Geosyntec consultants

engineers | scientists | innovators

2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

BYPRODUCT STORAGE AREA, C.D. MCINTOSH POWER PLANT

Prepared for

Lakeland Electric
501 East Lemon Street
Lakeland, Florida 33801

Prepared by

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

Project FR3715C

January 31, 2023

Geosyntec consultants

2022 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT

Byproduct Storage Area, C.D. Mcintosh Power Plants

This 2022 Annual Groundwater Monitoring and Corrective Action Report for the Byproduct Storage Area at C.D. McIntosh Power Plant has been prepared to meet the requirements of 40 Code of Federal Regulations §257.90(e)

Prepared for

Lakeland Electric
501 East Lemon Street
Lakeland, Florida 33801

Prepared by

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

Luke Varner, G.I.T. (FL)
Senior Staff Geologist

Lane Dorman, P.G. (FL)
Principal Hydrogeologist

Project Number: FR3715C

January 31, 2023

EXECUTIVE SUMMARY

In accordance with the United States Environmental Protection Agency ("USEPA") coal combustion residuals ("CCR") rule (40 Code of Federal Regulations ("CFR") Part 257, Subpart D: Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments) ("CCR Rule"), this *2022 Annual Groundwater Monitoring and Corrective Action Report* documents CCR unit groundwater monitoring activities completed in 2022 at the Lakeland Electric ("LE") C.D. McIntosh Power Plant ("MPP") Byproduct Storage Area ("BSA").

LE established a CCR unit groundwater monitoring well network to monitor groundwater quality within the uppermost aquifer in the vicinity of the BSA. Monitoring wells currently in the CCR unit groundwater monitoring well network are listed below:

- background wells (2): CCR-1 and CCR-2;
- downgradient wells (9): CCR-4, CCR-5, CCR-6, CCR-7, CCR-8, CCR-9, CCR-11, CCR-12, and CCR-13.

Statistical evaluation of CCR unit groundwater monitoring data collected through October 2017 identified statistically significant increases ("SSIs") of certain CCR Rule Appendix III groundwater monitoring constituents above background concentrations [boron, calcium, fluoride, pH, sulfate, and total dissolved solids ("TDS")]. In accordance with the CCR Rule, LE initiated an assessment monitoring program for the BSA in April 2018 and continued assessment monitoring activities through 2022. LE conducted an alternate source demonstration ("ASD") for total radium in June 2019 to document that total radium SSLs are not associated with a release from the BSA. As a result of the ASD, groundwater samples have not been analyzed for total radium thereafter. The first semi-annual assessment monitoring event (conducted between February and April 2022) and the second semi-annual monitoring event (conducted in August 2022) included CCR Rule Appendix III and Appendix IV constituents. Confirmatory samples were collected from CCR-4 and CCR-7 in December 2022 to confirm results from the second 2022 semi-annual groundwater sampling event.

Appendix IV analytical data from the first and second semi-annual 2022 sampling events were evaluated in accordance with the *Statistical Analysis Plan* (Golder, 2017b). The analyses indicated statistically significant levels ("SSLs") of the following Appendix IV constituents above applicable groundwater protection standards:

SSL Constituent	**Semi-annual assessment monitoring events**			
	1st Semi-annual 2022		**2nd Semi-annual 2022**	
Arsenic	CCR-11	CCR-12	CCR-11	CCR-12
Lithium	CCR-5 CCR-6	CCR-9 CCR-13	CCR-4 CCR-5 CCR-6	CCR-9 CCR-13

LE initiated an assessment of corrective measures ("ACM") in January 2019 which was completed in June 2019. In 2021, LE continued to evaluate groundwater corrective measures to support remedy selection for groundwater downgradient of the BSA. LE conducted the public meeting required in 40 CFR §257.96(e) on February 3, 2021. Following receipt of public input, LE finalized the remedy selection report for the BSA on March 31, 2021, which documented a remedy consisting of source control, including beneficial off-site use of CCR, and capping and closing the BSA in place following shutdown of Unit No. 3. Until the remedy is in place, LE will continue cleaning and maintaining the perimeter stormwater ditch to remove residual CCR; these activities continued in 2022. LE has moved forward with an evaluation of various closure options for eventual design and implementation.

LE continued evaluating the nature and extent of arsenic and lithium SSLs in groundwater downgradient of the BSA. Delineation activities completed in 2022 included the first and second semi-annual sampling of nature and extent monitoring wells CCR-15 through CCR-23 and property boundary well SW-106. Groundwater sampling results from 2022 indicated the need for supplemental sampling to further aid in delineation of CCR compliance well locations with lithium and arsenic SSLs. In 2023, LE intends to collect surface water samples from Fish Lake and Lake D which are downgradient from current SSL locations. Arsenic and lithium concentrations in these water bodies have historically been observed below groundwater protection standards.

Statistical analysis indicated a lithium SSL at CCR-4 following the second semi-annual groundwater assessment event. Although lithium was previously identified as an SSL at the BSA based on the October 15, 2018 SSL notification, a new SSL notification was completed for the August 2022 lithium SSL at CCR-4. Since the current ACM and selected remedy are applicable to lithium at the BSA, LE will implement the existing remedy to address the lithium SSL at CCR-4.

In September 2022, LE applied to the Florida Department of Environmental Protection ("FDEP") to close the BSA pursuant to Rule 62-701.805(11) and 62-701.805(8), Florida Administrative Code. FDEP issued a request for additional information ("RAI") to LE on October 5, 2022 and LE submitted a request for additional time (90 days) to respond to the RAI on December 22, 2022.

BSA closure design is ongoing with implementation anticipated to begin in 2023 or 2024 pending approval for BSA closure by FDEP. LE performs maintenance and cleanout activities at the BSA and perimeter ditch as needed in the interim.

Assessment monitoring will continue in 2023.

TABLE OF CONTENTS

EXECUTIVE SUMMARY 1

1. INTRODUCTION 1
   1.1 Overview 1
   1.2 Regional Geology & Hydrogeologic Setting 1
   1.3 CCR Unit and Groundwater Monitoring System Descriptions 2

2. GROUNDWATER MONITORING AND CORRECTIVE ACTION 3
   2.1 Monitoring Well Installation and Maintenance 3
   2.2 Monitoring Well Abandonment 3
   2.3 Semi-Annual Assessment Monitoring Events 3
   2.4 CCR Unit Maintenance Activities 3
   2.5 Corrective Measures and Remedy Design 3
   2.6 CCR Unit Closure 3

3. SAMPLE METHODOLOGY & RESULTS 5
   3.1 Groundwater Elevation Measurement 5
   3.2 Groundwater Gradient and Flow Velocity 5
   3.3 Groundwater Sampling 6
   3.4 Nature and Extent Sampling 6
   3.5 Laboratory Analyses 7
   3.6 Quality Assurance & Quality Control Summary 7

4. STATISTICAL ANALYSIS 8
   4.1 Statistical Methods 8
   4.2 Appendix IV Constituents Statistical Analysis Results 8

5. ALTERNATE SOURCE DEMONSTRATION 10

6. SUMMARY AND FUTURE ACTIONS 11

7. REFERENCES 12

LIST OF TABLES

Table 1	Groundwater Monitoring Location Details
Table 2	Summary of 2022 Groundwater Sampling Events
Table 3	Summary of 2022 Groundwater Laboratory Analytical Data
Table 4	Summary of 2022 Groundwater Elevations
Table 5	Summary of Background Limits and Groundwater Protection Standards

LIST OF FIGURES

Figure 1	Site Location – Byproduct Storage Area
Figure 2	Well Locations – Byproduct Storage Area
Figure 3	Surficial Aquifer Groundwater Contour Map – February 2022
Figure 4	Surficial Aquifer Groundwater Contour Map – July 2022

LIST OF APPENDICES

Appendix A	Laboratory Analytical Reports, Field Sampling Logs, and Data Validation Reports
Appendix B	First Semi-Annual 2022 BSA Appendix IV Statistics Summary – Downgradient Wells
Appendix C	Second Semi-Annual 2022 BSA Appendix IV Statistics Summary – Downgradient Wells
Appendix D	Alternate Source Demonstration for Radium 226 & 228 in Groundwater

1. INTRODUCTION

1.1 Overview

On behalf of Lakeland Electric ("LE"), Geosyntec Consultants, Inc. ("Geosyntec") prepared this *2022 Annual Groundwater Monitoring and Corrective Action Report* for the Byproduct Storage Area ("BSA") at the C.D. McIntosh Jr. Power Plant ("MPP" or "Site"). The purpose of this report is to present a summary of coal combustion residuals ("CCR") unit groundwater monitoring activities conducted in 2022 in accordance with the annual reporting requirements of the United States Environmental Protection Agency ("USEPA") CCR rule (40 Code of Federal Regulations Part 257 ("CFR"), Subpart D: Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments) ("CCR Rule"), Section 257.90(e). In addition, this report describes the status of corrective actions being undertaken at the CCR unit to address statistically significant levels ("SSLs") of CCR Rule Appendix IV constituents.

The Site is located at 3030 East Lake Parker Drive in Lakeland, Florida. A Site location map is provided as **Figure 1**. The Site is bordered by undeveloped lakes and marsh land to the north and east and Lake Parker to the south and west. The undeveloped lakes and marsh land were created from phosphate mining in the late 1960's to early 1970's. The BSA is in the eastern portion of the Site and encompasses approximately 44 acres.

1.2 Regional Geology & Hydrogeologic Setting

The regional geology and hydrogeology were presented in the *2019 Assessment of Corrective Measures Report* and *2019 Annual Groundwater Monitoring and Corrective Action Report* (Golder, 2019a and b). A brief summary is included here. Geologic units present near the MPP include (in descending order; youngest to oldest):

- Holocene to Pliocene-age sands and clays up to 25 feet thick occur in the Lakeland area (Florida Geological Survey, 1991).
- The clayey-sand soils of the Miocene to Oligocene-age Hawthorn Group underly the Holocene to Pliocene sands with an approximate thickness of 40 to 60 ft in the vicinity of the MPP (Cathcart, 1964).
- Older units, comprised primarily of limestone and/or dolostone, underlying the Hawthorn group in the region include the Suwannee Limestone, Ocala Limestone, Avon Park Formation, and Oldsmar Formation.

The regional and Site-specific hydrogeology is comprised of three major hydrostratigraphic units: the unconfined surficial aquifer, the intermediate aquifer/confining unit, and the Floridan aquifer. The surficial aquifer represents the "uppermost aquifer" as defined in the CCR Rule. Groundwater flow in the surficial aquifer at the Site generally flows from topographic highs to topographic lows discharging to the numerous lakes surrounding the Site (Golder, 2005). Groundwater in the vicinity of the BSA has been observed to flow radially away from the BSA, with flow to the north toward Lake B, to the west toward Fish Lake, and to the east toward Lakes C and D. There is a smaller component of groundwater flow in the surficial aquifer that is

vertically downgradient toward the intermediate confining unit and Floridan aquifer. This vertical flow component is restricted by the clayey materials of the intermediate confining unit.

1.3 CCR Unit and Groundwater Monitoring System Descriptions

The BSA CCR unit encompasses approximately 44 acres and receives CCR generated by Unit 3. Pursuant to the CCR Rule, LE installed a CCR unit groundwater monitoring system around the BSA to monitor groundwater within the uppermost aquifer at the Site (Golder, 2017a). Background monitoring wells were installed upgradient of the Site to establish Site-wide background water quality. The downgradient monitoring well network was installed at the waste boundary. The BSA groundwater monitoring network is comprised of the following wells:

- background wells (2): CCR-1 and CCR-2;
- downgradient wells (9): CCR-4, CCR-5, CCR-6, CCR-7, CCR-8, CCR-9, CCR-11, CCR-12, and CCR-13.

CCR-3, CCR-10, and CCR-14 were removed from the CCR unit monitoring well network in 2021 following five or more semi-annual groundwater monitoring events prior to January 2021 with no CCR constituent concentrations above CCR Rule groundwater protection standards ("GWPS"). These wells are not needed to evaluate the nature and extent of CCR constituents at other wells and are utilized as piezometers to supplement groundwater flow interpretations.

As previously reported in February 2019, LE installed vertical and horizontal delineation wells (CCR-15 through CCR-23) to evaluate the nature and extent of identified SSLs (Golder, 2019b). In 2022, LE sampled the vertical and horizontal delineation wells around the BSA and the downgradient property boundary well SW-106. These samples were analyzed for CCR Rule Appendix IV constituents (except for radium since an ASD established that radium is from a source other than the CCR unit).

Monitoring well details, including installation dates, coordinates, elevations, screen intervals, and designations are summarized in **Table 1**. The CCR unit groundwater monitoring network and delineation wells for the BSA are depicted on **Figure 2.**

2. GROUNDWATER MONITORING AND CORRECTIVE ACTION

Groundwater samples were collected in 2022 from monitoring wells in the CCR unit groundwater monitoring network and delineation wells (**Figure 2**). A summary of these groundwater sampling events is provided in **Table 2**. Analytical data associated with these events are summarized in **Table 3** and laboratory analytical reports are included in **Appendix A.**

2.1 Monitoring Well Installation and Maintenance

No additional monitoring wells or piezometers were installed at the BSA in 2022. Monitoring well conditions were adequate for their intended purpose in 2022.

2.2 Monitoring Well Abandonment

No monitoring well abandonment activities were completed at the BSA in 2022.

2.3 Semi-Annual Assessment Monitoring Events

The first semi-annual assessment monitoring event was conducted between February and April 2022 and the second semi-annual monitoring event was conducted during August 2022. Confirmatory samples were collected from CCR-4 and CCR-7 in December 2022 to confirm groundwater results observed during the second 2022 semi-annual sampling event. During the 2022 semi-annual assessment monitoring events, groundwater samples were collected from CCR unit monitoring wells and analyzed for Appendix III and Appendix IV constituents. Groundwater samples were collected from select delineation wells (CCR-15 through CCR-23 and SW-106) and analyzed for Appendix III and Appendix IV constituents (except for radium since an ASD established that radium is from a source other than the CCR unit). Monitoring well locations are shown on **Figure 2**.

2.4 CCR Unit Maintenance Activities

In addition to completing two semi-annual groundwater assessment monitoring events, LE continued to maintain the BSA perimeter ditch by removing accumulated CCR.

2.5 Corrective Measures and Remedy Design

LE completed an assessment of corrective measures ("ACM") in June 2019 in accordance with 40 CFR §257.96(a). LE continued to evaluate groundwater corrective measures to support remedy selection for groundwater downgradient of the BSA in 2020 and 2021. LE conducted the public meeting required in 40 CFR §257.96(e) on February 3, 2021. Following receipt of public input, LE submitted the *Remedy Selection Report Byproduct Storage Area* to document a remedy consisting of source control, including beneficial off-site use of CCR material and capping and closing the BSA in place following the shutdown of Unit No. 3 (Geosyntec, 2021).

2.6 CCR Unit Closure

In September 2022, LE applied to the FDEP to close the BSA pursuant to Rule 62-701.805(11) and 62-701.805(8), Florida Administrative Code. The FDEP issued a request for additional

information (“RAI”) to LE on October 5, 2022 and LE submitted a request for additional time (90 days) to respond to the RAI on December 22, 2022.

BSA closure design is ongoing with implementation anticipated to begin in 2023 or 2024 pending BSA approval for BSA closure by the Florida Department of Environmental Protection (“FDEP”). LE performs maintenance and cleanout activities at the BSA and perimeter ditch as needed in the interim.

3. SAMPLE METHODOLOGY & RESULTS

The following section describes the methods used to conduct CCR unit groundwater monitoring at the BSA, including groundwater level gauging and delineation well sampling. Results for Appendix IV constituents are discussed in Section 4.

3.1 Groundwater Elevation Measurement

During CCR unit groundwater sampling events, depth to groundwater measurements were recorded from the CCR unit groundwater monitoring wells, delineation wells, and piezometers. These measurements were converted to elevations and are summarized in **Table 4**. Site-wide groundwater elevation contour maps developed for the first and second semi-annual assessment monitoring events in February and July 2022 are presented on **Figure 3** and **Figure 4**, respectively. Shallow groundwater beneath the BSA generally flows in a semi-radial pattern towards the surrounding lakes. Shallow groundwater flow patterns observed during 2022 assessment monitoring events were generally consistent with historical observations.

3.2 Groundwater Gradient and Flow Velocity

Groundwater flow rates were calculated based on hydraulic gradients from the 2022 groundwater sampling events and hydraulic conductivity measured via slug tests. The maximum Site-specific surficial aquifer horizontal hydraulic conductivity was calculated to be 52 feet(ft)/day (Golder, 2005). Horizontal hydraulic gradients between CCR-8/CCR-3, CCR-5/CCR-16, and CCR-11/CCR-20 well pairs were calculated based on groundwater elevation data from the January and July 2022 sampling events, resulting in horizontal hydraulic gradients of 0.002 and 0.0002 ft/ft for CCR-8/CCR-3 well pair, 0.001 and 0.0006 ft/ft for CCR-5/CCR-16 well pair, and 0.0001 and 0.0002 ft/ft for CCR-11/CCR-20 well pair in January and July 2022, respectively.

Horizontal flow velocity was calculated using a form of Darcy's Law:

$V=(K*i)/n_e$

Where:

V=groundwater velocity (ft/day);

K=measured hydraulic conductivity (ft/day);

i=horizontal hydraulic gradient (ft/ft);

n_e=effective porosity (unitless), which was assumed to be 0.15 (Golder, 2005).

The calculated horizontal groundwater velocities are summarized below:

Well Pair	January 2022		July 2022	
	Groundwater Velocity (ft/day)	Groundwater Velocity (ft/year)	Groundwater Velocity (ft/day)	Groundwater Velocity (ft/year)
CCR-8/CCR-3	0.53	193.4	0.067	24.6
CCR-5/CCR-16	0.34	125.7	0.22	78.6
CCR-11/CCR-20	0.019	6.8	0.073	26.7

These velocities are consistent with historical groundwater velocities at the BSA.

3.3 Groundwater Sampling

Groundwater samples were collected in general accordance with the CCR Rule. Water quality parameters (pH, conductivity, dissolved oxygen, temperature, and turbidity) were documented during well purging to evaluate stabilization prior to sampling. Following sample collection, samples were placed in ice-packed coolers and submitted for laboratory analysis following chain-of-custody protocol. Field sampling data sheets are provided in **Appendix A**.

Confirmatory groundwater samples were collected in December 2022 from CCR-4 and CCR-7 and analyzed for lithium. A field error, documented during the confirmatory sample event at CCR-4, resulted in an elevated lithium concentration relative to the August 2022 lithium concentration. Therefore, the August 2022 sample result was used for statistical analysis (Section 4.0). Lithium concentrations from the confirmatory sampling event did not confirm the August 2022 lithium concentration at CCR-7. Therefore, the December 2022 lithium concentration at CCR-7 was used for statistical analysis (Section 4.0).

3.4 Nature and Extent Sampling

Groundwater samples were collected from relevant nature and extent ("N&E") wells during semi-annual assessment monitoring events to assess the nature and extent of lithium and arsenic (i.e., constituents with SSLs).

During the first and second semi-annual assessment monitoring events:

- LE sampled N&E wells CCR-20 and CCR-21 to assess the horizontal extent of arsenic at CCR-11 and CCR-12, respectively.
- LE sampled N&E wells CCR-15, CCR-16, CCR-17, CCR-18, CCR-20, CCR-22, CCR-23 to assess the horizontal extent of lithium at CCR-4, CCR-5, CCR-6, CCR-7, CCR-9, and CCR-13 (CCR-22 and CCR-23 both assess CCR-13), respectively.
- LE sampled N&E well SW-106 to evaluate GWPS compliance at the downgradient property boundary.

Groundwater sampling results from 2022 indicated the need for supplemental sampling to further aid in delineation of CCR compliance well locations with lithium and arsenic SSLs. In 2023, LE intends to collect surface water samples from Fish Lake and Lake D which are downgradient from current SSL locations. Arsenic and lithium concentrations in these water bodies have historically been observed below GWPS.

3.5 Laboratory Analyses

Laboratory analyses for groundwater samples collected during the first and second semi-annual assessment monitoring events included both Appendix III and Appendix IV constituents. Applicable constituents and analytical methods are provided in laboratory reports in **Appendix A**.

3.6 Quality Assurance & Quality Control Summary

During each sampling event, quality assurance/quality control ("QA/QC") samples including field equipment blanks were collected. Data from these QA/QC samples were evaluated during data validation.

Groundwater quality data in this report were independently validated in accordance with USEPA guidance (USEPA, 2011) and the analytical methods. Data validation generally consisted of reviewing sample integrity, holding times, laboratory method blanks, laboratory control samples, matrix spikes/matrix spike duplicate recoveries and relative percent differences ("RPDs"), laboratory duplicate RPDs, equipment blanks, and reporting limits. Where appropriate, validation qualifiers and flags are applied to the data using USEPA procedures as guidance (USEPA, 2017). Data validation reports for the first and second semi-annual assessment monitoring events are included in **Appendix A**.

4. STATISTICAL ANALYSIS

The following section describes the statistical methods and analysis performed in 2022.

4.1 Statistical Methods

Statistical analysis of Appendix IV constituents was performed on CCR unit groundwater monitoring data collected during the 2022 semi-annual assessment monitoring events in accordance with the *Statistical Analysis Plan* (Golder, 2017b). The *Statistical Analysis Plan* describes Site-specific statistical methods that were used to evaluate CCR unit groundwater data. In accordance with the CCR Rule, GWPS for Appendix IV constituents were established and are presented in **Table 5**.

To evaluate SSLs of Appendix IV constituents, a confidence interval approach was used to evaluate if downgradient groundwater concentrations were above the GWPS at statistically significant levels. As recommended in the *Statistical Analysis of Groundwater Data at RCRA Facilities, Unified Guidance*, a confidence interval around the mean was employed for normal or normalized data (USEPA, 2009). If the downgradient well data is not normally distributed and cannot be transformed to a normal distribution, the non-parametric confidence interval around the median was employed. There is evidence of an SSL if the lower confidence limit ("LCL") exceeds the GWPS at the 95% confidence level.

4.2 Appendix IV Constituents Statistical Analysis Results

Analytical data from the first and second semi-annual assessment monitoring events were analyzed in accordance with the *Statistical Analysis Plan*. The results from the Appendix IV constituent data collected during the first and second semi-annual monitoring events were evaluated statistically to evaluate exceedances of the established GWPS. As discussed in Section 3.4, Confirmatory groundwater samples were collected in December 2022 from CCR-4 and CCR-7 and analyzed for lithium. Due to a field error during the December 2022 confirmatory sample event at CCR-4, the August 2022 lithium results were used for statistical analysis. The December 2022 confirmatory sample result at CCR-7 did not confirm the August 2022 lithium sample result. As such, the December 2022 confirmatory sample result was used for statistical analysis. Statistical results associated with the first and second semi-annual monitoring data are included in **Appendix B** and **Appendix C**, respectively.

Based on the statistical analysis of Appendix IV constituents, the following CCR unit monitoring wells exhibited SSLs for arsenic or lithium:

SSL Constituent	Semi-annual assessment monitoring events	
	1st Semi-annual 2022	2nd Semi-annual 2022
Arsenic	CCR-11 CCR-12	CCR-11 CCR-12

Lithium	CCR-5 CCR-6 CCR-9 CCR-13	CCR-4 CCR-5 CCR-6 CCR-9 CCR-13

Statistical analysis indicated a lithium SSL at CCR-4 following the second semi-annual groundwater assessment event. Although lithium was previously identified as an SSL at the BSA based on the October 15, 2018 SSL notification, a new SSL notification was completed for the August 2022 lithium SSL at CCR-4. Since the current ACM and selected remedy are applicable to lithium at the BSA, LE will implement the existing remedy to address the lithium SSL at CCR-4.

5. ALTERNATE SOURCE DEMONSTRATION

In accordance with the CCR Rule, LE prepared an alternate source demonstration ("ASD") for total radium (**Appendix D**). The key conclusions of the ASD are briefly summarized below:

- Radionuclides including radium-226 and radium-228 (total radium) are naturally occurring in the study area and are associated with minerals in the phosphate matrix that was mined by the phosphate mining industry during the 1970s at the BSA prior to its construction.
- Uranium concentrations in phosphate-bearing rocks exhibit typical uranium concentrations of up to 300 parts per million, which is approximately 1 to 2 orders of magnitude higher than U.S. coals and fly ash, respectively (USGS, 1997).
- Detailed mineralogical assessment of the underlying soils conducted by Petrologic Solutions, Inc. revealed significant uranium and other accessory constituents associated with the phosphate ore mined at and near the BSA.

Due to the abundance of naturally occurring uranium in sediments underlying the MPP, LE ceased analysis of total radium in CCR unit groundwater samples collected following 2019.

6. SUMMARY AND FUTURE ACTIONS

In accordance with the CCR Rule, LE continued assessment monitoring in 2022. Statistical analysis identified SSLs of arsenic and lithium downgradient of the BSA. Monitoring well data collected in 2022 indicated SSLs remain in groundwater for arsenic (CCR-11 and CCR-12) and lithium (CCR-4 [event 2 only], CCR-5, CCR-6, CCR-9, and CCR-13). Groundwater sampling results from 2022 indicated the need for supplemental sampling to further aid in delineation of CCR compliance well locations with lithium and arsenic SSLs. In 2023, LE intends to collect surface water samples from Fish Lake and Lake D which are downgradient from current SSL locations. Arsenic and lithium concentrations in these water bodies have historically been observed below GWPS. An ASD was prepared in 2019 for total radium SSLs, which documents that a source other than the BSA caused the total radium SSLs.

Statistical analysis indicated a lithium SSL at CCR-4 following the second semi-annual groundwater assessment event. Although lithium was previously identified as an SSL at the BSA based on the October 15, 2018 SSL notification, a new SSL notification was completed for the August 2022 lithium SSL at CCR-4. Since the current ACM and selected remedy are applicable to lithium at the BSA, LE will implement the existing remedy to address the lithium SSL at CCR-4.

In 2019, LE completed an assessment of corrective measures in support of remedy selection for groundwater downgradient of the BSA. LE conducted the public meeting required in 40 CFR §257.96(e) on February 3, 2021. Following receipt of public input, LE submitted the *Remedy Selection Report Byproduct Storage Area* to document a remedy consisting of source control, including beneficial off-site use of CCR and capping and closing the BSA in place following the shutdown of Unit No. 3 (Geosyntec, 2021). The BSA closure design process is ongoing.

In September 2022, LE applied to the FDEP for closure of the BSA pursuant to Rule 62-701.805(11) and 62-701.805(8), Florida Administrative Code. The FDEP issued a RAI to LE on October 5, 2022 and LE submitted a request for additional time (90 days) to respond to the RAI on December 22, 2022.

BSA closure design is ongoing with implementation anticipated to begin in 2023 or 2024 pending approval for BSA closure by the FDEP. LE performs maintenance and cleanout activities at the BSA and perimeter ditch as needed in the interim.

Assessment monitoring will continue in 2023.

7. REFERENCES

Cathcart, J.B., 1964. Economic Geology of the Lakeland Quadrangle Florida. USGS Survey Bulletin 1162-G. US Government Printing Office. Washington.

Florida Geological Survey, 1991. FGS Special Publication No. 32. Florida's Ground Water Quality Monitoring Program Hydrogeological Framework. Tallahassee, FL.

Geosyntec, 2021. Remedy Selection Report, Byproduct Storage Area, C.D. McIntosh, Jr. Power Plant, Lakeland, Florida, March.

Golder, 2005. Phase 2 Contamination Assessment Report, C.D. McIntosh, Jr. Power Plant, Lakeland, Florida, Volume I, II, and III, January.

Golder, 2017a. CCR Groundwater Monitoring Network Documentation, C.D. McIntosh Power Plant, Byproduct Storage Area, Lakeland Electric, Lakeland, Florida, October.

Golder, 2017b. Statistical Analysis Plan, CCR Groundwater Monitoring, Lakeland Electric, C.D. McIntosh Power Plant, October.

Golder, 2019a. Assessment of Corrective Measures Report, Byproduct Storage Area, C.D. McIntosh Power Plant, Lakeland Electric, June.

Golder, 2019b. Annual Groundwater Monitoring and Corrective Action Report, Byproduct Storage Area, C.D. McIntosh Power Plant, Lakeland Electric, January.

USEPA, 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance. Office of Resource Conservation and Recovery – Program Implementation and Information Division, March.

USEPA, 2011. Region IV Data Validation Standard Operating Procedures. Science and Ecosystem Support Division. Region IV. Athens, GA, September.

USEPA, 2017. National Functional Guidelines for Inorganic Superfund Methods Data Review. Office of Superfund Remediation and Technology Innovation. OLEM 9355.0-135 [EPA-540-R-2017-001]. Washington, DC, January.

