615573	8/15/2013	266

Table F-4
TDS Background Data From Site Production Wells
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	TDS Concentration (mg/L)¹
Production Well ID 615573	11/15/2013	247
Production Well ID 615573	2/11/2014	265
Production Well ID 615573	5/18/2014	310
Production Well ID 615573	8/12/2014	270
Production Well ID 615573	11/11/2014	281
Production Well ID 615573	2/28/2015	241
Production Well ID 615573	5/13/2015	277
Production Well ID 615573	11/11/2015	278
Production Well ID 615573	2/9/2016	253
Production Well ID 615573	5/18/2016	258
Production Well ID 615573	8/31/2016	248
Production Well ID 615573	11/15/2016	251
Production Well ID 615573	2/14/2017	272
Production Well ID 615573	5/17/2017	231
Production Well ID 615573	8/15/2017	251
Production Well ID 615573	11/14/2017	277
Production Well ID 615573	2/14/2018	290
Production Well ID 615573	5/15/2018	271
Production Well ID 615573	8/14/2018	254
Production Well ID 615573	11/13/2018	256
Production Well ID 615573	2/12/2019	7.6
Production Well ID 615573	5/8/2019	7.7
Production Well ID 615573	6/1/2019	7.7
Production Well ID 615573	11/13/2019	270
Production Well ID 615573	1/15/2020	270
Production Well ID 615573	4/14/2020	255
Production Well ID 615573	11/24/2020	237
Production Well ID 615574	1/31/1982	453
Production Well ID 615574	2/28/1982	249
Production Well ID 615574	3/31/1982	580
Production Well ID 615574	4/30/1982	215
Production Well ID 615574	5/31/1982	245
Production Well ID 615574	6/30/1982	258
Production Well ID 615574	7/31/1982	259
Production Well ID 615574	8/31/1982	249
Production Well ID 615574	9/30/1982	241
Production Well ID 615574	10/31/1982	176
Production Well ID 615574	11/30/1982	193
Production Well ID 615574	12/31/1982	211
Production Well ID 615574	1/31/1983	231
Production Well ID 615574	2/28/1983	251
Production Well ID 615574	5/31/1983	220
Production Well ID 615574	9/1/1983	223
Production Well ID 615574	1/31/1984	251

Table F-4
TDS Background Data From Site Production Wells
Citrus Combined Cycle Plant
Cystal River, FL

Location ID	Sample Date	TDS Concentration (mg/L)¹
Production Well ID 615574	5/31/1984	237
Production Well ID 615574	9/30/1984	240
Production Well ID 615574	5/31/1985	255
Production Well ID 615574	9/30/1985	266
Production Well ID 615574	5/31/1986	245
Production Well ID 615574	9/4/1986	252
Production Well ID 615574	5/1/1987	239
Production Well ID 615574	9/29/1987	385
Production Well ID 615574	5/5/1988	260
Production Well ID 615574	9/14/1988	232
Production Well ID 615574	5/5/1989	233
Production Well ID 615574	9/6/1989	202
Production Well ID 615574	5/31/1990	225
Production Well ID 615574	9/5/1990	295
Production Well ID 615574	5/2/1991	235
Production Well ID 615574	9/12/1991	265
Production Well ID 615574	5/8/1992	235
Production Well ID 615574	9/2/1992	285
Production Well ID 615574	5/7/1993	260
Production Well ID 615574	10/8/1993	225
Production Well ID 615574	3/3/1994	245
Production Well ID 615574	5/30/1994	210
Production Well ID 615574	9/9/1994	230
Production Well ID 615574	3/6/1995	305
Production Well ID 615574	9/11/1996	225
Production Well ID 615574	9/17/1997	239
Production Well ID 615574	5/14/1998	227
Production Well ID 615574	9/10/1998	233
Production Well ID 615574	9/16/1999	229
Production Well ID 615574	5/25/2000	229
Production Well ID 615574	9/7/2000	231
Production Well ID 615574	9/20/2001	240
Production Well ID 615574	5/29/2002	240
Production Well ID 615574	9/19/2002	237
Production Well ID 615574	9/11/2003	240
Production Well ID 615574	5/13/2004	240
Production Well ID 615574	5/26/2006	230
Production Well ID 615574	9/29/2006	200
Production Well ID 615574	5/11/2007	230
Production Well ID 615574	5/22/2008	250
Production Well ID 615574	9/25/2008	240
Production Well ID 615574	10/3/2008	240
Production Well ID 615574	2/17/2009	270
Production Well ID 615574	5/13/2009	280

Table F-4
TDS Background Data From Site Production Wells
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	TDS Concentration (mg/L)¹
Production Well ID 615574	5/10/2010	350
Production Well ID 615574	8/12/2010	230
Production Well ID 615574	2/7/2011	250
Production Well ID 615574	5/9/2011	250
Production Well ID 615574	8/17/2011	250
Production Well ID 615574	11/21/2011	180
Production Well ID 615574	2/29/2012	220
Production Well ID 615574	5/10/2012	210
Production Well ID 615574	8/13/2012	250
Production Well ID 615574	11/8/2012	230
Production Well ID 615574	2/12/2013	246
Production Well ID 615574	5/16/2013	256
Production Well ID 615574	8/15/2013	248
Production Well ID 615574	11/15/2013	246
Production Well ID 615574	2/11/2014	246
Production Well ID 615574	5/18/2014	292
Production Well ID 615574	8/12/2014	272
Production Well ID 615574	11/11/2014	269
Production Well ID 615574	2/28/2015	218
Production Well ID 615574	5/13/2015	265
Production Well ID 615574	11/11/2015	260
Production Well ID 615574	2/9/2016	243
Production Well ID 615574	5/18/2016	246
Production Well ID 615574	8/31/2016	247
Production Well ID 615574	11/15/2016	232
Production Well ID 615574	2/14/2017	248
Production Well ID 615574	5/23/2017	268
Production Well ID 615574	8/15/2017	187
Production Well ID 615574	11/14/2017	233
Production Well ID 615574	2/14/2018	269
Production Well ID 615574	5/15/2018	276
Production Well ID 615574	8/14/2018	245
Production Well ID 615574	11/13/2018	249
Production Well ID 615574	2/12/2019	7.3
Production Well ID 615574	5/8/2019	7.9
Production Well ID 615574	6/1/2019	7.9
Production Well ID 615574	11/24/2020	226
Production Well ID 615575	8/12/2010	240
Production Well ID 615575	2/7/2011	230
Production Well ID 615575	5/9/2011	240
Production Well ID 615575	8/17/2011	250
Production Well ID 615575	11/21/2011	190
Production Well ID 615575	2/29/2012	210
Production Well ID 615575	5/10/2012	210

Table F-4
TDS Background Data From Site Production Wells
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	TDS Concentration (mg/L)¹
Production Well ID 615575	8/13/2012	250
Production Well ID 615575	11/8/2012	230
Production Well ID 615575	2/12/2013	251
Production Well ID 615575	5/16/2013	244
Production Well ID 615575	8/15/2013	250
Production Well ID 615575	11/15/2013	238
Production Well ID 615575	2/11/2014	247
Production Well ID 615575	5/18/2014	280
Production Well ID 615575	8/12/2014	272
Production Well ID 615575	11/11/2014	258
Production Well ID 615575	2/28/2015	254
Production Well ID 615575	5/13/2015	266
Production Well ID 615575	11/11/2015	250
Production Well ID 615575	2/9/2016	235
Production Well ID 615575	5/18/2016	242
Production Well ID 615575	8/31/2016	241
Production Well ID 615575	11/15/2016	237
Production Well ID 615575	2/14/2017	245
Production Well ID 615575	5/17/2017	206
Production Well ID 615575	8/15/2017	205
Production Well ID 615575	11/14/2017	244
Production Well ID 615575	2/14/2018	245
Production Well ID 615575	5/15/2018	276
Production Well ID 615575	8/14/2018	237
Production Well ID 615575	11/13/2018	245
Production Well ID 615575	2/12/2019	8
Production Well ID 615575	5/8/2019	7.8
Production Well ID 615575	6/1/2019	7.8
Production Well ID 615575	11/13/2019	257
Production Well ID 615575	1/15/2020	257
Production Well ID 615575	4/14/2020	143
Production Well ID 615575	11/23/2020	233
Production Well ID 615576	2/7/2011	190
Production Well ID 615576	5/9/2011	240
Production Well ID 615576	8/17/2011	230
Production Well ID 615576	11/21/2011	170
Production Well ID 615576	2/29/2012	220
Production Well ID 615576	5/10/2012	210
Production Well ID 615576	8/13/2012	250
Production Well ID 615576	11/8/2012	220
Production Well ID 615576	2/12/2013	238
Production Well ID 615576	5/16/2013	250
Production Well ID 615576	8/15/2013	256
Production Well ID 615576	11/15/2013	237

Table F-4
TDS Background Data From Site Production Wells
Citrus Combined Cycle Plant
Cystal River, FL

Location ID	Sample Date	TDS Concentration (mg/L)¹
Production Well ID 615576	2/11/2014	246
Production Well ID 615576	5/18/2014	258
Production Well ID 615576	8/12/2014	231
Production Well ID 615576	11/11/2014	252
Production Well ID 615576	2/28/2015	239
Production Well ID 615576	5/13/2015	250
Production Well ID 615576	11/11/2015	260
Production Well ID 615576	2/9/2016	235
Production Well ID 615576	5/18/2016	206
Production Well ID 615576	8/31/2016	251
Production Well ID 615576	11/15/2016	250
Production Well ID 615576	2/14/2017	242
Production Well ID 615576	5/17/2017	204
Production Well ID 615576	8/15/2017	10.2
Production Well ID 615576	11/14/2017	252
Production Well ID 615576	2/14/2018	241
Production Well ID 615576	5/15/2018	250
Production Well ID 615576	8/14/2018	233
Production Well ID 615576	11/13/2018	214
Production Well ID 615576	2/12/2019	12.6
Production Well ID 615576	5/8/2019	17
Production Well ID 615576	6/1/2019	17
Production Well ID 615576	11/13/2019	232
Production Well ID 615576	1/15/2020	232
Production Well ID 615576	11/23/2020	205
Production Well ID 615577	8/12/2010	6.9
Production Well ID 615577	2/7/2011	230
Production Well ID 615577	5/9/2011	260
Production Well ID 615577	8/17/2011	250
Production Well ID 615577	11/21/2011	180
Production Well ID 615577	2/29/2012	220
Production Well ID 615577	5/10/2012	220
Production Well ID 615577	8/13/2012	240
Production Well ID 615577	11/8/2012	240
Production Well ID 615577	2/12/2013	252
Production Well ID 615577	5/16/2013	250
Production Well ID 615577	8/15/2013	255
Production Well ID 615577	11/15/2013	233
Production Well ID 615577	2/11/2014	251
Production Well ID 615577	5/18/2014	255
Production Well ID 615577	8/12/2014	262
Production Well ID 615577	11/11/2014	257
Production Well ID 615577	2/28/2015	245
Production Well ID 615577	5/13/2015	242

Table F-4
TDS Background Data From Site Production Wells
Citrus Combined Cycle Plant
Cystal River, FL

Location ID	Sample Date	TDS Concentration (mg/L)¹
Production Well ID 615577	11/11/2015	253
Production Well ID 615577	2/9/2016	247
Production Well ID 615577	5/18/2016	236
Production Well ID 615577	8/31/2016	318
Production Well ID 615577	11/15/2016	226
Production Well ID 615577	2/14/2017	258
Production Well ID 615577	5/17/2017	231
Production Well ID 615577	8/15/2017	239
Production Well ID 615577	11/14/2017	269
Production Well ID 615577	2/14/2018	268
Production Well ID 615577	5/15/2018	239
Production Well ID 615577	8/14/2018	241
Production Well ID 615577	11/13/2018	263
Production Well ID 615577	2/12/2019	8.9
Production Well ID 615577	5/8/2019	9.1
Production Well ID 615577	6/1/2019	9.1
Production Well ID 615577	11/13/2019	252
Production Well ID 615577	1/15/2020	252
Production Well ID 615577	4/14/2020	238
Production Well ID 615577	11/23/2020	237
Production Well ID 723330	5/10/2010	220
Production Well ID 723330	2/7/2011	210
Production Well ID 723330	5/9/2011	230
Production Well ID 723330	8/17/2011	230
Production Well ID 723330	11/21/2011	150
Production Well ID 723330	2/29/2012	200
Production Well ID 723330	5/10/2012	180
Production Well ID 723330	8/13/2012	210
Production Well ID 723330	11/8/2012	210
Production Well ID 723330	2/12/2013	234
Production Well ID 723330	5/16/2013	235
Production Well ID 723330	8/15/2013	236
Production Well ID 723330	11/15/2013	238
Production Well ID 723330	2/11/2014	248
Production Well ID 723330	5/18/2014	249
Production Well ID 723330	8/12/2014	247
Production Well ID 723330	11/11/2014	249
Production Well ID 723330	2/28/2015	214
Production Well ID 723330	5/13/2015	236
Production Well ID 723330	11/11/2015	240
Production Well ID 723330	2/9/2016	235
Production Well ID 723330	5/18/2016	233
Production Well ID 723330	8/31/2016	268
Production Well ID 723330	11/15/2016	209

Table F-4
TDS Background Data From Site Production Wells
Citrus Combined Cycle Plant
Cystal River, FL

Location ID	Sample Date	TDS Concentration (mg/L)¹
Production Well ID 723330	2/14/2017	290
Production Well ID 723330	5/17/2017	207
Production Well ID 723330	8/15/2017	211
Production Well ID 723330	11/14/2017	200
Production Well ID 723330	2/14/2018	257
Production Well ID 723330	5/15/2018	235
Production Well ID 723330	8/14/2018	249
Production Well ID 723330	11/13/2018	234
Production Well ID 723330	2/12/2019	10
Production Well ID 723330	5/8/2019	21.3
Production Well ID 723330	6/1/2019	21.3
Production Well ID 723330	11/13/2019	241
Production Well ID 723330	1/15/2020	241
Production Well ID 723330	4/14/2020	231
Production Well ID 723330	11/24/2020	218
Production Well ID 723331	5/10/2010	230
Production Well ID 723331	8/12/2010	230
Production Well ID 723331	2/7/2011	210
Production Well ID 723331	5/9/2011	230
Production Well ID 723331	8/17/2011	220
Production Well ID 723331	11/21/2011	170
Production Well ID 723331	2/29/2012	210
Production Well ID 723331	5/10/2012	200
Production Well ID 723331	8/13/2012	230
Production Well ID 723331	11/8/2012	230
Production Well ID 723331	2/12/2013	252
Production Well ID 723331	5/16/2013	244
Production Well ID 723331	8/15/2013	249
Production Well ID 723331	11/15/2013	256
Production Well ID 723331	2/11/2014	247
Production Well ID 723331	5/18/2014	246
Production Well ID 723331	8/12/2014	264
Production Well ID 723331	11/11/2014	246
Production Well ID 723331	2/28/2015	247
Production Well ID 723331	5/13/2015	259
Production Well ID 723331	11/11/2015	259
Production Well ID 723331	2/9/2016	228
Production Well ID 723331	5/18/2016	238
Production Well ID 723331	8/31/2016	221
Production Well ID 723331	11/15/2016	223
Production Well ID 723331	2/14/2017	245
Production Well ID 723331	5/17/2017	194
Production Well ID 723331	8/15/2017	221
Production Well ID 723331	11/14/2017	244

Table F-4
TDS Background Data From Site Production Wells
Citrus Combined Cycle Plant
Crystal River, FL

Location ID	Sample Date	TDS Concentration (mg/L)¹
Production Well ID 723331	2/14/2018	263
Production Well ID 723331	8/14/2018	245
Production Well ID 723331	11/13/2018	240
Production Well ID 723331	2/12/2019	9.1
Production Well ID 723331	5/8/2019	9.2
Production Well ID 723331	6/1/2019	9.2
Production Well ID 723331	11/13/2019	252
Production Well ID 723331	1/15/2020	252
Production Well ID 723331	4/14/2020	269
Production Well ID 723331	11/23/2020	217
Production Well ID 723332	5/10/2010	370
Production Well ID 723332	8/12/2010	350
Production Well ID 723332	2/7/2011	350
Production Well ID 723332	5/9/2011	340
Production Well ID 723332	8/17/2011	240
Production Well ID 723332	2/29/2012	310
Production Well ID 723332	5/10/2012	290
Production Well ID 723332	8/13/2012	300
Production Well ID 723332	11/8/2012	300
Production Well ID 723332	2/12/2013	327
Production Well ID 723332	5/16/2013	327
Production Well ID 723332	8/15/2013	304
Production Well ID 723332	11/15/2013	328
Production Well ID 723332	2/11/2014	311
Production Well ID 723332	5/18/2014	318
Production Well ID 723332	8/12/2014	293
Production Well ID 723332	2/28/2015	304
Production Well ID 723332	5/13/2015	343
Production Well ID 723332	11/11/2015	333
Production Well ID 723332	5/18/2016	331
Production Well ID 723332	8/31/2016	227
Production Well ID 723332	11/15/2016	313
Production Well ID 723332	2/14/2017	325
Production Well ID 723332	5/17/2017	289
Production Well ID 723332	8/15/2017	307
Production Well ID 723332	11/14/2017	345
Production Well ID 723332	2/14/2018	303
Production Well ID 723332	5/15/2018	307
Production Well ID 723332	8/14/2018	325
Production Well ID 723332	11/13/2018	295
Production Well ID 723332	2/12/2019	67
Production Well ID 723332	5/8/2019	47.9
Production Well ID 723332	6/1/2019	47.9
Production Well ID 723332	11/13/2019	306

Table F-4
TDS Background Data From Site Production Wells
Citrus Combined Cycle Plant
Cystal River, FL

Location ID	Sample Date	TDS Concentration (mg/L)¹
Production Well ID 723332	1/15/2020	306
Production Well ID 723332	11/23/2020	236

Notes:

1. Where replicate measurments were made on the same date at the same location, the maximum value is used.

mg/L - milligrams per liter

TDS - total dissolved solids

Table F-5
Concentration Data Set from Background Well MWB-1 Used in Statistical Evaluation
Citrus River Combined Cycle Plant
Crystal River, FL

Location	Date	Iron (mg/L)	Manganese (mg/L)	TDS (mg/L)
MWB-1	11/1/2017	0.336	0.0489	356
	2/27/2018	3.05	0.0787	266
	5/17/2018	2.82	0.0799	272
	8/27/2018	3.42	0.102	346
	11/13/2018	3.44	0.0975	762
	02/14/2019	3.6	0.168	840
	05/30/2019	3.38	0.104	332
	08/08/2019	3.8	0.125	342
	10/21/2019	3.6	0.11	354
	02/13/2020	3.26	0.101	442
	04/23/2020	3.3	0.104	360
	07/30/2020	3.34	0.108	424
	10/29/2020	3.21	0.107	388
	02/09/2021	3.23	0.109	328
	04/22/2021	5.94	0.123	352
	07/26/2021	4.30	0.122	342
	10/19/2021	3.57	0.118	368

Notes:

mg/L - milligrams per liter

TDS - total dissolved solids

Table F-6
Mann-Kendall Results
Citrus Combined Cycle Plant
Crystal River, FL

Data Set Type	Location ID	Analyte	N	Frequency	Mann-Kendall (S)	Z Statistic	COV	Probability	Confidence in Trend	Concentration Trend
Regional	6092326	Arsenic	5	100	2	--	0.25	0.408	0.592	No Trend
Regional	6094523	Arsenic	4	100	2	--	0.59	0.375	0.625	No Trend
Regional	6095093	Arsenic	4	100	0	--	0.68	0.625	0.375	Stable
Regional	AAC7366 6094956	Arsenic	6	100	-9	--	0.46	0.068	0.932	Probably Decreasing
Regional	AAE6717	Arsenic	46	100	-287	-2.71	0.78	0.003	0.997	Decreasing
Regional	AAE6718 6092186	Arsenic	21	100	-107	-3.21	0.73	0.001	0.999	Decreasing
Regional	AAE6720	Arsenic	5	100	0	--	0.40	0.592	0.408	Stable
Regional	AAF7127	Arsenic	10	100	1	--	0.52	0.500	0.500	No Trend
Regional	AAJ7226	Arsenic	5	100	5	--	0.07	(0.117, 0.242)	(0.758, 0.883)	No Trend
Regional	AAK5204	Arsenic	9	100	-12	--	0.47	0.130	0.870	Stable
Regional	AAK5206	Arsenic	18	100	-28	-1.02	1.73	0.153	0.847	No Trend
Regional	AAK5225	Arsenic	5	100	-4	--	0.06	0.242	0.758	Stable
Regional	AAK5227	Arsenic	5	100	2	--	0.15	0.408	0.592	No Trend
Regional	AAK5228	Arsenic	18	100	32	1.18	0.25	0.120	0.880	No Trend
Regional	AAK5229	Arsenic	6	100	3	--	0.38	0.360	0.640	No Trend
Regional	AAK5267	Arsenic	6	100	-9	--	0.37	0.068	0.932	Probably Decreasing
Regional	AAK5268	Arsenic	4	100	-2	--	0.08	0.375	0.625	Stable
Regional	AAK5278	Arsenic	9	100	-24	--	0.40	0.006	0.994	Decreasing
Regional	AAK5286	Arsenic	5	100	4	--	0.27	0.242	0.758	No Trend
Regional	AAK5289	Arsenic	13	100	11	0.61	0.14	0.271	0.729	No Trend
Regional	AAK5291	Arsenic	6	100	3	--	0.15	0.360	0.640	No Trend
Regional	AAK5295	Arsenic	7	100	-11	--	1.11	0.068	0.932	Probably Decreasing
Regional	AAL3900	Arsenic	4	100	-2	--	0.15	0.375	0.625	Stable
Regional	AAL3901	Arsenic	5	100	-4	--	0.75	0.242	0.758	Stable
Regional	AAL3902	Arsenic	20	100	-2	-0.03	0.72	0.487	0.513	Stable
Regional	AAL3903	Arsenic	4	100	-2	--	0.39	0.375	0.625	Stable
Regional	AAL3905	Arsenic	8	100	-10	--	0.94	0.138	0.862	Stable
Regional	AAL3906	Arsenic	5	100	-4	--	0.48	0.242	0.758	Stable
Regional	AAL3919	Arsenic	6	100	-9	--	0.23	0.068	0.932	Probably Decreasing
Regional	AAL3920	Arsenic	11	100	-1	0.00	0.64	0.500	0.500	Stable
Regional	AAL3921	Arsenic	4	100	2	--	0.14	0.375	0.625	No Trend
Regional	AAL3922	Arsenic	5	100	-6	--	0.11	0.117	0.883	Stable
Regional	AAL3923	Arsenic	7	100	-3	--	0.33	0.386	0.614	Stable
Regional	AAL3925	Arsenic	5	100	-6	--	0.59	0.117	0.883	Stable
Regional	AAL3926	Arsenic	8	100	-8	--	0.95	0.199	0.801	Stable
Regional	AAL3927	Arsenic	4	100	-4	--	0.16	0.167	0.833	Stable
Regional	AAL3929	Arsenic	9	100	-6	--	1.29	0.306	0.694	No Trend
Regional	AAL3930	Arsenic	4	100	6	--	0.14	0.042	0.958	Increasing
Regional	AAL3931	Arsenic	12	100	-22	-1.44	1.09	0.075	0.925	Probably Decreasing
Regional	AAL3933	Arsenic	6	100	1	--	0.60	0.500	0.500	No Trend
Regional	AAL3935	Arsenic	16	100	-64	-2.84	0.26	0.002	0.998	Decreasing
Regional	AAL3936	Arsenic	9	100	6	--	0.95	0.306	0.694	No Trend
Regional	AAL3937	Arsenic	5	100	-6	--	0.86	0.117	0.883	Stable
Regional	AAL3938	Arsenic	6	100	-5	--	0.40	0.235	0.765	Stable
Regional	AAL3941	Arsenic	5	100	-8	--	0.17	0.042	0.958	Decreasing
Regional	AAL3946	Arsenic	8	100	4	--	0.43	0.360	0.640	No Trend
Regional	AAL3947	Arsenic	8	100	-16	--	0.86	0.031	0.969	Decreasing
Regional	AAL3955	Arsenic	44	100	-147	-1.48	0.56	0.070	0.930	Probably Decreasing
Regional	AAL3956	Arsenic	5	100	-2	--	0.14	0.408	0.592	Stable
Regional	AAL3957	Arsenic	6	100	-5	--	0.72	0.235	0.765	Stable
Regional	AAL3963	Arsenic	4	100	-4	--	0.55	0.167	0.833	Stable
Regional	AAL3964	Arsenic	6	100	-5	--	0.50	0.235	0.765	Stable
Regional	AAL3965	Arsenic	8	100	-14	--	1.00	0.054	0.946	Probably Decreasing
Regional	AAL3967	Arsenic	8	100	-2	--	0.42	0.452	0.548	Stable
Regional	AAL3969	Arsenic	9	100	-12	--	1.29	0.130	0.870	No Trend
Regional	AAL3972	Arsenic	44	100	-56	-0.56	0.46	0.289	0.711	Stable