USGS, 1997. Radioactive Elements in Coal and Fly Ash: Abundance, Forms, and Environmental Significance. USGS Fact Sheet FS-163-97. https://pubs.usgs.gov/fs/1997/fs163-97/FS-163-97.pdf

TABLES

TABLE 1: GROUNDWATER MONITORING LOCATION DETAILS
Lakeland Electric - C.D. McIntosh Power Plant, Polk County, Florida

Monitoring Location	Installation Date	Northing	Easting	Ground Elevation	Top of Casing Elevation	Top of Screen Elevation	Bottom of Screen Elevation	Designation
CCR Groundwater Monitoring Network								
CCR-1	6/24/2016	1362405.2	681287.2	138.3	141.30	122.6	113.1	Background
CCR-2	6/23/2016	1362203.9	681787.6	137.6	140.57	121.9	112.4	Background
CCR-4	6/24/2016	1362450.0	683042.7	140.3	143.13	124.7	115.2	Monitoring
CCR-5	6/22/2016	1362716.0	683376.9	138.6	141.07	122.4	112.9	Monitoring
CCR-6	6/22/2016	1363168.4	683578.6	138.5	141.34	122.8	113.3	Monitoring
CCR-7	6/22/2016	1363631.9	683772.2	139.1	142.10	123.4	113.9	Monitoring
CCR-8	6/22/2016	1363917.6	683411.6	139.4	142.12	123.5	114.0	Monitoring
CCR-9	6/21/2016	1364085.2	683045.3	138.6	141.67	123.1	113.6	Monitoring
CCR-11	6/20/2016	1363835.5	682577.2	134.3	137.12	118.7	109.2	Monitoring
CCR-12	6/20/2016	1363353.1	682430.5	134.1	136.99	118.4	108.9	Monitoring
CCR-13	6/21/2016	1362936.6	682164.1	135.0	137.95	119.4	109.9	Monitoring
Groundwater Monitoring Locations for Nature and Extent								
CCR-15	2/18/2019	1362341.3	683123.5	141.8	144.65	126.4	116.8	Delineation
CCR-16	2/18/2019	1362533.2	683385.6	141.2	144.10	125.9	116.3	Delineation
CCR-17	2/19/2019	1363019.9	683712.7	142.9	145.80	127.5	117.9	Delineation
CCR-18	2/18/2019	1363631.1	683869.7	138.2	140.81	122.6	113.0	Delineation
CCR-19	2/15/2019	1364205.4	683064.5	133.8	136.47	118.3	108.7	Delineation
CCR-20	2/14/2019	1363855.5	682474.9	133.1	136.05	118.2	108.6	Delineation
CCR-21	2/13/2019	1363454.0	682331.4	134.5	137.12	118.9	109.3	Delineation
CCR-22	2/13/2019	1363017.4	682078.7	134.0	137.51	119.2	109.6	Delineation
CCR-23	2/12/2019	1362812.1	681744.7	136.2	135.78	121.1	111.5	Delineation
SW-106	--	--	--	--	--	--	--	Delineation
MW-24S	--	1363278.5	683727.0	--	143.91	--	--	Delineation
MW-25S	--	1362906.6	683555.1	--	144.40	--	--	Delineation
Groundwater Piezometers								
CCR-3	6/23/2016	1362334.6	682451.3	137.5	137.04	121.6	112.2	Piezometer
CCR-10R	3/13/2018	1364262.1	682706.3	133.8	133.56	119.2	109.7	Piezometer
CCR-14	6/21/2016	1362771.1	681761.2	135.8	138.70	120.4	110.9	Piezometer

Notes:

1. Northing and easting are in feet relative to the State Plane Florida North Datum of 1983, Florida West.
2. Elevations are in feet relative to the North American Vertical Datum of 1988.
3. "--" indicates not available.

TABLE 2: SUMMARY OF 2022 GROUNDWATER SAMPLING EVENTS
Lakeland Electric - C.D. McIntosh Power Plant, Polk County, Florida

Monitoring Location	2022 Semi-Annual Assessment Monitoring Event 1	2022 Semi-Annual Assessment Monitoring Event 2
CCR Groundwater Monitoring Network		
CCR-1	2/28/2022	8/10/2022
CCR-2	2/28/2022	8/10/2022
CCR-4	3/15/2022	8/10/2022
CCR-5	3/15/2022	8/22/2022
CCR-6	3/15/2022	8/22/2022
CCR-7	3/17/2022	12/19/2022
CCR-8	3/29/2022	8/22/2022
CCR-9	3/17/2022	8/22/2022
CCR-11	4/5/2022	8/24/2022
CCR-12	4/5/2022	8/24/2022
CCR-13	3/16/2022	8/17/2022
Groundwater Monitoring Locations for Nature and Extent		
CCR-15	2/28/2022	8/18/2022
CCR-16	3/29/2022	8/18/2022
CCR-17	3/2/2022	8/18/2022
CCR-18	3/2/2022	8/24/2022
CCR-19	3/2/2022	8/18/2022
CCR-20	3/17/2022	8/17/2022
CCR-21	3/2/2022	8/17/2022
CCR-22	3/16/2022	8/17/2022
CCR-23	3/17/2022	8/17/2022
SW-106	4/5/2022	8/10/2022
MW-24S	NS	NS
MW-25S	NS	NS

Notes:

1. "NS" indicates not sampled

TABLE 3: SUMMARY OF 2022 GROUNDWATER LABORATORY ANALYTICAL DATA
Lakeland Electric - C.D. McIntosh Power Plant, Polk County, Florida

Monitoring Location	Well Designation	Sample Date	Antimony (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Combined Radium (pCi/L)	Fluoride (mg/L)	Lead (mg/L)	Lithium (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	pH (SU)	Selenium (mg/L)	Sulfate (mg/L)	TDS (mg/L)	Thallium (mg/L)
Semi-Annual Assessment Monitoring Event 1																							
CCR-1	Background	2/28/2022	0.00511 U	0.00221 U	0.00870	0.000101 U	0.0756	0.000181 U	50.5	5.50	0.00120 J	0.000361 U	NA	0.109	0.00119 U	0.00272 U	0.000120 U	0.00117 U	5.87	0.00346 U	71.5	192	0.000925 U
CCR-2	Background	2/28/2022	0.00511 U	0.00221 U	0.0130	0.000101 U	0.0365	0.000181 U	47.6	15.7	0.00150 J	0.000361 U	NA	0.152	0.00119 U	0.00272 U	0.000120 U	0.00180 J	5.52	0.00346 U	71.2	216	0.000925 U
CCR-4	Monitoring	3/15/2022	0.00511 U	0.00221 U	0.266	0.000101 U	0.572	0.0051	1680	4460	0.00200 J	0.000361 U	NA	0.396	0.00119 U	**0.331**	0.000120 U	0.00117 U	3.81	0.00346 U	949	9820	0.000925 U
CCR-5	Monitoring	3/15/2022	0.00511 U	0.00221 U	0.0751	0.000101 U	0.527	0.000181 U	2010	5540	0.00180 J	0.000361 U	NA	0.223	0.00210	**4.11**	0.000120 U	0.00117 U	5.09	0.00346 U	650	12200	0.000925 U
CCR-6	Monitoring	3/15/2022	0.00511 U	0.00221 U	0.0430	0.000101 U	0.523	0.000181 U	887	1640	0.00090 J	0.000361 U	NA	0.414	0.00119 U	**1.47**	0.000120 U	0.00117 U	5.97	0.00346 U	868	4980	0.000925 U
CCR-7	Monitoring	3/17/2022	0.00511 U	0.00221 U	0.0242	0.000101 U	1.03	0.000181 U	329	81.1	0.00170 J	0.000361 U	NA	0.418	0.00119 U	**0.0515**	0.000120 U	0.00117 U	4.61	0.00346 U	917	1530	0.000925 U
CCR-8	Monitoring	3/29/2022	0.00511 U	0.00221 U	0.0324	0.000101 U	0.111	0.000181 U	134	6.06	0.000700 J	0.000361 U	NA	0.351	0.00119 U	0.00272 U	0.000120 U	0.0144	6.54	0.00346 U	236	510	0.000925 U
CCR-9	Monitoring	3/17/2022	0.00511 U	0.00221 U	0.0550	0.000101 U	0.508	0.000181 U	682	620	0.00140 J	0.000361 U	NA	0.574	0.00119 U	**0.0742**	0.000120 U	0.00117 U	5.11	0.00346 U	1370	3270	0.000925 U
CCR-11	Monitoring	4/5/2022	0.00511 U	**0.0568**	0.0566	0.000101 U	0.401	0.000181 U	596	566	0.00180 J	0.000361 U	NA	1.100	0.00119 U	0.00272 U	0.000120 U	0.00117 U	4.29	0.00346 U	1700	3380	0.000925 U
CCR-12	Monitoring	4/5/2022	0.00511 U	**0.0847**	0.0233	0.000101 U	0.455	0.000181 U	648	22.9	0.00090 J	0.000361 U	NA	0.864	0.00119 U	0.00272 U	0.000120 U	0.0209	6.58	0.00346 U	1490	2360	0.000925 U
CCR-13	Monitoring	3/16/2022	0.00511 U	0.00221 U	0.0384	0.000300	0.213	0.000181 U	470	273	0.00220 J	0.000361 U	NA	2.640	0.00119 U	**0.227**	0.000120 U	0.00117 U	3.84	0.00346 U	1530	2570	0.000925 U
CCR-15	Delineation	2/28/2022	0.00511 U	0.00221 U	0.0295	0.000101 U	0.0213	0.000181 U	18.9	7.67	0.00160 J	0.000361 U	NA	0.136 J+	0.00119 U	0.00272 U	0.000120 U	0.00117 U	3.92	0.00346 U	66.9 J-	104	0.000925 U
CCR-16	Delineation	3/29/2022	0.00511 U	0.00221 U	0.145	0.000101 U	0.521	0.000400 J	1280	3000	0.00220 J	0.000361 U	NA	0.0260 U	0.00119 U	0.00272 U	0.000120 U	0.00230 J	3.74	0.00346 U	1020	6720	0.000925 U
CCR-17	Delineation	3/2/2022	0.00511 U	0.00590	0.00400	0.000101 U	0.129	0.000181 U	202	197	0.00160 J	0.000361 U	NA	0.0260 U	0.00119 U	0.00272 U	0.000120 U	0.00250 J	6.23	0.00346 U	231	936	0.000925 U
CCR-18	Delineation	3/3/2022	0.00511 U	0.00221 U	0.00100	0.000101 U	0.0465	0.000181 U	75.8	2.08	0.00130 J	0.000361 U	NA	0.280	0.00119 U	0.00272 U	0.000120 U	0.0041 J	6.56	0.00346 U	24.5	250	0.000925 U
CCR-19	Delineation	3/2/2022	0.00511 U	0.00221 U	0.0702	0.000101 U	0.352	0.000181 U	504	789	0.00150 J	0.000361 U	NA	0.844	0.00119 U	0.00272 U	0.000120 U	0.00117 U	4.41	0.00346 U	729	2480	0.000925 U
CCR-20	Delineation	3/17/2022	0.00511 U	**0.0549**	0.0913	0.000101 U	0.495	0.000181 U	701	457	0.00180 J	0.000361 U	NA	0.585	0.00119 U	0.0144 J	0.000120 U	0.00117 U	4.83	0.00346 U	1820	3460	0.000925 U
CCR-21	Delineation	3/2/2022	0.00511 U	0.00221 U	0.0441	0.000101 U	0.389	0.000181 U	470	21.5	0.000500 J	0.000361 U	NA	1.08	0.00119 U	0.00272 U	0.000120 U	0.0279	6.31	0.00346 U	863	1590	0.000925 U
CCR-22	Delineation	3/16/2022	0.00511 U	0.00221 U	0.0259	0.000101 U	0.493	0.000181 U	312	40.1	0.00150 J	0.000361 U	NA	0.993	0.00119 U	**0.0882**	0.000120 U	0.00117 U	4.39	0.00346 U	494	1610	0.000925 U
CCR-23	Delineation	3/17/2022	0.00511 U	0.00221 U	0.0100	0.000101 U	0.783	0.000181 U	304	156	0.00200 J	0.000361 U	NA	0.552	0.00119 U	0.00272 U	0.000120 U	0.00117 U	5.14	0.00346 U	650	1280	0.000925 U
SW-106	Delineation	4/5/2022	0.00511 U	0.00221 U	0.0255	0.000101 U	0.0411	0.000181 U	9.13	1.53	0.00180 J	0.000361 U	NA	0.051	0.00119 U	0.00272 U	0.000120 U	0.0019 J	5.56	0.00346 U	17.7	41.0	0.000925 U
MW-24S	Delineation	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-25S	Delineation	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Semi-Annual Assessment Monitoring Event 2																							
CCR-1	Background	8/10/2022	0.00620 U	0.00396 U	0.00840	0.000107 U	0.0610	0.000217 U	45.2	6.17	0.00110 J	0.000354 U	NA	0.0990	0.00193 U	0.00474 U	0.000120 U	0.00143 U	5.87	0.00439 U	70.5	88.0	0.000925 U
CCR-2	Background	8/10/2022	0.00620 U	0.00396 U	0.00710	0.000107 U	0.0344	0.000217 U	44.7	6.55	0.00100 J	0.000354 U	NA	0.182	0.00193 U	0.00474 U	0.000120 U	0.00143 U	5.88	0.00439 U	72.1	210	0.000925 U
CCR-4	Monitoring	8/10/2022	0.00620 U	0.00396 U	0.262	0.000107 U	0.607	0.000217 U	1710	4310	0.00160 J	0.000354 U	NA	0.470	0.00193 U	**0.251**	0.000120 U	0.00143 U	4.17	0.00439 U	1030	9780	0.000925 U
CCR-5	Monitoring	8/22/2022	0.00620 U	0.00396 U	0.0813	0.000107 U	0.508	0.000217 U	1860	5440	0.000900 J	0.000354 U	NA	0.560	0.00193 U	**3.13 J-**	0.000120 U	0.00143 U	5.43	0.00439 U	789	9520	0.000925 U
CCR-6	Monitoring	8/22/2022	0.00620 U	0.00396 U	0.0264	0.000107 U	0.525	0.000217 U	532	942	0.000900 J	0.000354 U	NA	0.738	0.00193 U	**0.760**	0.000120 U	0.00550 J	6.30	0.00439 U	673	2920	0.000925 U
CCR-7	Monitoring	8/22/2022	0.00620 U	0.00396 U	0.0100	0.000107 U	0.428	0.000217 U	104	45	0.00190 J	0.000354 U	NA	0.218	0.00193 U	0.00474 U*	0.000120 U	0.00143 U	5.07	0.00439 U	341	642	0.000925 U
CCR-8	Monitoring	8/22/2022	0.00620 U	0.00396 U	0.0270	0.000107 U	0.0740	0.000217 U	87.0	3.12	0.000513 U	0.000354 U	NA	0.379	0.00193 U	0.00474 U	0.000120 U	0.0110	6.74	0.00439 U	73.3	268	0.000925 U
CCR-9	Monitoring	8/22/2022	0.00620 U	0.00396 U	0.0479	0.000107 U	0.532	0.000217 U	593	478	0.00100 J	0.000354 U	NA	0.690	0.00193 U	**0.0589**	0.000120 U	0.00143 U	5.37	0.00439 U	1360	2780	0.000925 U
CCR-11	Monitoring	8/24/2022	0.00620 U	**0.0659**	0.0517	0.000107 U	0.367	0.000217 U	581	545	0.00180 J	0.000354 U	NA	1.44	0.00193 U	0.00474 U	0.000120 U	0.00143 U	4.51	0.00439 U	1730	3350	0.000925 U
CCR-12	Monitoring	8/24/2022	0.00620 U	**0.0635**	0.0178	0.000107 U	0.484	0.000217 U	530	19.5	0.00110 J	0.000354 U	NA	1.08	0.00193 U	0.00474 U	0.000120 U	0.0247	6.79	0.00439 U	1200	2070	0.000925 U
CCR-13	Monitoring	8/17/2022	0.00620 U	0.00396 U	0.0372	0.000107 U	0.282	**0.0351**	485	217	0.00200 J	0.000354 U	NA	2.10	0.00193 U	**0.175**	0.000120 U	0.00143 U	4.30	0.00439 U	1480	2410	0.000925 U
CCR-15	Delineation	8/18/2022	0.00620 U	0.00396 U	0.0450	0.000107 U	0.0465	0.000217 U	96.0	24.3	0.00170 J	0.000354 U	NA	0.162	0.00193 U	0.00474 U	0.000120 U	0.00143 U	4.11	0.00439 U	264	412	0.000925 U
CCR-16	Delineation	8/18/2022	0.00620 U	0.00396 U	0.125	0.000107 U	0.489	0.000217 U	1300	2900	0.00120 J	0.000354 U	NA	0.279	0.00193 U	0.00474 U	0.000120 U	0.00143 U	4.00	0.00439 U	994	6570	0.000925 U
CCR-17	Delineation	8/18/2022	0.00620 U	0.00950 J	0.00320	0.000107 U	0.147	0.000217 U	173	137	0.00100 J	0.000354 U	NA	0.116	0.00193 U	0.00474 U	0.000120 U	0.00400 J	6.69	0.00439 U	109	748	0.000925 U
CCR-18	Delineation	8/24/2022	0.00620 U	0.00396 U	0.00140	0.000107 U	0.0419	0.000217 U	78.7	3.01	0.00120 J	0.000354 U	NA	0.382	0.00193 U	0.00474 U	0.000120 U	0.00260 J	6.70	0.00439 U	29.6	310	0.000925 U
CCR-19	Delineation	8/18/2022	0.00620 U	0.00396 U	0.0544	0.000107 U	0.301	0.000217 U	406	676	0.00140 J	0.000354 U	NA	1.29	0.00193 U	0.00474 U	0.000120 U	0.00143 U	4.88	0.00439 U	629	2340	0.000925 U
CCR-20	Delineation	8/17/2022	0.00620 U	**0.0820**	0.0541	0.000107 U	0.356	0.000217 U	605	474	0.00160 J	0.000354 U	NA	0.317	0.00193 U	0.00474 U	0.000120 U	0.00143 U	6.03	0.00439 U	1790	3400	0.000925 U
CCR-21	Delineation	8/17/2022	0.00620 U	0.00396 U	0.0431	0.000107 U	0.367	0.000217 U	447	19.9	0.000513 U	0.000354 U	NA	1.10	0.00193 U	0.00474 U	0.000120 U	0.0281	7.48	0.00439 U	807	1500	0.000925 U
CCR-22	Delineation	8/17/2022	0.00620 U	0.00396 U	0.0322	0.000107 U	0.447	0.000217 U	420	130	0.00150 J	0.000354 U	NA	1.57	0.00193 U	**0.0885**	0.000120 U	0.00143 U	4.98	0.00439 U	1170	1940	0.000925 U
CCR-23	Delineation	8/17/2022	0.00620 U	0.00396 U	0.00950	0.000107 U	0.773	0.000217 U	270	159	0.00150 J	0.000354 U	NA	0.830	0.00193 U	0.00474 U	0.000120 U	0.00143 U	5.56	0.00439 U	630	1210	0.000925 U
SW-106	Delineation	8/10/2022	0.00620 U	0.00396 U	0.0163	0.000107 U	0.0418	0.000217 U	9.70	1.73	0.00110 J	0.000354 U	NA	0.00520 U	0.00193 U	0.00474 U	0.000120 U	0.00143 U	5.52	0.00439 U	23.2	76.0	0.000925 U
MW-24S	Delineation	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-25S	Delineation	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes:

1. "mg/L" indicates milligrams per liter, "pCi/L" indicates picocuries per liter, "SU" indicates standard units.
2. "TDS" indicates Total Dissolved Solids.
3. "U" indicates analyte was analyzed but not detected.
5. "J" indicates an estimated value; Quality control does not meet criteria.
6. "J+" indicates an estimated value with a high bias; Quality control does not meet criteria.
7. "J-" indicates an estimated value with a low bias; Quality control does not meet criteria
8. "NA" indicates not analyzed or not available.
9. "NS" indicates not sampled.
10. Where duplicates were collected, the higher analyte concentration of the two samples is reported.
11. "*" indicates results reported from confirmatory resampling of well on December 19, 2022.

bold, highlighted text indicates concentrations above the Groundwater Protection Standard.

TABLE 4: SUMMARY OF 2022 GROUNDWATER ELEVATIONS
Lakeland Electric - C.D. McIntosh Power Plant, Polk County, Florida

Monitoring Location	Northing	Easting	Top of Casing Elevation	Date	Depth to Water	Groundwater Elevation
CCR-1	1362405.2	681287.1	141.30	1/7/2022	10.00	131.30
CCR-2	1362203.9	681787.6	140.57	1/7/2022	9.60	130.97
CCR-3	1362334.6	682451.3	137.04	1/7/2022	6.15	130.89
CCR-4	1362450.0	683042.7	143.13	1/7/2022	14.00	129.13
CCR-5	1362716.0	683376.9	141.07	1/7/2022	10.18	130.89
CCR-6	1363168.4	683578.6	141.34	1/7/2022	8.40	132.94
CCR-7	1363631.9	683772.2	142.10	1/7/2022	8.71	133.39
CCR-8	1363917.6	683411.6	142.12	1/7/2022	8.40	133.72
CCR-9	1364085.2	683045.3	141.67	1/7/2022	9.22	132.45
CCR-10R	1364262.1	682706.3	133.56	1/7/2022	1.72	131.84
CCR-11	1363835.4	682577.2	137.12	1/7/2022	5.26	131.86
CCR-12	1363353.1	682430.5	136.99	1/7/2022	5.30	131.69
CCR-13	1362936.6	682164.1	137.95	1/7/2022	6.35	131.60
CCR-14	1362771.1	681761.2	138.70	1/7/2022	8.10	130.60
CCR-15	1362341.3	683123.5	144.65	1/7/2022	17.00	127.65
CCR-16	1362533.2	683385.6	144.10	1/7/2022	15.05	129.05
CCR-17	1363019.9	683712.7	145.80	1/7/2022	14.25	131.55
CCR-18	1363631.1	683869.7	140.81	1/7/2022	7.92	132.89
CCR-19	1364205.4	683064.5	136.47	1/7/2022	4.38	132.09
CCR-20	1363855.5	687474.9	136.05	1/7/2022	4.29	131.76
CCR-21	1363454.0	682331.4	137.12	1/7/2022	6.00	131.12
CCR-22	1363017.4	682078.7	137.51	1/7/2022	6.13	131.38
CCR-23	1362812.1	681744.7	135.78	1/7/2022	4.70	131.08
MW-24S	1363278.5	683727.0	143.91	1/7/2022	12.94	130.97
MW-25S	1362906.6	683555.1	144.40	1/7/2022	15.70	128.70

Notes:

1. Northing and easting are in feet relative to the State Plane Florida North Datum of 1983, Florida West.
2. Elevations are in feet relative to the North American Vertical Datum of 1988.
3. Depth to water measurements are in feet below top of casing.

TABLE 4: SUMMARY OF 2022 GROUNDWATER ELEVATIONS
Lakeland Electric - C.D. McIntosh Power Plant, Polk County, Florida

Monitoring Location	Northing	Easting	Top of Casing Elevation	Date	Depth to Water	Groundwater Elevation
CCR-1	1362405.2	681287.1	141.30	7/21/2022	12.06	129.24
CCR-2	1362203.9	681787.6	140.57	7/21/2022	11.24	129.33
CCR-3	1362334.6	682451.3	137.04	7/21/2022	6.10	130.94
CCR-4	1362450.0	683042.7	143.13	7/21/2022	14.82	128.31
CCR-5	1362716.0	683376.9	141.07	7/21/2022	11.67	129.40
CCR-6	1363168.4	683578.6	141.34	7/21/2022	10.66	130.68
CCR-7	1363631.9	683772.2	142.10	7/21/2022	10.83	131.27
CCR-8	1363917.6	683411.6	142.12	7/21/2022	10.82	131.30
CCR-9	1364085.2	683045.3	141.67	7/21/2022	8.96	132.71
CCR-10R	1364262.1	682706.3	133.56	7/21/2022	4.04	129.52
CCR-11	1363835.4	682577.2	137.12	7/21/2022	7.89	129.23
CCR-12	1363353.1	682430.5	136.99	7/21/2022	7.69	129.30
CCR-13	1362936.6	682164.1	137.95	7/21/2022	8.93	129.02
CCR-14	1362771.1	681761.2	138.70	7/21/2022	9.47	129.23
CCR-15	1362341.3	683123.5	144.65	7/21/2022	17.05	127.60
CCR-16	1362533.2	683385.6	144.10	7/21/2022	15.85	128.25
CCR-17	1363019.9	683712.7	145.80	7/21/2022	15.49	130.31
CCR-18	1363631.1	683869.7	140.81	7/21/2022	9.67	131.14
CCR-19	1364205.4	683064.5	136.47	7/21/2022	6.74	129.73
CCR-20	1363855.5	687474.9	136.05	7/21/2022	7.21	128.84
CCR-21	1363454.0	682331.4	137.12	7/21/2022	8.86	128.26
CCR-22	1363017.4	682078.7	137.51	7/21/2022	8.84	128.67
CCR-23	1362812.1	681744.7	135.78	7/21/2022	6.64	129.14
MW-24S	1363278.5	683727.0	143.91	7/21/2022	12.67	131.24
MW-25S	1362906.6	683555.1	144.40	7/21/2022	15.31	129.09

Notes:

1. Northing and easting are in feet relative to the State Plane Florida North Datum of 1983, Florida West.
2. Elevations are in feet relative to the North American Vertical Datum of 1988.
3. Depth to water measurements are in feet below top of casing.

TABLE 5: SUMMARY OF GROUNDWATER PROTECTION STANDARDS

Lakeland Electric - C.D. McIntosh Power Plant, Polk County, Florida

Analyte	Units	Site-Specific GWPS[4]
Antimony	mg/L	0.006
Arsenic	mg/L	0.01
Barium	mg/L	2
Beryllium	mg/L	0.004
Cadmium	mg/L	0.005
Chromium	mg/L	0.1
Cobalt[2]	mg/L	0.006
Fluoride	mg/L	4
Lead[2]	mg/L	0.015
Lithium[2]	mg/L	0.04
Mercury	mg/L	0.002
Molybdenum[2]	mg/L	0.1
Selenium	mg/L	0.05
Thallium	mg/L	0.002
Combined Radium - 226+228	pCi/L	7.94

Notes:

1. "USEPA" indicates United States Environmental Protection Agency;
   "GWPS" indicates Groundwater Protection Standard; "mg/L" indicates milligrams per liter;
   "pCi/L" indicates picocuries per liter; "NA" indicates not applicable;
   "CCR" indicates Coal Combustion Residuals; "NC" indicates not calculated.
2. USEPA CCR Rule Specified Limit established in the USEPA CCR Rule Amendment dated July 30, 2018.
3. Background indicates the statistically derived upper tolerance limit.
4. Site-Specific GWPS derivation is available in the *July 2021 Statistical Evaluation for Assessment Monitoring* for the Byproduct Storage Area by Geosyntec dated February 10, 2022.

FIGURES

Legend

- BSA Boundary
- Approximate BSA Perimeter Ditch
- City of Lakeland Property
- C.D. McIntosh Power Plant Boundary
- Approximate Lake Boundary

Note:
1. BSA indicates byproduct storage area.
2. 2020 ESRI World Imagery Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.
3. ESRI Street Map Source (inset image): Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community.