Table F-6
Mann-Kendall Results
Citrus Combined Cycle Plant
Crystal River, FL

Data Set Type	Location ID	Analyte	N	Frequency	Mann-Kendall (S)	Z Statistic	COV	Probability	Confidence in Trend	Concentration Trend
Regional	AAL3973	Arsenic	6	100	1	--	0.95	0.500	0.500	No Trend
Regional	AAL3975	Arsenic	5	100	-2	--	0.56	0.408	0.592	Stable
Regional	AAL3976	Arsenic	5	100	-6	--	0.28	0.117	0.883	Stable
Regional	AAL3977	Arsenic	8	100	-13	--	0.21	(0.054, 0.089)	(0.911, 0.946)	Probably Decreasing
Regional	AAL3978	Arsenic	9	100	-22	--	0.84	0.012	0.988	Decreasing
Regional	AAL7311	Arsenic	40	100	-114	-1.32	0.49	0.094	0.906	Probably Decreasing
Regional	AAL7330	Arsenic	7	100	7	--	0.09	0.191	0.809	No Trend
Regional	AAL7334	Arsenic	7	100	-15	--	1.10	0.015	0.985	Decreasing
Regional	AAL7335	Arsenic	4	100	0	--	0.26	0.625	0.375	Stable
Regional	AAL7336	Arsenic	18	100	-13	-0.45	0.22	0.325	0.675	Stable
Regional	AAL7344	Arsenic	7	100	5	--	0.25	0.281	0.719	No Trend
Regional	AAL7346	Arsenic	4	100	2	--	0.22	0.375	0.625	No Trend
Regional	AAL7355	Arsenic	31	100	99	1.67	0.47	0.048	0.952	Increasing
Regional	AAL7369	Arsenic	11	100	5	0.31	0.78	0.378	0.622	No Trend
Regional	AAL7372	Arsenic	10	100	-25	--	0.57	0.014	0.986	Decreasing
Regional	AAL7377	Arsenic	8	100	-14	--	0.98	0.054	0.946	Probably Decreasing
Regional	AAL7378	Arsenic	6	100	-3	--	0.35	0.360	0.640	Stable
Regional	AAL7388	Arsenic	7	100	1	--	0.37	0.500	0.500	No Trend
Regional	AAL7397	Arsenic	4	100	4	--	0.13	0.167	0.833	No Trend
Regional	AAL7398	Arsenic	5	100	-6	--	0.44	0.117	0.883	Stable
Regional	AAL7602	Arsenic	6	100	-7	--	0.76	0.136	0.864	Stable
Regional	AAL7603	Arsenic	9	100	-20	--	0.30	0.022	0.978	Decreasing
Regional	AAL7606	Arsenic	11	100	-21	-1.56	1.17	0.060	0.940	Probably Decreasing
Regional	AAL7610	Arsenic	5	100	-3	--	0.55	(0.242, 0.408)	(0.592, 0.758)	Stable
Regional	AAL7611	Arsenic	5	100	-10	--	0.21	0.008	0.992	Decreasing
Regional	AAL7626	Arsenic	11	100	-13	-0.93	1.91	0.175	0.825	No Trend
Regional	AAL7630	Arsenic	4	100	-6	--	0.28	0.042	0.958	Decreasing
Regional	AAL7632	Arsenic	4	100	-4	--	0.13	0.167	0.833	Stable
Regional	AAL7638	Arsenic	16	100	-4	-0.14	0.18	0.446	0.554	Stable
Regional	AAL7641	Arsenic	4	100	0	--	0.13	0.625	0.375	Stable
Regional	AAL7642	Arsenic	5	100	0	--	0.33	0.592	0.408	Stable
Regional	AAL7645	Arsenic	10	100	-9	--	0.18	0.242	0.758	Stable
Regional	AAL7651	Arsenic	5	100	-4	--	0.27	0.242	0.758	Stable
Regional	AAL7654	Arsenic	7	100	-1	--	0.21	0.500	0.500	Stable
Regional	AAL7676	Arsenic	10	100	-21	--	0.35	0.036	0.964	Decreasing
Regional	AAL7682	Arsenic	10	100	-15	--	0.64	0.108	0.892	Stable
Regional	AAL7691	Arsenic	4	100	-2	--	0.88	0.375	0.625	Stable
Regional	AAM1373	Arsenic	11	100	19	1.40	0.35	0.081	0.919	Probably Increasing
Regional	AAM5501	Arsenic	4	100	0	--	0.51	0.625	0.375	Stable
Regional	AAM5514	Arsenic	5	100	-4	--	0.58	0.242	0.758	Stable
Regional	AAM5524	Arsenic	7	100	-7	--	0.87	0.191	0.809	Stable
Regional	AAM5534	Arsenic	4	100	-2	--	0.98	0.375	0.625	Stable
Regional	AAM5535	Arsenic	4	100	-4	--	0.35	0.167	0.833	Stable
Regional	AAM5536	Arsenic	10	100	-27	--	0.77	0.008	0.992	Decreasing
Regional	AAM5539	Arsenic	8	100	-6	--	0.22	0.274	0.726	Stable
Regional	AAM5548	Arsenic	5	100	-4	--	0.10	0.242	0.758	Stable
Regional	AAM5551	Arsenic	7	100	-3	--	0.42	0.386	0.614	Stable
Regional	AAM5552	Arsenic	4	100	-4	--	0.13	0.167	0.833	Stable
Regional	AAM5553	Arsenic	6	100	-6	--	0.63	(0.136, 0.235)	(0.765, 0.864)	Stable
Regional	AAM5558	Arsenic	11	100	-35	-2.65	0.10	0.004	0.996	Decreasing
Regional	AAM5565	Arsenic	17	100	18	0.70	0.16	0.242	0.758	No Trend
Regional	AAM5570	Arsenic	6	100	-9	--	1.00	0.068	0.932	Probably Decreasing
Regional	AAM5584	Arsenic	16	100	4	0.14	0.54	0.446	0.554	No Trend
Regional	AAM6801	Arsenic	10	100	15	--	0.41	0.108	0.892	No Trend
Regional	AAM6811	Arsenic	13	100	27	1.59	0.24	0.056	0.944	Probably Increasing
Regional	AAM6825	Arsenic	4	100	-2	--	0.29	0.375	0.625	Stable

Table F-6
Mann-Kendall Results
Citrus Combined Cycle Plant
Crystal River, FL

Data Set Type	Location ID	Analyte	N	Frequency	Mann-Kendall (S)	Z Statistic	COV	Probability	Confidence in Trend	Concentration Trend
Regional	AAM6826	Arsenic	5	100	2	--	0.60	0.408	0.592	No Trend
Regional	AAM6827	Arsenic	9	100	2	--	0.18	0.460	0.540	No Trend
Regional	AAM6829	Arsenic	4	100	-6	--	0.16	0.042	0.958	Decreasing
Regional	AAM6835	Arsenic	4	100	0	--	0.45	0.625	0.375	Stable
Regional	AAM6844	Arsenic	5	100	4	--	0.06	0.242	0.758	No Trend
Regional	AAM6846	Arsenic	6	100	-9	--	0.74	0.068	0.932	Probably Decreasing
Regional	AAM6849	Arsenic	5	100	2	--	0.40	0.408	0.592	No Trend
Regional	AAM6867	Arsenic	6	100	-7	--	1.23	0.136	0.864	No Trend
Regional	AAM6868	Arsenic	4	100	-4	--	0.29	0.167	0.833	Stable
Regional	AAM6869	Arsenic	12	100	-10	-0.62	0.11	0.269	0.731	Stable
Regional	AAM7611	Arsenic	6	100	-7	--	0.17	0.136	0.864	Stable
Regional	AAM7612	Arsenic	9	100	-6	--	0.46	0.306	0.694	Stable
Regional	AAM7613	Arsenic	15	100	-9	-0.40	0.31	0.346	0.654	Stable
Regional	AAM7620	Arsenic	4	100	-2	--	0.14	0.375	0.625	Stable
Regional	AAM7638	Arsenic	9	100	2	--	0.18	0.460	0.540	No Trend
Regional	AAM7640	Arsenic	4	100	0	--	0.70	0.625	0.375	Stable
Regional	AAM7642	Arsenic	6	100	-1	--	0.35	0.500	0.500	Stable
Regional	AAM7647	Arsenic	8	100	-8	--	0.11	0.199	0.801	Stable
Regional	AAM7649	Arsenic	6	100	-13	--	0.84	0.008	0.992	Decreasing
Regional	AAM7652	Arsenic	6	100	-7	--	0.33	0.136	0.864	Stable
Regional	AAM7667	Arsenic	4	100	2	--	0.07	0.375	0.625	No Trend
Regional	AAN0228	Arsenic	5	100	2	--	0.53	0.408	0.592	No Trend
Regional	AAN0605	Arsenic	7	100	-7	--	0.19	0.191	0.809	Stable
Regional	AAN0614	Arsenic	7	100	5	--	0.63	0.281	0.719	No Trend
Regional	AAN0644	Arsenic	5	100	0	--	0.55	0.592	0.408	Stable
Regional	AAN0678	Arsenic	18	100	60	2.24	0.19	0.013	0.987	Increasing
Regional	AAN8100	Arsenic	7	100	3	--	0.35	0.386	0.614	No Trend
Regional	AAN8101	Arsenic	11	100	27	2.02	0.13	0.021	0.979	Increasing
Regional	AAN8132	Arsenic	7	100	-10	--	0.13	0.068, 0.119	0.881, 0.932	Stable
Regional	AAN8133	Arsenic	5	100	-10	--	0.55	0.008	0.992	Decreasing
Regional	AAN8134	Arsenic	5	100	6	--	0.14	0.117	0.883	No Trend
Regional	AAN8137	Arsenic	5	100	0	--	0.07	0.592	0.408	Stable
Regional	AAN8148	Arsenic	4	100	0	--	0.22	0.625	0.375	Stable
Regional	AAN8161	Arsenic	6	100	-9	--	0.21	0.068	0.932	Probably Decreasing
Regional	AAN8173	Arsenic	19	100	-79	-2.73	0.49	0.003	0.997	Decreasing
Regional	AAO0309	Arsenic	4	100	-2	--	0.50	0.375	0.625	Stable
Regional	AAO0330	Arsenic	4	100	2	--	0.15	0.375	0.625	No Trend
Regional	AAO0366	Arsenic	4	100	-2	--	0.63	0.375	0.625	Stable
Regional	AAO0388	Arsenic	5	100	-6	--	0.29	0.117	0.883	Stable
Regional	AAO0390	Arsenic	5	100	-10	--	0.36	0.008	0.992	Decreasing
Regional	AAO0392	Arsenic	5	100	4	--	0.20	0.242	0.758	No Trend
Regional	AAO0397	Arsenic	8	100	-19	--	0.24	0.0071, 0.016	0.984, 0.9929	Decreasing
Regional	AAO1021	Arsenic	4	100	2	--	0.18	0.375	0.625	No Trend
Regional	AAO1049	Arsenic	12	100	-15	-0.96	0.25	0.168	0.832	Stable
Regional	AAO1051	Arsenic	15	100	-57	-2.77	1.93	0.003	0.997	Decreasing
Regional	AAO1082	Arsenic	12	100	2	0.07	0.30	0.473	0.527	No Trend
Regional	AAO1094	Arsenic	13	100	-16	-0.92	1.49	0.180	0.820	No Trend
Regional	AAO1095	Arsenic	6	100	1	--	0.51	0.500	0.500	No Trend
Regional	AAO3550	Arsenic	10	100	-11	--	0.41	0.190	0.810	Stable
Regional	AAO3551	Arsenic	9	100	-7	--	1.80	0.238, 0.306	0.694, 0.762	No Trend
Regional	AAO3584	Arsenic	22	100	-91	-2.54	0.80	0.006	0.994	Decreasing
Regional	AAO3585	Arsenic	12	100	-36	-2.40	0.82	0.008	0.992	Decreasing
Regional	AAO3804	Arsenic	4	100	-2	--	0.11	0.375	0.625	Stable
Regional	AAO3805	Arsenic	4	100	4	--	0.26	0.167	0.833	No Trend
Regional	AAO4825	Arsenic	7	100	-4	--	0.24	0.281, 0.386	0.614, 0.719	Stable
Regional	AAO4844	Arsenic	9	100	-10	--	0.13	0.179	0.821	Stable

Table F-6
Mann-Kendall Results
Citrus Combined Cycle Plant
Crystal River, FL

Data Set Type	Location ID	Analyte	N	Frequency	Mann-Kendall (S)	Z Statistic	COV	Probability	Confidence in Trend	Concentration Trend
Regional	AAR1001	Arsenic	4	100	-2	--	0.06	0.375	0.625	Stable
Regional	AAR1004	Arsenic	4	100	0	--	0.12	0.625	0.375	Stable
Regional	AAR1092	Arsenic	7	100	-19	--	0.19	0.001	0.999	Decreasing
Regional	AAR2446	Arsenic	4	100	2	--	0.14	0.375	0.625	No Trend
Regional	AAR2450	Arsenic	11	100	-11	-0.78	0.79	0.218	0.782	Stable
Regional	AAR2563	Arsenic	5	100	7	--	0.11	(0.042, 0.117)	(0.883, 0.958)	No Trend
Production Wells	Production Well ID 615571	TDS	101	100	792	2.32	0.26	0.010	0.990	Increasing
Production Wells	Production Well ID 615572	TDS	96	100	969	3.07	0.28	0.001	0.999	Increasing
Production Wells	Production Well ID 615573	TDS	94	100	946	3.09	0.22	0.001	0.999	Increasing
Production Wells	Production Well ID 615574	TDS	98	100	-11	-0.03	0.27	0.488	0.512	Stable
Production Wells	Production Well ID 615575	TDS	39	100	-53	-0.63	0.30	0.264	0.736	Stable
Production Wells	Production Well ID 615576	TDS	37	100	-70	-0.90	0.34	0.183	0.817	Stable
Production Wells	Production Well ID 615577	TDS	39	100	40	0.47	0.34	0.318	0.682	No Trend
Production Wells	Production Well ID 723330	TDS	39	100	62	0.74	0.29	0.230	0.770	No Trend
Production Wells	Production Well ID 723331	TDS	39	100	56	0.67	0.30	0.252	0.748	No Trend
Production Wells	Production Well ID 723332	TDS	36	100	-196	-2.66	0.27	0.004	0.996	Decreasing
Background Well	MWB-1	Fe	17	100	41	1.65	0.31	0.050	0.950	Increasing
Background Well	MWB-1	Mn	17	100	71	2.89	0.23	0.002	0.998	Increasing
Background Well	MWB-1	TDS	17	100	15	0.58	0.39	0.282	0.718	No Trend

Notes:

N = Total number of samples

Mann-Kendall (S) = Mann-Kendall test statistic

Z Statistic = Standardized Mann-Kendall S value based on the normal approximation (for sample sizes greater than 10)

COV - coefficient of variation calculated as the ratio of sample standard deviation to the sample mean

Probability = Probability associated with Mann-Kendall Hypothesis Test (i.e., *p*-value associated with the S/Z Statistic). For sample sizes $N \leq 10$, if an exact *p*-value was not available, then a range for the *p*-value was provided as: (minimum *p*-value, maximum *p*-value), where the minimum and maximum *p*-values correspond to $|S|-1$ and $|S|+1$, respectively.