N

0 1,250 Feet

Site Location - Byproduct Storage Area

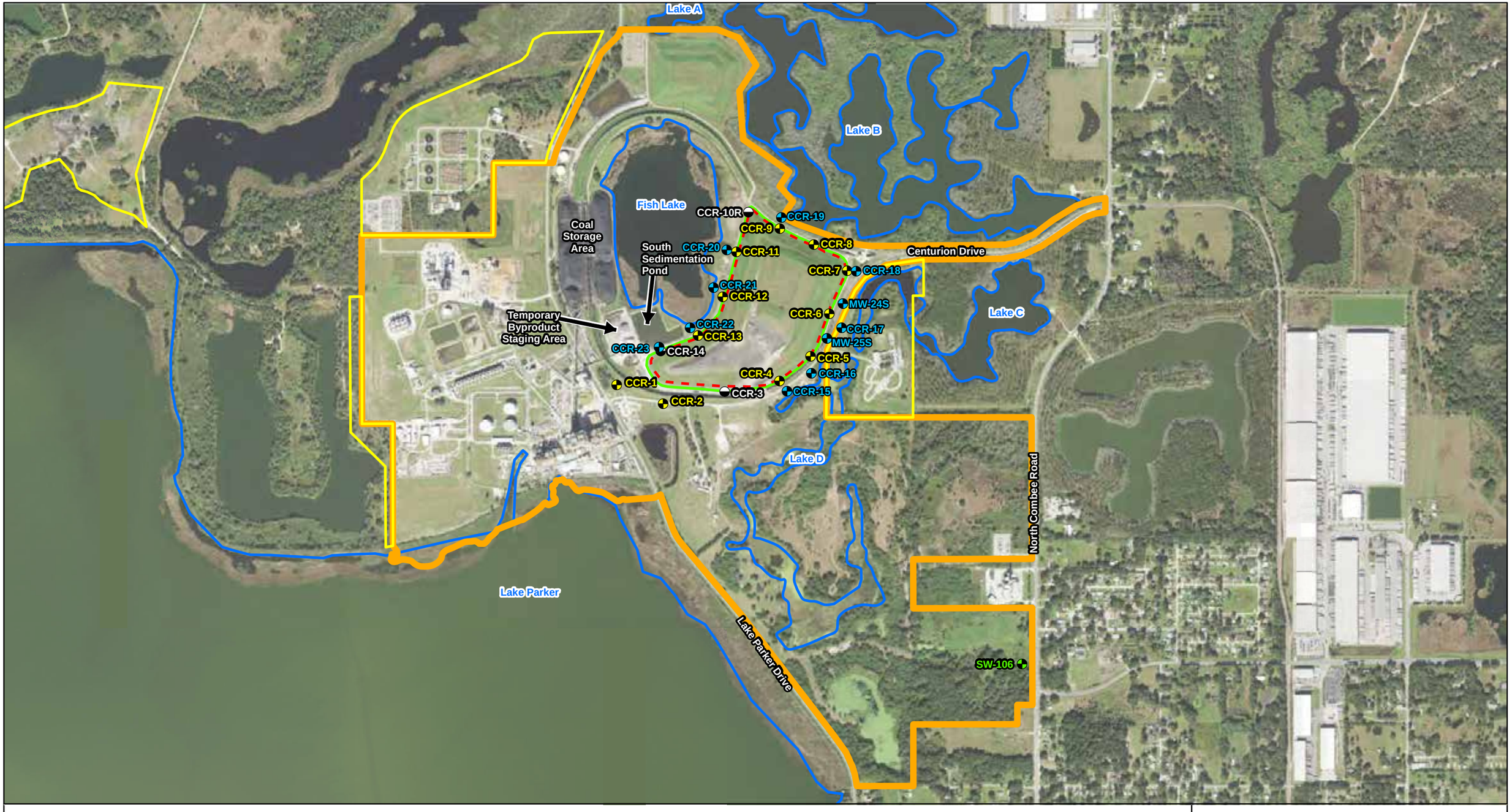
C.D. McIntosh Power Plant
Lakeland, Polk County, Florida

Geosyntec consultants

Tampa, FL | December 2022

Figure 1

Path: (Titusville-01\DATA) \\Titusville-01\Data\0GIS\FR3715_Lakeland_Electric\MXDs\202101\SiteLocation_BSA.mxd 29 December 2022. Last Edited by: csaville



Legend

- Piezometer
- CCR Monitoring Well
- Nature and Extent Monitoring Well
- Sampling Location
- BSA Boundary
- Approximate BSA Perimeter Ditch
- City of Lakeland Property
- C.D. McIntosh Power Plant Boundary
- Approximate Lake Boundary

Note:
1. CCR indicates Coal Combustion Residual.
2. BSA indicates byproduct storage area.
3. The location of SW-106 is approximate.
4. 2020 ESRI World Imagery Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.

N

0 1,000 Feet

Well Locations - Byproduct Storage Area

C.D. McIntosh Power Plant
Lakeland, Polk County, Florida

Geosyntec consultants

Tampa, FL | December 2022

Figure 2

Path: (Titusville-01\DATA) \\Titusville-01\Data\0GIS\FR3715_Lakeland_Electric\MXDs\202101\Well_locs.mxd 29 December 2022. Last Edited by: csaville

Legend

- Piezometer
- CCR Monitoring Well
- Nature and Extent Monitoring Well
- BSA Boundary
- Approximate BSA Perimeter Ditch
- City of Lakeland Property
- C.D. McIntosh Power Plant Boundary
- Approximate Lake Boundary
- Groundwater Elevation Contour
- Groundwater Elevation Contour Inferred
- Groundwater Flow Direction
- [131.30] Groundwater Elevation (ft NAVD 88)

Notes:
1. * indicates measurement not used for contouring purposes.
2. BSA indicates byproduct storage area.
3. ft NAVD88 indicates an elevation in feet relative to the North American Vertical Datum of 1988.
4. CCR indicates Coal Combustion Residual.
5. Well locations were obtained from the Golder 2019 Assessment of Corrective Measures Report.
6. 2020 ESRI World Imagery Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.

N

0 300 Feet

Surficial Aquifer Groundwater Contour Map January 2022

C.D. McIntosh Power Plant
Lakeland, Polk County, Florida

Geosyntec consultants

Tampa, FL | December 2022

Figure 3

Path: (Titusville-01\DATA) \\Titusville-01\Data\0GIS\FR3715_Lakeland_Electric\MXDs\202203\GW_elev_Jan2022.mxd 29 December 2022. Last Edited by: csaville

Legend

- Piezometer
- CCR Monitoring Well
- Nature and Extent Monitoring Well
- BSA Boundary
- Approximate BSA Perimeter Ditch
- City of Lakeland Property
- C.D. McIntosh Power Plant Boundary
- Approximate Lake Boundary
- Groundwater Elevation Contour
- Groundwater Elevation Contour Inferred
- Groundwater Flow Direction
- [131.30] Groundwater Elevation (ft NAVD 88)

Notes:
1. * indicates measurement not used for contouring purposes.
2. BSA indicates byproduct storage area.
3. ft NAVD88 indicates an elevation in feet relative to the North American Vertical Datum of 1988.
4. CCR indicates Coal Combustion Residual.
5. Well locations were obtained from the Golder 2019 Assessment of Corrective Measures Report.
6. 2020 ESRI World Imagery Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.

N

0 300 Feet

Surficial Aquifer Groundwater Contour Map July 2022

C.D. McIntosh Power Plant
Lakeland, Polk County, Florida

Geosyntec consultants

Tampa, FL | December 2022

Figure 4

Path: {Titusville-01\DATA} \\Titusville-01\Data\0GIS\FR3715_Lakeland_Electric\MXDs\202211\GW_CCRelev_Jul2022.mxd 29 December 2022. Last Edited by: csaville

APPENDIX A

Laboratory Analytical Reports, Field Sampling Logs, and Data Validation

1460 West McNab Road
Fort Lauderdale, FL 33309
1-800-ANALYTE Phone
(954) 978-6400 Phone
(954) 978-2233 Fax

NELAP Certificate No. E86006

10 March 2022
Lab Work Order (COC): 22C0066

Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland, FL 33805

RE: **CCR Monitoring Program**

Project Location: **McIntosh Plant**

Dear Thomas Johnston:

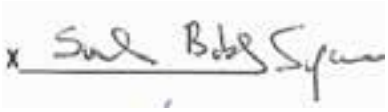
This report details the analytical results of samples collected at the above-referenced project location. These samples were received by Florida Spectrum Environmental Services at **03/01/2022 16:20**.

All Analyses were performed according to the TNI/NELAP standard unless indicated by a "~" on the report.

Your samples will be retained by Florida Spectrum Environmental for a period of at least 30 days following sample receipt or until the longest of the preparation and/or analytical hold times expires, whichever is shorter. After that time, they will be properly disposed without further notice, unless there exists an explicit contractual agreement to the contrary. We reserve the right to return any unused samples, extracts, or related materials or solutions to you if we consider it necessary. Examples might include those samples identified as hazardous wastes, submissions where the sample sizes significantly exceed those required for analysis, samples containing controlled substances, etc.

We thank you for selecting Florida Spectrum Environmental to serve your analytical needs. Should you have any questions or require additional information regarding any of the information in this report, please feel free to contact us at any time. We appreciate the opportunity to be of service.

Florida Spectrum Environmental Inc.



Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/10/2022
Work Order # 22C0066
Project: CCR Monitoring Program
McIntosh Plant

DETECTED ANALYTE SUMMARY

CCR-1A	22C0066-01	Water	Barium	8.70	ug/L	2/28/2022	10:57
CCR-1A	22C0066-01	Water	Boron	75.6	ug/L	2/28/2022	10:57
CCR-1A	22C0066-01	Water	Calcium	50500	ug/L	2/28/2022	10:57
CCR-1A	22C0066-01	Water	Titanium	1.00	ug/L	2/28/2022	10:57
CCR-1A	22C0066-01	Water	Chromium	1.20	ug/L	2/28/2022	10:57
CCR-1B	22C0066-02	Water	Total Dissolved Solids	192	mg/L	2/28/2022	10:57
CCR-1B	22C0066-02	Water	Chloride	5.50	mg/L	2/28/2022	10:57
CCR-1B	22C0066-02	Water	Fluoride	0.109	mg/L	2/28/2022	10:57
CCR-1B	22C0066-02	Water	Sulfate	71.5	mg/L	2/28/2022	10:57
CCR-2A	22C0066-03	Water	Molybdenum	1.80	ug/L	2/28/2022	12:57
CCR-2A	22C0066-03	Water	Titanium	1.30	ug/L	2/28/2022	12:57
CCR-2A	22C0066-03	Water	Boron	36.5	ug/L	2/28/2022	12:57
CCR-2A	22C0066-03	Water	Calcium	47600	ug/L	2/28/2022	12:57
CCR-2A	22C0066-03	Water	Chromium	1.50	ug/L	2/28/2022	12:57
CCR-2A	22C0066-03	Water	Barium	13.0	ug/L	2/28/2022	12:57
CCR-2B	22C0066-04	Water	Sulfate	71.2	mg/L	2/28/2022	12:57
CCR-2B	22C0066-04	Water	Chloride	15.7	mg/L	2/28/2022	12:57
CCR-2B	22C0066-04	Water	Total Dissolved Solids	216	mg/L	2/28/2022	12:57
CCR-2B	22C0066-04	Water	Fluoride	0.152	mg/L	2/28/2022	12:57
CCR-15A	22C0066-05	Water	Calcium	18900	ug/L	2/28/2022	14:20
CCR-15A	22C0066-05	Water	Barium	29.5	ug/L	2/28/2022	14:20
CCR-15A	22C0066-05	Water	Boron	21.3	ug/L	2/28/2022	14:20
CCR-15A	22C0066-05	Water	Titanium	7.20	ug/L	2/28/2022	14:20
CCR-15A	22C0066-05	Water	Magnesium	1150	ug/L	2/28/2022	14:20

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/10/2022
Work Order # 22C0066
Project: CCR Monitoring Program
McIntosh Plant

DETECTED ANALYTE SUMMARY

Client Sample ID	Laboratory ID	Matrix	Analyte	Result	Units	Collection Date	Collection Time
CCR-15A	22C0066-05	Water	Sodium	2240	ug/L	2/28/2022	14:20
CCR-15A	22C0066-05	Water	Potassium	506	ug/L	2/28/2022	14:20
CCR-15A	22C0066-05	Water	Chromium	1.60	ug/L	2/28/2022	14:20
CCR-15B	22C0066-06	Water	Chloride	7.67	mg/L	2/28/2022	14:20
CCR-15B	22C0066-06	Water	Total Dissolved Solids	104	mg/L	2/28/2022	14:20
CCR-15B	22C0066-06	Water	Bicarbonate	3.03	mg/L	2/28/2022	14:20
CCR-15B	22C0066-06	Water	Total Alkalinity	3.03	mg/L	2/28/2022	14:20
CCR-15B	22C0066-06	Water	Sulfate	66.9	mg/L	2/28/2022	14:20
CCR-15B	22C0066-06	Water	Fluoride	0.136	mg/L	2/28/2022	14:20

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/10/2022
Work Order # 22C0066
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22C0066-01
Client Sample ID: CCR-1A
Matrix: Water

Collection Date: 02/28/22 10:57
Received Date: 03/01/22 16:20
Collected By: Client

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	5.11	15.0	EPA 200.7/3010	03/02 08:30	03/02 11:11	MAZ
Arsenic	ND	U	ug/L	1	2.21	10.0	EPA 200.7/3010	03/02 08:30	03/02 11:11	MAZ
Barium	8.70		ug/L	1	0.0728	1.00	EPA 200.7/3010	03/02 08:30	03/02 11:11	MAZ
Beryllium	ND	U	ug/L	1	0.101	1.00	EPA 200.7/3010	03/02 08:30	03/02 11:11	MAZ
Boron	75.6		ug/L	1	1.57	10.0	EPA 200.7/3010	03/02 08:30	03/02 11:11	MAZ
Cadmium	ND	U	ug/L	1	0.181	1.00	EPA 200.7/3010	03/02 08:30	03/02 11:11	MAZ
Calcium	50500		ug/L	1	5.79	50.0	EPA 200.7/3010	03/02 08:30	03/02 11:11	MAZ
Chromium	1.20	I	ug/L	1	0.339	5.00	EPA 200.7/3010	03/02 08:30	03/02 11:11	MAZ
Cobalt	ND	U	ug/L	1	0.361	1.00	EPA 200.7/3010	03/02 08:30	03/02 11:11	MAZ
Lead	ND	U	ug/L	1	1.19	10.0	EPA 200.7/3010	03/02 08:30	03/02 11:11	MAZ
Lithium	ND	U	ug/L	1	2.72	25.0	EPA 200.7/3010	03/02 08:30	03/03 11:44	MAZ
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	03/07 10:00	03/07 12:24	JF
Molybdenum	ND	U	ug/L	1	1.17	10.0	EPA 200.7/3010	03/02 08:30	03/02 11:11	MAZ
Selenium	ND	U	ug/L	1	3.46	15.0	EPA 200.7/3010	03/02 08:30	03/02 11:11	MAZ
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	03/02 08:30	03/02 11:11	MAZ
Titanium	1.00		ug/L	1	0.201	1.00	EPA 200.7/3010	03/02 08:30	03/02 11:11	MAZ

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/10/2022
Work Order # 22C0066
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22C0066-02
Client Sample ID: CCR-1B
Matrix: Water

Collection Date: 02/28/22 10:57
Received Date: 03/01/22 16:20
Collected By: Client

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Chloride	5.50		mg/L	1	0.126	0.500	EPA 300.0	03/01 18:32	03/02 02:13	PK
Fluoride	0.109		mg/L	1	0.00520	0.0250	EPA 300.0	03/01 18:32	03/02 02:13	PK
Sulfate	71.5		mg/L	1	0.0953	0.500	EPA 300.0	03/01 18:32	03/02 02:13	PK
Total Dissolved Solids	192		mg/L	2	20.0	60.0	SM 2540C	03/03 16:45	03/05 16:20	HM

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/10/2022
Work Order # 22C0066
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22C0066-03
Client Sample ID: CCR-2A
Matrix: Water

Collection Date: 02/28/22 12:57
Received Date: 03/01/22 16:20
Collected By: Client

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	5.11	15.0	EPA 200.7/3010	03/02 08:30	03/02 11:22	MAZ
Arsenic	ND	U	ug/L	1	2.21	10.0	EPA 200.7/3010	03/02 08:30	03/02 11:22	MAZ
Barium	13.0		ug/L	1	0.0728	1.00	EPA 200.7/3010	03/02 08:30	03/02 11:22	MAZ
Beryllium	ND	U	ug/L	1	0.101	1.00	EPA 200.7/3010	03/02 08:30	03/02 11:22	MAZ
Boron	36.5		ug/L	1	1.57	10.0	EPA 200.7/3010	03/02 08:30	03/02 11:22	MAZ
Cadmium	ND	U	ug/L	1	0.181	1.00	EPA 200.7/3010	03/02 08:30	03/02 11:22	MAZ
Calcium	47600		ug/L	1	5.79	50.0	EPA 200.7/3010	03/02 08:30	03/02 11:22	MAZ
Chromium	1.50	I	ug/L	1	0.339	5.00	EPA 200.7/3010	03/02 08:30	03/02 11:22	MAZ
Cobalt	ND	U	ug/L	1	0.361	1.00	EPA 200.7/3010	03/02 08:30	03/02 11:22	MAZ
Lead	ND	U	ug/L	1	1.19	10.0	EPA 200.7/3010	03/02 08:30	03/02 11:22	MAZ
Lithium	ND	U	ug/L	1	2.72	25.0	EPA 200.7/3010	03/02 08:30	03/03 11:47	MAZ
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	03/07 10:00	03/07 12:27	JF
Molybdenum	1.80	I	ug/L	1	1.17	10.0	EPA 200.7/3010	03/02 08:30	03/02 11:22	MAZ
Selenium	ND	U	ug/L	1	3.46	15.0	EPA 200.7/3010	03/02 08:30	03/02 11:22	MAZ
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	03/02 08:30	03/02 11:22	MAZ
Titanium	1.30		ug/L	1	0.201	1.00	EPA 200.7/3010	03/02 08:30	03/02 11:22	MAZ

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/10/2022
Work Order # 22C0066
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22C0066-04
Client Sample ID: CCR-2B
Matrix: Water

Collection Date: 02/28/22 12:57
Received Date: 03/01/22 16:20
Collected By: Client

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Chloride	15.7		mg/L	1	0.126	0.500	EPA 300.0	03/01 18:32	03/02 02:30	PK
Fluoride	0.152		mg/L	1	0.00520	0.0250	EPA 300.0	03/01 18:32	03/02 02:30	PK
Sulfate	71.2		mg/L	1	0.0953	0.500	EPA 300.0	03/01 18:32	03/02 02:30	PK
Total Dissolved Solids	216		mg/L	2	20.0	60.0	SM 2540C	03/04 19:10	03/08 10:32	HM

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/10/2022
Work Order # 22C0066
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22C0066-05
Client Sample ID: CCR-15A
Matrix: Water

Collection Date: 02/28/22 14:20
Received Date: 03/01/22 16:20
Collected By: Client

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	5.11	15.0	EPA 200.7/3010	03/02 08:30	03/02 11:25	MAZ
Arsenic	ND	U	ug/L	1	2.21	10.0	EPA 200.7/3010	03/02 08:30	03/02 11:25	MAZ
Barium	29.5		ug/L	1	0.0728	1.00	EPA 200.7/3010	03/02 08:30	03/02 11:25	MAZ
Beryllium	ND	U	ug/L	1	0.101	1.00	EPA 200.7/3010	03/02 08:30	03/02 11:25	MAZ
Boron	21.3		ug/L	1	1.57	10.0	EPA 200.7/3010	03/02 08:30	03/02 11:25	MAZ
Cadmium	ND	U	ug/L	1	0.181	1.00	EPA 200.7/3010	03/02 08:30	03/02 11:25	MAZ
Calcium	18900		ug/L	1	5.79	50.0	EPA 200.7/3010	03/02 08:30	03/02 11:25	MAZ
Chromium	1.60	I	ug/L	1	0.339	5.00	EPA 200.7/3010	03/02 08:30	03/02 11:25	MAZ
Cobalt	ND	U	ug/L	1	0.361	1.00	EPA 200.7/3010	03/02 08:30	03/02 11:25	MAZ
Lead	ND	U	ug/L	1	1.19	10.0	EPA 200.7/3010	03/02 08:30	03/02 11:25	MAZ
Lithium	ND	U	ug/L	1	2.72	25.0	EPA 200.7/3010	03/02 08:30	03/03 11:50	MAZ
Magnesium	1150		ug/L	1	3.74	20.0	EPA 200.7/3010	03/02 08:30	03/02 11:25	MAZ
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	03/07 10:00	03/07 12:30	JF
Molybdenum	ND	U	ug/L	1	1.17	10.0	EPA 200.7/3010	03/02 08:30	03/02 11:25	MAZ
Potassium	506		ug/L	1	17.3	50.0	EPA 200.7/3010	03/02 08:30	03/02 11:25	MAZ
Selenium	ND	U	ug/L	1	3.46	15.0	EPA 200.7/3010	03/02 08:30	03/02 11:25	MAZ
Sodium	2240		ug/L	1	446	2000	EPA 200.7/3010	03/02 08:30	03/02 11:25	MAZ
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	03/02 08:30	03/02 11:25	MAZ
Titanium	7.20		ug/L	1	0.201	1.00	EPA 200.7/3010	03/02 08:30	03/02 11:25	MAZ

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/10/2022
Work Order # 22C0066
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22C0066-06
Client Sample ID: CCR-15B
Matrix: Water

Collection Date: 02/28/22 14:20
Received Date: 03/01/22 16:20
Collected By: Client

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	3.03	I	mg/L	1	2.49	7.46	EPA 310.2	03/05 12:39	03/05 12:39	OC
Bicarbonate	3.03	I	mg/L	1	2.49	7.46	EPA 310.2	03/05 12:39	03/05 12:39	OC
Chloride	7.67		mg/L	1	0.126	0.500	EPA 300.0	03/01 18:32	03/02 01:24	PK
Fluoride	0.136	J3	mg/L	1	0.00520	0.0250	EPA 300.0	03/01 18:32	03/02 01:24	PK
Sulfate	66.9	J3	mg/L	1	0.0953	0.500	EPA 300.0	03/01 18:32	03/02 01:24	PK
Total Dissolved Solids	104		mg/L	2	20.0	60.0	SM 2540C	03/04 19:10	03/08 10:32	HM

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/10/2022
Work Order # 22C0066
Project: CCR Monitoring Program
McIntosh Plant

Wet Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22C0185 - Default Prep GenChem										
Blank (22C0185-BLK1)				Prepared & Analyzed: 03/01/2022						
Fluoride	ND	0.0250	mg/L							U
Chloride	ND	0.500	"							U
Sulfate	ND	0.500	"							U
LCS (22C0185-BS1)				Prepared & Analyzed: 03/01/2022						
Fluoride	2.41	0.0250	mg/L	2.500		96	90-110			
Chloride	50.2	0.500	"	50.00		100	90-110			
Sulfate	49.2	0.500	"	50.00		98	90-110			
Duplicate (22C0185-DUP1)	**Source: 22C0066-06**			Prepared: 03/01/2022 Analyzed: 03/02/2022						
Fluoride	0.126	0.0250	mg/L		0.136			8	20	
Chloride	7.61	0.500	"		7.67			0.8	20	
Sulfate	68.6	0.500	"		66.9			3	20	
Matrix Spike (22C0185-MS1)	**Source: 22C0066-06**			Prepared: 03/01/2022 Analyzed: 03/02/2022						
Fluoride	3.48	0.0250	mg/L	2.500	0.136	134	90-110			J3
Chloride	57.6	0.500	"	50.00	7.67	100	90-110			
Sulfate	104	0.500	"	50.00	66.9	75	90-110			J3
Batch 22C0241 - Default Prep GenChem										
Blank (22C0241-BLK1)				Prepared: 03/03/2022 Analyzed: 03/05/2022						
Total Dissolved Solids	ND	30.0	mg/L							U
LCS (22C0241-BS1)				Prepared: 03/03/2022 Analyzed: 03/05/2022						
Total Dissolved Solids	476	120	mg/L	500.0		95.2	80-120			

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/10/2022

Work Order # 22C0066

Project: CCR Monitoring Program
McIntosh Plant

Wet Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22C0241 - Default Prep GenChem										
Duplicate (22C0241-DUP1)	**Source: 22C0005-01**			Prepared: 03/03/2022 Analyzed: 03/05/2022						
Total Dissolved Solids	416	60.0	mg/L		418			0.480	20	
Batch 22C0290 - Default Prep GenChem										
Blank (22C0290-BLK1)				Prepared: 03/04/2022 Analyzed: 03/08/2022						
Total Dissolved Solids	ND	30.0	mg/L							U
LCS (22C0290-BS1)				Prepared: 03/04/2022 Analyzed: 03/08/2022						
Total Dissolved Solids	516	120	mg/L	500.0		103	80-120			
Duplicate (22C0290-DUP1)	**Source: 22C0125-03**			Prepared: 03/04/2022 Analyzed: 03/08/2022						
Total Dissolved Solids	5710	120	mg/L		5580			2.20	20	
Duplicate (22C0290-DUP2)	**Source: 22C0125-04**			Prepared: 03/04/2022 Analyzed: 03/08/2022						
Total Dissolved Solids	5650	120	mg/L		5600			0.996	20	
Batch 22C0296 - Default Prep GenChem										
Blank (22C0296-BLK1)				Prepared & Analyzed: 03/05/2022						
Total Alkalinity	ND	7.46	mg/L							U
LCS (22C0296-BS1)				Prepared & Analyzed: 03/05/2022						
Total Alkalinity	255	7.46	mg/L	250.0		102	90-110			
Duplicate (22C0296-DUP1)	**Source: 22C0066-06**			Prepared & Analyzed: 03/05/2022						
Total Alkalinity	2.55	7.46	mg/L		3.03			17	20	I

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/10/2022
Work Order # 22C0066
Project: CCR Monitoring Program
McIntosh Plant

Wet Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22C0296 - Default Prep GenChem										
Matrix Spike (22C0296-MS1)	**Source: 22C0066-06**			Prepared & Analyzed: 03/05/2022						
Total Alkalinity	263	7.46	mg/L	250.0	3.03	104	90-110			
Matrix Spike (22C0296-MS2)	**Source: 22C0212-08**			Prepared & Analyzed: 03/05/2022						
Total Alkalinity	395	7.46	mg/L	250.0	177	87	90-110			J3

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/10/2022

Work Order # 22C0066

Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22C0006 - EPA 3010A										
Blank (22C0006-BLK1)				Prepared & Analyzed: 03/02/2022						
Calcium	ND	50.0	ug/L							U
Cobalt	ND	1.00	"							U
Cadmium	ND	1.00	"							U
Chromium	ND	5.00	"							U
Arsenic	ND	10.0	"							U
Beryllium	ND	1.00	"							U
Boron	ND	10.0	"							U
Barium	ND	1.00	"							U
Lead	ND	10.0	"							U
Sodium	ND	2000	"							U
Molybdenum	ND	10.0	"							U
Thallium	ND	4.00	"							U
Titanium	ND	1.00	"							U
Magnesium	ND	20.0	"							U
Selenium	ND	15.0	"							U
Potassium	ND	50.0	"							U
Antimony	ND	15.0	"							U
LCS (22C0006-BS1)				Prepared & Analyzed: 03/02/2022						
Calcium	25800	50.0	ug/L	25500		101	85-115			
Cadmium	503.5	1.00	"	500.0		101	85-115			
Chromium	491.0	5.00	"	500.0		98.2	85-115			
Cobalt	487.5	1.00	"	500.0		97.5	85-115			
Barium	482.8	1.00	"	500.0		96.6	85-115			
Antimony	484.7	15.0	"	500.0		96.9	85-115			
Arsenic	499	10.0	"	500.0		99.8	85-115			
Beryllium	503.2	1.00	"	500.0		101	85-115			
Boron	497.5	10.0	"	500.0		99.5	85-115			
Thallium	483.6	4.00	"	500.0		96.7	85-115			
Selenium	508.0	15.0	"	500.0		102	85-115			
Titanium	503.7	1.00	"	500.0		101	85-115			
Magnesium	478	20.0	"	500.0		95.6	85-115			

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/10/2022
Work Order # 22C0066
Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22C0006 - EPA 3010A										
LCS (22C0006-BS1)				Prepared & Analyzed: 03/02/2022						
Lead	492	10.0	ug/L	500.0		98.3	85-115			
Sodium	23600	2000	"	25500		92.4	85-115			
Molybdenum	504.6	10.0	"	500.0		101	85-115			
Potassium	23400	50.0	"	25500		91.9	85-115			
Matrix Spike (22C0006-MS1)	**Source: 22C0040-01**			Prepared & Analyzed: 03/02/2022						
Cadmium	495.5	1.00	ug/L	500.0	0.4000	99.0	70-130			
Calcium	40800	50.0	"	25500	15200	100	70-130			
Chromium	508.7	5.00	"	500.0	0.9000	102	70-130			
Cobalt	504.5	1.00	"	500.0	ND	101	70-130			
Barium	500.2	1.00	"	500.0	4.300	99.2	70-130			
Antimony	554.4	15.0	"	500.0	ND	111	70-130			
Arsenic	513	10.0	"	500.0	ND	103	70-130			
Molybdenum	539.2	10.0	"	500.0	5.100	107	70-130			
Beryllium	515.5	1.00	"	500.0	ND	103	70-130			
Boron	591.9	10.0	"	500.0	78.40	103	70-130			
Selenium	497.7	15.0	"	500.0	ND	99.5	70-130			
Sodium	65400	2000	"	25500	37600	109	70-130			
Thallium	487.5	4.00	"	500.0	ND	97.5	70-130			
Titanium	523.2	1.00	"	500.0	4.000	104	70-130			
Lead	498	10.0	"	500.0	ND	99.5	70-130			
Magnesium	6020	20.0	"	500.0	5650	73.5	70-130			
Potassium	31200	50.0	"	25500	3500	108	70-130			
Matrix Spike Dup (22C0006-MSD1)	**Source: 22C0040-01**			Prepared & Analyzed: 03/02/2022						
Calcium	41200	50.0	ug/L	25500	15200	102	70-130	1.90	20	
Cadmium	498.3	1.00	"	500.0	0.4000	99.6	70-130	0.564	20	
Chromium	510.3	5.00	"	500.0	0.9000	102	70-130	0.315	20	
Antimony	556.3	15.0	"	500.0	ND	111	70-130	0.342	20	
Arsenic	516	10.0	"	500.0	ND	103	70-130	0.622	20	
Barium	503.7	1.00	"	500.0	4.300	99.9	70-130	0.703	20	
Boron	600.8	10.0	"	500.0	78.40	104	70-130	1.72	20	

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/10/2022

Work Order # 22C0066

Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22C0006 - EPA 3010A										
Matrix Spike Dup (22C0006-MSD1)	**Source: 22C0040-01**			Prepared & Analyzed: 03/02/2022						
Cobalt	507.3	1.00	ug/L	500.0	ND	101	70-130	0.553	20	
Beryllium	521.8	1.00	"	500.0	ND	104	70-130	1.21	20	
Selenium	502.7	15.0	"	500.0	ND	101	70-130	1.00	20	
Thallium	489.3	4.00	"	500.0	ND	97.9	70-130	0.369	20	
Titanium	526.4	1.00	"	500.0	4.000	104	70-130	0.614	20	
Sodium	66200	2000	"	25500	37600	112	70-130	2.80	20	
Magnesium	6110	20.0	"	500.0	5650	90.1	70-130	20.3	20	
Potassium	31600	50.0	"	25500	3500	110	70-130	1.53	20	
Molybdenum	543.6	10.0	"	500.0	5.100	108	70-130	0.820	20	
Lead	501	10.0	"	500.0	ND	100	70-130	0.641	20	
Batch 22C0012 - EPA 3010A										
Blank (22C0012-BLK1)				Prepared: 03/02/2022 Analyzed: 03/03/2022						
Lithium	ND	25.0	ug/L							U
LCS (22C0012-BS1)				Prepared: 03/02/2022 Analyzed: 03/03/2022						
Lithium	2490	25.0	ug/L	2500		100	85-115			
Matrix Spike (22C0012-MS1)	**Source: 22C0066-05**			Prepared: 03/02/2022 Analyzed: 03/03/2022						
Lithium	2460	25.0	ug/L	2500	ND	99	75-125			
Matrix Spike Dup (22C0012-MSD1)	**Source: 22C0066-05**			Prepared: 03/02/2022 Analyzed: 03/03/2022						
Lithium	2470	25.0	ug/L	2500	ND	99	75-125	0.2	20	
Batch 22C0023 - EPA 245.1/245.2 Prep										
Blank (22C0023-BLK1)				Prepared & Analyzed: 03/07/2022						
Mercury	ND	1.00	ug/L							U

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/10/2022
Work Order # 22C0066
Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22C0023 - EPA 245.1/245.2 Prep										
LCS (22C0023-BS1)				Prepared & Analyzed: 03/07/2022						
Mercury	10.6	1.00	ug/L	10.00		106	85-115			
Matrix Spike (22C0023-MS1)	**Source: 22C0008-10**			Prepared & Analyzed: 03/07/2022						
Mercury	8.98	1.00	ug/L	10.00	ND	90	70-130			
Matrix Spike Dup (22C0023-MSD1)	**Source: 22C0008-10**			Prepared & Analyzed: 03/07/2022						
Mercury	8.93	1.00	ug/L	10.00	ND	89	70-130	0.6	20	

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

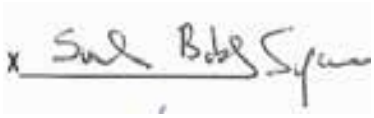
Report Printed: 3/10/2022
Work Order # 22C0066
Project: CCR Monitoring Program
McIntosh Plant

Notes and Definitions

U	Indicated that the compound was analyzed for but not detected. This shall be used to indicate that the specific component was not detected. The value associated with the qualifier shall be the laboratory method detection limit.
J3	The matrix spike recovery outside method acceptance limits indicating matrix interference.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the detection limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
N.O.O.	No Odor Observed
REP	Field parameter measured by client
V	Indicated that the analyte was detected in both the sample and the associated method blank.
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
Z	Too many colonies were present for accurate counting.
SUB	Work performed by outside (subcontracted) labs denoted by SUB in analyst field.