Concentration Trend = Indication of whether Mann-Kendall test can detect a trend, and if so, the direction of the trend is shown

-- = not calculated due to $N < 4$ or $< 50\%$ detection frequency

NA = Not analyzed due to $N < 4$ or $< 50\%$ detection frequency

Table F-7
Background Threshold Statistical Evaluation Summary
Citrus Combined Cycle Plant
Crystal River, FL

Analyte	Arsenic	Iron		Manganese		TDS	
Data Set	Regional	Regional	MWB-1	Regional	MWB-1	Production Wells	MWB-1
Number of Wells	174	33	1	29	1	10	1
Number of Samples	1472	43	17	37	17	618	17
Units	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Minimum	0.06	0.011	0.336	0.001	0.0489	6.9	266
Mean	14	2.07	3.388	0.037	0.106	239.6	404.4
Maximum	167	14.9	5.94	0.234	0.168	645	840
2 x Mean	28	4.14	6.78	0.074	0.212	479.2	809
Type of Distribution	Nonparametric	Nonparametric	Nonparametric	Gamma	Normal	Nonparametric	Nonparametric
UTL	72	14.9	5.94	0.18	0.168	472	840
Type of UTL	Nonparametric 95-99 UTL	Nonparametric 95-99 UTL	Nonparametric 95-99 UTL	95-95 Hawkins Wixley Approximation Gamma UTL	Normal 95-95 UTL	Nonparametric 95-99 UTL	Nonparametric 95-99 UTL

Notes:

µg/L - micrograms per liter

mg/L - milligrams per liter

TDS - total dissolved solids

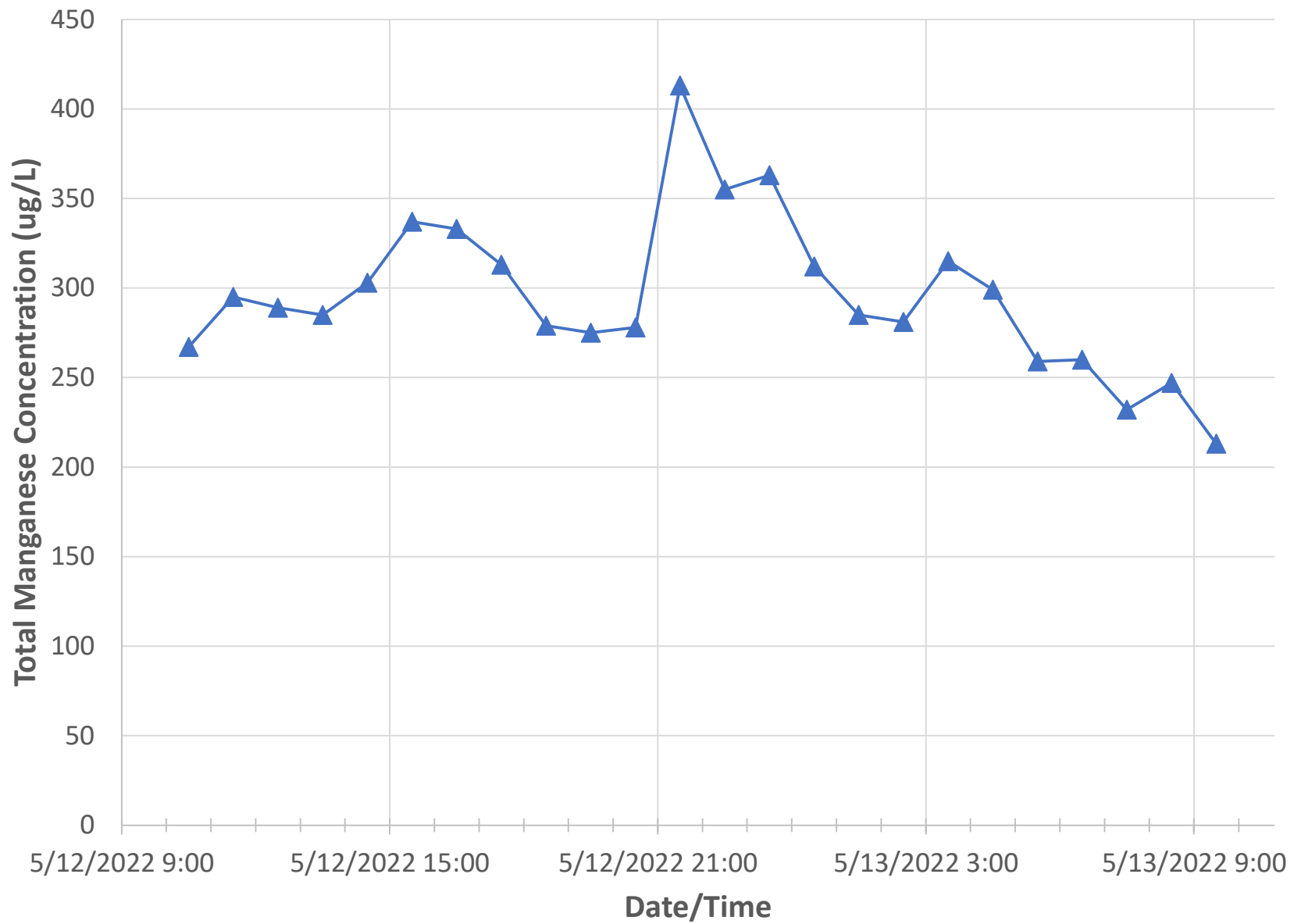
UTL - upper tolerance limit

 - UTLs in yellow highlight were selected as background threshold values

APPENDIX G

ISCO Sampling Results

Manganese Concentration In Wastewater Sump PB-1



The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Geosyntec Consultants

CCCP Soil & ISCO Sampling; Crystal River, FL

SGS Job Number: FA95682

Sampling Dates: 05/12/22 - 05/13/22

Report to:

Geosyntec Consultants
19321 US Hwy 19 N Suite 200
Clearwater, FL 33764
dmontiel@geosyntec.com; mgozdor@geosyntec.com

ATTN: Daniel Montiel

Total number of pages in report: **67**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.



Norm Farmer
Technical Director

Client Service contact: Kelly Blanchard 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001)
DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177),
AL, AK, AR, CT, IA, KY, MA, MI, MS, ND, NH, NV, OK, OR, IL, UT, VT, WA, WI, WV
This report shall not be reproduced, except in its entirety, without the written approval of SGS.
Test results relate only to samples analyzed.

Table of Contents

-1-

Section 1: Sample Summary	3
Section 2: Case Narrative/Conformance Summary	6
Section 3: Summary of Hits	7
Section 4: Sample Results	10
4.1: FA95682-1: HA-1 (1-2)	11
4.2: FA95682-2: HA-1 (6-7)	12
4.3: FA95682-3: HA-2 (1-2)	13
4.4: FA95682-4: HA-2 (6-7)	14
4.5: FA95682-5: HA-3 (1-2)	15
4.6: FA95682-6: HA-3 (5-6)	16
4.7: FA95682-7: HA-4 (1-2)	17
4.8: FA95682-8: HA-4 (3-4)	18
4.9: FA95682-9: WW-SUMP-1	19
4.10: FA95682-10: WW-SUMP-1	20
4.11: FA95682-11: WW-SUMP-1	21
4.12: FA95682-12: WW-SUMP-1	22
4.13: FA95682-13: WW-SUMP-5	23
4.14: FA95682-14: WW-SUMP-6	24
4.15: FA95682-15: WW-SUMP-7	25
4.16: FA95682-16: WW-SUMP-8	26
4.17: FA95682-17: WW-SUMP-9	27
4.18: FA95682-18: WW-SUMP-10	28
4.19: FA95682-19: WW-SUMP-11	29
4.20: FA95682-20: WW-SUMP-12	30
4.21: FA95682-21: WW-SUMP-13	31
4.22: FA95682-22: WW-SUMP-14	32
4.23: FA95682-23: WW-SUMP-15	33
4.24: FA95682-24: WW-SUMP-16	34
4.25: FA95682-25: WW-SUMP-17	35
4.26: FA95682-26: WW-SUMP-18	36
4.27: FA95682-27: WW-SUMP-19	37
4.28: FA95682-28: WW-SUMP-20	38
4.29: FA95682-29: WW-SUMP-21	39
4.30: FA95682-30: WW-SUMP-22	40
4.31: FA95682-31: WW-SUMP-23	41
4.32: FA95682-32: WW-SUMP-24	42
Section 5: Misc. Forms	43
5.1: Chain of Custody	44
Section 6: Metals Analysis - QC Data Summaries	49
6.1: Prep QC MP40724: Mn	50
6.2: Prep QC MP40747: Mn	55
6.3: Prep QC MP40749: Mn	62



Sample Summary

Geosyntec Consultants

Job No: FA95682

CCCP Soil & ISCO Sampling; Crystal River, FL

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
FA95682-1	05/12/22	11:32 DM	05/13/22	SO	Soil	HA-1 (1-2)
FA95682-2	05/12/22	11:58 DM	05/13/22	SO	Soil	HA-1 (6-7)
FA95682-3	05/12/22	12:14 DM	05/13/22	SO	Soil	HA-2 (1-2)
FA95682-4	05/12/22	12:40 DM	05/13/22	SO	Soil	HA-2 (6-7)
FA95682-5	05/12/22	13:10 DM	05/13/22	SO	Soil	HA-3 (1-2)
FA95682-6	05/12/22	13:45 DM	05/13/22	SO	Soil	HA-3 (5-6)
FA95682-7	05/12/22	11:05 DM	05/13/22	SO	Soil	HA-4 (1-2)
FA95682-8	05/12/22	11:10 DM	05/13/22	SO	Soil	HA-4 (3-4)
FA95682-9	05/12/22	10:25 DM	05/13/22	AQ	Water	WW-SUMP-1
FA95682-10	05/12/22	11:25 DM	05/13/22	AQ	Water	WW-SUMP-1
FA95682-11	05/12/22	12:25 DM	05/13/22	AQ	Water	WW-SUMP-1
FA95682-12	05/12/22	13:25 DM	05/13/22	AQ	Water	WW-SUMP-1
FA95682-13	05/12/22	14:25 DM	05/13/22	AQ	Water	WW-SUMP-5

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



Sample Summary
(continued)

Geosyntec Consultants

Job No: FA95682

CCCP Soil & ISCO Sampling; Crystal River, FL

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
FA95682-14	05/12/22	15:25 DM	05/13/22	AQ	Water	WW-SUMP-6
FA95682-15	05/12/22	16:25 DM	05/13/22	AQ	Water	WW-SUMP-7
FA95682-16	05/12/22	17:25 DM	05/13/22	AQ	Water	WW-SUMP-8
FA95682-17	05/12/22	18:25 DM	05/13/22	AQ	Water	WW-SUMP-9
FA95682-18	05/12/22	19:25 DM	05/13/22	AQ	Water	WW-SUMP-10
FA95682-19	05/12/22	20:25 DM	05/13/22	AQ	Water	WW-SUMP-11
FA95682-20	05/12/22	21:25 DM	05/13/22	AQ	Water	WW-SUMP-12
FA95682-21	05/12/22	22:25 DM	05/13/22	AQ	Water	WW-SUMP-13
FA95682-22	05/12/22	23:25 DM	05/13/22	AQ	Water	WW-SUMP-14
FA95682-23	05/13/22	00:25 DM	05/13/22	AQ	Water	WW-SUMP-15
FA95682-24	05/13/22	01:25 DM	05/13/22	AQ	Water	WW-SUMP-16
FA95682-25	05/13/22	02:25 DM	05/13/22	AQ	Water	WW-SUMP-17
FA95682-26	05/13/22	03:25 DM	05/13/22	AQ	Water	WW-SUMP-18

Soil samples reported on a dry weight basis unless otherwise indicated on result page.



Sample Summary
(continued)

Geosyntec Consultants

Job No: FA95682

CCCP Soil & ISCO Sampling; Crystal River, FL

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
FA95682-27	05/13/22	04:25 DM	05/13/22	AQ	Water	WW-SUMP-19
FA95682-28	05/13/22	05:25 DM	05/13/22	AQ	Water	WW-SUMP-20
FA95682-29	05/13/22	06:25 DM	05/13/22	AQ	Water	WW-SUMP-21
FA95682-30	05/13/22	07:25 DM	05/13/22	AQ	Water	WW-SUMP-22
FA95682-31	05/13/22	08:25 DM	05/13/22	AQ	Water	WW-SUMP-23
FA95682-32	05/13/22	09:25 DM	05/13/22	AQ	Water	WW-SUMP-24

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Geosyntec Consultants

Job No: FA95682

Site: CCCP Soil & ISCO Sampling; Crystal River, FL

Report Date: 5/31/2022 10:43:49 AM

On 05/13/2022, 32 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc - Orlando, at a maximum corrected temperature of 4 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FA95682 was assigned to the project.

Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section. Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Metals Analysis By Method SW846 6010D

Matrix: AQ

Batch ID: MP40747

Sample(s) FA95643-5DUP, FA95643-5MS, FA95643-5MSD, FA95643-5PS, FA95643-5SDL were used as the QC samples for metals.

Matrix: AQ

Batch ID: MP40749

Sample(s) FA95685-1FDUP, FA95685-1FMS, FA95685-1FMDS, FA95685-1FPS, FA95685-1FSDL were used as the QC samples for metals.

RPD(s) for Serial Dilution for Manganese are outside control limits for sample MP40749-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

Matrix: LEACHATE

Batch ID: MP40724

Sample(s) FA95682-1DUP, FA95682-2DUP, FA95682-2MS, FA95682-2MSD, FA95682-2SDL were used as the QC samples for metals.

RPD(s) for Serial Dilution for Manganese are outside control limits for sample MP40724-SD1. Probable cause is due to sample non-homogeneity.

SGS North America Inc. - Orlando certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted. Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria. SGS North America Inc.- Orlando is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety.

Narrative prepared by:

Kim Benham, Client Services (*Signature on File*)

Summary of Hits

Page 1 of 3

Job Number: FA95682
Account: Geosyntec Consultants
Project: CCCP Soil & ISCO Sampling; Crystal River, FL
Collected: 05/12/22 thru 05/13/22



Lab Sample ID Analyte	Client Sample ID	Result/ Qual	PQL	MDL	Units	Method
FA95682-1	HA-1 (1-2)					
Manganese		0.0097 I	0.015	0.0010	mg/l	SW846 6010D
FA95682-2	HA-1 (6-7)					
Manganese		0.019	0.015	0.0010	mg/l	SW846 6010D
FA95682-3	HA-2 (1-2)					
Manganese		0.020	0.015	0.0010	mg/l	SW846 6010D
FA95682-4	HA-2 (6-7)					
Manganese		0.026	0.015	0.0010	mg/l	SW846 6010D
FA95682-5	HA-3 (1-2)					
Manganese		0.041	0.015	0.0010	mg/l	SW846 6010D
FA95682-6	HA-3 (5-6)					
Manganese		0.042	0.015	0.0010	mg/l	SW846 6010D
FA95682-7	HA-4 (1-2)					
No hits reported in this sample.						
FA95682-8	HA-4 (3-4)					
Manganese		0.0089 I	0.015	0.0010	mg/l	SW846 6010D
FA95682-9	WW-SUMP-1					
Manganese		267	15	1.0	ug/l	SW846 6010D
FA95682-10	WW-SUMP-1					
Manganese		295	15	1.0	ug/l	SW846 6010D
FA95682-11	WW-SUMP-1					
Manganese		289	15	1.0	ug/l	SW846 6010D

Summary of Hits

Job Number: FA95682
Account: Geosyntec Consultants
Project: CCCP Soil & ISCO Sampling; Crystal River, FL
Collected: 05/12/22 thru 05/13/22