QC=Qualifier Codes as defined by DEP 62-160
Unless indicated, soil results are reported on actual (wet) weight basis.
The Color SM2120B method is reported as (Color / pH)
Legionella analyzed under CDC acreditation program
Dilution factors >= 1000 are abreviated using k=1000 and M=1000000
Field parameters are not NELAP acredited.
Results relate only to this sample.

Suresh (Bobby) Supan - CSM



Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification# E86006

All NELAP certified analysis are performed in accordance with Chapter 64E-1 Florida Administrative code, which has been determined to be equivalent to NELAC standards. Analysis certified by programs other than NELAP are designated with a "~".

CHAIN OF CUSTODY RECORD

SUBMISSION # 22C0064

Logged into LIMS by: C

Florida Spectrum Environmental Services, Inc.

Doc Ctrl 2401117.001 Date 12/6/17

1460 W McNab Road Ft Lauderdale FL 33309 Tel: (954) 978-6400 Fax: (954) 978-2233
1112 NW Park Street, Okeechobee, FL 34972 Tel: (863) 763-3336 Fax: (863) 763-1544
630 Indian Street Savannah, GA 31401 Tel: (912) 238-5050 Fax: (912) 234-4815
5?3 Gooch Road Fort Meade FL 33841 Tel: (863) 285-8145 Fax (863) 285-7030
1910 Harden Blvd # 101, Lakeland, FL 33803 Tel: (863) 686-4271 Fax (863) 686-4359

DUE DATE Requested

RUSH RESERVATION #

Rush Surcharges apply

Report to: Lakeland Electric | Report to Address:

Invoice to: Lakeland Electric | Purchase Order # 281095 | Invoice to Address:

Project Name and/or Number: CCR Monitoring Program | Site Location: McIntosh Plant

Project Mgr: Thomas Johnston | Phone: | Fax: | Email:

Sampler Name: (printed) | Sampler Signature: [signature]

ORDER # Lab Control Number (*Shaded Areas For Laboratory Use Only*)	Sample ID	Date Sampled	Time Sampled	Matrix (DW SW GW SED S EFF HW BIO SA OIL X)	Appendix III Metals	Appendix IV Metals	CC Suite Metals	App III Cl, F, SO4, TDS	CC Suite Bicarb, T-Alk	TEMP °C	PH	COND	CHLOR
01	CCR-1A	2/28/2022	1057	GW	X	X							
02	CCR-1B	2/28/2022	1057	GW				X					
03	CCR-2A	2/28/2022	1257	GW	X	X							
04	CCR-2B	2/28/2022	1257	GW				X					
05	CCR-15A	2/28/2022	1420	GW	x	x	x						
06	CCR-15B	2/28/2022	1420	GW				x	x				

Special Comments:

"I waive NELAC protocol" (sign here):

Deliverables: QA/QC Report Needed? Yes No (additional charge)

SAMPLE CUSTODY AND TRANSFER SIGNATURES — DATE / TIME

#		Signature	Date / Time
1	Relinquished by:	[signature]	3/1/22 10:22
1	Received by:	[signature]	3/1/22 10:22
2	Relinquished by:	[signature] RES	3/1/22 16:20
2	Received by:	[signature]	3/1/22 16:20
3	Relinquished by:		
3	Received by:		

Sample Custody & Field Comments

Received on Ice: Y N

Temp as received: 4.8 °C

Custody Seals? Y N

D-9 ______ GLN-1 ______

FIELD TIME:

Sampling ___ hr Pick up ___ hr

Misc. Charges

Bottle Type

A-liter amber
B-Bacteria bag/bottle
F-500 ml | O-125ml
L-liter bottle | R-Plastic Amber
S-Soil Jar | TED-Tedlar Air Bag
T-250 ml
V-40 ml vial
W-wide mouth
X-other

Preservatives

A-Ascorbic acid | P-H_3PO_4
C-HCL | S-H_2SO_4
Cu-$CuSO_4$ | T-$Na_2S_2O_3$-H_2O
H-HNO_3 | U-Unpreserved
M-MCAB | DI-DI Water
N-NaOH | Z-zinc acetate
NH_4-NH_4CL
Hex- Hex.Cr. Buffer
EDA-Ethylene Diamine

www.flenviro.com

COC Page 1 of 1

1460 West McNab Road
Fort Lauderdale, FL 33309
1-800-ANALYTE Phone
(954) 978-6400 Phone
(954) 978-2233 Fax

NELAP Certificate No. E86006

25 March 2022
Lab Work Order (COC): 22C0664

Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland, FL 33805

RE: **CCR Monitoring Program**

Project Location: **McIntosh Plant**

Dear Thomas Johnston:

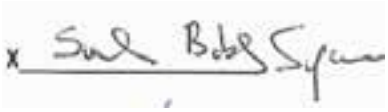
This report details the analytical results of samples collected at the above-referenced project location. These samples were received by Florida Spectrum Environmental Services at **03/16/2022 10:10**.

All Analyses were performed according to the TNI/NELAP standard unless indicated by a "~" on the report.

Your samples will be retained by Florida Spectrum Environmental for a period of at least 30 days following sample receipt or until the longest of the preparation and/or analytical hold times expires, whichever is shorter. After that time, they will be properly disposed without further notice, unless there exists an explicit contractual agreement to the contrary. We reserve the right to return any unused samples, extracts, or related materials or solutions to you if we consider it necessary. Examples might include those samples identified as hazardous wastes, submissions where the sample sizes significantly exceed those required for analysis, samples containing controlled substances, etc.

We thank you for selecting Florida Spectrum Environmental to serve your analytical needs. Should you have any questions or require additional information regarding any of the information in this report, please feel free to contact us at any time. We appreciate the opportunity to be of service.

Florida Spectrum Environmental Inc.



Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/25/2022
Work Order # 22C0664
Project: CCR Monitoring Program
McIntosh Plant

DETECTED ANALYTE SUMMARY

Client Sample ID	Laboratory ID	Matrix	Analyte	Result	Units	Collection Date	Collection Time
CCR-4A	22C0664-01	Water	Boron	572	ug/L	3/15/2022	11:39
CCR-4A	22C0664-01	Water	Lithium	331	ug/L	3/15/2022	11:39
CCR-4A	22C0664-01	Water	Potassium	494000	ug/L	3/15/2022	11:39
CCR-4A	22C0664-01	Water	Magnesium	69200	ug/L	3/15/2022	11:39
CCR-4A	22C0664-01	Water	Sodium	651000	ug/L	3/15/2022	11:39
CCR-4A	22C0664-01	Water	Calcium	1680000	ug/L	3/15/2022	11:39
CCR-4A	22C0664-01	Water	Cadmium	5.10	ug/L	3/15/2022	11:39
CCR-4A	22C0664-01	Water	Chromium	2.00	ug/L	3/15/2022	11:39
CCR-4A	22C0664-01	Water	Titanium	1.30	ug/L	3/15/2022	11:39
CCR-4A	22C0664-01	Water	Barium	266	ug/L	3/15/2022	11:39
CCR-4B	22C0664-02	Water	Chloride	4460	mg/L	3/15/2022	11:39
CCR-4B	22C0664-02	Water	Bicarbonate	18.5	mg/L	3/15/2022	11:39
CCR-4B	22C0664-02	Water	Sulfate	949	mg/L	3/15/2022	11:39
CCR-4B	22C0664-02	Water	Fluoride	0.396	mg/L	3/15/2022	11:39
CCR-4B	22C0664-02	Water	Total Alkalinity	18.5	mg/L	3/15/2022	11:39
CCR-4B	22C0664-02	Water	Total Dissolved Solids	9820	mg/L	3/15/2022	11:39
CCR-5A	22C0664-03	Water	Calcium	2010000	ug/L	3/15/2022	14:06
CCR-5A	22C0664-03	Water	Sodium	926000	ug/L	3/15/2022	14:06
CCR-5A	22C0664-03	Water	Magnesium	27000	ug/L	3/15/2022	14:06
CCR-5A	22C0664-03	Water	Lithium	4110	ug/L	3/15/2022	14:06
CCR-5A	22C0664-03	Water	Potassium	646000	ug/L	3/15/2022	14:06
CCR-5A	22C0664-03	Water	Barium	75.1	ug/L	3/15/2022	14:06
CCR-5A	22C0664-03	Water	Boron	527	ug/L	3/15/2022	14:06
CCR-5A	22C0664-03	Water	Lead	2.10	ug/L	3/15/2022	14:06

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/25/2022
Work Order # 22C0664
Project: CCR Monitoring Program
McIntosh Plant

DETECTED ANALYTE SUMMARY

Client Sample ID	Laboratory ID	Matrix	Analyte	Result	Units	Collection Date	Collection Time
CCR-5A	22C0664-03	Water	Chromium	1.80	ug/L	3/15/2022	14:06
CCR-5A	22C0664-03	Water	Titanium	2.10	ug/L	3/15/2022	14:06
CCR-5B	22C0664-04	Water	Total Dissolved Solids	12200	mg/L	3/15/2022	14:06
CCR-5B	22C0664-04	Water	Chloride	5540	mg/L	3/15/2022	14:06
CCR-5B	22C0664-04	Water	Bicarbonate	29.7	mg/L	3/15/2022	14:06
CCR-5B	22C0664-04	Water	Total Alkalinity	29.7	mg/L	3/15/2022	14:06
CCR-5B	22C0664-04	Water	Fluoride	0.223	mg/L	3/15/2022	14:06
CCR-5B	22C0664-04	Water	Sulfate	650	mg/L	3/15/2022	14:06
CCR-6A	22C0664-05	Water	Lithium	1470	ug/L	3/15/2022	15:15
CCR-6A	22C0664-05	Water	Calcium	887000	ug/L	3/15/2022	15:15
CCR-6A	22C0664-05	Water	Sodium	310000	ug/L	3/15/2022	15:15
CCR-6A	22C0664-05	Water	Barium	43.0	ug/L	3/15/2022	15:15
CCR-6A	22C0664-05	Water	Magnesium	16200	ug/L	3/15/2022	15:15
CCR-6A	22C0664-05	Water	Chromium	0.900	ug/L	3/15/2022	15:15
CCR-6A	22C0664-05	Water	Boron	523	ug/L	3/15/2022	15:15
CCR-6A	22C0664-05	Water	Potassium	248000	ug/L	3/15/2022	15:15
CCR-6B	22C0664-06	Water	Total Dissolved Solids	4980	mg/L	3/15/2022	15:15
CCR-6B	22C0664-06	Water	Sulfate	868	mg/L	3/15/2022	15:15
CCR-6B	22C0664-06	Water	Chloride	1640	mg/L	3/15/2022	15:15
CCR-6B	22C0664-06	Water	Fluoride	0.414	mg/L	3/15/2022	15:15
CCR-6B	22C0664-06	Water	Total Alkalinity	156	mg/L	3/15/2022	15:15
CCR-6B	22C0664-06	Water	Bicarbonate	156	mg/L	3/15/2022	15:15

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/25/2022
Work Order # 22C0664
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22C0664-01
Client Sample ID: CCR-4A
Matrix: Water

Collection Date: 03/15/22 11:39
Received Date: 03/16/22 10:10
Collected By: Client

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	5.11	15.0	EPA 200.7/3010	03/17 08:30	03/17 11:40	MAZ
Arsenic	ND	U	ug/L	1	2.21	10.0	EPA 200.7/3010	03/17 08:30	03/17 11:40	MAZ
Barium	266		ug/L	1	0.0728	1.00	EPA 200.7/3010	03/17 08:30	03/17 11:40	MAZ
Beryllium	ND	U	ug/L	1	0.101	1.00	EPA 200.7/3010	03/17 08:30	03/17 11:40	MAZ
Boron	572		ug/L	1	1.57	10.0	EPA 200.7/3010	03/17 08:30	03/17 11:40	MAZ
Cadmium	5.10		ug/L	1	0.181	1.00	EPA 200.7/3010	03/17 08:30	03/17 11:40	MAZ
Calcium	1680000		ug/L	50	290	2500	EPA 200.7/3010	03/17 08:30	03/17 12:10	MAZ
Chromium	2.00	I	ug/L	1	0.339	5.00	EPA 200.7/3010	03/17 08:30	03/17 11:40	MAZ
Cobalt	ND	U	ug/L	1	0.361	1.00	EPA 200.7/3010	03/17 08:30	03/17 11:40	MAZ
Lead	ND	U	ug/L	1	1.19	10.0	EPA 200.7/3010	03/17 08:30	03/17 11:40	MAZ
Lithium	331		ug/L	1	2.72	25.0	EPA 200.7/3010	03/17 16:15	03/18 08:14	JF
Magnesium	69200		ug/L	50	187	1000	EPA 200.7/3010	03/17 08:30	03/17 12:10	MAZ
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	03/18 09:04	03/18 11:43	JF
Molybdenum	ND	U	ug/L	1	1.17	10.0	EPA 200.7/3010	03/17 08:30	03/17 11:40	MAZ
Potassium	494000		ug/L	50	865	2500	EPA 200.7/3010	03/17 08:30	03/17 12:10	MAZ
Selenium	ND	U	ug/L	1	3.46	15.0	EPA 200.7/3010	03/17 08:30	03/17 11:40	MAZ
Sodium	651000		ug/L	50	22300	100000	EPA 200.7/3010	03/17 08:30	03/17 12:10	MAZ
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	03/17 08:30	03/17 11:40	MAZ
Titanium	1.30		ug/L	1	0.201	1.00	EPA 200.7/3010	03/17 08:30	03/17 11:40	MAZ

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/25/2022
Work Order # 22C0664
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22C0664-02
Client Sample ID: CCR-4B
Matrix: Water

Collection Date: 03/15/22 11:39
Received Date: 03/16/22 10:10
Collected By: Client

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	18.5		mg/L	1	2.49	7.46	EPA 310.2	03/17 17:27	03/17 17:27	OC
Bicarbonate	18.5		mg/L	1	2.49	7.46	EPA 310.2	03/17 17:27	03/17 17:27	OC
Chloride	4460		mg/L	50	6.30	25.0	EPA 300.0	03/17 14:49	03/17 20:50	OC
Fluoride	0.396		mg/L	5	0.0260	0.125	EPA 300.0	03/18 13:01	03/18 17:57	OC
Sulfate	949		mg/L	50	4.76	25.0	EPA 300.0	03/17 14:49	03/17 20:50	OC
Total Dissolved Solids	9820		mg/L	4	40.0	120	SM 2540C	03/19 15:31	03/23 12:49	HM

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/25/2022
Work Order # 22C0664
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22C0664-03
Client Sample ID: CCR-5A
Matrix: Water

Collection Date: 03/15/22 14:06
Received Date: 03/16/22 10:10
Collected By: Client

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	5.11	15.0	EPA 200.7/3010	03/17 08:30	03/17 11:43	MAZ
Arsenic	ND	U	ug/L	1	2.21	10.0	EPA 200.7/3010	03/17 08:30	03/17 11:43	MAZ
Barium	75.1		ug/L	1	0.0728	1.00	EPA 200.7/3010	03/17 08:30	03/17 11:43	MAZ
Beryllium	ND	U	ug/L	1	0.101	1.00	EPA 200.7/3010	03/17 08:30	03/17 11:43	MAZ
Boron	527		ug/L	1	1.57	10.0	EPA 200.7/3010	03/17 08:30	03/17 11:43	MAZ
Cadmium	ND	U	ug/L	1	0.181	1.00	EPA 200.7/3010	03/17 08:30	03/17 11:43	MAZ
Calcium	2010000		ug/L	50	290	2500	EPA 200.7/3010	03/17 08:30	03/17 12:13	MAZ
Chromium	1.80	I	ug/L	1	0.339	5.00	EPA 200.7/3010	03/17 08:30	03/17 11:43	MAZ
Cobalt	ND	U	ug/L	1	0.361	1.00	EPA 200.7/3010	03/17 08:30	03/17 11:43	MAZ
Lead	2.10	I	ug/L	1	1.19	10.0	EPA 200.7/3010	03/17 08:30	03/17 11:43	MAZ
Lithium	4110		ug/L	1	2.72	25.0	EPA 200.7/3010	03/17 16:15	03/18 08:17	JF
Magnesium	27000		ug/L	50	187	1000	EPA 200.7/3010	03/17 08:30	03/17 12:13	MAZ
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	03/18 09:04	03/18 11:46	JF
Molybdenum	ND	U	ug/L	1	1.17	10.0	EPA 200.7/3010	03/17 08:30	03/17 11:43	MAZ
Potassium	646000		ug/L	50	865	2500	EPA 200.7/3010	03/17 08:30	03/17 12:13	MAZ
Selenium	ND	U	ug/L	1	3.46	15.0	EPA 200.7/3010	03/17 08:30	03/17 11:43	MAZ
Sodium	926000		ug/L	50	22300	100000	EPA 200.7/3010	03/17 08:30	03/17 12:13	MAZ
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	03/17 08:30	03/17 11:43	MAZ
Titanium	2.10		ug/L	1	0.201	1.00	EPA 200.7/3010	03/17 08:30	03/17 11:43	MAZ

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/25/2022
Work Order # 22C0664
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22C0664-04
Client Sample ID: CCR-5B
Matrix: Water

Collection Date: 03/15/22 14:06
Received Date: 03/16/22 10:10
Collected By: Client

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	29.7		mg/L	1	2.49	7.46	EPA 310.2	03/17 17:27	03/17 17:27	OC
Bicarbonate	29.7		mg/L	1	2.49	7.46	EPA 310.2	03/17 17:27	03/17 17:27	OC
Chloride	5540		mg/L	100	12.6	50.0	EPA 300.0	03/17 14:49	03/18 12:15	OC
Fluoride	0.223		mg/L	5	0.0260	0.125	EPA 300.0	03/18 13:01	03/18 19:58	OC
Sulfate	650		mg/L	50	4.76	25.0	EPA 300.0	03/17 14:49	03/17 20:33	OC
Total Dissolved Solids	12200		mg/L	10	100	300	SM 2540C	03/19 15:31	03/23 12:49	HM

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/25/2022
Work Order # 22C0664
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22C0664-05
Client Sample ID: CCR-6A
Matrix: Water

Collection Date: 03/15/22 15:15
Received Date: 03/16/22 10:10
Collected By: Client

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	5.11	15.0	EPA 200.7/3010	03/17 08:30	03/17 11:46	MAZ
Arsenic	ND	U	ug/L	1	2.21	10.0	EPA 200.7/3010	03/17 08:30	03/17 11:46	MAZ
Barium	43.0		ug/L	1	0.0728	1.00	EPA 200.7/3010	03/17 08:30	03/17 11:46	MAZ
Beryllium	ND	U	ug/L	1	0.101	1.00	EPA 200.7/3010	03/17 08:30	03/17 11:46	MAZ
Boron	523		ug/L	1	1.57	10.0	EPA 200.7/3010	03/17 08:30	03/17 11:46	MAZ
Cadmium	ND	U	ug/L	1	0.181	1.00	EPA 200.7/3010	03/17 08:30	03/17 11:46	MAZ
Calcium	887000		ug/L	20	116	1000	EPA 200.7/3010	03/17 08:30	03/17 12:16	MAZ
Chromium	0.900	I	ug/L	1	0.339	5.00	EPA 200.7/3010	03/17 08:30	03/17 11:46	MAZ
Cobalt	ND	U	ug/L	1	0.361	1.00	EPA 200.7/3010	03/17 08:30	03/17 11:46	MAZ
Lead	ND	U	ug/L	1	1.19	10.0	EPA 200.7/3010	03/17 08:30	03/17 11:46	MAZ
Lithium	1470		ug/L	1	2.72	25.0	EPA 200.7/3010	03/17 16:15	03/18 08:19	JF
Magnesium	16200		ug/L	20	74.8	400	EPA 200.7/3010	03/17 08:30	03/17 12:16	MAZ
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	03/18 09:04	03/18 11:49	JF
Molybdenum	ND	U	ug/L	1	1.17	10.0	EPA 200.7/3010	03/17 08:30	03/17 11:46	MAZ
Potassium	248000		ug/L	20	346	1000	EPA 200.7/3010	03/17 08:30	03/17 12:16	MAZ
Selenium	ND	U	ug/L	1	3.46	15.0	EPA 200.7/3010	03/17 08:30	03/17 11:46	MAZ
Sodium	310000		ug/L	20	8920	40000	EPA 200.7/3010	03/17 08:30	03/17 12:16	MAZ
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	03/17 08:30	03/17 11:46	MAZ
Titanium	ND	U	ug/L	1	0.201	1.00	EPA 200.7/3010	03/17 08:30	03/17 11:46	MAZ

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/25/2022
Work Order # 22C0664
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22C0664-06
Client Sample ID: CCR-6B
Matrix: Water

Collection Date: 03/15/22 15:15
Received Date: 03/16/22 10:10
Collected By: Client

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	156	J3	mg/L	1	2.49	7.46	EPA 310.2	03/17 17:27	03/17 17:27	OC
Bicarbonate	156		mg/L	1	2.49	7.46	EPA 310.2	03/17 17:27	03/17 17:27	OC
Chloride	1640		mg/L	40	5.04	20.0	EPA 300.0	03/17 14:49	03/17 21:07	OC
Fluoride	0.414		mg/L	5	0.0260	0.125	EPA 300.0	03/18 13:01	03/18 17:41	OC
Sulfate	868		mg/L	40	3.81	20.0	EPA 300.0	03/17 14:49	03/17 21:07	OC
Total Dissolved Solids	4980		mg/L	4	40.0	120	SM 2540C	03/19 15:31	03/23 16:42	HM

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/25/2022

Work Order # 22C0664

Project: CCR Monitoring Program
McIntosh Plant

Wet Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22C0631 - Default Prep GenChem										
Blank (22C0631-BLK1)				Prepared & Analyzed: 03/17/2022						
Total Alkalinity	ND	7.46	mg/L							U
LCS (22C0631-BS1)				Prepared & Analyzed: 03/17/2022						
Total Alkalinity	265	7.46	mg/L	250.0		106	90-110			
Duplicate (22C0631-DUP1)		**Source: 22C0565-07**		Prepared & Analyzed: 03/17/2022						
Total Alkalinity	282	7.46	mg/L		282			0	20	
Matrix Spike (22C0631-MS1)		**Source: 22C0648-01**		Prepared & Analyzed: 03/17/2022						
Total Alkalinity	259	7.46	mg/L	250.0	91.7	67	90-110			J3
Matrix Spike (22C0631-MS2)		**Source: 22C0664-06**		Prepared & Analyzed: 03/17/2022						
Total Alkalinity	372	7.46	mg/L	250.0	156	86	90-110			J3
Batch 22C0642 - Default Prep GenChem										
Blank (22C0642-BLK1)				Prepared & Analyzed: 03/17/2022						
Chloride	ND	0.500	mg/L							U
Sulfate	ND	0.500	"							U
LCS (22C0642-BS1)				Prepared & Analyzed: 03/17/2022						
Sulfate	49.5	0.500	mg/L	50.00		99	90-110			
Chloride	50.2	0.500	"	50.00		100	90-110			
Duplicate (22C0642-DUP1)		**Source: 22C0647-01**		Prepared & Analyzed: 03/17/2022						
Sulfate	110	0.500	mg/L		109			0.1	20	
Chloride	37.2	0.500	"		37.2			0.03	20	

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/25/2022

Work Order # 22C0664

Project: CCR Monitoring Program
McIntosh Plant

Wet Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22C0642 - Default Prep GenChem										
Matrix Spike (22C0642-MS1)	**Source: 22C0647-01**			Prepared & Analyzed: 03/17/2022						
Chloride	83.2	0.500	mg/L	50.00	37.2	92	90-110			
Sulfate	148	0.500	"	50.00	109	77	90-110			J3
Matrix Spike (22C0642-MS2)	**Source: 22C0759-01**			Prepared: 03/17/2022 Analyzed: 03/18/2022						
Chloride	51.4	0.500	mg/L	50.00	0.924	101	90-110			
Sulfate	64.8	0.500	"	50.00	15.3	99	90-110			
Batch 22C0663 - Default Prep GenChem										
Blank (22C0663-BLK1)				Prepared: 03/18/2022 Analyzed: 03/19/2022						
Fluoride	ND	0.0250	mg/L							U
LCS (22C0663-BS1)				Prepared & Analyzed: 03/18/2022						
Fluoride	2.52	0.0250	mg/L	2.500		101	90-110			
Duplicate (22C0663-DUP1)	**Source: 22C0738-01**			Prepared & Analyzed: 03/18/2022						
Fluoride	0.113	0.0250	mg/L		0.112			0.9	20	
Matrix Spike (22C0663-MS1)	**Source: 22C0738-01**			Prepared & Analyzed: 03/18/2022						
Fluoride	2.50	0.0250	mg/L	2.500	0.112	96	90-110			
Matrix Spike (22C0663-MS2)	**Source: 22C0738-02**			Prepared & Analyzed: 03/18/2022						
Fluoride	2.44	0.0250	mg/L	2.500	0.119	93	90-110			
Batch 22C0669 - Default Prep GenChem										
Blank (22C0669-BLK1)				Prepared: 03/19/2022 Analyzed: 03/23/2022						
Total Dissolved Solids	ND	30.0	mg/L							U