Lab Sample ID Analyte	Client Sample ID	Result/ Qual	PQL	MDL	Units	Method
FA95682-12	WW-SUMP-1					
Manganese		285	15	1.0	ug/l	SW846 6010D
FA95682-13	WW-SUMP-5					
Manganese		303	15	1.0	ug/l	SW846 6010D
FA95682-14	WW-SUMP-6					
Manganese		337	15	1.0	ug/l	SW846 6010D
FA95682-15	WW-SUMP-7					
Manganese		333	15	1.0	ug/l	SW846 6010D
FA95682-16	WW-SUMP-8					
Manganese		313	15	1.0	ug/l	SW846 6010D
FA95682-17	WW-SUMP-9					
Manganese		279	15	1.0	ug/l	SW846 6010D
FA95682-18	WW-SUMP-10					
Manganese		275	15	1.0	ug/l	SW846 6010D
FA95682-19	WW-SUMP-11					
Manganese		278	15	1.0	ug/l	SW846 6010D
FA95682-20	WW-SUMP-12					
Manganese		413	15	1.0	ug/l	SW846 6010D
FA95682-21	WW-SUMP-13					
Manganese		355	15	1.0	ug/l	SW846 6010D
FA95682-22	WW-SUMP-14					
Manganese		363	15	1.0	ug/l	SW846 6010D

Summary of Hits

Job Number: FA95682
Account: Geosyntec Consultants
Project: CCCP Soil & ISCO Sampling; Crystal River, FL
Collected: 05/12/22 thru 05/13/22



Lab Sample ID Analyte	Client Sample ID	Result/ Qual	PQL	MDL	Units	Method
FA95682-23	WW-SUMP-15					
Manganese		312	15	1.0	ug/l	SW846 6010D
FA95682-24	WW-SUMP-16					
Manganese		285	15	1.0	ug/l	SW846 6010D
FA95682-25	WW-SUMP-17					
Manganese		281	15	1.0	ug/l	SW846 6010D
FA95682-26	WW-SUMP-18					
Manganese		315	15	1.0	ug/l	SW846 6010D
FA95682-27	WW-SUMP-19					
Manganese		299	15	1.0	ug/l	SW846 6010D
FA95682-28	WW-SUMP-20					
Manganese		259	15	1.0	ug/l	SW846 6010D
FA95682-29	WW-SUMP-21					
Manganese		260	15	1.0	ug/l	SW846 6010D
FA95682-30	WW-SUMP-22					
Manganese		232	15	1.0	ug/l	SW846 6010D
FA95682-31	WW-SUMP-23					
Manganese		247	15	1.0	ug/l	SW846 6010D
FA95682-32	WW-SUMP-24					
Manganese		213	15	1.0	ug/l	SW846 6010D



Orlando, FL

Section 4

4

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	HA-1 (1-2)	Date Sampled:	05/12/22
Lab Sample ID:	FA95682-1	Date Received:	05/13/22
Matrix:	SO - Soil	Percent Solids:	n/a
Project:	CCCP Soil & ISCO Sampling; Crystal River, FL		

Metals Analysis, SPLP Leachate SW846 1312

Analyte	Result	MCL	PQL	MDL	Units	DF	Prep	Analyzed By	Method
Manganese	0.0097 I		0.015	0.0010	mg/l	1	05/20/22	05/23/22 LM	SW846 6010D ¹

- (1) Instrument QC Batch: MA18690
(2) Prep QC Batch: MP40724

PQL = Practical Quantitation Limit MDL = Method Detection Limit U = Indicates a result < MDL
MCL = Maximum Contamination Level (not available) I = Indicates a result > = MDL but < PQL

Report of Analysis

Client Sample ID:	HA-1 (6-7)	Date Sampled:	05/12/22
Lab Sample ID:	FA95682-2	Date Received:	05/13/22
Matrix:	SO - Soil	Percent Solids:	n/a
Project:	CCCP Soil & ISCO Sampling; Crystal River, FL		

Metals Analysis, SPLP Leachate SW846 1312

Analyte	Result	MCL	PQL	MDL	Units	DF	Prep	Analyzed By	Method
Manganese	0.019		0.015	0.0010	mg/l	1	05/20/22	05/23/22 LM	SW846 6010D ¹

(1) Instrument QC Batch: MA18690
(2) Prep QC Batch: MP40724

PQL = Practical Quantitation Limit MDL = Method Detection Limit U = Indicates a result < MDL
MCL = Maximum Contamination Level (not available) I = Indicates a result > = MDL but < PQL

4.2
4

Report of Analysis

Client Sample ID:	HA-2 (1-2)	Date Sampled:	05/12/22
Lab Sample ID:	FA95682-3	Date Received:	05/13/22
Matrix:	SO - Soil	Percent Solids:	n/a
Project:	CCCP Soil & ISCO Sampling; Crystal River, FL		

Metals Analysis, SPLP Leachate SW846 1312

Analyte	Result	MCL	PQL	MDL	Units	DF	Prep	Analyzed By	Method
Manganese	0.020		0.015	0.0010	mg/l	1	05/20/22	05/23/22 LM	SW846 6010D ¹

(1) Instrument QC Batch: MA18690
(2) Prep QC Batch: MP40724

PQL = Practical Quantitation Limit MDL = Method Detection Limit U = Indicates a result < MDL
MCL = Maximum Contamination Level (not available) I = Indicates a result > = MDL but < PQL

Report of Analysis

Client Sample ID:	HA-2 (6-7)	Date Sampled:	05/12/22
Lab Sample ID:	FA95682-4	Date Received:	05/13/22
Matrix:	SO - Soil	Percent Solids:	n/a
Project:	CCCP Soil & ISCO Sampling; Crystal River, FL		

Metals Analysis, SPLP Leachate SW846 1312

Analyte	Result	MCL	PQL	MDL	Units	DF	Prep	Analyzed By	Method
Manganese	0.026		0.015	0.0010	mg/l	1	05/20/22	05/23/22 LM	SW846 6010D ¹

(1) Instrument QC Batch: MA18690
(2) Prep QC Batch: MP40724

PQL = Practical Quantitation Limit MDL = Method Detection Limit U = Indicates a result < MDL
MCL = Maximum Contamination Level (not available) I = Indicates a result > = MDL but < PQL

4.4
4

Report of Analysis

Client Sample ID:	HA-3 (1-2)	Date Sampled:	05/12/22
Lab Sample ID:	FA95682-5	Date Received:	05/13/22
Matrix:	SO - Soil	Percent Solids:	n/a
Project:	CCCP Soil & ISCO Sampling; Crystal River, FL		

Metals Analysis, SPLP Leachate SW846 1312

Analyte	Result	MCL	PQL	MDL	Units	DF	Prep	Analyzed By	Method
Manganese	0.041		0.015	0.0010	mg/l	1	05/20/22	05/23/22 LM	SW846 6010D ¹

(1) Instrument QC Batch: MA18690
(2) Prep QC Batch: MP40724

PQL = Practical Quantitation Limit MDL = Method Detection Limit U = Indicates a result < MDL
MCL = Maximum Contamination Level (not available) I = Indicates a result > = MDL but < PQL

4.5
4

Report of Analysis

Client Sample ID:	HA-3 (5-6)	Date Sampled:	05/12/22
Lab Sample ID:	FA95682-6	Date Received:	05/13/22
Matrix:	SO - Soil	Percent Solids:	n/a
Project:	CCCP Soil & ISCO Sampling; Crystal River, FL		

Metals Analysis, SPLP Leachate SW846 1312

Analyte	Result	MCL	PQL	MDL	Units	DF	Prep	Analyzed By	Method
Manganese	0.042		0.015	0.0010	mg/l	1	05/20/22	05/23/22 LM	SW846 6010D ¹

(1) Instrument QC Batch: MA18690
(2) Prep QC Batch: MP40724

PQL = Practical Quantitation Limit MDL = Method Detection Limit U = Indicates a result < MDL
MCL = Maximum Contamination Level (not available) I = Indicates a result > = MDL but < PQL

Report of Analysis

Client Sample ID:	HA-4 (1-2)	Date Sampled:	05/12/22
Lab Sample ID:	FA95682-7	Date Received:	05/13/22
Matrix:	SO - Soil	Percent Solids:	n/a
Project:	CCCP Soil & ISCO Sampling; Crystal River, FL		

Metals Analysis, SPLP Leachate SW846 1312

Analyte	Result	MCL	PQL	MDL	Units	DF	Prep	Analyzed By	Method
Manganese	0.0010 U		0.015	0.0010	mg/l	1	05/20/22	05/23/22 LM	SW846 6010D ¹

(1) Instrument QC Batch: MA18690
(2) Prep QC Batch: MP40724

PQL = Practical Quantitation Limit MDL = Method Detection Limit U = Indicates a result < MDL
MCL = Maximum Contamination Level (not available) I = Indicates a result > = MDL but < PQL

4.7
4

Report of Analysis

Client Sample ID:	HA-4 (3-4)	Date Sampled:	05/12/22
Lab Sample ID:	FA95682-8	Date Received:	05/13/22
Matrix:	SO - Soil	Percent Solids:	n/a
Project:	CCCP Soil & ISCO Sampling; Crystal River, FL		

Metals Analysis, SPLP Leachate SW846 1312

Analyte	Result	MCL	PQL	MDL	Units	DF	Prep	Analyzed By	Method
Manganese	0.0089 I		0.015	0.0010	mg/l	1	05/20/22	05/23/22 LM	SW846 6010D ¹

- (1) Instrument QC Batch: MA18690
(2) Prep QC Batch: MP40724

PQL = Practical Quantitation Limit MDL = Method Detection Limit U = Indicates a result < MDL
MCL = Maximum Contamination Level (not available) I = Indicates a result > = MDL but < PQL

Report of Analysis

Client Sample ID:	WW-SUMP-1	Date Sampled:	05/12/22
Lab Sample ID:	FA95682-9	Date Received:	05/13/22
Matrix:	AQ - Water	Percent Solids:	n/a
Project:	CCCP Soil & ISCO Sampling; Crystal River, FL		

Total Metals Analysis

Analyte	Result	PQL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Manganese	267	15	1.0	ug/l	1	05/25/22	05/26/22 LM	SW846 6010D ¹	SW846 3010A ²

(1) Instrument QC Batch: MA18701
(2) Prep QC Batch: MP40747

PQL = Practical Quantitation Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
I = Indicates a result > = MDL but < PQL

Report of Analysis

Client Sample ID:	WW-SUMP-1	Date Sampled:	05/12/22
Lab Sample ID:	FA95682-10	Date Received:	05/13/22
Matrix:	AQ - Water	Percent Solids:	n/a
Project:	CCCP Soil & ISCO Sampling; Crystal River, FL		

Total Metals Analysis

Analyte	Result	PQL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Manganese	295	15	1.0	ug/l	1	05/25/22	05/26/22 LM	SW846 6010D ¹	SW846 3010A ²

(1) Instrument QC Batch: MA18701
(2) Prep QC Batch: MP40747

PQL = Practical Quantitation Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
I = Indicates a result > = MDL but < PQL

4.10
4

Report of Analysis

Client Sample ID:	WW-SUMP-1	Date Sampled:	05/12/22
Lab Sample ID:	FA95682-11	Date Received:	05/13/22
Matrix:	AQ - Water	Percent Solids:	n/a
Project:	CCCP Soil & ISCO Sampling; Crystal River, FL		

Total Metals Analysis

Analyte	Result	PQL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Manganese	289	15	1.0	ug/l	1	05/25/22	05/26/22 LM	SW846 6010D ¹	SW846 3010A ²

(1) Instrument QC Batch: MA18701
(2) Prep QC Batch: MP40747

PQL = Practical Quantitation Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
I = Indicates a result > = MDL but < PQL

4.11
4

Report of Analysis

Client Sample ID:	WW-SUMP-1	Date Sampled:	05/12/22
Lab Sample ID:	FA95682-12	Date Received:	05/13/22
Matrix:	AQ - Water	Percent Solids:	n/a
Project:	CCCP Soil & ISCO Sampling; Crystal River, FL		

Total Metals Analysis

Analyte	Result	PQL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Manganese	285	15	1.0	ug/l	1	05/25/22	05/26/22 LM	SW846 6010D ¹	SW846 3010A ²

(1) Instrument QC Batch: MA18701
(2) Prep QC Batch: MP40747

PQL = Practical Quantitation Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
I = Indicates a result > = MDL but < PQL

4.12
4

Report of Analysis

Client Sample ID:	WW-SUMP-5	Date Sampled:	05/12/22
Lab Sample ID:	FA95682-13	Date Received:	05/13/22
Matrix:	AQ - Water	Percent Solids:	n/a
Project:	CCCP Soil & ISCO Sampling; Crystal River, FL		

Total Metals Analysis

Analyte	Result	PQL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Manganese	303	15	1.0	ug/l	1	05/25/22	05/26/22 LM	SW846 6010D ¹	SW846 3010A ²

(1) Instrument QC Batch: MA18701
(2) Prep QC Batch: MP40747

PQL = Practical Quantitation Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
I = Indicates a result > = MDL but < PQL

Report of Analysis

Client Sample ID:	WW-SUMP-6	Date Sampled:	05/12/22
Lab Sample ID:	FA95682-14	Date Received:	05/13/22
Matrix:	AQ - Water	Percent Solids:	n/a
Project:	CCCP Soil & ISCO Sampling; Crystal River, FL		

Total Metals Analysis

Analyte	Result	PQL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Manganese	337	15	1.0	ug/l	1	05/25/22	05/26/22 LM	SW846 6010D ¹	SW846 3010A ²

(1) Instrument QC Batch: MA18701
(2) Prep QC Batch: MP40747

PQL = Practical Quantitation Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
I = Indicates a result > = MDL but < PQL

4.14
4

Report of Analysis

Client Sample ID:	WW-SUMP-7	Date Sampled:	05/12/22
Lab Sample ID:	FA95682-15	Date Received:	05/13/22
Matrix:	AQ - Water	Percent Solids:	n/a
Project:	CCCP Soil & ISCO Sampling; Crystal River, FL		

Total Metals Analysis

Analyte	Result	PQL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Manganese	333	15	1.0	ug/l	1	05/25/22	05/26/22 LM	SW846 6010D ¹	SW846 3010A ²

(1) Instrument QC Batch: MA18701
(2) Prep QC Batch: MP40747

PQL = Practical Quantitation Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
I = Indicates a result > = MDL but < PQL

4.15
4

Report of Analysis

Client Sample ID:	WW-SUMP-8	Date Sampled:	05/12/22
Lab Sample ID:	FA95682-16	Date Received:	05/13/22
Matrix:	AQ - Water	Percent Solids:	n/a
Project:	CCCP Soil & ISCO Sampling; Crystal River, FL		