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/25/2022
Work Order # 22C0664
Project: CCR Monitoring Program
McIntosh Plant

Wet Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22C0669 - Default Prep GenChem										
LCS (22C0669-BS1)				Prepared: 03/19/2022 Analyzed: 03/23/2022						
Total Dissolved Solids	500	120	mg/L	500.0		100	80-120			
Duplicate (22C0669-DUP1)		**Source: 22C0792-04**		Prepared: 03/19/2022 Analyzed: 03/23/2022						
Total Dissolved Solids	1630	120	mg/L		1610			1.48	20	
Duplicate (22C0669-DUP2)		**Source: 22C0807-08**		Prepared: 03/19/2022 Analyzed: 03/23/2022						
Total Dissolved Solids	1300	120	mg/L		1280			1.86	20	

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/25/2022

Work Order # 22C0664

Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22C0066 - EPA 3010A										
Blank (22C0066-BLK1)				Prepared & Analyzed: 03/17/2022						
Calcium	ND	50.0	ug/L							U
Boron	ND	10.0	"							U
Cadmium	ND	1.00	"							U
Beryllium	ND	1.00	"							U
Barium	ND	1.00	"							U
Arsenic	ND	10.0	"							U
Antimony	ND	15.0	"							U
Titanium	ND	1.00	"							U
Sodium	ND	2000	"							U
Selenium	ND	15.0	"							U
Thallium	ND	4.00	"							U
Molybdenum	ND	10.0	"							U
Chromium	ND	5.00	"							U
Lead	ND	10.0	"							U
Magnesium	ND	20.0	"							U
Potassium	ND	50.0	"							U
Cobalt	ND	1.00	"							U
LCS (22C0066-BS1)				Prepared & Analyzed: 03/17/2022						
Boron	557.1	10.0	ug/L	500.0		111	85-115			
Cadmium	541.5	1.00	"	500.0		108	85-115			
Antimony	540.7	15.0	"	500.0		108	85-115			
Calcium	27900	50.0	"	25500		109	85-115			
Beryllium	561.6	1.00	"	500.0		112	85-115			
Barium	526.5	1.00	"	500.0		105	85-115			
Arsenic	550	10.0	"	500.0		110	85-115			
Chromium	540.5	5.00	"	500.0		108	85-115			
Sodium	26400	2000	"	25500		103	85-115			
Molybdenum	551.0	10.0	"	500.0		110	85-115			
Selenium	558.0	15.0	"	500.0		112	85-115			
Thallium	530.4	4.00	"	500.0		106	85-115			
Titanium	550.1	1.00	"	500.0		110	85-115			

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/25/2022
Work Order # 22C0664
Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22C0066 - EPA 3010A										
LCS (22C0066-BS1)				Prepared & Analyzed: 03/17/2022						
Cobalt	529.4	1.00	ug/L	500.0		106	85-115			
Lead	534	10.0	"	500.0		107	85-115			
Magnesium	534	20.0	"	500.0		107	85-115			
Potassium	26000	50.0	"	25500		102	85-115			
Matrix Spike (22C0066-MS1)		**Source: 22C0646-05**		Prepared & Analyzed: 03/17/2022						
Boron	912.2	10.0	ug/L	500.0	393.1	104	70-130			
Beryllium	499.9	1.00	"	500.0	ND	100	70-130			
Cadmium	469.6	1.00	"	500.0	ND	93.9	70-130			
Barium	490.8	1.00	"	500.0	9.700	96.2	70-130			
Arsenic	520	10.0	"	500.0	ND	104	70-130			
Calcium	129000	50.0	"	25500	110000	74.0	70-130			
Antimony	568.6	15.0	"	500.0	ND	114	70-130			
Molybdenum	522.7	10.0	"	500.0	ND	105	70-130			
Sodium	1110000	2000	"	25500	1130000	NR	70-130			J3, L
Titanium	504.0	1.00	"	500.0	ND	101	70-130			
Selenium	511.3	15.0	"	500.0	ND	102	70-130			
Thallium	461.7	4.00	"	500.0	ND	92.3	70-130			
Cobalt	482.1	1.00	"	500.0	ND	96.4	70-130			
Chromium	497.7	5.00	"	500.0	0.4000	99.5	70-130			
Potassium	97600	50.0	"	25500	63000	136	70-130			J3, L
Magnesium	88400	20.0	"	500.0	92200	NR	70-130			J3, L
Lead	472	10.0	"	500.0	ND	94.5	70-130			
Matrix Spike Dup (22C0066-MSD1)		**Source: 22C0646-05**		Prepared & Analyzed: 03/17/2022						
Beryllium	502.3	1.00	ug/L	500.0	ND	100	70-130	0.479	20	
Boron	914.8	10.0	"	500.0	393.1	104	70-130	0.500	20	
Cadmium	470.6	1.00	"	500.0	ND	94.1	70-130	0.213	20	
Barium	491.2	1.00	"	500.0	9.700	96.3	70-130	0.0831	20	
Arsenic	523	10.0	"	500.0	ND	105	70-130	0.499	20	
Antimony	568.0	15.0	"	500.0	ND	114	70-130	0.106	20	
Titanium	509.0	1.00	"	500.0	ND	102	70-130	0.987	20	

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/25/2022
Work Order # 22C0664
Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22C0066 - EPA 3010A										
Matrix Spike Dup (22C0066-MSD1)	**Source: 22C0646-05**			Prepared & Analyzed: 03/17/2022						
Calcium	130000	50.0	ug/L	25500	110000	77.7	70-130	4.85	20	
Magnesium	89000	20.0	"	500.0	92200	NR	70-130	NR	20	J3, L
Thallium	461.9	4.00	"	500.0	ND	92.4	70-130	0.0433	20	
Potassium	98300	50.0	"	25500	63000	138	70-130	2.00	20	J3, L
Sodium	1120000	2000	"	25500	1130000	NR	70-130	NR	20	J3, L
Chromium	497.8	5.00	"	500.0	0.4000	99.5	70-130	0.0201	20	
Selenium	511.8	15.0	"	500.0	ND	102	70-130	0.0977	20	
Cobalt	484.0	1.00	"	500.0	ND	96.8	70-130	0.393	20	
Lead	471	10.0	"	500.0	ND	94.3	70-130	0.233	20	
Molybdenum	527.3	10.0	"	500.0	ND	105	70-130	0.876	20	
Batch 22C0071 - EPA 3010A										
Blank (22C0071-BLK1)				Prepared: 03/17/2022 Analyzed: 03/18/2022						
Lithium	ND	25.0	ug/L							U
LCS (22C0071-BS1)				Prepared: 03/17/2022 Analyzed: 03/18/2022						
Lithium	2690	25.0	ug/L	2500		108	85-115			
Matrix Spike (22C0071-MS1)	**Source: 22C0792-03**			Prepared: 03/17/2022 Analyzed: 03/18/2022						
Lithium	2700	25.0	ug/L	2500	88.2	104	75-125			
Matrix Spike Dup (22C0071-MSD1)	**Source: 22C0792-03**			Prepared: 03/17/2022 Analyzed: 03/18/2022						
Lithium	2720	25.0	ug/L	2500	88.2	105	75-125	0.8	20	
Batch 22C0072 - EPA 245.1/245.2 Prep										
Blank (22C0072-BLK1)				Prepared & Analyzed: 03/18/2022						
Mercury	ND	1.00	ug/L							U

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/25/2022
Work Order # 22C0664
Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22C0072 - EPA 245.1/245.2 Prep										
LCS (22C0072-BS1)				Prepared & Analyzed: 03/18/2022						
Mercury	9.86	1.00	ug/L	10.00		99	85-115			
Matrix Spike (22C0072-MS1)	**Source: 22C0681-01**			Prepared & Analyzed: 03/18/2022						
Mercury	8.99	1.00	ug/L	10.00	ND	90	70-130			
Matrix Spike Dup (22C0072-MSD1)	**Source: 22C0681-01**			Prepared & Analyzed: 03/18/2022						
Mercury	8.93	1.00	ug/L	10.00	ND	89	70-130	0.6	20	

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

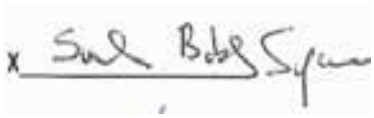
Report Printed: 3/25/2022
Work Order # 22C0664
Project: CCR Monitoring Program
McIntosh Plant

Notes and Definitions

U	Indicated that the compound was analyzed for but not detected. This shall be used to indicate that the specific component was not detected. The value associated with the qualifier shall be the laboratory method detection limit.
L	Off-Scale high. The concentration of the analyte was above the quantitation range of the calibration curve.
J3	The matrix spike recovery outside method acceptance limits indicating matrix interference.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the detection limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
N.O.O.	No Odor Observed
REP	Field parameter measured by client
V	Indicated that the analyte was detected in both the sample and the associated method blank.
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
Z	Too many colonies were present for accurate counting.
SUB	Work performed by outside (subcontracted) labs denoted by SUB in analyst field.

QC=Qualifier Codes as defined by DEP 62-160
Unless indicated, soil results are reported on actual (wet) weight basis.
The Color SM2120B method is reported as (Color / pH)
Legionella analyzed under CDC acreditation program
Dilution factors >= 1000 are abreviated using k=1000 and M=1000000
Field parameters are not NELAP acredited.
Results relate only to this sample.

Suresh (Bobby) Supan - CSM



Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification# E86006

All NELAP certified analysis are performed in accordance with Chapter 64E-1 Florida Administrative code, which has been determined to be equivalent to NELAC standards. Analysis certified by programs other than NELAP are designated with a "~".

CHAIN OF CUSTODY RECORD

SUBMISSION # 22C0064

Logged into LIMS by: L

Florida Spectrum Environmental Services, Inc.

Doc: [illegible] Date: [illegible]

1460 W McNab Road Ft Lauderdale FL 33309 Tel: (954) 978-6400 Fax: (954) 978-2233
1112 NW Park Street, Okeechobee, FL 34972 Tel: (863) 763-3336 Fax: (863) 763-1544
630 Indian Street Savannah, GA 31401 Tel: (912) 238-5050 Fax (912) 234-4815
528 Gooch Road Fort Meade FL 33841 Tel: (863) 285-8145 Fax (863) 285-7030
1910 Harden Blvd # 101, Lakeland, FL 33803 Tel: (863) 686-4271 Fax (863) 686-4389

DUE DATE Requested

RUSH RESERVATION #

Rush Surcharges apply

Report to: Lakeland Electric

Report to Address:

Invoice to: Lakeland Electric

Purchase Order # 281095

Invoice to Address:

Project Name and/or Number: CCR Monitoring Program

Site Location: McIntosh Plant

Project Mgr: Thomas Johnston

Phone:

Fax:

Email:

Sampler Name: (printed)

Sampler Signature

ORDER # Lab Control Number *Shaded Areas For Laboratory Use Only*	Sample ID	Date Sampled	Time Sampled	Matrix DW SW GW SED S EFF HW BIO SA OIL X	Appendix III Metals	Appendix IV Metals	CC Suite Metals	App III Cl, F, SO4, TDS	CC Suite Bicarb, T-Alk			TEMP C	PH	COND	CHLOR
01	CCR-4A	3/15/2022	1139	GW	X	X	X								
02	CCR-4B	3/15/2022	1139	GW				X	X						
03	CCR-5A	3/15/2022	1406	GW	X	X	X								
04	CCR-5B	3/15/2022	1406	GW				X	X						
05	CCR-6A	3/15/2022	1515	GW	X	X	X								
06	CCR-6B	3/15/2022	1515	GW				X	X						

Special Comments: 3 [illegible]

"I waive NELAC protocol" (sign here)>

Deliverables QA/QC Report Needed? Yes No (additional charge)

SAMPLE CUSTODY AND TRANSFER SIGNATURES DATE/TIME

		Signature	Date	Time
1	Relinquished by:	[signature]	3/15/22	1610
1	Received by:	Omar Azcona	3.15.22	1615
2	Relinquished by:	[signature]		
2	Received by:	[signature]	3/16/22	1014
3	Relinquished by:			
3	Received by:			

Sample Custody & Field Comments

Received on Ice: (Y) N

Temp received: 5.1 °C

Custody Seals? Y N

RAD GUN-1 E7660P

FIELD TIME:

Sampling ___ hr Pick up ___ hr

Charges

Bottle Type

A- Liter amber
B-Bacteria bag/bottle
F-500 ml
L-liter bottle
S-Soil jar
T-250 ml
V-40 ml vial
W-wide mouth
X-other
O-125ml
H-Plastic Amber
TED-Tedlar Air Bag

Preservation

A-Ascorbic acid
C-HCL
Cu-CuSO4
H-HNO3
M-MCAB
N-NaOH
NH4-NH4CL
Hex-Hex-Cr. Buffer
EDA-Ethylene Diamine
P-H3PO4
S-H2SO4
T-Na2S2O3-H2O
U-Unpreserved
DI-DI Water
Z-zinc acetate

www.flenviro.com

COC Page 1 of 1

Well ID	Well Type	Historical GWPS exceedances	SSI?	January & July Monitoring?	Rationale	Parameters
CCR-1	Background	None - background	NO	YES	Ongoing Assessment Monitoring	Appendix III, IV
CCR-2	Background	None - background	NO	YES	Ongoing Assessment Monitoring	Appendix III, IV
CCR-3	CCR Compliance	arsenic	NO	NO	No Further Monitoring Warranted	
CCR-4	CCR Compliance	lithium thallium arsenic	NO NO NO	YES	Ongoing Assessment Monitoring	Appendix III, IV
CCR-5	CCR Compliance	lithium thallium	YES NO	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
CCR-6	CCR Compliance	lithium	YES	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
CCR-7	CCR Compliance	arsenic lithium	NO NO	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
CCR-8	CCR Compliance	arsenic arsenic	NO NO	YES	Ongoing Assessment Monitoring	Appendix III, IV
CCR-9	CCR Compliance	lithium thallium	YES NO	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
CCR-10R	CCR Compliance	No GWPS exceedances	NO	NO	No Further Monitoring Warranted	--
CCR-11	CCR Compliance	arsenic arsenic	YES YES	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
CCR-12	CCR Compliance	lithium thallium	NO NO	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
CCR-13	CCR Compliance	lithium	YES	YES	Ongoing Assessment Monitoring	Appendix III, IV
CCR-14	CCR Compliance	No GWPS exceedances	NO	NO	No Further Monitoring Warranted	--
CCR-15	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-4	Appendix III, IV, GC suite
CCR-16	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-5	Appendix III, IV, GC suite
CCR-17	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-6	Appendix III, IV, GC suite
CCR-18	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-7	Appendix III, IV, GC suite
CCR-19	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-9	Appendix III, IV, GC suite
CCR-20	Nature & Extent	NA	NA	YES	Evaluate arsenic mobility downgradient CCR-11	Appendix III, IV, GC suite
CCR-21	Nature & Extent	NA	NA	YES	Evaluate arsenic mobility downgradient CCR-12	Appendix III, IV, GC suite
CCR-22	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-13	Appendix III, IV, GC suite
CCR-23	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-13	Appendix III, IV, GC suite
SW-101	Nature & Extent	NA	NA	YES	Evaluate GWPS compliance at downgradient property boundary	Appendix III, IV, GC suite

Notes:

1. NA - not applicable
2. GWPS - Groundwater protection standards
3. SSI - statistically significant increase
4. Appendix III - Boron, calcium, chloride, fluoride, sulfate, total dissolved solids (TDS)
5. Appendix IV - Antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, fluoride, lead, lithium, mercury, molybdenum, selenium, thallium, radium 226 + 228
6. GC suite - Geochemical suite - magnesium, sodium, bicarbonate, potassium, alkalinity

1460 West McNab Road
Fort Lauderdale, FL 33309
1-800-ANALYTE Phone
(954) 978-6400 Phone
(954) 978-2233 Fax

NELAP Certificate No. E86006

28 March 2022
Lab Work Order (COC): 22C0807

Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland, FL 33805

RE: **CCR Monitoring Program**

Project Location: **McIntosh Plant**

Dear Thomas Johnston:

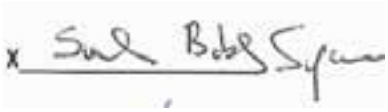
This report details the analytical results of samples collected at the above-referenced project location. These samples were received by Florida Spectrum Environmental Services at **03/18/2022 10:40**.

All Analyses were performed according to the TNI/NELAP standard unless indicated by a "~" on the report.

Your samples will be retained by Florida Spectrum Environmental for a period of at least 30 days following sample receipt or until the longest of the preparation and/or analytical hold times expires, whichever is shorter. After that time, they will be properly disposed without further notice, unless there exists an explicit contractual agreement to the contrary. We reserve the right to return any unused samples, extracts, or related materials or solutions to you if we consider it necessary. Examples might include those samples identified as hazardous wastes, submissions where the sample sizes significantly exceed those required for analysis, samples containing controlled substances, etc.

We thank you for selecting Florida Spectrum Environmental to serve your analytical needs. Should you have any questions or require additional information regarding any of the information in this report, please feel free to contact us at any time. We appreciate the opportunity to be of service.

Florida Spectrum Environmental Inc.



Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/28/2022
Work Order # 22C0807
Project: CCR Monitoring Program
McIntosh Plant

DETECTED ANALYTE SUMMARY

Client Sample ID	Laboratory ID	Matrix	Analyte	Result	Units	Collection Date	Collection Time
CCR-7A	22C0807-01	Water	Barium	24.2	ug/L	3/17/2022	14:25
CCR-7A	22C0807-01	Water	Boron	1030	ug/L	3/17/2022	14:25
CCR-7A	22C0807-01	Water	Calcium	329000	ug/L	3/17/2022	14:25
CCR-7A	22C0807-01	Water	Potassium	67400	ug/L	3/17/2022	14:25
CCR-7A	22C0807-01	Water	Magnesium	20800	ug/L	3/17/2022	14:25
CCR-7A	22C0807-01	Water	Sodium	70100	ug/L	3/17/2022	14:25
CCR-7A	22C0807-01	Water	Chromium	1.70	ug/L	3/17/2022	14:25
CCR-7A	22C0807-01	Water	Lithium	51.5	ug/L	3/17/2022	14:25
CCR-7A	22C0807-01	Water	Titanium	1.50	ug/L	3/17/2022	14:25
CCR-7B	22C0807-02	Water	Total Dissolved Solids	1530	mg/L	3/17/2022	14:25
CCR-7B	22C0807-02	Water	Chloride	81.1	mg/L	3/17/2022	14:25
CCR-7B	22C0807-02	Water	Total Alkalinity	16.7	mg/L	3/17/2022	14:25
CCR-7B	22C0807-02	Water	Sulfate	917	mg/L	3/17/2022	14:25
CCR-7B	22C0807-02	Water	Fluoride	0.418	mg/L	3/17/2022	14:25
CCR-7B	22C0807-02	Water	Bicarbonate	16.7	mg/L	3/17/2022	14:25
CCR-9A	22C0807-03	Water	Titanium	0.900	ug/L	3/17/2022	11:47
CCR-9A	22C0807-03	Water	Chromium	1.40	ug/L	3/17/2022	11:47
CCR-9A	22C0807-03	Water	Lithium	74.2	ug/L	3/17/2022	11:47
CCR-9A	22C0807-03	Water	Boron	508	ug/L	3/17/2022	11:47
CCR-9A	22C0807-03	Water	Barium	55.0	ug/L	3/17/2022	11:47
CCR-9A	22C0807-03	Water	Calcium	682000	ug/L	3/17/2022	11:47
CCR-9A	22C0807-03	Water	Magnesium	39500	ug/L	3/17/2022	11:47
CCR-9A	22C0807-03	Water	Sodium	169000	ug/L	3/17/2022	11:47
CCR-9A	22C0807-03	Water	Potassium	163000	ug/L	3/17/2022	11:47

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/28/2022
Work Order # 22C0807
Project: CCR Monitoring Program
McIntosh Plant

DETECTED ANALYTE SUMMARY

Client Sample ID	Laboratory ID	Matrix	Analyte	Result	Units	Collection Date	Collection Time
CCR-9B	22C0807-04	Water	Total Dissolved Solids	3270	mg/L	3/17/2022	11:47
CCR-9B	22C0807-04	Water	Chloride	620	mg/L	3/17/2022	11:47
CCR-9B	22C0807-04	Water	Sulfate	1370	mg/L	3/17/2022	11:47
CCR-9B	22C0807-04	Water	Bicarbonate	25.6	mg/L	3/17/2022	11:47
CCR-9B	22C0807-04	Water	Total Alkalinity	25.6	mg/L	3/17/2022	11:47
CCR-9B	22C0807-04	Water	Fluoride	0.574	mg/L	3/17/2022	11:47
CCR-20A	22C0807-05	Water	Magnesium	6190	ug/L	3/17/2022	9:26
CCR-20A	22C0807-05	Water	Sodium	169000	ug/L	3/17/2022	9:26
CCR-20A	22C0807-05	Water	Potassium	378000	ug/L	3/17/2022	9:26
CCR-20A	22C0807-05	Water	Calcium	701000	ug/L	3/17/2022	9:26
CCR-20A	22C0807-05	Water	Arsenic	54.9	ug/L	3/17/2022	9:26
CCR-20A	22C0807-05	Water	Titanium	0.700	ug/L	3/17/2022	9:26
CCR-20A	22C0807-05	Water	Boron	495	ug/L	3/17/2022	9:26
CCR-20A	22C0807-05	Water	Barium	91.3	ug/L	3/17/2022	9:26
CCR-20A	22C0807-05	Water	Lithium	14.4	ug/L	3/17/2022	9:26
CCR-20A	22C0807-05	Water	Chromium	1.80	ug/L	3/17/2022	9:26
CCR-20B	22C0807-06	Water	Chloride	457	mg/L	3/17/2022	9:26
CCR-20B	22C0807-06	Water	Total Alkalinity	19.5	mg/L	3/17/2022	9:26
CCR-20B	22C0807-06	Water	Total Dissolved Solids	3460	mg/L	3/17/2022	9:26
CCR-20B	22C0807-06	Water	Fluoride	0.585	mg/L	3/17/2022	9:26
CCR-20B	22C0807-06	Water	Sulfate	1820	mg/L	3/17/2022	9:26
CCR-20B	22C0807-06	Water	Bicarbonate	19.5	mg/L	3/17/2022	9:26
CCR-23A	22C0807-07	Water	Barium	10.0	ug/L	3/17/2022	10:20
CCR-23A	22C0807-07	Water	Titanium	1.40	ug/L	3/17/2022	10:20

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/28/2022

Work Order # 22C0807

Project: CCR Monitoring Program
McIntosh Plant

DETECTED ANALYTE SUMMARY

Client Sample ID	Laboratory ID	Matrix	Analyte	Result	Units	Collection Date	Collection Time
CCR-23A	22C0807-07	Water	Calcium	304000	ug/L	3/17/2022	10:20
CCR-23A	22C0807-07	Water	Magnesium	30800	ug/L	3/17/2022	10:20
CCR-23A	22C0807-07	Water	Potassium	19600	ug/L	3/17/2022	10:20
CCR-23A	22C0807-07	Water	Chromium	2.00	ug/L	3/17/2022	10:20
CCR-23A	22C0807-07	Water	Boron	783	ug/L	3/17/2022	10:20
CCR-23A	22C0807-07	Water	Sodium	43800	ug/L	3/17/2022	10:20
CCR-23B	22C0807-08	Water	Fluoride	0.552	mg/L	3/17/2022	10:20
CCR-23B	22C0807-08	Water	Total Dissolved Solids	1280	mg/L	3/17/2022	10:20
CCR-23B	22C0807-08	Water	Chloride	156	mg/L	3/17/2022	10:20
CCR-23B	22C0807-08	Water	Sulfate	650	mg/L	3/17/2022	10:20
CCR-23B	22C0807-08	Water	Bicarbonate	20.5	mg/L	3/17/2022	10:20
CCR-23B	22C0807-08	Water	Total Alkalinity	20.5	mg/L	3/17/2022	10:20

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/28/2022
Work Order # 22C0807
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22C0807-01
Client Sample ID: CCR-7A
Matrix: Water

Collection Date: 03/17/22 14:25
Received Date: 03/18/22 10:40
Collected By: Thomas Johnston

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	5.11	15.0	EPA 200.7/3010	03/21 08:30	03/21 11:41	JF
Arsenic	ND	U	ug/L	1	2.21	10.0	EPA 200.7/3010	03/21 08:30	03/21 11:41	JF
Barium	24.2		ug/L	1	0.0728	1.00	EPA 200.7/3010	03/21 08:30	03/21 11:41	JF
Beryllium	ND	U	ug/L	1	0.101	1.00	EPA 200.7/3010	03/21 08:30	03/21 11:41	JF
Boron	1030		ug/L	10	15.7	100	EPA 200.7/3010	03/21 08:30	03/21 14:37	JF
Cadmium	ND	U	ug/L	1	0.181	1.00	EPA 200.7/3010	03/21 08:30	03/21 11:41	JF
Calcium	329000		ug/L	10	57.9	500	EPA 200.7/3010	03/21 08:30	03/21 14:37	JF
Chromium	1.70	I	ug/L	1	0.339	5.00	EPA 200.7/3010	03/21 08:30	03/21 11:41	JF
Cobalt	ND	U	ug/L	1	0.361	1.00	EPA 200.7/3010	03/21 08:30	03/21 11:41	JF
Lead	ND	U	ug/L	1	1.19	10.0	EPA 200.7/3010	03/21 08:30	03/21 11:41	JF
Lithium	51.5		ug/L	1	2.72	25.0	EPA 200.7/3010	03/18 13:15	03/18 14:48	JF
Magnesium	20800		ug/L	100	374	2000	EPA 200.7/3010	03/21 08:30	03/21 14:25	JF
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	03/21 16:29	03/22 12:40	JF
Molybdenum	ND	U	ug/L	1	1.17	10.0	EPA 200.7/3010	03/21 08:30	03/21 11:41	JF
Potassium	67400		ug/L	10	173	500	EPA 200.7/3010	03/21 08:30	03/21 14:37	JF
Selenium	ND	U	ug/L	1	3.46	15.0	EPA 200.7/3010	03/21 08:30	03/21 11:41	JF
Sodium	70100		ug/L	10	4460	20000	EPA 200.7/3010	03/21 08:30	03/21 14:37	JF
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	03/21 08:30	03/21 11:41	JF
Titanium	1.50		ug/L	1	0.201	1.00	EPA 200.7/3010	03/21 08:30	03/21 11:41	JF

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/28/2022
Work Order # 22C0807
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22C0807-02
Client Sample ID: CCR-7B
Matrix: Water

Collection Date: 03/17/22 14:25
Received Date: 03/18/22 10:40
Collected By: Thomas Johnston

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	16.7		mg/L	1	2.49	7.46	EPA 310.2	03/25 15:39	03/25 15:39	OC
Bicarbonate	16.7		mg/L	1	2.49	7.46	EPA 310.2	03/25 15:39	03/25 15:39	OC
Chloride	81.1		mg/L	5	0.630	2.50	EPA 300.0	03/18 17:00	03/19 00:05	OC
Fluoride	0.418		mg/L	5	0.0260	0.125	EPA 300.0	03/18 17:00	03/19 00:05	OC
Sulfate	917		mg/L	10	0.953	5.00	EPA 300.0	03/18 17:00	03/19 11:09	OC
Total Dissolved Solids	1530		mg/L	4	40.0	120	SM 2540C	03/19 15:31	03/23 12:49	HM

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/28/2022
Work Order # 22C0807
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22C0807-03
Client Sample ID: CCR-9A
Matrix: Water

Collection Date: 03/17/22 11:47
Received Date: 03/18/22 10:40
Collected By: Thomas Johnston