Total Metals Analysis

Analyte	Result	PQL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Manganese	313	15	1.0	ug/l	1	05/26/22	05/27/22 LM	SW846 6010D ¹	SW846 3010A ²

(1) Instrument QC Batch: MA18704
(2) Prep QC Batch: MP40749

PQL = Practical Quantitation Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
I = Indicates a result > = MDL but < PQL

4.16
4

Report of Analysis

Client Sample ID:	WW-SUMP-9	Date Sampled:	05/12/22
Lab Sample ID:	FA95682-17	Date Received:	05/13/22
Matrix:	AQ - Water	Percent Solids:	n/a
Project:	CCCP Soil & ISCO Sampling; Crystal River, FL		

Total Metals Analysis

Analyte	Result	PQL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Manganese	279	15	1.0	ug/l	1	05/26/22	05/27/22 LM	SW846 6010D ¹	SW846 3010A ²

(1) Instrument QC Batch: MA18704
(2) Prep QC Batch: MP40749

PQL = Practical Quantitation Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
I = Indicates a result > = MDL but < PQL

4.17
4

Report of Analysis

Client Sample ID:	WW-SUMP-10	Date Sampled:	05/12/22
Lab Sample ID:	FA95682-18	Date Received:	05/13/22
Matrix:	AQ - Water	Percent Solids:	n/a
Project:	CCCP Soil & ISCO Sampling; Crystal River, FL		

Total Metals Analysis

Analyte	Result	PQL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Manganese	275	15	1.0	ug/l	1	05/26/22	05/27/22 LM	SW846 6010D ¹	SW846 3010A ²

(1) Instrument QC Batch: MA18704
(2) Prep QC Batch: MP40749

PQL = Practical Quantitation Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
I = Indicates a result > = MDL but < PQL

Report of Analysis

Client Sample ID:	WW-SUMP-11	Date Sampled:	05/12/22
Lab Sample ID:	FA95682-19	Date Received:	05/13/22
Matrix:	AQ - Water	Percent Solids:	n/a
Project:	CCCP Soil & ISCO Sampling; Crystal River, FL		

Total Metals Analysis

Analyte	Result	PQL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Manganese	278	15	1.0	ug/l	1	05/26/22	05/27/22 LM	SW846 6010D ¹	SW846 3010A ²

(1) Instrument QC Batch: MA18704
(2) Prep QC Batch: MP40749

PQL = Practical Quantitation Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
I = Indicates a result > = MDL but < PQL

4.19
4

Report of Analysis

Client Sample ID:	WW-SUMP-12	Date Sampled:	05/12/22
Lab Sample ID:	FA95682-20	Date Received:	05/13/22
Matrix:	AQ - Water	Percent Solids:	n/a
Project:	CCCP Soil & ISCO Sampling; Crystal River, FL		

Total Metals Analysis

Analyte	Result	PQL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Manganese	413	15	1.0	ug/l	1	05/26/22	05/27/22 LM	SW846 6010D ¹	SW846 3010A ²

(1) Instrument QC Batch: MA18704
(2) Prep QC Batch: MP40749

PQL = Practical Quantitation Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
I = Indicates a result > = MDL but < PQL

4.20
4

Report of Analysis

Client Sample ID:	WW-SUMP-13	Date Sampled:	05/12/22
Lab Sample ID:	FA95682-21	Date Received:	05/13/22
Matrix:	AQ - Water	Percent Solids:	n/a
Project:	CCCP Soil & ISCO Sampling; Crystal River, FL		

Total Metals Analysis

Analyte	Result	PQL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Manganese	355	15	1.0	ug/l	1	05/26/22	05/27/22 LM	SW846 6010D ¹	SW846 3010A ²

(1) Instrument QC Batch: MA18704
(2) Prep QC Batch: MP40749

PQL = Practical Quantitation Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
I = Indicates a result > = MDL but < PQL

4.21
4

Report of Analysis

Client Sample ID:	WW-SUMP-14	Date Sampled:	05/12/22
Lab Sample ID:	FA95682-22	Date Received:	05/13/22
Matrix:	AQ - Water	Percent Solids:	n/a
Project:	CCCP Soil & ISCO Sampling; Crystal River, FL		

Total Metals Analysis

Analyte	Result	PQL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Manganese	363	15	1.0	ug/l	1	05/26/22	05/27/22 LM	SW846 6010D ¹	SW846 3010A ²

(1) Instrument QC Batch: MA18704
(2) Prep QC Batch: MP40749

PQL = Practical Quantitation Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
I = Indicates a result > = MDL but < PQL

4.22
4

Report of Analysis

Client Sample ID:	WW-SUMP-15	Date Sampled:	05/13/22
Lab Sample ID:	FA95682-23	Date Received:	05/13/22
Matrix:	AQ - Water	Percent Solids:	n/a
Project:	CCCP Soil & ISCO Sampling; Crystal River, FL		

Total Metals Analysis

Analyte	Result	PQL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Manganese	312	15	1.0	ug/l	1	05/26/22	05/27/22 LM	SW846 6010D ¹	SW846 3010A ²

(1) Instrument QC Batch: MA18704
(2) Prep QC Batch: MP40749

PQL = Practical Quantitation Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
I = Indicates a result > = MDL but < PQL

4.23
4

Report of Analysis

Client Sample ID:	WW-SUMP-16	Date Sampled:	05/13/22
Lab Sample ID:	FA95682-24	Date Received:	05/13/22
Matrix:	AQ - Water	Percent Solids:	n/a
Project:	CCCP Soil & ISCO Sampling; Crystal River, FL		

Total Metals Analysis

Analyte	Result	PQL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Manganese	285	15	1.0	ug/l	1	05/26/22	05/27/22 LM	SW846 6010D ¹	SW846 3010A ²

(1) Instrument QC Batch: MA18704
(2) Prep QC Batch: MP40749

PQL = Practical Quantitation Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
I = Indicates a result > = MDL but < PQL

4.24
4

Report of Analysis

Client Sample ID:	WW-SUMP-17	Date Sampled:	05/13/22
Lab Sample ID:	FA95682-25	Date Received:	05/13/22
Matrix:	AQ - Water	Percent Solids:	n/a
Project:	CCCP Soil & ISCO Sampling; Crystal River, FL		

Total Metals Analysis

Analyte	Result	PQL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Manganese	281	15	1.0	ug/l	1	05/26/22	05/27/22 LM	SW846 6010D ¹	SW846 3010A ²

(1) Instrument QC Batch: MA18704
(2) Prep QC Batch: MP40749

PQL = Practical Quantitation Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
I = Indicates a result > = MDL but < PQL

4.25
4

Report of Analysis

Client Sample ID:	WW-SUMP-18	Date Sampled:	05/13/22
Lab Sample ID:	FA95682-26	Date Received:	05/13/22
Matrix:	AQ - Water	Percent Solids:	n/a
Project:	CCCP Soil & ISCO Sampling; Crystal River, FL		

Total Metals Analysis

Analyte	Result	PQL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Manganese	315	15	1.0	ug/l	1	05/26/22	05/27/22 LM	SW846 6010D ¹	SW846 3010A ²

(1) Instrument QC Batch: MA18704
(2) Prep QC Batch: MP40749

PQL = Practical Quantitation Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
I = Indicates a result > = MDL but < PQL

4.26
4

Report of Analysis

Client Sample ID:	WW-SUMP-19	Date Sampled:	05/13/22
Lab Sample ID:	FA95682-27	Date Received:	05/13/22
Matrix:	AQ - Water	Percent Solids:	n/a
Project:	CCCP Soil & ISCO Sampling; Crystal River, FL		

Total Metals Analysis

Analyte	Result	PQL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Manganese	299	15	1.0	ug/l	1	05/26/22	05/27/22 LM	SW846 6010D ¹	SW846 3010A ²

(1) Instrument QC Batch: MA18704
(2) Prep QC Batch: MP40749

PQL = Practical Quantitation Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
I = Indicates a result > = MDL but < PQL

4.27
4

Report of Analysis

Client Sample ID:	WW-SUMP-20	Date Sampled:	05/13/22
Lab Sample ID:	FA95682-28	Date Received:	05/13/22
Matrix:	AQ - Water	Percent Solids:	n/a
Project:	CCCP Soil & ISCO Sampling; Crystal River, FL		

Total Metals Analysis

Analyte	Result	PQL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Manganese	259	15	1.0	ug/l	1	05/26/22	05/27/22 LM	SW846 6010D ¹	SW846 3010A ²

(1) Instrument QC Batch: MA18704
(2) Prep QC Batch: MP40749

PQL = Practical Quantitation Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
I = Indicates a result > = MDL but < PQL

4.28
4

Report of Analysis

Client Sample ID:	WW-SUMP-21	Date Sampled:	05/13/22
Lab Sample ID:	FA95682-29	Date Received:	05/13/22
Matrix:	AQ - Water	Percent Solids:	n/a
Project:	CCCP Soil & ISCO Sampling; Crystal River, FL		

Total Metals Analysis

Analyte	Result	PQL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Manganese	260	15	1.0	ug/l	1	05/26/22	05/27/22 LM	SW846 6010D ¹	SW846 3010A ²

(1) Instrument QC Batch: MA18704
(2) Prep QC Batch: MP40749

PQL = Practical Quantitation Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
I = Indicates a result > = MDL but < PQL

Report of Analysis

Client Sample ID:	WW-SUMP-22	Date Sampled:	05/13/22
Lab Sample ID:	FA95682-30	Date Received:	05/13/22
Matrix:	AQ - Water	Percent Solids:	n/a
Project:	CCCP Soil & ISCO Sampling; Crystal River, FL		

Total Metals Analysis

Analyte	Result	PQL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Manganese	232	15	1.0	ug/l	1	05/26/22	05/27/22 LM	SW846 6010D ¹	SW846 3010A ²

(1) Instrument QC Batch: MA18704
(2) Prep QC Batch: MP40749

PQL = Practical Quantitation Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
I = Indicates a result > = MDL but < PQL

4.30
4

Report of Analysis

Client Sample ID:	WW-SUMP-23	Date Sampled:	05/13/22
Lab Sample ID:	FA95682-31	Date Received:	05/13/22
Matrix:	AQ - Water	Percent Solids:	n/a
Project:	CCCP Soil & ISCO Sampling; Crystal River, FL		

Total Metals Analysis

Analyte	Result	PQL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Manganese	247	15	1.0	ug/l	1	05/26/22	05/27/22 LM	SW846 6010D ¹	SW846 3010A ²

(1) Instrument QC Batch: MA18704
(2) Prep QC Batch: MP40749

PQL = Practical Quantitation Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
I = Indicates a result > = MDL but < PQL

Report of Analysis

Client Sample ID:	WW-SUMP-24	Date Sampled:	05/13/22
Lab Sample ID:	FA95682-32	Date Received:	05/13/22
Matrix:	AQ - Water	Percent Solids:	n/a
Project:	CCCP Soil & ISCO Sampling; Crystal River, FL		

Total Metals Analysis

Analyte	Result	PQL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Manganese	213	15	1.0	ug/l	1	05/26/22	05/27/22 LM	SW846 6010D ¹	SW846 3010A ²

(1) Instrument QC Batch: MA18704
(2) Prep QC Batch: MP40749

PQL = Practical Quantitation Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
I = Indicates a result > = MDL but < PQL

4.32
4

Misc. Forms

5

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

FA95682

Client / Reporting Information				Project Information				Analytical Information												Matrix Codes					
Company Name: <u>Geosyntec</u>				Project Name: <u>CCCP Soil and ISCO sampling</u>																DW - Drinking Water					
Address: <u>19321 US Highway 19 N Building C, Suite 200</u>				Street																GW - Ground Water					
City: <u>Clearwater</u> State: <u>FL</u> Zip: <u>33764</u>				City: <u>Crystal River</u> State: <u>FL</u>																WW - Waster					
Project Contact: <u>Daniel Montiel</u> Email: <u>dmontiel@geosyntec.com</u>				Project # <u>PO # 100036736</u>																SW - Surface Water					
Phone #: <u>727-253-9423</u>				Fax #																SO - Soil					
Sampler(s) Name(s) (Printed)				Client Purchase Order #																SL - Sludge					
Sampler 1: <u>Daniel Montiel</u> Sampler 2:																				OI - Oil					
				COLLECTION				CONTAINER INFORMATION												LIQ - Other Liquid					
SGS Orlando Sample #				Field ID / Point of Collection				DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	KCl	NaOH	HNO3	H2SO4	NH4OH/ZnAc	D/WATER	MEOH		LAB USE ONLY		
1				HA-1 (1-2)				5/12/22	1132	DM	SO	1			X										
2				HA-1 (6-7)					1158			1													
3				HA-2 (1-2)					1217			1													
4				HA-2 (6-7)					1240			1													
5				HA-3 (1-2)					1310			1													
6				HA-3 (5-6)					1345			1													
7				HA-4 (1-2)					1105			1													
8				HA-4 (3-4)					1110			1													
9				WW-Sump-1					1025	WW		1													
10				WW-Sump-2					1125			1													
11				WW-Sump-3					1225			1													
12				WW-Sump-4					1325			1													
Turnaround Time (Business days)				Data Deliverable Information				Comments / Remarks																	
10 Day (Business)				Approved By / Date:				☐ COMMERCIAL "A" (RESULTS ONLY)												Samples represented Lab needs to preserve upon receipt.					
7 Day								☐ COMMERCIAL "B" (RESULTS PLUS QC)																	
5 Day								☐ REDT1 (EPA LEVEL 3)																	
3 Day RUSH								☐ FULLT1 (EPA LEVEL 4)																	
2 Day RUSH								☐ EDD'S																	
1 Day RUSH																									
Other																									
Rush T/A Data Available VIA Email or Lablink				Sample Custody must be documented below each time samples change possession, including courier delivery.																					
Relinquished by Sampler/Affiliation				Date Time:				Received By/Affiliation				Date Time:				Received By/Affiliation									
Daniel Montiel/Geosyntec				5/13/22 1530				[Signature]				5/13/22				5/13/22									
Relinquished by/Affiliation				Date Time:				Received By/Affiliation				Date Time:				Received By/Affiliation									
																4 hui mi 1628									
5								6				7				8									
Lab Use Only : Cooler Temperature (s) Celsius (corrected): <u>3.6°C 24°C</u>																http://www.sgs.com/en/terms-and-conditions									

5.

FA95682: Chain of Custody

Page 1 of 5



SGS North America Inc - Orlando

Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, FL 32811
TEL: 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB #:

PAGE 2 OF 3

FA95682

SGS - ORLANDO Quote #

SKIFF #

Client / Reporting Information			Project Information			Analytical Information										Matrix Codes
Company Name: <u>Geosyntec</u>			Project Name: <u>CCCP Soil and TSC sampling</u>													DW - Drinking Water
Address: <u>19321 US Highway 19 N Bldg C, Suite 200</u>			Street													GW - Ground Water
City: <u>Clearwater</u> State: <u>FL</u> Zip: <u>33764</u>			City: <u>Crystal River</u> State: <u>FL</u>													WW - Water
Project Contact: <u>Daniel Manziel</u> Email: <u>dmanziel@geosyntec.com</u>			Project #													SW - Surface Water
Phone #: <u>727-253-9423</u>			Fax #													SO - Soil
Sampler(s) Name(s) (Printed):			Client Purchase Order # <u>PO # 100036736</u>													SL - Sludge
Sampler 1: <u>Daniel Manziel</u> Sampler 2:																OI - Oil
SGS Orlando Sample #	Field ID / Point of Collection	DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NaOH-ZnAc	DI WATER	MEDH	LAB USE ONLY
13	WW-Sump-5	5/12/22	1425	DM	WW	1				X						
14	WW-Sump-6		1525													
15	WW-Sump-7		1625													
16	WW-Sump-8		1725													
17	WW-Sump-9		1825													
18	WW-Sump-10		1925													
19	WW-Sump-11		2025													
20	WW-Sump-12		2125													
21	WW-Sump-13		2225													
22	WW-Sump-14		2325													
23	WW-Sump-15	5/13/22	0025													
24	WW-Sump-16		0125													
Turnaround Time (Business days)			Data Deliverable Information			Comments / Remarks										
10 Day (Business) Approved By: / Date:			☐ COMMERCIAL "A" (RESULTS ONLY)			Samples unpreserved. Lab needs to preserve upon receipt.										
7 Day			☐ COMMERCIAL "B" (RESULTS PLUS QC)													
5 Day			☐ REDT1 (EPA LEVEL 3)													
3 Day RUSH			☐ FULLT1 (EPA LEVEL 4)													
2 Day RUSH			☐ EDD'S													
1 Day RUSH																
Other																
Rush T/A Data Available VIA Email or Lablink			Sample Custody must be documented below each time samples change possession, including courier delivery.													
Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation											
1 Daniel Manziel/Geosyntec	5/13/22 1330	2	3	5/13/22	4											
Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation											
5		6	7		8											

Lab Use Only : Cooler Temperature (s) Celsius (corrected):

http://www.sgs.com/en/terms-and-conditions

ORLD-SMT-0001-03-FORM-COC (4).xls Rev 031318

FA95682: Chain of Custody

Page 2 of 5



FA95682

[illegible]

ORLD-SMT-0001-03-FORM-COC (4).xls Rev 031318

<http://www.sgs.com/en/terms-and-conditions>

FA95682: Chain of Custody

Page 3 of 5

SGS Sample Receipt Summary

Job Number: FA95682

Client: GEOSYNTEC

Project: CCCP SOIL AND ISCO SAMPLING

Date / Time Received: 5/13/2022 4:28:00 PM

Delivery Method: COURIER

Airbill #s:
Therm ID: IR 1;

Therm CF: 0.4;

of Coolers: 2

Cooler Temps (Raw Measured) °C: Cooler 1: (3.6); Cooler 2: (2.4);

Cooler Temps (Corrected) °C: Cooler 1: (4.0); Cooler 2: (2.8);

Cooler Information
Y or N

- | | | |
|-----------------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present | ☒ | ☐ |
| 2. Custody Seals Intact | ☒ | ☐ |
| 3. Temp criteria achieved | ☒ | ☐ |
| 4. Cooler temp verification | IR Gun | |
| 5. Cooler media | Ice (Bag) | |

Trip Blank Information
Y or N
N/A

- | | | | |
|--------------------------------|--------------------------|--------------------------|-------------------------------------|
| 1. Trip Blank present / cooler | ☐ | ☐ | ☒ |
| 2. Trip Blank listed on COC | ☐ | ☐ | ☒ |
| | W or S | | N/A |
| 3. Type Of TB Received | ☐ | ☐ | ☒ |

Sample Information
Y or N
N/A

- | | | | |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Sample labels present on bottles | ☒ | ☐ | |
| 2. Samples preserved properly | ☒ | ☐ | |
| 3. Sufficient volume/containers recvd for analysis: | ☒ | ☐ | |
| 4. Condition of sample | Intact | | |
| 5. Sample recvd within HT | ☒ | ☐ | |
| 6. Dates/Times/IDs on COC match Sample Label | ☒ | ☐ | |
| 7. VOCs have headspace | ☐ | ☐ | ☒ |
| 8. Bottles received for unspecified tests | ☐ | ☒ | |
| 9. Compositing instructions clear | ☐ | ☐ | ☒ |
| 10. Voa Soil Kits/Jars received past 48hrs? | ☐ | ☐ | ☒ |
| 11. % Solids Jar received? | ☐ | ☐ | ☒ |
| 12. Residual Chlorine Present? | ☐ | ☐ | ☒ |

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____

Number of 5035 Field Kits: _____

Number of Lab Filtered Metals: _____

Test Strip Lot #s: pH 0-3 _____ 230315

pH 10-12 _____ 219813A

Other: (Specify) _____

Residual Chlorine Test Strip Lot #: _____

Comments NO INFORMATION GIVEN IN "ANALYSIS" SECTION OF COC.
 WE RECEIVED ONE 8oz JAR THAT WAS MARKED ON THE LABEL FOR "SPLPE" ANALYSIS FOR SAMPLES #1, ID: "HA-1 (1-2)" THROUGH SAMPLE #8, ID: "HA-4 (3-4)".
 WE RECEIVED ONE 250 mL PLASTIC BOTTLE THAT WAS MARKED ON THE LABEL FOR "MN (LAB FILTERED)" ANALYSIS FOR SAMPLES #9, ID: "WW-SUMP-1" THROUGH SAMPLE #32, ID: "WW-SUMP-24".

 ACCORDING TO "COMMENTS" SECTION OF COC/PROJECT MANAGER, THE BOTTLES FOR MN ANALYSIS ONLY NEED TO BE PRESERVED IN THE LAB, NOT FILTERED.

Technician: SAMUELM

Date: 5/13/2022 4:28:00 PM

Reviewer: _____

Date: _____

 SM001
 Rev. Date 05/24/17

FA95682: Chain of Custody

Page 4 of 5

CSR: Kelly Blanchard

Response Date: 5/17/2022

Response: Per client Matt Gozdor, all aqueous samples should be lab-preserved but NOT filtered. Analysis is total MN only.
All soil samples analyze for SPLP MN.

5.1

5

SM001
Rev. Date 05/24/17

FA95682: Chain of Custody
Page 5 of 5

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: FA95682
Account: GSYFLC - Geosyntec Consultants
Project: CCCP Soil & ISCO Sampling; Crystal River, FL

QC Batch ID: MP40724
Matrix Type: LEACHATE

Methods: SW846 6010D
Units: mg/l

Prep Date: 05/20/22 05/20/22

Metal	RL	IDL	MDL	MB raw	final	MB raw	final
Aluminum	0.20	.014	.014				
Antimony	0.0060	.001	.001				
Arsenic	0.010	.0013	.0013				
Barium	0.20	.0005	.005				
Beryllium	0.0040	.0001	.0002				
Cadmium	0.0050	.0001	.0002				
Calcium	1.0	.05	.05				
Chromium	0.010	.0005	.001				
Cobalt	0.050	.0002	.0002				
Copper	0.025	.001	.001				
Iron	0.30	.015	.017				
Lead	0.0050	.001	.0011				
Magnesium	5.0	.035	.035				
Manganese	0.015	.00025	.001	-0.00010	<0.015	-0.00010	<0.015
Molybdenum	0.050	.0003	.0003				
Nickel	0.040	.0004	.0004				
Potassium	10	.1	.2				
Selenium	0.010	.002	.0029				
Silver	0.010	.0005	.0007				
Sodium	10	.25	.5				
Strontium	0.010	.00025	.0005				
Thallium	0.010	.001	.0014				
Tin	0.050	.0005	.001				
Titanium	0.010	.0005	.001				
Vanadium	0.050	.0005	.0006				
Zinc	0.020	.003	.01				

Associated samples MP40724: FA95682-1, FA95682-2, FA95682-3, FA95682-4, FA95682-5, FA95682-6, FA95682-7, FA95682-8

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FA95682
 Account: GSYFLC - Geosyntec Consultants
 Project: CCCP Soil & ISCO Sampling; Crystal River, FL

QC Batch ID: MP40724
 Matrix Type: LEACHATE

Methods: SW846 6010D
 Units: mg/l

Prep Date: 05/20/22 05/20/22

Metal	FA95682-2 Original DUP		RPD	QC Limits	FA95682-2 Original MS		Spikelot MPFLICP2 % Rec		QC Limits
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese	0.019	0.019	0.0	0-20	0.019	0.48	0.50	92.2	80-120
Molybdenum									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Strontium									
Thallium									
Tin									
Titanium									
Vanadium									
Zinc									

Associated samples MP40724: FA95682-1, FA95682-2, FA95682-3, FA95682-4, FA95682-5, FA95682-6, FA95682-7, FA95682-8

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FA95682
 Account: GSYFLC - Geosyntec Consultants
 Project: CCCP Soil & ISCO Sampling; Crystal River, FL

QC Batch ID: MP40724
 Matrix Type: LEACHATE

Methods: SW846 6010D
 Units: mg/l

Prep Date: 05/20/22 05/20/22

Metal	FA95682-2 Original MSD		SpikeLot MPFLICP2 % Rec		MSD RPD	QC Limit	FA95682-1 Original DUP		RPD	QC Limits
Aluminum										
Antimony										
Arsenic										
Barium										
Beryllium										
Cadmium										
Calcium										
Chromium										
Cobalt										
Copper										
Iron										
Lead										
Magnesium										
Manganese	0.019	0.48	0.50	92.2	0.0	20	0.0097	0.0083	15.6	0-20
Molybdenum										
Nickel										
Potassium										
Selenium										
Silver										
Sodium										
Strontium										
Thallium										
Tin										
Titanium										
Vanadium										
Zinc										

Associated samples MP40724: FA95682-1, FA95682-2, FA95682-3, FA95682-4, FA95682-5, FA95682-6, FA95682-7, FA95682-8

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: FA95682
 Account: GSYFLC - Geosyntec Consultants
 Project: CCCP Soil & ISCO Sampling; Crystal River, FL

QC Batch ID: MP40724
 Matrix Type: LEACHATE

Methods: SW846 6010D
 Units: mg/l

Prep Date: 05/20/22 05/20/22

Metal	BSP Result	SpikeLot MPFLICP2	% Rec	QC Limits	BSP Result	SpikeLot MPFLICP2	% Rec	QC Limits
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Magnesium								
Manganese	0.56	0.50	112.0	80-120	0.56	0.50	112.0	80-120
Molybdenum								
Nickel								
Potassium								
Selenium								
Silver								
Sodium								
Strontium								
Thallium								
Tin								
Titanium								
Vanadium								
Zinc								

Associated samples MP40724: FA95682-1, FA95682-2, FA95682-3, FA95682-4, FA95682-5, FA95682-6, FA95682-7, FA95682-8

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: FA95682
 Account: GSYFLC - Geosyntec Consultants
 Project: CCCP Soil & ISCO Sampling; Crystal River, FL

QC Batch ID: MP40724
 Matrix Type: LEACHATE

Methods: SW846 6010D
 Units: ug/l

Prep Date: 05/20/22

Metal	FA95682-2 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Magnesium				
Manganese	19.0	21.3	12.1*(a)	0-10
Molybdenum				
Nickel				
Potassium				
Selenium				
Silver				
Sodium				
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc				

Associated samples MP40724: FA95682-1, FA95682-2, FA95682-3, FA95682-4, FA95682-5, FA95682-6, FA95682-7, FA95682-8

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested
 (a) Serial dilution indicates possible matrix interference.

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: FA95682
Account: GSYFLC - Geosyntec Consultants
Project: CCCP Soil & ISCO Sampling; Crystal River, FL

QC Batch ID: MP40747
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 05/25/22

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	14	14		
Antimony	6.0	1	1		
Arsenic	10	1.3	1.3		
Barium	200	.5	1		
Beryllium	4.0	.1	.2		
Cadmium	5.0	.1	.2		
Calcium	1000	50	50		
Chromium	10	.5	1		
Cobalt	50	.2	.2		
Copper	25	1	1		
Iron	300	15	17		
Lead	5.0	1	1.1		
Magnesium	5000	35	35		
Manganese	15	.25	1	0.10	<15
Molybdenum	50	.3	.3		
Nickel	40	.4	.4		
Potassium	10000	100	200		
Selenium	10	2	2.9		
Silver	10	.5	.7		
Sodium	10000	250	500		
Strontium	10	.25	.5		
Thallium	10	1	1.4		
Tin	50	.5	1		
Titanium	10	.5	1		
Vanadium	50	.5	.6		
Zinc	20	3	4.4		

Associated samples MP40747: FA95682-9, FA95682-10, FA95682-11, FA95682-12, FA95682-13, FA95682-14, FA95682-15

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FA95682
 Account: GSYFLC - Geosyntec Consultants
 Project: CCCP Soil & ISCO Sampling; Crystal River, FL

QC Batch ID: MP40747
 Matrix Type: AQUEOUS

Methods: SW846 6010D
 Units: ug/l

Prep Date:

05/25/22

05/25/22

Metal	FA95643-5 Original	DUP	RPD	QC Limits	FA95643-5 Original	MS	Spikelot MPFLICP2	% Rec	QC Limits
Aluminum	anr								
Antimony	anr								
Arsenic	anr								
Barium	anr								
Beryllium	anr								
Cadmium	anr								
Calcium	anr								
Chromium	anr								
Cobalt	anr								
Copper	anr								
Iron	anr								
Lead	anr								
Magnesium	anr								
Manganese	123	126	2.4	0-20	123	607	500	96.8	80-120
Molybdenum	anr								
Nickel	anr								
Potassium	anr								
Selenium	anr								
Silver	anr								
Sodium	anr								
Strontium									
Thallium	anr								
Tin	anr								
Titanium									
Vanadium	anr								
Zinc	anr								

Associated samples MP40747: FA95682-9, FA95682-10, FA95682-11, FA95682-12, FA95682-13, FA95682-14, FA95682-15

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FA95682
 Account: GSYFLC - Geosyntec Consultants
 Project: CCCP Soil & ISCO Sampling; Crystal River, FL

QC Batch ID: MP40747
 Matrix Type: AQUEOUS

Methods: SW846 6010D
 Units: ug/l

Prep Date: 05/25/22

Metal	FA95643-5 Original MSD	Spike lot MPFLICP2 % Rec	MSD RPD	QC Limit
Aluminum	anr			
Antimony	anr			
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Cadmium	anr			
Calcium	anr			
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	anr			
Magnesium	anr			
Manganese	123	604	500	96.2
Molybdenum	anr			
Nickel	anr			
Potassium	anr			
Selenium	anr			
Silver	anr			
Sodium	anr			
Strontium				
Thallium	anr			
Tin	anr			
Titanium				
Vanadium	anr			
Zinc	anr			

Associated samples MP40747: FA95682-9, FA95682-10, FA95682-11, FA95682-12, FA95682-13, FA95682-14, FA95682-15

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: FA95682
 Account: GSYFLC - Geosyntec Consultants
 Project: CCCP Soil & ISCO Sampling; Crystal River, FL

QC Batch ID: MP40747
 Matrix Type: AQUEOUS

Methods: SW846 6010D
 Units: ug/l

Prep Date: 05/25/22 05/25/22

Metal	BSP Result	SpikeLot MPFLICP2	% Rec	QC Limits	BSP Result	SpikeLot MPFLICP2	% Rec	QC Limits
Aluminum	anr							
Antimony	anr							
Arsenic	anr							
Barium	anr							
Beryllium	anr							
Cadmium	anr							
Calcium	anr							
Chromium	anr							
Cobalt	anr							
Copper	anr							
Iron	anr							
Lead	anr							
Magnesium	anr							
Manganese	495	500	99.0	80-120	517	500	103.4	80-120
Molybdenum	anr							
Nickel	anr							
Potassium	anr							
Selenium	anr							
Silver	anr							
Sodium	anr							
Strontium								
Thallium	anr							
Tin	anr							
Titanium								
Vanadium	anr							
Zinc	anr							

Associated samples MP40747: FA95682-9, FA95682-10, FA95682-11, FA95682-12, FA95682-13, FA95682-14, FA95682-15

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: FA95682
 Account: GSYFLC - Geosyntec Consultants
 Project: CCCP Soil & ISCO Sampling; Crystal River, FL

QC Batch ID: MP40747
 Matrix Type: AQUEOUS

Methods: SW846 6010D
 Units: ug/l

Prep Date: 05/25/22 05/25/22

Metal	BSP Result	SpikeLot MPFLICP2	% Rec	QC Limits	BSP Result	SpikeLot MPFLICP2	% Rec	QC Limits
Aluminum	anr							
Antimony	anr							
Arsenic	anr							
Barium	anr							
Beryllium	anr							
Cadmium	anr							
Calcium	anr							
Chromium	anr							
Cobalt	anr							
Copper	anr							
Iron	anr							
Lead	anr							
Magnesium	anr							
Manganese	515	500	103.0	80-120	514	500	102.8	80-120
Molybdenum	anr							
Nickel	anr							
Potassium	anr							
Selenium	anr							
Silver	anr							
Sodium	anr							
Strontium								
Thallium	anr							
Tin	anr							
Titanium								
Vanadium	anr							
Zinc	anr							

Associated samples MP40747: FA95682-9, FA95682-10, FA95682-11, FA95682-12, FA95682-13, FA95682-14, FA95682-15

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: FA95682
 Account: GSYFLC - Geosyntec Consultants
 Project: CCCP Soil & ISCO Sampling; Crystal River, FL

QC Batch ID: MP40747
 Matrix Type: AQUEOUS

Methods: SW846 6010D
 Units: ug/l

Prep Date: 05/25/22

Metal	FA95643-5 Original	SDL 1:5	%DIF	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Cadmium	anr			
Calcium	anr			
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	anr			
Magnesium	anr			
Manganese	123	122	0.4	0-10
Molybdenum	anr			
Nickel	anr			
Potassium	anr			
Selenium	anr			
Silver	anr			
Sodium	anr			
Strontium				
Thallium	anr			
Tin	anr			
Titanium				
Vanadium	anr			
Zinc	anr			

Associated samples MP40747: FA95682-9, FA95682-10, FA95682-11, FA95682-12, FA95682-13, FA95682-14, FA95682-15

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

POST DIGESTATE SPIKE SUMMARY

Login Number: FA95682
 Account: GSYFLC - Geosyntec Consultants
 Project: CCCP Soil & ISCO Sampling; Crystal River, FL

QC Batch ID: MP40747
 Matrix Type: AQUEOUS

Methods: SW846 6010D
 Units: ug/l

Prep Date:

05/25/22

Metal	Sample ml	Final ml	FA95643-5 Raw	PS Corr.** ug/l	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
Aluminum										
Antimony										
Arsenic										
Barium										
Beryllium										
Cadmium										
Calcium										
Chromium										
Cobalt										
Copper										
Iron										
Lead										
Magnesium										
Manganese	9.8	10	122.8	120.344	168.2	0.2	2.5	50	95.7	80-120
Molybdenum										
Nickel										
Potassium										
Selenium										
Silver										
Sodium										
Strontium										
Thallium										
Tin										
Titanium										
Vanadium										
Zinc										

Associated samples MP40747: FA95682-9, FA95682-10, FA95682-11, FA95682-12, FA95682-13, FA95682-14, FA95682-15

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (**) Corr. sample result = Raw * (sample volume / final volume)
 (anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: FA95682
Account: GSYFLC - Geosyntec Consultants
Project: CCCP Soil & ISCO Sampling; Crystal River, FL

QC Batch ID: MP40749
Matrix Type: AQUEOUS

Methods: SW846 6010D
Units: ug/l

Prep Date: 05/26/22 05/26/22

Metal	RL	IDL	MDL	MB raw	final	MB raw	final
Aluminum	200	14	14				
Antimony	6.0	1	1				
Arsenic	10	1.3	1.3				
Barium	200	.5	1				
Beryllium	4.0	.1	.2				
Cadmium	5.0	.1	.2				
Calcium	1000	50	50				
Chromium	10	.5	1				
Cobalt	50	.2	.2				
Copper	25	1	1				
Iron	300	15	17				
Lead	5.0	1	1.1				
Magnesium	5000	35	35				
Manganese	15	.25	1	0.10	<15	0.30	<15
Molybdenum	50	.3	.3				
Nickel	40	.4	.4				
Potassium	10000	100	200				
Selenium	10	2	2.9				
Silver	10	.5	.7				
Sodium	10000	250	500				
Strontium	10	.25	.5				
Thallium	10	1	1.4				
Tin	50	.5	1				
Titanium	10	.5	1				
Vanadium	50	.5	.6				
Zinc	20	3	4.4				

Associated samples MP40749: FA95682-16, FA95682-17, FA95682-18, FA95682-19, FA95682-20, FA95682-21, FA95682-22, FA95682-23, FA95682-24, FA95682-25, FA95682-26, FA95682-27, FA95682-28, FA95682-29, FA95682-30, FA95682-31, FA95682-32

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FA95682
 Account: GSYFLC - Geosyntec Consultants
 Project: CCCP Soil & ISCO Sampling; Crystal River, FL

QC Batch ID: MP40749
 Matrix Type: AQUEOUS

Methods: SW846 6010D
 Units: ug/l

Prep Date: 05/26/22 05/26/22

Metal	FA95685-1F Original DUP	RPD	QC Limits	FA95685-1F Original MS	Spikelot MPFLICP2 % Rec	QC Limits
Aluminum	anr					
Antimony	anr					
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Cadmium	anr					
Calcium	anr					
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	anr					
Magnesium	anr					
Manganese	7.0 6.9 (a)	1.4	0-20	7.0 510 (a)	500 100.6	80-120
Molybdenum	anr					
Nickel	anr					
Potassium	anr					
Selenium	anr					
Silver	anr					
Sodium	anr					
Strontium						
Thallium	anr					
Tin	anr					
Titanium						
Vanadium	anr					
Zinc	anr					

Associated samples MP40749: FA95682-16, FA95682-17, FA95682-18, FA95682-19, FA95682-20, FA95682-21, FA95682-22, FA95682-23, FA95682-24, FA95682-25, FA95682-26, FA95682-27, FA95682-28, FA95682-29, FA95682-30, FA95682-31, FA95682-32

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested
 (a) Sample dilution required due to difficult matrix.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: FA95682
 Account: GSYFLC - Geosyntec Consultants
 Project: CCCP Soil & ISCO Sampling; Crystal River, FL

QC Batch ID: MP40749
 Matrix Type: AQUEOUS

Methods: SW846 6010D
 Units: ug/l

Prep Date: 05/26/22

Metal	FA95685-1F Original MSD	SpikeLot MPFLICP2 % Rec	MSD RPD	QC Limit
Aluminum	anr			
Antimony	anr			
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Cadmium	anr			
Calcium	anr			
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	anr			
Magnesium	anr			
Manganese	7.0	509 (a) 500	100.4	0.2
Molybdenum	anr			20
Nickel	anr			
Potassium	anr			
Selenium	anr			
Silver	anr			
Sodium	anr			
Strontium				
Thallium	anr			
Tin	anr			
Titanium				
Vanadium	anr			
Zinc	anr			

Associated samples MP40749: FA95682-16, FA95682-17, FA95682-18, FA95682-19, FA95682-20, FA95682-21, FA95682-22, FA95682-23, FA95682-24, FA95682-25, FA95682-26, FA95682-27, FA95682-28, FA95682-29, FA95682-30, FA95682-31, FA95682-32

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (N) Matrix Spike Rec. outside of QC limits
 (anr) Analyte not requested
 (a) Sample dilution required due to difficult matrix.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: FA95682
 Account: GSYFLC - Geosyntec Consultants
 Project: CCCP Soil & ISCO Sampling; Crystal River, FL

QC Batch ID: MP40749
 Matrix Type: AQUEOUS

Methods: SW846 6010D
 Units: ug/l

Prep Date: 05/26/22

Metal	BSP Result	Spike lot MPFLICP2 % Rec	QC Limits
Aluminum	anr		
Antimony	anr		
Arsenic	anr		
Barium	anr		
Beryllium	anr		
Cadmium	anr		
Calcium	anr		
Chromium	anr		
Cobalt	anr		
Copper	anr		
Iron	anr		
Lead	anr		
Magnesium	anr		
Manganese	480	500	96.0 80-120
Molybdenum	anr		
Nickel	anr		
Potassium	anr		
Selenium	anr		
Silver	anr		
Sodium	anr		
Strontium			
Thallium	anr		
Tin	anr		
Titanium			
Vanadium	anr		
Zinc	anr		

Associated samples MP40749: FA95682-16, FA95682-17, FA95682-18, FA95682-19, FA95682-20, FA95682-21, FA95682-22, FA95682-23, FA95682-24, FA95682-25, FA95682-26, FA95682-27, FA95682-28, FA95682-29, FA95682-30, FA95682-31, FA95682-32

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: FA95682
 Account: GSYFLC - Geosyntec Consultants
 Project: CCCP Soil & ISCO Sampling; Crystal River, FL

QC Batch ID: MP40749
 Matrix Type: AQUEOUS

Methods: SW846 6010D
 Units: ug/l

Prep Date: 05/26/22

Metal	FA95685-1F Original	SDL 5:25	%DIF	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Cadmium	anr			
Calcium	anr			
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	anr			
Magnesium	anr			
Manganese	7.00	0.00	100.0(a)	0-10
Molybdenum	anr			
Nickel	anr			
Potassium	anr			
Selenium	anr			
Silver	anr			
Sodium	anr			
Strontium				
Thallium	anr			
Tin	anr			
Titanium				
Vanadium	anr			
Zinc	anr			

Associated samples MP40749: FA95682-16, FA95682-17, FA95682-18, FA95682-19, FA95682-20, FA95682-21, FA95682-22, FA95682-23, FA95682-24, FA95682-25, FA95682-26, FA95682-27, FA95682-28, FA95682-29, FA95682-30, FA95682-31, FA95682-32

Results < IDL are shown as zero for calculation purposes

(*) Outside of QC limits

(anr) Analyte not requested

(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

POST DIGESTATE SPIKE SUMMARY

Login Number: FA95682
 Account: GSYFLC - Geosyntec Consultants
 Project: CCCP Soil & ISCO Sampling; Crystal River, FL

QC Batch ID: MP40749
 Matrix Type: AQUEOUS

Methods: SW846 6010D
 Units: ug/l

Prep Date:

05/26/22

Metal	Sample ml	Final ml	FA95685-1F Raw	PS Corr.**	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
Aluminum										
Antimony										
Arsenic										
Barium										
Beryllium										
Cadmium										
Calcium										
Chromium										
Cobalt										
Copper										
Iron										
Lead										
Magnesium										
Manganese	9.8	10	7	6.86	57.5	0.2	2.5	50	101.3	80-120
Molybdenum										
Nickel										
Potassium										
Selenium										
Silver										
Sodium										
Strontium										
Thallium										
Tin										
Titanium										
Vanadium										
Zinc										

Associated samples MP40749: FA95682-16, FA95682-17, FA95682-18, FA95682-19, FA95682-20, FA95682-21, FA95682-22, FA95682-23, FA95682-24, FA95682-25, FA95682-26, FA95682-27, FA95682-28, FA95682-29, FA95682-30, FA95682-31, FA95682-32

Results < IDL are shown as zero for calculation purposes
 (*) Outside of QC limits
 (**) Corr. sample result = Raw * (sample volume / final volume)
 (anr) Analyte not requested