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	5.11	15.0	EPA 200.7/3010	03/21 08:30	03/21 11:44	JF
Arsenic	ND	U	ug/L	1	2.21	10.0	EPA 200.7/3010	03/21 08:30	03/21 11:44	JF
Barium	55.0		ug/L	1	0.0728	1.00	EPA 200.7/3010	03/21 08:30	03/21 11:44	JF
Beryllium	ND	U	ug/L	1	0.101	1.00	EPA 200.7/3010	03/21 08:30	03/21 11:44	JF
Boron	508		ug/L	1	1.57	10.0	EPA 200.7/3010	03/21 08:30	03/21 11:44	JF
Cadmium	ND	U	ug/L	1	0.181	1.00	EPA 200.7/3010	03/21 08:30	03/21 11:44	JF
Calcium	682000		ug/L	100	579	5000	EPA 200.7/3010	03/21 08:30	03/21 14:28	JF
Chromium	1.40	I	ug/L	1	0.339	5.00	EPA 200.7/3010	03/21 08:30	03/21 11:44	JF
Cobalt	ND	U	ug/L	1	0.361	1.00	EPA 200.7/3010	03/21 08:30	03/21 11:44	JF
Lead	ND	U	ug/L	1	1.19	10.0	EPA 200.7/3010	03/21 08:30	03/21 11:44	JF
Lithium	74.2		ug/L	1	2.72	25.0	EPA 200.7/3010	03/18 13:15	03/18 14:50	JF
Magnesium	39500		ug/L	100	374	2000	EPA 200.7/3010	03/21 08:30	03/21 14:28	JF
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	03/21 16:29	03/22 12:43	JF
Molybdenum	ND	U	ug/L	1	1.17	10.0	EPA 200.7/3010	03/21 08:30	03/21 11:44	JF
Potassium	163000		ug/L	10	173	500	EPA 200.7/3010	03/21 08:30	03/21 14:40	JF
Selenium	ND	U	ug/L	1	3.46	15.0	EPA 200.7/3010	03/21 08:30	03/21 11:44	JF
Sodium	169000		ug/L	10	4460	20000	EPA 200.7/3010	03/21 08:30	03/21 14:40	JF
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	03/21 08:30	03/21 11:44	JF
Titanium	0.900	I	ug/L	1	0.201	1.00	EPA 200.7/3010	03/21 08:30	03/21 11:44	JF

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/28/2022
Work Order # 22C0807
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22C0807-04
Client Sample ID: CCR-9B
Matrix: Water

Collection Date: 03/17/22 11:47
Received Date: 03/18/22 10:40
Collected By: Thomas Johnston

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	25.6		mg/L	1	2.49	7.46	EPA 310.2	03/25 15:39	03/25 15:39	OC
Bicarbonate	25.6		mg/L	1	2.49	7.46	EPA 310.2	03/25 15:39	03/25 15:39	OC
Chloride	620		mg/L	10	1.26	5.00	EPA 300.0	03/18 17:00	03/19 02:00	OC
Fluoride	0.574		mg/L	10	0.0520	0.250	EPA 300.0	03/18 17:00	03/19 02:00	OC
Sulfate	1370		mg/L	20	1.91	10.0	EPA 300.0	03/18 17:00	03/19 11:25	OC
Total Dissolved Solids	3270		mg/L	4	40.0	120	SM 2540C	03/19 15:31	03/23 12:49	HM

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/28/2022
Work Order # 22C0807
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22C0807-05
Client Sample ID: CCR-20A
Matrix: Water

Collection Date: 03/17/22 09:26
Received Date: 03/18/22 10:40
Collected By: Thomas Johnston

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	5.11	15.0	EPA 200.7/3010	03/21 08:30	03/21 11:47	JF
Arsenic	54.9		ug/L	1	2.21	10.0	EPA 200.7/3010	03/21 08:30	03/21 11:47	JF
Barium	91.3		ug/L	1	0.0728	1.00	EPA 200.7/3010	03/21 08:30	03/21 11:47	JF
Beryllium	ND	U	ug/L	1	0.101	1.00	EPA 200.7/3010	03/21 08:30	03/21 11:47	JF
Boron	495		ug/L	1	1.57	10.0	EPA 200.7/3010	03/21 08:30	03/21 11:47	JF
Cadmium	ND	U	ug/L	1	0.181	1.00	EPA 200.7/3010	03/21 08:30	03/21 11:47	JF
Calcium	701000		ug/L	100	579	5000	EPA 200.7/3010	03/21 08:30	03/21 14:31	JF
Chromium	1.80	I	ug/L	1	0.339	5.00	EPA 200.7/3010	03/21 08:30	03/21 11:47	JF
Cobalt	ND	U	ug/L	1	0.361	1.00	EPA 200.7/3010	03/21 08:30	03/21 11:47	JF
Lead	ND	U	ug/L	1	1.19	10.0	EPA 200.7/3010	03/21 08:30	03/21 11:47	JF
Lithium	14.4	I	ug/L	1	2.72	25.0	EPA 200.7/3010	03/18 13:15	03/18 14:53	JF
Magnesium	6190		ug/L	10	37.4	200	EPA 200.7/3010	03/21 08:30	03/21 14:43	JF
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	03/21 16:29	03/22 12:46	JF
Molybdenum	ND	U	ug/L	1	1.17	10.0	EPA 200.7/3010	03/21 08:30	03/21 11:47	JF
Potassium	378000		ug/L	10	173	500	EPA 200.7/3010	03/21 08:30	03/21 14:43	JF
Selenium	ND	U	ug/L	1	3.46	15.0	EPA 200.7/3010	03/21 08:30	03/21 11:47	JF
Sodium	169000		ug/L	10	4460	20000	EPA 200.7/3010	03/21 08:30	03/21 14:43	JF
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	03/21 08:30	03/21 11:47	JF
Titanium	0.700	I	ug/L	1	0.201	1.00	EPA 200.7/3010	03/21 08:30	03/21 11:47	JF

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/28/2022
Work Order # 22C0807
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22C0807-06
Client Sample ID: CCR-20B
Matrix: Water

Collection Date: 03/17/22 09:26
Received Date: 03/18/22 10:40
Collected By: Thomas Johnston

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	19.5		mg/L	1	2.49	7.46	EPA 310.2	03/25 15:39	03/25 15:39	OC
Bicarbonate	19.5		mg/L	1	2.49	7.46	EPA 310.2	03/25 15:39	03/25 15:39	OC
Chloride	457		mg/L	10	1.26	5.00	EPA 300.0	03/18 17:00	03/19 02:16	OC
Fluoride	0.585		mg/L	10	0.0520	0.250	EPA 300.0	03/18 17:00	03/19 02:16	OC
Sulfate	1820		mg/L	20	1.91	10.0	EPA 300.0	03/18 17:00	03/19 11:42	OC
Total Dissolved Solids	3460		mg/L	4	40.0	120	SM 2540C	03/19 15:31	03/23 12:49	HM

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/28/2022
Work Order # 22C0807
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22C0807-07
Client Sample ID: CCR-23A
Matrix: Water

Collection Date: 03/17/22 10:20
Received Date: 03/18/22 10:40
Collected By: Thomas Johnston

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	5.11	15.0	EPA 200.7/3010	03/21 08:30	03/21 11:53	JF
Arsenic	ND	U	ug/L	1	2.21	10.0	EPA 200.7/3010	03/21 08:30	03/21 11:53	JF
Barium	10.0		ug/L	1	0.0728	1.00	EPA 200.7/3010	03/21 08:30	03/21 11:53	JF
Beryllium	ND	U	ug/L	1	0.101	1.00	EPA 200.7/3010	03/21 08:30	03/21 11:53	JF
Boron	783		ug/L	1	1.57	10.0	EPA 200.7/3010	03/21 08:30	03/21 11:53	JF
Cadmium	ND	U	ug/L	1	0.181	1.00	EPA 200.7/3010	03/21 08:30	03/21 11:53	JF
Calcium	304000		ug/L	10	57.9	500	EPA 200.7/3010	03/21 08:30	03/21 14:54	JF
Chromium	2.00	I	ug/L	1	0.339	5.00	EPA 200.7/3010	03/21 08:30	03/21 11:53	JF
Cobalt	ND	U	ug/L	1	0.361	1.00	EPA 200.7/3010	03/21 08:30	03/21 11:53	JF
Lead	ND	U	ug/L	1	1.19	10.0	EPA 200.7/3010	03/21 08:30	03/21 11:53	JF
Lithium	ND	U	ug/L	1	2.72	25.0	EPA 200.7/3010	03/18 13:15	03/18 14:56	JF
Magnesium	30800		ug/L	100	374	2000	EPA 200.7/3010	03/21 08:30	03/21 14:34	JF
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	03/21 16:29	03/22 12:50	JF
Molybdenum	ND	U	ug/L	1	1.17	10.0	EPA 200.7/3010	03/21 08:30	03/21 11:53	JF
Potassium	19600		ug/L	1	17.3	50.0	EPA 200.7/3010	03/21 08:30	03/21 11:53	JF
Selenium	ND	U	ug/L	1	3.46	15.0	EPA 200.7/3010	03/21 08:30	03/21 11:53	JF
Sodium	43800		ug/L	10	4460	20000	EPA 200.7/3010	03/21 08:30	03/21 14:54	JF
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	03/21 08:30	03/21 11:53	JF
Titanium	1.40		ug/L	1	0.201	1.00	EPA 200.7/3010	03/21 08:30	03/21 11:53	JF

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/28/2022
Work Order # 22C0807
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22C0807-08
Client Sample ID: CCR-23B
Matrix: Water

Collection Date: 03/17/22 10:20
Received Date: 03/18/22 10:40
Collected By: Thomas Johnston

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	20.5		mg/L	1	2.49	7.46	EPA 310.2	03/25 15:39	03/25 15:39	OC
Bicarbonate	20.5		mg/L	1	2.49	7.46	EPA 310.2	03/25 15:39	03/25 15:39	OC
Chloride	156		mg/L	5	0.630	2.50	EPA 300.0	03/18 17:00	03/19 00:21	OC
Fluoride	0.552		mg/L	5	0.0260	0.125	EPA 300.0	03/18 17:00	03/19 00:21	OC
Sulfate	650		mg/L	10	0.953	5.00	EPA 300.0	03/18 17:00	03/19 11:58	OC
Total Dissolved Solids	1280		mg/L	4	40.0	120	SM 2540C	03/19 15:31	03/23 12:49	HM

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/28/2022
Work Order # 22C0807
Project: CCR Monitoring Program
McIntosh Plant

Wet Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22C0664 - Default Prep GenChem										
Blank (22C0664-BLK1)				Prepared: 03/18/2022 Analyzed: 03/19/2022						
Fluoride	ND	0.0250	mg/L							U
Sulfate	ND	0.500	"							U
Chloride	ND	0.500	"							U
LCS (22C0664-BS1)				Prepared & Analyzed: 03/18/2022						
Fluoride	2.53	0.0250	mg/L	2.500		101	90-110			
Chloride	50.5	0.500	"	50.00		101	90-110			
Sulfate	49.6	0.500	"	50.00		99	90-110			
Duplicate (22C0664-DUP1)	**Source: 22C0738-07**			Prepared: 03/18/2022 Analyzed: 03/19/2022						
Fluoride	0.101	0.0250	mg/L		0.102			1	20	
Chloride	5.64	0.500	"		5.66			0.3	20	
Sulfate	4.16	0.500	"		4.18			0.4	20	
Matrix Spike (22C0664-MS1)	**Source: 22C0738-07**			Prepared: 03/18/2022 Analyzed: 03/19/2022						
Fluoride	2.44	0.0250	mg/L	2.500	0.102	94	90-110			
Chloride	56.4	0.500	"	50.00	5.66	102	90-110			
Sulfate	54.8	0.500	"	50.00	4.18	101	90-110			
Matrix Spike (22C0664-MS2)	**Source: 22C0738-05**			Prepared: 03/18/2022 Analyzed: 03/19/2022						
Fluoride	2.55	0.0250	mg/L	2.500	0.131	97	90-110			
Chloride	63.5	0.500	"	50.00	14.6	98	90-110			
Sulfate	56.7	0.500	"	50.00	7.26	99	90-110			
Batch 22C0669 - Default Prep GenChem										
Blank (22C0669-BLK1)				Prepared: 03/19/2022 Analyzed: 03/23/2022						
Total Dissolved Solids	ND	30.0	mg/L							U

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/28/2022
Work Order # 22C0807
Project: CCR Monitoring Program
McIntosh Plant

Wet Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22C0669 - Default Prep GenChem										
LCS (22C0669-BS1)				Prepared: 03/19/2022 Analyzed: 03/23/2022						
Total Dissolved Solids	500	120	mg/L	500.0		100	80-120			
Duplicate (22C0669-DUP1)		**Source: 22C0792-04**		Prepared: 03/19/2022 Analyzed: 03/23/2022						
Total Dissolved Solids	1630	120	mg/L		1610			1.48	20	
Duplicate (22C0669-DUP2)		**Source: 22C0807-08**		Prepared: 03/19/2022 Analyzed: 03/23/2022						
Total Dissolved Solids	1300	120	mg/L		1280			1.86	20	
Batch 22C0825 - Default Prep GenChem										
Blank (22C0825-BLK1)				Prepared & Analyzed: 03/25/2022						
Total Alkalinity	ND	7.46	mg/L							U
LCS (22C0825-BS1)				Prepared & Analyzed: 03/25/2022						
Total Alkalinity	250	7.46	mg/L	250.0		100	90-110			
Duplicate (22C0825-DUP1)		**Source: 22C0794-01**		Prepared & Analyzed: 03/25/2022						
Total Alkalinity	70.2	7.46	mg/L		70.3			0.1	20	
Matrix Spike (22C0825-MS1)		**Source: 22C0794-01**		Prepared & Analyzed: 03/25/2022						
Total Alkalinity	278	7.46	mg/L	250.0	70.3	83	90-110			J3
Matrix Spike (22C0825-MS2)		**Source: 22C0871-05**		Prepared & Analyzed: 03/25/2022						
Total Alkalinity	258	7.46	mg/L	250.0	4.10	102	90-110			

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/28/2022
Work Order # 22C0807
Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22C0071 - EPA 3010A										
Blank (22C0071-BLK1)				Prepared: 03/17/2022 Analyzed: 03/18/2022						
Lithium	ND	25.0	ug/L							U
LCS (22C0071-BS1)				Prepared: 03/17/2022 Analyzed: 03/18/2022						
Lithium	2690	25.0	ug/L	2500		108	85-115			
Matrix Spike (22C0071-MS1)	**Source: 22C0792-03**			Prepared: 03/17/2022 Analyzed: 03/18/2022						
Lithium	2700	25.0	ug/L	2500	88.2	104	75-125			
Matrix Spike Dup (22C0071-MSD1)	**Source: 22C0792-03**			Prepared: 03/17/2022 Analyzed: 03/18/2022						
Lithium	2720	25.0	ug/L	2500	88.2	105	75-125	0.8	20	
Batch 22C0083 - EPA 3010A										
Blank (22C0083-BLK1)				Prepared & Analyzed: 03/21/2022						
Beryllium	ND	1.00	ug/L							U
Barium	ND	1.00	"							U
Antimony	ND	15.0	"							U
Titanium	ND	1.00	"							U
Thallium	ND	4.00	"							U
Cadmium	ND	1.00	"							U
Arsenic	ND	10.0	"							U
Potassium	ND	50.0	"							U
Boron	ND	10.0	"							U
Molybdenum	ND	10.0	"							U
Selenium	ND	15.0	"							U
Sodium	ND	2000	"							U
Calcium	ND	50.0	"							U
Magnesium	ND	20.0	"							U
Lead	ND	10.0	"							U
Chromium	ND	5.00	"							U
Cobalt	ND	1.00	"							U

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/28/2022

Work Order # 22C0807

Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22C0083 - EPA 3010A										
LCS (22C0083-BS1)				Prepared & Analyzed: 03/21/2022						
Beryllium	510.8	1.00	ug/L	500.0		102	85-115			
Barium	487.4	1.00	"	500.0		97.5	85-115			
Arsenic	507	10.0	"	500.0		101	85-115			
Antimony	514.0	15.0	"	500.0		103	85-115			
Titanium	508.3	1.00	"	500.0		102	85-115			
Thallium	489.9	4.00	"	500.0		98.0	85-115			
Magnesium	483	20.0	"	500.0		96.7	85-115			
Molybdenum	521.9	10.0	"	500.0		104	85-115			
Lead	495	10.0	"	500.0		99.0	85-115			
Potassium	23900	50.0	"	25500		93.7	85-115			
Selenium	517.1	15.0	"	500.0		103	85-115			
Sodium	24400	2000	"	25500		95.8	85-115			
Cadmium	506.9	1.00	"	500.0		101	85-115			
Calcium	26400	50.0	"	25500		104	85-115			
Chromium	497.1	5.00	"	500.0		99.4	85-115			
Cobalt	494.3	1.00	"	500.0		98.9	85-115			
Boron	504.2	10.0	"	500.0		101	85-115			
Matrix Spike (22C0083-MS1)	**Source: 22C0798-07**			Prepared & Analyzed: 03/21/2022						
Antimony	517.7	15.0	ug/L	500.0	ND	104	70-130			
Beryllium	511.1	1.00	"	500.0	ND	102	70-130			
Barium	483.8	1.00	"	500.0	ND	96.8	70-130			
Arsenic	510	10.0	"	500.0	ND	102	70-130			
Thallium	490.8	4.00	"	500.0	ND	98.2	70-130			
Titanium	497.6	1.00	"	500.0	ND	99.5	70-130			
Boron	504.6	10.0	"	500.0	ND	101	70-130			
Magnesium	482	20.0	"	500.0	ND	96.4	70-130			
Lead	486	10.0	"	500.0	ND	97.1	70-130			
Potassium	22800	50.0	"	25500	ND	89.3	70-130			
Selenium	540.5	15.0	"	500.0	ND	108	70-130			
Molybdenum	464.4	10.0	"	500.0	ND	92.9	70-130			
Calcium	26200	50.0	"	25500	ND	103	70-130			

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/28/2022
Work Order # 22C0807
Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22C0083 - EPA 3010A										
Matrix Spike (22C0083-MS1)	**Source: 22C0798-07**			Prepared & Analyzed: 03/21/2022						
Cadmium	511.5	1.00	ug/L	500.0	ND	102	70-130			
Sodium	23900	2000	"	25500	ND	93.9	70-130			
Chromium	493.3	5.00	"	500.0	ND	98.7	70-130			
Cobalt	492.1	1.00	"	500.0	ND	98.4	70-130			
Matrix Spike Dup (22C0083-MSD1)	**Source: 22C0798-07**			Prepared & Analyzed: 03/21/2022						
Barium	482.9	1.00	ug/L	500.0	ND	96.6	70-130	0.186	20	
Arsenic	511	10.0	"	500.0	ND	102	70-130	0.0392	20	
Sodium	23900	2000	"	25500	ND	93.9	70-130	0.0372	20	
Antimony	524.5	15.0	"	500.0	ND	105	70-130	1.30	20	
Beryllium	513.1	1.00	"	500.0	ND	103	70-130	0.391	20	
Thallium	487.4	4.00	"	500.0	ND	97.5	70-130	0.695	20	
Titanium	501.2	1.00	"	500.0	ND	100	70-130	0.721	20	
Lead	490	10.0	"	500.0	ND	98.0	70-130	0.882	20	
Magnesium	482	20.0	"	500.0	ND	96.5	70-130	0.0622	20	
Molybdenum	487.6	10.0	"	500.0	ND	97.5	70-130	4.87	20	
Potassium	22800	50.0	"	25500	ND	89.3	70-130	0.0272	20	
Selenium	547.4	15.0	"	500.0	ND	109	70-130	1.27	20	
Cadmium	511.7	1.00	"	500.0	ND	102	70-130	0.0391	20	
Boron	505.4	10.0	"	500.0	ND	101	70-130	0.158	20	
Calcium	26200	50.0	"	25500	ND	103	70-130	0.0667	20	
Chromium	492.6	5.00	"	500.0	ND	98.5	70-130	0.142	20	
Cobalt	491.4	1.00	"	500.0	ND	98.3	70-130	0.142	20	
Batch 22C0085 - EPA 245.1/245.2 Prep										
Blank (22C0085-BLK1)				Prepared: 03/21/2022 Analyzed: 03/22/2022						
Mercury	ND	1.00	ug/L							U

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/28/2022
Work Order # 22C0807
Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22C0085 - EPA 245.1/245.2 Prep										
LCS (22C0085-BS1)				Prepared: 03/21/2022 Analyzed: 03/22/2022						
Mercury	11.2	1.00	ug/L	10.00		112	85-115			
Matrix Spike (22C0085-MS1)	**Source: 22C0809-02**			Prepared: 03/21/2022 Analyzed: 03/22/2022						
Mercury	7.78	1.00	ug/L	10.00	ND	78	70-130			
Matrix Spike Dup (22C0085-MSD1)	**Source: 22C0809-02**			Prepared: 03/21/2022 Analyzed: 03/22/2022						
Mercury	7.84	1.00	ug/L	10.00	ND	78	70-130	0.7	20	

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

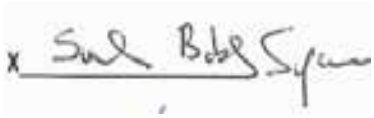
Report Printed: 3/28/2022
Work Order # 22C0807
Project: CCR Monitoring Program
McIntosh Plant

Notes and Definitions

U	Indicated that the compound was analyzed for but not detected. This shall be used to indicate that the specific component was not detected. The value associated with the qualifier shall be the laboratory method detection limit.
J3	The matrix spike recovery outside method acceptance limits indicating matrix interference.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the detection limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
N.O.O.	No Odor Observed
REP	Field parameter measured by client
V	Indicated that the analyte was detected in both the sample and the associated method blank.
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
Z	Too many colonies were present for accurate counting.
SUB	Work performed by outside (subcontracted) labs denoted by SUB in analyst field.

QC=Qualifier Codes as defined by DEP 62-160
Unless indicated, soil results are reported on actual (wet) weight basis.
The Color SM2120B method is reported as (Color / pH)
Legionella analyzed under CDC acreditation program
Dilution factors >= 1000 are abreviated using k=1000 and M=1000000
Field parameters are not NELAP acredited.
Results relate only to this sample.

Suresh (Bobby) Supan - CSM



Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification# E86006

All NELAP certified analysis are performed in accordance with Chapter 64E-1 Florida Administrative code, which has been determined to be equivalent to NELAC standards. Analysis certified by programs other than NELAP are designated with a "~".

CHAIN OF CUSTODY RECORD

SUBMISSION # 22C0827

Logged into LIMS by: BF

Doc CS-SOP-117-001 Date 12/8/17

Florida Spectrum Environmental Services, Inc.

1460 W McNab Road Ft Lauderdale FL 33309 Tel: (954) 978-6400 Fax: (954) 978-2233
1112 NW Park Street, Okeechobee, FL 34972 Tel: (863) 763-3336 Fax: (863) 763-1544
630 Indian Street Savannah, GA 31401 Tel: (912) 238-5050 Fax (912) 234-4815
525 Gooch Road Fort Meade FL 33841 Tel: (863) 285-8145 Fax (863) 285-7030
1910 Harden Blvd # 101, Lakeland, FL 33803 Tel: (863) 686-4271 Fax (863) 686-4389

DUE DATE Requested

RUSH RESERVATION #

Rush Surcharges apply

Report to: Lakeland Electric | Report to Address:

Invoice to: Lakeland Electric | Purchase Order # 281095 | Invoice to Address:

Project Name and/or Number: CCR Monitoring Program | Site Location: McIntosh Plant

Project Mgr: Thomas Johnston | Phone: | Fax: | Email:

Sampler Name (printed): Thomas Johnston | Sampler Signature: [signature]

Shaded Areas For Laboratory Use Only

Matrix: DW SW GW SED S EFF HW RID SA OIL X

ORDER # Lab Control Number	Sample ID	Date Sampled	Time Sampled	Matrix	Appendix III Metals	Appendix IV Metals	CC Suite Metals	App III Cl, F, SO4, TDS	CC Suite Bicarb, T-Alk	TEMP -C	PH	COND	CHLOR
01	CCR-7A	3/17/2022	1425	GW	X	X	x						
02	CCR-7B	3/17/2022	1425	GW				X	x				
03	CCR-9A	3/17/2022	1147	GW	X	X	x						
04	CCR-9B	3/17/2022	1147	GW				X	x				
05	CCR-20A	3/17/2022	926	GW	x	x	X						
06	CCR-20B	3/17/2022	926	GW				x	x				
07	CCR-23A	3/17/2022	1020	GW	x	x	x						
08	CCR-23B	3/17/2022	1020	GW				x	x				

Special Comments: ce 3.7°C

"I waive NELAC protocol" (sign here) >

Deliverables: QA/QC Report Needed? (Yes) No (additional charge)

	SAMPLE CUSTODY AND TRANSFER SIGNATURES	DATE	TIME
1	Relinquished by: [signature]	3/17/22	1510
1	Received by: [signature]	3·17·22	1515
2	Relinquished by:		
2	Received by:		
3	Relinquished by: FedEx		
3	Received by: [signature]	3/18/22	1040

Sample Custody & Field Comments
Received on Ice: (Y) N
Temp received 2.0 °C
Custody Seals? Y N
RAD ___ GUN-1 ET6503
FIELD TIME: Samp ___ hr Pick up ___ hr
Mi Charge

Bottle Type
A-liter amber
B-Bacteria bag/bottle
P-500 ml | O-125ml
L-liter bottle | H-Plastic Amber
S-Soil jar | TED-Tedlar Air Bag
T-250 ml
V-40 ml vial
W-wide mouth
X-other

Preservation
A-Ascorbic acid | P-H_3PO_4
C-HCL | S-H_2SO_4
Cu-$CuSO_4$ | T-$Na_2S_2O_3$/H_2O
H-HNO_3 | U-Unpreserved
M-MCAB | DI-DI Water
N-NaOH | Z-zinc acetate
NH_4-NH_4Cl
Hex- Hex.Cr. Buffer
EDA-Ethylene Diamine

www.flenviro.com

COC Page 1 of 1

1460 West McNab Road
Fort Lauderdale, FL 33309
1-800-ANALYTE Phone
(954) 978-6400 Phone
(954) 978-2233 Fax

NELAP Certificate No. E86006

11 April 2022
Lab Work Order (COC): 22C1155

Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland, FL 33805

RE: **CCR Monitoring Program**

Project Location: **McIntosh Plant**

Dear Thomas Johnston:

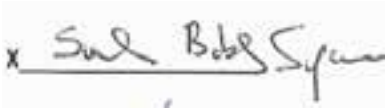
This report details the analytical results of samples collected at the above-referenced project location. These samples were received by Florida Spectrum Environmental Services at **03/30/2022 10:30**.

All Analyses were performed according to the TNI/NELAP standard unless indicated by a "~" on the report.

Your samples will be retained by Florida Spectrum Environmental for a period of at least 30 days following sample receipt or until the longest of the preparation and/or analytical hold times expires, whichever is shorter. After that time, they will be properly disposed without further notice, unless there exists an explicit contractual agreement to the contrary. We reserve the right to return any unused samples, extracts, or related materials or solutions to you if we consider it necessary. Examples might include those samples identified as hazardous wastes, submissions where the sample sizes significantly exceed those required for analysis, samples containing controlled substances, etc.

We thank you for selecting Florida Spectrum Environmental to serve your analytical needs. Should you have any questions or require additional information regarding any of the information in this report, please feel free to contact us at any time. We appreciate the opportunity to be of service.

Florida Spectrum Environmental Inc.



Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 4/11/2022

Work Order # 22C1155

Project: CCR Monitoring Program
McIntosh Plant

DETECTED ANALYTE SUMMARY

Client Sample ID	Laboratory ID	Matrix	Analyte	Result	Units	Collection Date	Collection Time
CCR-8A	22C1155-01	Water	Barium	32.4	ug/L	3/29/2022	14:46
CCR-8A	22C1155-01	Water	Boron	111	ug/L	3/29/2022	14:46
CCR-8A	22C1155-01	Water	Chromium	0.700	ug/L	3/29/2022	14:46
CCR-8A	22C1155-01	Water	Calcium	134000	ug/L	3/29/2022	14:46
CCR-8A	22C1155-01	Water	Sodium	3920	ug/L	3/29/2022	14:46
CCR-8A	22C1155-01	Water	Molybdenum	14.4	ug/L	3/29/2022	14:46
CCR-8A	22C1155-01	Water	Magnesium	4430	ug/L	3/29/2022	14:46
CCR-8A	22C1155-01	Water	Potassium	5540	ug/L	3/29/2022	14:46
CCR-8B	22C1155-02	Water	Sulfate	236	mg/L	3/29/2022	14:46
CCR-8B	22C1155-02	Water	Fluoride	0.351	mg/L	3/29/2022	14:46
CCR-8B	22C1155-02	Water	Chloride	6.06	mg/L	3/29/2022	14:46
CCR-8B	22C1155-02	Water	Total Dissolved Solids	510	mg/L	3/29/2022	14:46
CCR-8B	22C1155-02	Water	Bicarbonate	146	mg/L	3/29/2022	14:46
CCR-8B	22C1155-02	Water	Total Alkalinity	146	mg/L	3/29/2022	14:46
CCR-16A	22C1155-03	Water	Molybdenum	2.30	ug/L	3/29/2022	10:05
CCR-16A	22C1155-03	Water	Cadmium	0.400	ug/L	3/29/2022	10:05
CCR-16A	22C1155-03	Water	Chromium	2.20	ug/L	3/29/2022	10:05
CCR-16A	22C1155-03	Water	Barium	145	ug/L	3/29/2022	10:05
CCR-16A	22C1155-03	Water	Boron	521	ug/L	3/29/2022	10:05
CCR-16A	22C1155-03	Water	Calcium	1280000	ug/L	3/29/2022	10:05
CCR-16A	22C1155-03	Water	Sodium	501000	ug/L	3/29/2022	10:05
CCR-16A	22C1155-03	Water	Potassium	497000	ug/L	3/29/2022	10:05
CCR-16A	22C1155-03	Water	Magnesium	17000	ug/L	3/29/2022	10:05
CCR-16B	22C1155-04	Water	Bicarbonate	4.26	mg/L	3/29/2022	10:05

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 4/11/2022
Work Order # 22C1155
Project: CCR Monitoring Program
McIntosh Plant

DETECTED ANALYTE SUMMARY

Client Sample ID	Laboratory ID	Matrix	Analyte	Result	Units	Collection Date	Collection Time
CCR-16B	22C1155-04	Water	Total Alkalinity	4.26	mg/L	3/29/2022	10:05
CCR-16B	22C1155-04	Water	Sulfate	1020	mg/L	3/29/2022	10:05
CCR-16B	22C1155-04	Water	Chloride	3000	mg/L	3/29/2022	10:05
CCR-16B	22C1155-04	Water	Total Dissolved Solids	6720	mg/L	3/29/2022	10:05

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 4/11/2022
Work Order # 22C1155
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22C1155-01
Client Sample ID: CCR-8A
Matrix: Water

Collection Date: 03/29/22 14:46
Received Date: 03/30/22 10:30
Collected By: Client

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	5.11	15.0	EPA 200.7/3010	03/31 10:00	03/31 11:38	MAZ
Arsenic	ND	U	ug/L	1	2.21	10.0	EPA 200.7/3010	03/31 10:00	03/31 11:38	MAZ
Barium	32.4		ug/L	1	0.0728	1.00	EPA 200.7/3010	03/31 10:00	03/31 11:38	MAZ
Beryllium	ND	U	ug/L	1	0.101	1.00	EPA 200.7/3010	03/31 10:00	03/31 11:38	MAZ
Boron	111		ug/L	1	1.57	10.0	EPA 200.7/3010	03/31 10:00	03/31 11:38	MAZ
Cadmium	ND	U	ug/L	1	0.181	1.00	EPA 200.7/3010	03/31 10:00	03/31 11:38	MAZ
Calcium	134000		ug/L	1	5.79	50.0	EPA 200.7/3010	03/31 10:00	03/31 11:38	MAZ
Chromium	0.700	I	ug/L	1	0.339	5.00	EPA 200.7/3010	03/31 10:00	03/31 11:38	MAZ
Cobalt	ND	U	ug/L	1	0.361	1.00	EPA 200.7/3010	03/31 10:00	03/31 11:38	MAZ
Lead	ND	U	ug/L	1	1.19	10.0	EPA 200.7/3010	03/31 10:00	03/31 11:38	MAZ
Lithium	ND	U	ug/L	1	2.72	25.0	EPA 200.7/3010	04/07 09:25	04/07 11:08	JF
Magnesium	4430		ug/L	5	18.7	100	EPA 200.7/3010	03/31 10:00	03/31 14:32	MAZ
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	04/05 08:44	04/05 11:41	JF
Molybdenum	14.4		ug/L	1	1.17	10.0	EPA 200.7/3010	03/31 10:00	03/31 11:38	MAZ
Potassium	5540		ug/L	1	17.3	50.0	EPA 200.7/3010	03/31 10:00	03/31 11:38	MAZ
Selenium	ND	U	ug/L	1	3.46	15.0	EPA 200.7/3010	03/31 10:00	03/31 11:38	MAZ
Sodium	3920		ug/L	1	446	2000	EPA 200.7/3010	03/31 10:00	03/31 11:38	MAZ
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	03/31 10:00	03/31 11:38	MAZ

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 4/11/2022
Work Order # 22C1155
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22C1155-02
Client Sample ID: CCR-8B
Matrix: Water

Collection Date: 03/29/22 14:46
Received Date: 03/30/22 10:30
Collected By: Client

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	146	J3	mg/L	1	2.49	7.46	EPA 310.2	04/01 17:39	04/01 17:39	OC
Bicarbonate	146		mg/L	1	2.49	7.46	EPA 310.2	04/01 17:39	04/01 17:39	OC
Chloride	6.06		mg/L	1	0.126	0.500	EPA 300.0	03/30 13:36	03/30 18:00	PK
Fluoride	0.351		mg/L	1	0.00520	0.0250	EPA 300.0	03/30 13:36	03/30 18:00	PK
Sulfate	236		mg/L	5	0.476	2.50	EPA 300.0	03/30 13:36	03/31 12:05	PK
Total Dissolved Solids	510		mg/L	2	20.0	60.0	SM 2540C	04/02 17:43	04/05 14:54	HM

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 4/11/2022
Work Order # 22C1155
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22C1155-03
Client Sample ID: CCR-16A
Matrix: Water

Collection Date: 03/29/22 10:05
Received Date: 03/30/22 10:30
Collected By: Client

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	5.11	15.0	EPA 200.7/3010	03/31 10:00	03/31 11:53	MAZ
Arsenic	ND	U	ug/L	1	2.21	10.0	EPA 200.7/3010	03/31 10:00	03/31 11:53	MAZ
Barium	145		ug/L	1	0.0728	1.00	EPA 200.7/3010	03/31 10:00	03/31 11:53	MAZ
Beryllium	ND	U	ug/L	1	0.101	1.00	EPA 200.7/3010	03/31 10:00	03/31 11:53	MAZ
Boron	521		ug/L	1	1.57	10.0	EPA 200.7/3010	03/31 10:00	03/31 11:53	MAZ
Cadmium	0.400	I	ug/L	1	0.181	1.00	EPA 200.7/3010	03/31 10:00	03/31 11:53	MAZ
Calcium	1280000		ug/L	50	290	2500	EPA 200.7/3010	03/31 10:00	03/31 14:20	MAZ
Chromium	2.20	I	ug/L	1	0.339	5.00	EPA 200.7/3010	03/31 10:00	03/31 11:53	MAZ
Cobalt	ND	U	ug/L	1	0.361	1.00	EPA 200.7/3010	03/31 10:00	03/31 11:53	MAZ
Lead	ND	U	ug/L	1	1.19	10.0	EPA 200.7/3010	03/31 10:00	03/31 11:53	MAZ
Lithium	ND	U	ug/L	1	2.72	25.0	EPA 200.7/3010	04/07 09:25	04/07 11:10	JF
Magnesium	17000		ug/L	25	93.5	500	EPA 200.7/3010	03/31 10:00	03/31 14:23	MAZ
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	04/05 08:44	04/05 11:44	JF
Molybdenum	2.30	I	ug/L	1	1.17	10.0	EPA 200.7/3010	03/31 10:00	03/31 11:53	MAZ
Potassium	497000		ug/L	25	432	1250	EPA 200.7/3010	03/31 10:00	03/31 14:23	MAZ
Selenium	ND	U	ug/L	1	3.46	15.0	EPA 200.7/3010	03/31 10:00	03/31 11:53	MAZ
Sodium	501000		ug/L	25	11200	50000	EPA 200.7/3010	03/31 10:00	03/31 14:23	MAZ
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	03/31 10:00	03/31 11:53	MAZ

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 4/11/2022
Work Order # 22C1155
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22C1155-04
Client Sample ID: CCR-16B
Matrix: Water

Collection Date: 03/29/22 10:05
Received Date: 03/30/22 10:30
Collected By: Client

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	4.26	I	mg/L	1	2.49	7.46	EPA 310.2	04/01 17:39	04/01 17:39	OC
Bicarbonate	4.26	I	mg/L	1	2.49	7.46	EPA 310.2	04/01 17:39	04/01 17:39	OC
Chloride	3000		mg/L	40	5.04	20.0	EPA 300.0	03/30 13:36	03/30 21:01	PK
Fluoride	ND	U	mg/L	5	0.0260	0.125	EPA 300.0	03/30 13:36	03/30 20:45	PK
Sulfate	1020		mg/L	40	3.81	20.0	EPA 300.0	03/30 13:36	03/30 21:01	PK
Total Dissolved Solids	6720		mg/L	4	40.0	120	SM 2540C	04/02 17:43	04/05 17:41	HM

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 4/11/2022

Work Order # 22C1155

Project: CCR Monitoring Program
McIntosh Plant

Wet Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22C0933 - Default Prep GenChem										
Blank (22C0933-BLK1)				Prepared: 03/30/2022 Analyzed: 03/31/2022						
Fluoride	ND	0.0250	mg/L							U
Chloride	ND	0.500	"							U
Sulfate	ND	0.500	"							U
LCS (22C0933-BS1)				Prepared & Analyzed: 03/30/2022						
Fluoride	2.51	0.0250	mg/L	2.500		100	90-110			
Chloride	48.7	0.500	"	50.00		97	90-110			
Sulfate	49.0	0.500	"	50.00		98	90-110			
Duplicate (22C0933-DUP1)	**Source: 22C1145-01**			Prepared & Analyzed: 03/30/2022						
Fluoride	0.0850	0.0250	mg/L		0.0860			1	20	
Chloride	3.55	0.500	"		5.42			42	20	
Sulfate	0.591	0.500	"		0.598			1	20	
Matrix Spike (22C0933-MS1)	**Source: 22C1145-01**			Prepared & Analyzed: 03/30/2022						
Fluoride	2.37	0.0250	mg/L	2.500	0.0860	91	90-110			
Chloride	52.4	0.500	"	50.00	5.42	94	90-110			
Sulfate	50.4	0.500	"	50.00	0.598	100	90-110			
Matrix Spike (22C0933-MS2)	**Source: 22C1168-02**			Prepared: 03/30/2022 Analyzed: 03/31/2022						
Fluoride	2.38	0.0250	mg/L	2.500	0.122	90	90-110			
Chloride	50.5	0.500	"	50.00	1.32	98	90-110			
Sulfate	59.4	0.500	"	50.00	11.6	96	90-110			
Batch 22D0165 - Default Prep GenChem										
Blank (22D0165-BLK1)				Prepared & Analyzed: 04/01/2022						
Total Alkalinity	ND	7.46	mg/L							U

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 4/11/2022

Work Order # 22C1155

Project: CCR Monitoring Program
McIntosh Plant

Wet Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22D0165 - Default Prep GenChem										
LCS (22D0165-BS1)				Prepared & Analyzed: 04/01/2022						
Total Alkalinity	248	7.46	mg/L	250.0		99	90-110			
Duplicate (22D0165-DUP1)		**Source: 22C1091-05**		Prepared & Analyzed: 04/01/2022						
Total Alkalinity	336	7.46	mg/L		336			0	20	
Matrix Spike (22D0165-MS1)		**Source: 22C1091-05**		Prepared & Analyzed: 04/01/2022						
Total Alkalinity	520	7.46	mg/L	250.0	336	74	90-110			J3
Matrix Spike (22D0165-MS2)		**Source: 22C1155-02**		Prepared & Analyzed: 04/01/2022						
Total Alkalinity	268	7.46	mg/L	250.0	146	49	90-110			J3
Batch 22D0171 - Default Prep GenChem										
Blank (22D0171-BLK1)				Prepared: 04/02/2022 Analyzed: 04/05/2022						
Total Dissolved Solids	ND	30.0	mg/L							U
LCS (22D0171-BS1)				Prepared: 04/02/2022 Analyzed: 04/05/2022						
Total Dissolved Solids	500	120	mg/L	500.0		100	80-120			
Duplicate (22D0171-DUP1)		**Source: 22C1155-04**		Prepared: 04/02/2022 Analyzed: 04/05/2022						
Total Dissolved Solids	6820	120	mg/L		6720			1.48	20	
Duplicate (22D0171-DUP2)		**Source: 22C1236-05**		Prepared: 04/02/2022 Analyzed: 04/05/2022						
Total Dissolved Solids	800	120	mg/L		756			5.66	20	

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 4/11/2022
Work Order # 22C1155
Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22C0125 - EPA 3010A										
Blank (22C0125-BLK1)				Prepared & Analyzed: 03/31/2022						
Arsenic	ND	10.0	ug/L							U
Barium	ND	1.00	"							U
Boron	ND	10.0	"							U
Beryllium	ND	1.00	"							U
Cadmium	ND	1.00	"							U
Antimony	ND	15.0	"							U
Thallium	ND	4.00	"							U
Sodium	ND	2000	"							U
Selenium	ND	15.0	"							U
Potassium	ND	50.0	"							U
Chromium	ND	5.00	"							U
Calcium	ND	50.0	"							U
Molybdenum	ND	10.0	"							U
Cobalt	ND	1.00	"							U
Lead	ND	10.0	"							U
Magnesium	ND	20.0	"							U
LCS (22C0125-BS1)				Prepared & Analyzed: 03/31/2022						
Arsenic	505	10.0	ug/L	500.0		101	85-115			
Antimony	523.7	15.0	"	500.0		105	85-115			
Barium	491.3	1.00	"	500.0		98.3	85-115			
Beryllium	512.9	1.00	"	500.0		103	85-115			
Boron	511.5	10.0	"	500.0		102	85-115			
Cobalt	495.8	1.00	"	500.0		99.2	85-115			
Thallium	491.4	4.00	"	500.0		98.3	85-115			
Sodium	23700	2000	"	25500		92.9	85-115			
Selenium	517.8	15.0	"	500.0		104	85-115			
Cadmium	504.8	1.00	"	500.0		101	85-115			
Molybdenum	514.0	10.0	"	500.0		103	85-115			
Potassium	23100	50.0	"	25500		90.8	85-115			
Chromium	499.9	5.00	"	500.0		100	85-115			
Lead	497	10.0	"	500.0		99.4	85-115			

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 4/11/2022
Work Order # 22C1155
Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22C0125 - EPA 3010A										
LCS (22C0125-BS1)				Prepared & Analyzed: 03/31/2022						
Magnesium	491	20.0	ug/L	500.0		98.2	85-115			
Calcium	25400	50.0	"	25500		99.6	85-115			
Matrix Spike (22C0125-MS1)	**Source: 22C1155-01**			Prepared & Analyzed: 03/31/2022						
Calcium	161000	50.0	ug/L	25500	134000	104	70-130			
Antimony	582.7	15.0	"	500.0	ND	117	70-130			
Arsenic	533	10.0	"	500.0	ND	107	70-130			
Barium	545.1	1.00	"	500.0	32.40	103	70-130			
Beryllium	530.6	1.00	"	500.0	ND	106	70-130			
Boron	660.9	10.0	"	500.0	111.4	110	70-130			
Cadmium	507.8	1.00	"	500.0	ND	102	70-130			
Cobalt	520.2	1.00	"	500.0	ND	104	70-130			
Chromium	521.9	5.00	"	500.0	0.7000	104	70-130			
Lead	506	10.0	"	500.0	ND	101	70-130			
Magnesium	4990	20.0	"	500.0	4430	111	70-130			
Molybdenum	564.0	10.0	"	500.0	14.40	110	70-130			
Potassium	32500	50.0	"	25500	5540	106	70-130			
Selenium	522.7	15.0	"	500.0	ND	105	70-130			
Sodium	30200	2000	"	25500	3920	103	70-130			
Thallium	502.5	4.00	"	500.0	ND	100	70-130			
Matrix Spike Dup (22C0125-MSD1)	**Source: 22C1155-01**			Prepared & Analyzed: 03/31/2022						
Arsenic	532	10.0	ug/L	500.0	ND	106	70-130	0.169	20	
Antimony	579.5	15.0	"	500.0	ND	116	70-130	0.551	20	
Barium	545.7	1.00	"	500.0	32.40	103	70-130	0.117	20	
Beryllium	529.1	1.00	"	500.0	ND	106	70-130	0.283	20	
Boron	659.6	10.0	"	500.0	111.4	110	70-130	0.237	20	
Molybdenum	566.8	10.0	"	500.0	14.40	110	70-130	0.508	20	
Thallium	491.3	4.00	"	500.0	ND	98.3	70-130	2.25	20	
Sodium	30200	2000	"	25500	3920	103	70-130	0.188	20	
Selenium	520.3	15.0	"	500.0	ND	104	70-130	0.460	20	
Potassium	32500	50.0	"	25500	5540	106	70-130	0.306	20	

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 4/11/2022
Work Order # 22C1155
Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22C0125 - EPA 3010A										
Matrix Spike Dup (22C0125-MSD1)	**Source: 22C1155-01**			Prepared & Analyzed: 03/31/2022						
Chromium	521.0	5.00	ug/L	500.0	0.7000	104	70-130	0.173	20	
Cadmium	506.7	1.00	"	500.0	ND	101	70-130	0.217	20	
Calcium	160000	50.0	"	25500	134000	102	70-130	2.05	20	
Magnesium	4970	20.0	"	500.0	4430	108	70-130	3.41	20	
Lead	504	10.0	"	500.0	ND	101	70-130	0.377	20	
Cobalt	518.9	1.00	"	500.0	ND	104	70-130	0.250	20	
Batch 22D0011 - EPA 245.1/245.2 Prep										
Blank (22D0011-BLK1)				Prepared & Analyzed: 04/05/2022						
Mercury	ND	1.00	ug/L							U
LCS (22D0011-BS1)				Prepared & Analyzed: 04/05/2022						
Mercury	9.71	1.00	ug/L	10.00		97	85-115			
Matrix Spike (22D0011-MS1)	**Source: 22D0027-01**			Prepared & Analyzed: 04/05/2022						
Mercury	6.94	1.00	ug/L	10.00	ND	69	70-130			
Matrix Spike Dup (22D0011-MSD1)	**Source: 22D0027-01**			Prepared & Analyzed: 04/05/2022						
Mercury	6.98	1.00	ug/L	10.00	ND	70	70-130	0.5	20	
Batch 22D0024 - EPA 3010A										
Blank (22D0024-BLK1)				Prepared & Analyzed: 04/07/2022						
Lithium	ND	25.0	ug/L							U

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 4/11/2022
Work Order # 22C1155
Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22D0024 - EPA 3010A										
LCS (22D0024-BS1)				Prepared & Analyzed: 04/07/2022						
Lithium	2370	25.0	ug/L	2500		95	85-115			
Matrix Spike (22D0024-MS1)	**Source: 22C1155-03**			Prepared & Analyzed: 04/07/2022						
Lithium	2380	25.0	ug/L	2500	ND	95	75-125			
Matrix Spike Dup (22D0024-MSD1)	**Source: 22C1155-03**			Prepared & Analyzed: 04/07/2022						
Lithium	2380	25.0	ug/L	2500	ND	95	75-125	0.3	20	

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

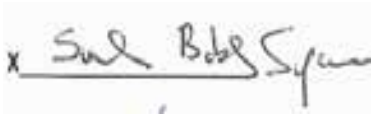
Report Printed: 4/11/2022
Work Order # 22C1155
Project: CCR Monitoring Program
McIntosh Plant

Notes and Definitions

U	Indicated that the compound was analyzed for but not detected. This shall be used to indicate that the specific component was not detected. The value associated with the qualifier shall be the laboratory method detection limit.
J3	The matrix spike recovery outside method acceptance limits indicating matrix interference.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the detection limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
N.O.O.	No Odor Observed
REP	Field parameter measured by client
V	Indicated that the analyte was detected in both the sample and the associated method blank.
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
Z	Too many colonies were present for accurate counting.
SUB	Work performed by outside (subcontracted) labs denoted by SUB in analyst field.

QC=Qualifier Codes as defined by DEP 62-160
Unless indicated, soil results are reported on actual (wet) weight basis.
The Color SM2120B method is reported as (Color / pH)
Legionella analyzed under CDC acreditation program
Dilution factors >= 1000 are abreviated using k=1000 and M=1000000
Field parameters are not NELAP acredited.
Results relate only to this sample.

Suresh (Bobby) Supan - CSM



Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification# E86006

All NELAP certified analysis are performed in accordance with Chapter 64E-1 Florida Administrative code, which has been determined to be equivalent to NELAC standards. Analysis certified by programs other than NELAP are designated with a "~".

CHAIN OF CUSTODY RECORD

SUBMISSION # 22C1155

Logged into LIMS by: JB

Florida Spectrum Environmental Services, Inc.

1460 W McNab Road Ft Lauderdale FL 33309 Tel: (954) 978-6409 Fax: (954) 978-2237
1112 NW Park Street Okeechobee, FL 34972 Tel: (863) 763-3326 Fax: (863) 763-1544
630 Indian Street Savannah, GA 31401 Tel: (912) 238-5058 Fax (912) 234-4815
528 Gooch Road Fort Meade FL 33841 Tel: (863) 285-8145 Fax (863) 285-7030
1910 Harden Blvd # 101, Lakeland, FL 33803 Tel: (863) 686-4271 Fax (863) 686-4289

DUE DATE Requested

RUSH RESERVATION #

Rush Surcharges apply

Report to: Lakeland Electric
Report to Address:
Invoice to: Lakeland Electric
Purchase Order # 281095
Invoice to Address:
Project Name and/or Number: CCR Monitoring Program
Site Location: McIntosh Plant
Project Mgr: Thomas Johnston
Phone:
Fax:
Email:
Sampler Name: (printed)
Sampler Signature:

ORDER # (Lab Control Number; Shaded Areas For Laboratory Use Only)	Sample ID	Date Sampled	Time Sampled	Matrix (DW, GW, S, NS, SW, SLD, EFF, BIO, OIL, X)	Bottle & Preservation Codes	Number of Containers Received & NELAC Letter Suffixes # A-Z	Analysis Required: Appendix III Metals	Appendix IV Metals	GC Semi Metals	App III Cl, F-, SO4, TDS	GC Semi Rivers, T-Alk	Field Tests: TEMP °C	PH	CON D	CHLOR
01	CCR-8A	3/29/2022	1446	GW		1	X	X	X						
02	CCR-8B	3/29/2022	1446	GW		1				X	X				
03	CCR-16A	3/29/2022	1105	GW		1	X	X	X						
04	CCR-16B	3/29/2022	1205	GW		1				X	X				
5															
6															
7															
8															
9															
10															
						Total:									

Special Comments:
"I waive NELAC protocol" (sign here) 4-6 1CO Gw-1

Deliverables: QA/QC Report Needed? Yes No (additional charge)

SAMPLE CUSTODY AND TRANSFER SIGNATURES DATE / TIME

1 Relinquished by:
1 Received by: Erika Duggan 3/29/22 15 51
2 Relinquished by: Ryan Morris 3/29/22 JB FedEx
2 Received by: Dylan Baker 3/29/22 10:30 JB 1551
3 Relinquished by: 30 JB
3 Received by:

Sample Custody & Field Comments
Received on Ice: Y N
Temp as received: 8.4 C
Custody Seals? Y N
Rad: GUN-1 ET6900
FIELD TIME:
Sampling hr Pick up hr
Rush Charges

Bottle Type
A-liter amber
B-Bacteria bag/bottle
P-500 ml O-125ml
L-liter bottle R-Plastic Amber
S-Soil jar TED-Tedlar Air Bag
T-250 ml
V-40 ml vial
W-wide mouth
X-other

Preservatives
A-Ascorbic acid P-H_3PO_4
C-HCL S-H_2SO_4
Cu-$CuSO_4$ T-$Na_2S_2O_3$-H_2O
H-HNO_3 U-Unpreserved
M-MCAB D-DI Water
N-NaOH Z-zinc acetate
NH_4NH_4Cl
Hex-Hex.Cr. Buffer
EDA-Ethylene Diamine

www.flenviro.com COC Page 1 of 1

Well ID	Well Type	Historical GWPS exceedances	SSL?	January & July Monitoring?	Rationale	Parameters
CCR-3	Background	None - background	NO	YES	Ongoing Assessment Monitoring	Appendix III, IV
CCR-2	Background	None - background	NO	YES	Ongoing Assessment Monitoring	Appendix III, IV
CCR-1	CCR Compliance	arsenic	NO	NO	No Further Monitoring Warranted	
CCR-4	CCR Compliance	lithium	NO	YES	Ongoing Assessment Monitoring	Appendix III, IV
		thallium	NO			
		arsenic	NO			
CCR-5	CCR Compliance	lithium	YES	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC Suite
		thallium	NO			
CCR-6	CCR Compliance	lithium	YES	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC Suite
CCR-7	CCR Compliance	arsenic	NO	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC Suite
		lithium	NO			
CCR-8	CCR Compliance	arsenic	NO	YES	Ongoing Assessment Monitoring	Appendix III, IV
		arsenic	NO			
CCR-9	CCR Compliance	lithium	YES	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC Suite
		thallium	NO			
CCR-10R	CCR Compliance	No GWPS exceedances	NO	NO	No Further Monitoring Warranted	
CCR-11	CCR Compliance	arsenic	YES	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC Suite
		arsenic	YES			
CCR-12	CCR Compliance	lithium	NO	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC Suite
		thallium	NO			
CCR-13	CCR Compliance	lithium	YES	YES	Ongoing Assessment Monitoring	Appendix III, IV
CCR-14	CCR Compliance	No GWPS exceedances	NO	NO	No Further Monitoring Warranted	
CCR-15	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-4	Appendix III, IV, GC Suite
CCR-16	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-5	Appendix III, IV, GC Suite
CCR-17	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-6	Appendix III, IV, GC Suite
CCR-18	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-7	Appendix III, IV, GC Suite
CCR-19	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-9	Appendix III, IV, GC Suite
CCR-20	Nature & Extent	NA	NA	YES	Evaluate arsenic mobility downgradient CCR-11	Appendix III, IV, GC Suite
CCR-21	Nature & Extent	NA	NA	YES	Evaluate arsenic mobility downgradient CCR-12	Appendix III, IV, GC Suite
CCR-22	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-13	Appendix III, IV, GC Suite
CCR-23	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-13	Appendix III, IV, GC Suite
SW-30i	Nature & Extent	NA	NA	YES	Evaluate GWPS compliance at downgradient property boundary	Appendix III, IV, GC Suite

Notes:

1. NA - not applicable
2. GWPS - Groundwater protection standards
3. SSL - statistically significant level
4. Appendix III - boron, calcium, chloride, fluoride, sulfate, total dissolved solids
5. Appendix IV - arsenic, antimony, barium, beryllium, cadmium, chromium, cobalt, lead, lithium, mercury, molybdenum, selenium, thallium, radium 226+228 [illegible]
6. GC Suite - [illegible] magnesium, sodium, [illegible], potassium, alkalinity

1460 West McNab Road
Fort Lauderdale, FL 33309
1-800-ANALYTE Phone
(954) 978-6400 Phone
(954) 978-2233 Fax

NELAP Certificate No. E86006

14 April 2022
Lab Work Order (COC): 22D0170

Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland, FL 33805

RE: **CCR Monitoring Program**

Project Location: **McIntosh Plant**

Dear Thomas Johnston:

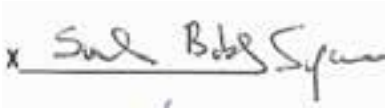
This report details the analytical results of samples collected at the above-referenced project location. These samples were received by Florida Spectrum Environmental Services at **04/06/2022 10:15**.

All Analyses were performed according to the TNI/NELAP standard unless indicated by a "~" on the report.

Your samples will be retained by Florida Spectrum Environmental for a period of at least 30 days following sample receipt or until the longest of the preparation and/or analytical hold times expires, whichever is shorter. After that time, they will be properly disposed without further notice, unless there exists an explicit contractual agreement to the contrary. We reserve the right to return any unused samples, extracts, or related materials or solutions to you if we consider it necessary. Examples might include those samples identified as hazardous wastes, submissions where the sample sizes significantly exceed those required for analysis, samples containing controlled substances, etc.

We thank you for selecting Florida Spectrum Environmental to serve your analytical needs. Should you have any questions or require additional information regarding any of the information in this report, please feel free to contact us at any time. We appreciate the opportunity to be of service.

Florida Spectrum Environmental Inc.



Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 4/14/2022
Work Order # 22D0170
Project: CCR Monitoring Program
McIntosh Plant

DETECTED ANALYTE SUMMARY

SW-106A	22D0170-01	Water	Magnesium	1970	ug/L	4/5/2022	10:02
SW-106A	22D0170-01	Water	Molybdenum	1.90	ug/L	4/5/2022	10:02
SW-106A	22D0170-01	Water	Sodium	2320	ug/L	4/5/2022	10:02
SW-106A	22D0170-01	Water	Chromium	1.80	ug/L	4/5/2022	10:02
SW-106A	22D0170-01	Water	Titanium	67.8	ug/L	4/5/2022	10:02
SW-106A	22D0170-01	Water	Calcium	9130	ug/L	4/5/2022	10:02
SW-106A	22D0170-01	Water	Barium	25.5	ug/L	4/5/2022	10:02
SW-106A	22D0170-01	Water	Boron	41.1	ug/L	4/5/2022	10:02
SW-106A	22D0170-01	Water	Potassium	4180	ug/L	4/5/2022	10:02
SW-106B	22D0170-02	Water	Sulfate	17.7	mg/L	4/5/2022	10:02
SW-106B	22D0170-02	Water	Bicarbonate	15.2	mg/L	4/5/2022	10:02
SW-106B	22D0170-02	Water	Total Alkalinity	15.2	mg/L	4/5/2022	10:02
SW-106B	22D0170-02	Water	Total Dissolved Solids	41.0	mg/L	4/5/2022	10:02
SW-106B	22D0170-02	Water	Fluoride	0.0510	mg/L	4/5/2022	10:02
SW-106B	22D0170-02	Water	Chloride	1.53	mg/L	4/5/2022	10:02
CCR-11A	22D0170-03	Water	Potassium	336000	ug/L	4/5/2022	13:00
CCR-11A	22D0170-03	Water	Calcium	596000	ug/L	4/5/2022	13:00
CCR-11A	22D0170-03	Water	Chromium	1.80	ug/L	4/5/2022	13:00
CCR-11A	22D0170-03	Water	Boron	401	ug/L	4/5/2022	13:00
CCR-11A	22D0170-03	Water	Magnesium	11900	ug/L	4/5/2022	13:00
CCR-11A	22D0170-03	Water	Sodium	197000	ug/L	4/5/2022	13:00
CCR-11A	22D0170-03	Water	Barium	56.6	ug/L	4/5/2022	13:00
CCR-11A	22D0170-03	Water	Arsenic	56.8	ug/L	4/5/2022	13:00
CCR-11B	22D0170-04	Water	Total Dissolved Solids	3380	mg/L	4/5/2022	13:00

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 4/14/2022
Work Order # 22D0170
Project: CCR Monitoring Program
McIntosh Plant

DETECTED ANALYTE SUMMARY

Client Sample ID	Laboratory ID	Matrix	Analyte	Result	Units	Collection Date	Collection Time
CCR-11B	22D0170-04	Water	Total Alkalinity	12.6	mg/L	4/5/2022	13:00
CCR-11B	22D0170-04	Water	Chloride	566	mg/L	4/5/2022	13:00
CCR-11B	22D0170-04	Water	Sulfate	1700	mg/L	4/5/2022	13:00
CCR-11B	22D0170-04	Water	Fluoride	1.10	mg/L	4/5/2022	13:00
CCR-11B	22D0170-04	Water	Bicarbonate	12.6	mg/L	4/5/2022	13:00
CCR-12A	22D0170-05	Water	Potassium	86500	ug/L	4/5/2022	11:37
CCR-12A	22D0170-05	Water	Arsenic	84.7	ug/L	4/5/2022	11:37
CCR-12A	22D0170-05	Water	Boron	455	ug/L	4/5/2022	11:37
CCR-12A	22D0170-05	Water	Calcium	648000	ug/L	4/5/2022	11:37
CCR-12A	22D0170-05	Water	Molybdenum	20.9	ug/L	4/5/2022	11:37
CCR-12A	22D0170-05	Water	Chromium	0.900	ug/L	4/5/2022	11:37
CCR-12A	22D0170-05	Water	Barium	23.3	ug/L	4/5/2022	11:37
CCR-12A	22D0170-05	Water	Sodium	29600	ug/L	4/5/2022	11:37
CCR-12A	22D0170-05	Water	Magnesium	7560	ug/L	4/5/2022	11:37
CCR-12B	22D0170-06	Water	Total Dissolved Solids	2360	mg/L	4/5/2022	11:37
CCR-12B	22D0170-06	Water	Total Alkalinity	186	mg/L	4/5/2022	11:37
CCR-12B	22D0170-06	Water	Fluoride	0.864	mg/L	4/5/2022	11:37
CCR-12B	22D0170-06	Water	Bicarbonate	186	mg/L	4/5/2022	11:37
CCR-12B	22D0170-06	Water	Sulfate	1490	mg/L	4/5/2022	11:37
CCR-12B	22D0170-06	Water	Chloride	22.9	mg/L	4/5/2022	11:37

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 4/14/2022
Work Order # 22D0170
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22D0170-01
Client Sample ID: SW-106A
Matrix: Water

Collection Date: 04/05/22 10:02
Received Date: 04/06/22 10:15
Collected By: Client

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	5.11	15.0	EPA 200.7/3010	04/07 08:00	04/07 10:14	MAZ
Arsenic	ND	U	ug/L	1	2.21	10.0	EPA 200.7/3010	04/07 08:00	04/07 10:14	MAZ
Barium	25.5		ug/L	1	0.0728	1.00	EPA 200.7/3010	04/07 08:00	04/07 10:14	MAZ
Beryllium	ND	U	ug/L	1	0.101	1.00	EPA 200.7/3010	04/07 08:00	04/07 10:14	MAZ
Boron	41.1		ug/L	1	1.57	10.0	EPA 200.7/3010	04/07 08:00	04/07 10:14	MAZ
Cadmium	ND	U	ug/L	1	0.181	1.00	EPA 200.7/3010	04/07 08:00	04/07 10:14	MAZ
Calcium	9130		ug/L	1	5.79	50.0	EPA 200.7/3010	04/07 08:00	04/07 10:14	MAZ
Chromium	1.80	I	ug/L	1	0.339	5.00	EPA 200.7/3010	04/07 08:00	04/07 10:14	MAZ
Cobalt	ND	U	ug/L	1	0.361	1.00	EPA 200.7/3010	04/07 08:00	04/07 10:14	MAZ
Lead	ND	U	ug/L	1	1.19	10.0	EPA 200.7/3010	04/07 08:00	04/07 10:14	MAZ
Lithium	ND	U	ug/L	1	2.72	25.0	EPA 200.7/3010	04/07 09:25	04/07 10:57	JF
Magnesium	1970		ug/L	1	3.74	20.0	EPA 200.7/3010	04/07 08:00	04/07 10:14	MAZ
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	04/06 10:11	04/06 15:04	JF
Molybdenum	1.90	I	ug/L	1	1.17	10.0	EPA 200.7/3010	04/07 08:00	04/07 10:14	MAZ
Potassium	4180		ug/L	1	17.3	50.0	EPA 200.7/3010	04/07 08:00	04/07 10:14	MAZ
Selenium	ND	U	ug/L	1	3.46	15.0	EPA 200.7/3010	04/07 08:00	04/07 10:14	MAZ
Sodium	2320		ug/L	1	446	2000	EPA 200.7/3010	04/07 08:00	04/07 10:14	MAZ
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	04/07 08:00	04/07 10:14	MAZ
Titanium	67.8		ug/L	1	0.201	1.00	EPA 200.7/3010	04/07 08:00	04/07 10:14	MAZ

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 4/14/2022
Work Order # 22D0170
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22D0170-02
Client Sample ID: SW-106B
Matrix: Water

Collection Date: 04/05/22 10:02
Received Date: 04/06/22 10:15
Collected By: Client

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	15.2		mg/L	1	2.49	7.46	EPA 310.2	04/08 19:39	04/08 19:39	OC
Bicarbonate	15.2		mg/L	1	2.49	7.46	EPA 310.2	04/08 19:39	04/08 19:39	OC
Chloride	1.53		mg/L	1	0.126	0.500	EPA 300.0	04/06 14:18	04/06 20:20	PK
Fluoride	0.0510		mg/L	1	0.00520	0.0250	EPA 300.0	04/06 14:18	04/06 20:20	PK
Sulfate	17.7		mg/L	1	0.0953	0.500	EPA 300.0	04/06 14:18	04/06 20:20	PK
Total Dissolved Solids	41.0		mg/L	1	10.0	30.0	SM 2540C	04/07 15:36	04/09 16:13	HM

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 4/14/2022
Work Order # 22D0170
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22D0170-03
Client Sample ID: CCR-11A
Matrix: Water

Collection Date: 04/05/22 13:00
Received Date: 04/06/22 10:15
Collected By: Client

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	5.11	15.0	EPA 200.7/3010	04/07 08:00	04/07 10:17	MAZ
Arsenic	56.8		ug/L	1	2.21	10.0	EPA 200.7/3010	04/07 08:00	04/07 10:17	MAZ
Barium	56.6		ug/L	1	0.0728	1.00	EPA 200.7/3010	04/07 08:00	04/07 10:17	MAZ
Beryllium	ND	U	ug/L	1	0.101	1.00	EPA 200.7/3010	04/07 08:00	04/07 10:17	MAZ
Boron	401		ug/L	1	1.57	10.0	EPA 200.7/3010	04/07 08:00	04/07 10:17	MAZ
Cadmium	ND	U	ug/L	1	0.181	1.00	EPA 200.7/3010	04/07 08:00	04/07 10:17	MAZ
Calcium	596000		ug/L	10	57.9	500	EPA 200.7/3010	04/07 08:00	04/07 12:07	MAZ
Chromium	1.80	I	ug/L	1	0.339	5.00	EPA 200.7/3010	04/07 08:00	04/07 10:17	MAZ
Cobalt	ND	U	ug/L	1	0.361	1.00	EPA 200.7/3010	04/07 08:00	04/07 10:17	MAZ
Lead	ND	U	ug/L	1	1.19	10.0	EPA 200.7/3010	04/07 08:00	04/07 10:17	MAZ
Lithium	ND	U	ug/L	1	2.72	25.0	EPA 200.7/3010	04/07 09:25	04/07 11:00	JF
Magnesium	11900		ug/L	10	37.4	200	EPA 200.7/3010	04/07 08:00	04/07 12:07	MAZ
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	04/06 10:11	04/06 15:07	JF
Molybdenum	ND	U	ug/L	1	1.17	10.0	EPA 200.7/3010	04/07 08:00	04/07 10:17	MAZ
Potassium	336000		ug/L	10	173	500	EPA 200.7/3010	04/07 08:00	04/07 12:07	MAZ
Selenium	ND	U	ug/L	1	3.46	15.0	EPA 200.7/3010	04/07 08:00	04/07 10:17	MAZ
Sodium	197000		ug/L	10	4460	20000	EPA 200.7/3010	04/07 08:00	04/07 12:07	MAZ
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	04/07 08:00	04/07 10:17	MAZ
Titanium	ND	U	ug/L	1	0.201	1.00	EPA 200.7/3010	04/07 08:00	04/07 10:17	MAZ

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 4/14/2022
Work Order # 22D0170
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22D0170-04
Client Sample ID: CCR-11B
Matrix: Water

Collection Date: 04/05/22 13:00
Received Date: 04/06/22 10:15
Collected By: Client

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	12.6		mg/L	1	2.49	7.46	EPA 310.2	04/08 19:39	04/08 19:39	OC
Bicarbonate	12.6		mg/L	1	2.49	7.46	EPA 310.2	04/08 19:39	04/08 19:39	OC
Chloride	566		mg/L	20	2.52	10.0	EPA 300.0	04/06 14:18	04/06 21:10	PK
Fluoride	1.10		mg/L	2	0.0104	0.0500	EPA 300.0	04/06 14:18	04/06 20:53	PK
Sulfate	1700		mg/L	20	1.91	10.0	EPA 300.0	04/06 14:18	04/06 21:10	PK
Total Dissolved Solids	3380		mg/L	4	40.0	120	SM 2540C	04/07 15:36	04/09 16:13	HM

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 4/14/2022
Work Order # 22D0170
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22D0170-05
Client Sample ID: CCR-12A
Matrix: Water

Collection Date: 04/05/22 11:37
Received Date: 04/06/22 10:15
Collected By: Client

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	5.11	15.0	EPA 200.7/3010	04/07 08:00	04/07 10:20	MAZ
Arsenic	84.7		ug/L	1	2.21	10.0	EPA 200.7/3010	04/07 08:00	04/07 10:20	MAZ
Barium	23.3		ug/L	1	0.0728	1.00	EPA 200.7/3010	04/07 08:00	04/07 10:20	MAZ
Beryllium	ND	U	ug/L	1	0.101	1.00	EPA 200.7/3010	04/07 08:00	04/07 10:20	MAZ
Boron	455		ug/L	1	1.57	10.0	EPA 200.7/3010	04/07 08:00	04/07 10:20	MAZ
Cadmium	ND	U	ug/L	1	0.181	1.00	EPA 200.7/3010	04/07 08:00	04/07 10:20	MAZ
Calcium	648000		ug/L	10	57.9	500	EPA 200.7/3010	04/07 08:00	04/07 12:13	MAZ
Chromium	0.900	I	ug/L	1	0.339	5.00	EPA 200.7/3010	04/07 08:00	04/07 10:20	MAZ
Cobalt	ND	U	ug/L	1	0.361	1.00	EPA 200.7/3010	04/07 08:00	04/07 10:20	MAZ
Lead	ND	U	ug/L	1	1.19	10.0	EPA 200.7/3010	04/07 08:00	04/07 10:20	MAZ
Lithium	ND	U	ug/L	1	2.72	25.0	EPA 200.7/3010	04/07 09:25	04/07 11:02	JF
Magnesium	7560		ug/L	10	37.4	200	EPA 200.7/3010	04/07 08:00	04/07 12:13	MAZ
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	04/06 10:11	04/06 15:11	JF
Molybdenum	20.9		ug/L	1	1.17	10.0	EPA 200.7/3010	04/07 08:00	04/07 10:20	MAZ
Potassium	86500		ug/L	1	17.3	50.0	EPA 200.7/3010	04/07 08:00	04/07 10:20	MAZ
Selenium	ND	U	ug/L	1	3.46	15.0	EPA 200.7/3010	04/07 08:00	04/07 10:20	MAZ
Sodium	29600		ug/L	1	446	2000	EPA 200.7/3010	04/07 08:00	04/07 10:20	MAZ
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	04/07 08:00	04/07 10:20	MAZ
Titanium	ND	U	ug/L	1	0.201	1.00	EPA 200.7/3010	04/07 08:00	04/07 10:20	MAZ

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 4/14/2022
Work Order # 22D0170
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22D0170-06
Client Sample ID: CCR-12B
Matrix: Water

Collection Date: 04/05/22 11:37
Received Date: 04/06/22 10:15
Collected By: Client

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	186		mg/L	1	2.49	7.46	EPA 310.2	04/08 19:39	04/08 19:39	OC
Bicarbonate	186		mg/L	1	2.49	7.46	EPA 310.2	04/08 19:39	04/08 19:39	OC
Chloride	22.9		mg/L	10	1.26	5.00	EPA 300.0	04/06 14:18	04/06 21:26	PK
Fluoride	0.864		mg/L	2	0.0104	0.0500	EPA 300.0	04/06 14:18	04/06 21:43	PK
Sulfate	1490		mg/L	20	1.91	10.0	EPA 300.0	04/06 14:18	04/07 11:53	PK
Total Dissolved Solids	2360		mg/L	4	40.0	120	SM 2540C	04/07 15:36	04/09 16:13	HM

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 4/14/2022
Work Order # 22D0170
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22D0170-07
Client Sample ID: 400522 EqBlnk A
Matrix: Water

Collection Date: 04/05/22 14:30
Received Date: 04/06/22 10:15
Collected By: Client

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	5.11	15.0	EPA 200.7/3010	04/07 08:00	04/07 10:23	MAZ
Arsenic	ND	U	ug/L	1	2.21	10.0	EPA 200.7/3010	04/07 08:00	04/07 10:23	MAZ
Barium	ND	U	ug/L	1	0.0728	1.00	EPA 200.7/3010	04/07 08:00	04/07 10:23	MAZ
Beryllium	ND	U	ug/L	1	0.101	1.00	EPA 200.7/3010	04/07 08:00	04/07 10:23	MAZ
Boron	ND	U	ug/L	1	1.57	10.0	EPA 200.7/3010	04/07 08:00	04/07 10:23	MAZ
Cadmium	ND	U	ug/L	1	0.181	1.00	EPA 200.7/3010	04/07 08:00	04/07 10:23	MAZ
Calcium	ND	U	ug/L	1	5.79	50.0	EPA 200.7/3010	04/07 08:00	04/07 10:23	MAZ
Chromium	ND	U	ug/L	1	0.339	5.00	EPA 200.7/3010	04/07 08:00	04/07 10:23	MAZ
Cobalt	ND	U	ug/L	1	0.361	1.00	EPA 200.7/3010	04/07 08:00	04/07 10:23	MAZ
Lead	ND	U	ug/L	1	1.19	10.0	EPA 200.7/3010	04/07 08:00	04/07 10:23	MAZ
Lithium	ND	U	ug/L	1	2.72	25.0	EPA 200.7/3010	04/07 09:25	04/07 11:05	JF
Magnesium	ND	U	ug/L	1	3.74	20.0	EPA 200.7/3010	04/07 08:00	04/07 10:23	MAZ
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	04/06 10:11	04/06 15:14	JF
Molybdenum	ND	U	ug/L	1	1.17	10.0	EPA 200.7/3010	04/07 08:00	04/07 10:23	MAZ
Potassium	ND	U	ug/L	1	17.3	50.0	EPA 200.7/3010	04/07 08:00	04/07 10:23	MAZ
Selenium	ND	U	ug/L	1	3.46	15.0	EPA 200.7/3010	04/07 08:00	04/07 10:23	MAZ
Sodium	ND	U	ug/L	1	446	2000	EPA 200.7/3010	04/07 08:00	04/07 10:23	MAZ
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	04/07 08:00	04/07 10:23	MAZ
Titanium	ND	U	ug/L	1	0.201	1.00	EPA 200.7/3010	04/07 08:00	04/07 10:23	MAZ

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 4/14/2022
Work Order # 22D0170
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22D0170-08
Client Sample ID: 400522 EqBlnk B
Matrix: Water

Collection Date: 04/05/22 14:30
Received Date: 04/06/22 10:15
Collected By: Client

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	ND	U	mg/L	1	2.49	7.46	EPA 310.2	04/08 19:39	04/08 19:39	OC
Bicarbonate	ND	U	mg/L	1	2.49	7.46	EPA 310.2	04/08 19:39	04/08 19:39	OC
Chloride	ND	U	mg/L	1	0.126	0.500	EPA 300.0	04/06 18:55	04/07 08:58	PK
Fluoride	ND	U	mg/L	1	0.00520	0.0250	EPA 300.0	04/06 18:55	04/07 08:58	PK
Sulfate	ND	U	mg/L	1	0.0953	0.500	EPA 300.0	04/06 18:55	04/07 08:58	PK
Total Dissolved Solids	ND	U	mg/L	1	10.0	30.0	SM 2540C	04/07 15:36	04/09 16:13	HM

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 4/14/2022
Work Order # 22D0170
Project: CCR Monitoring Program
McIntosh Plant

Wet Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22D0296 - Default Prep GenChem										
Blank (22D0296-BLK1)				Prepared & Analyzed: 04/06/2022						
Fluoride	ND	0.0250	mg/L							U
Sulfate	ND	0.500	"							U
Chloride	ND	0.500	"							U
LCS (22D0296-BS1)				Prepared & Analyzed: 04/06/2022						
Fluoride	2.52	0.0250	mg/L	2.500		101	90-110			
Chloride	49.9	0.500	"	50.00		100	90-110			
Sulfate	49.2	0.500	"	50.00		98	90-110			
Duplicate (22D0296-DUP1)		**Source: 22D0160-01**		Prepared & Analyzed: 04/06/2022						
Fluoride	0.147	0.0250	mg/L		0.132			11	20	
Sulfate	2.90	0.500	"		3.14			8	20	
Chloride	6.46	0.500	"		7.55			16	20	
Matrix Spike (22D0296-MS1)		**Source: 22D0160-01**		Prepared & Analyzed: 04/06/2022						
Fluoride	2.49	0.0250	mg/L	2.500	0.132	94	90-110			
Chloride	56.8	0.500	"	50.00	7.55	99	90-110			
Sulfate	53.2	0.500	"	50.00	3.14	100	90-110			
Matrix Spike (22D0296-MS2)		**Source: 22D0170-02**		Prepared & Analyzed: 04/06/2022						
Fluoride	2.50	0.0250	mg/L	2.500	0.0510	98	90-110			
Chloride	52.0	0.500	"	50.00	1.53	101	90-110			
Sulfate	66.6	0.500	"	50.00	17.7	98	90-110			
Batch 22D0299 - Default Prep GenChem										
Blank (22D0299-BLK1)				Prepared: 04/06/2022 Analyzed: 04/07/2022						
Fluoride	ND	0.0250	mg/L							U
Sulfate	ND	0.500	"							U
Chloride	ND	0.500	"							U

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 4/14/2022
Work Order # 22D0170
Project: CCR Monitoring Program
McIntosh Plant

Wet Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22D0299 - Default Prep GenChem										
LCS (22D0299-BS1)				Prepared: 04/06/2022 Analyzed: 04/07/2022						
Fluoride	2.35	0.0250	mg/L	2.500		94	90-110			
Sulfate	49.9	0.500	"	50.00		100	90-110			
Chloride	50.3	0.500	"	50.00		101	90-110			
Duplicate (22D0299-DUP1)	**Source: 22D0178-01**			Prepared: 04/06/2022 Analyzed: 04/07/2022						
Fluoride	0.220	0.0250	mg/L		0.225			2	20	
Chloride	3.15	0.500	"		3.16			0.4	20	
Sulfate	5.55	0.500	"		5.55			0.04	20	
Matrix Spike (22D0299-MS1)	**Source: 22D0178-01**			Prepared: 04/06/2022 Analyzed: 04/07/2022						
Fluoride	2.40	0.0250	mg/L	2.500	0.225	87	90-110			J3
Chloride	52.7	0.500	"	50.00	3.16	99	90-110			
Sulfate	56.5	0.500	"	50.00	5.55	102	90-110			
Batch 22D0314 - Default Prep GenChem										
Blank (22D0314-BLK1)				Prepared: 04/07/2022 Analyzed: 04/09/2022						
Total Dissolved Solids	ND	30.0	mg/L							U
LCS (22D0314-BS1)				Prepared: 04/07/2022 Analyzed: 04/09/2022						
Total Dissolved Solids	452	120	mg/L	500.0		90.4	80-120			
Duplicate (22D0314-DUP1)	**Source: 22D0163-01**			Prepared: 04/07/2022 Analyzed: 04/09/2022						
Total Dissolved Solids	744	120	mg/L		744			0.00	20	
Duplicate (22D0314-DUP2)	**Source: 22D0198-02**			Prepared: 04/07/2022 Analyzed: 04/09/2022						
Total Dissolved Solids	1200	120	mg/L		1180			2.02	20	

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 4/14/2022
Work Order # 22D0170
Project: CCR Monitoring Program
McIntosh Plant

Wet Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22D0351 - Default Prep GenChem										
Blank (22D0351-BLK1)				Prepared & Analyzed: 04/08/2022						
Total Alkalinity	ND	7.46	mg/L							U
LCS (22D0351-BS1)				Prepared & Analyzed: 04/08/2022						
Total Alkalinity	250	7.46	mg/L	250.0		100	90-110			
Duplicate (22D0351-DUP1)	**Source: 22D0106-03**			Prepared & Analyzed: 04/08/2022						
Total Alkalinity	61.7	7.46	mg/L		61.0			1	20	
Matrix Spike (22D0351-MS1)	**Source: 22D0106-03**			Prepared & Analyzed: 04/08/2022						
Total Alkalinity	266	7.46	mg/L	250.0	61.0	82	90-110			J3
Matrix Spike (22D0351-MS2)	**Source: 22D0108-03**			Prepared & Analyzed: 04/08/2022						
Total Alkalinity	324	7.46	mg/L	250.0	141	73	90-110			J3
Batch 22D0352 - Default Prep GenChem										
Blank (22D0352-BLK1)				Prepared & Analyzed: 04/08/2022						
Total Alkalinity	ND	7.46	mg/L							U
LCS (22D0352-BS1)				Prepared & Analyzed: 04/08/2022						
Total Alkalinity	250	7.46	mg/L	250.0		100	90-110			
Duplicate (22D0352-DUP1)	**Source: 22D0108-05**			Prepared & Analyzed: 04/08/2022						
Total Alkalinity	152	7.46	mg/L		152			0	20	
Matrix Spike (22D0352-MS1)	**Source: 22D0108-05**			Prepared & Analyzed: 04/08/2022						
Total Alkalinity	340	7.46	mg/L	250.0	152	75	90-110			J3

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 4/14/2022
Work Order # 22D0170
Project: CCR Monitoring Program
McIntosh Plant

Wet Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22D0352 - Default Prep GenChem										
Matrix Spike (22D0352-MS2)	**Source: 22D0170-02**			Prepared & Analyzed: 04/08/2022						
Total Alkalinity	270	7.46	mg/L	250.0	15.2	102	90-110			

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 4/14/2022
Work Order # 22D0170
Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22D0021 - EPA 245.1/245.2 Prep										
Blank (22D0021-BLK1)				Prepared & Analyzed: 04/06/2022						
Mercury	ND	1.00	ug/L							U
LCS (22D0021-BS1)				Prepared & Analyzed: 04/06/2022						
Mercury	10.3	1.00	ug/L	10.00		103	85-115			
Matrix Spike (22D0021-MS1)		**Source: 22D0106-01**		Prepared & Analyzed: 04/06/2022						
Mercury	9.35	1.00	ug/L	10.00	ND	93	70-130			
Matrix Spike Dup (22D0021-MSD1)		**Source: 22D0106-01**		Prepared & Analyzed: 04/06/2022						
Mercury	9.18	1.00	ug/L	10.00	ND	92	70-130	2	20	
Batch 22D0022 - EPA 3010A										
Blank (22D0022-BLK1)				Prepared & Analyzed: 04/07/2022						
Arsenic	ND	10.0	ug/L							U
Antimony	ND	15.0	"							U
Titanium	ND	1.00	"							U
Thallium	ND	4.00	"							U
Sodium	ND	2000	"							U
Selenium	ND	15.0	"							U
Molybdenum	ND	10.0	"							U
Barium	ND	1.00	"							U
Cobalt	ND	1.00	"							U
Lead	ND	10.0	"							U
Magnesium	ND	20.0	"							U
Potassium	ND	50.0	"							U
Beryllium	ND	1.00	"							U
Boron	ND	10.0	"							U
Calcium	ND	50.0	"							U
Chromium	ND	5.00	"							U
Cadmium	ND	1.00	"							U

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 4/14/2022
Work Order # 22D0170
Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22D0022 - EPA 3010A										
LCS (22D0022-BS1)				Prepared & Analyzed: 04/07/2022						
Arsenic	529	10.0	ug/L	500.0		106	85-115			
Antimony	525.6	15.0	"	500.0		105	85-115			
Titanium	528.4	1.00	"	500.0		106	85-115			
Sodium	24900	2000	"	25500		97.8	85-115			
Thallium	508.8	4.00	"	500.0		102	85-115			
Cobalt	513.9	1.00	"	500.0		103	85-115			
Boron	530.4	10.0	"	500.0		106	85-115			
Lead	515	10.0	"	500.0		103	85-115			
Molybdenum	528.0	10.0	"	500.0		106	85-115			
Magnesium	507	20.0	"	500.0		101	85-115			
Potassium	24600	50.0	"	25500		96.3	85-115			
Barium	505.0	1.00	"	500.0		101	85-115			
Beryllium	531.4	1.00	"	500.0		106	85-115			
Selenium	539.2	15.0	"	500.0		108	85-115			
Cadmium	527.7	1.00	"	500.0		106	85-115			
Calcium	27000	50.0	"	25500		106	85-115			
Chromium	516.8	5.00	"	500.0		103	85-115			
Matrix Spike (22D0022-MS1)	**Source: 22D0164-01**			Prepared & Analyzed: 04/07/2022						
Selenium	533.2	15.0	ug/L	500.0	ND	107	70-130			
Arsenic	554	10.0	"	500.0	ND	111	70-130			
Antimony	594.5	15.0	"	500.0	ND	119	70-130			
Titanium	548.0	1.00	"	500.0	ND	110	70-130			
Thallium	513.7	4.00	"	500.0	ND	103	70-130			
Sodium	115000	2000	"	25500	83000	125	70-130			
Lead	524	10.0	"	500.0	ND	105	70-130			
Molybdenum	561.2	10.0	"	500.0	ND	112	70-130			
Cobalt	536.8	1.00	"	500.0	ND	107	70-130			
Magnesium	2370	20.0	"	500.0	1870	102	70-130			
Potassium	33800	50.0	"	25500	3090	121	70-130			
Cadmium	521.8	1.00	"	500.0	ND	104	70-130			
Barium	527.4	1.00	"	500.0	4.700	105	70-130			

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 4/14/2022
Work Order # 22D0170
Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22D0022 - EPA 3010A										
Matrix Spike (22D0022-MS1)	**Source: 22D0164-01**			Prepared & Analyzed: 04/07/2022						
Beryllium	544.5	1.00	ug/L	500.0	ND	109	70-130			
Boron	597.9	10.0	"	500.0	45.30	111	70-130			
Calcium	57100	50.0	"	25500	30700	104	70-130			
Chromium	537.5	5.00	"	500.0	ND	108	70-130			
Matrix Spike Dup (22D0022-MSD1)	**Source: 22D0164-01**			Prepared & Analyzed: 04/07/2022						
Antimony	594.8	15.0	ug/L	500.0	ND	119	70-130	0.0504	20	
Boron	598.8	10.0	"	500.0	45.30	111	70-130	0.163	20	
Sodium	115000	2000	"	25500	83000	125	70-130	0.0160	20	
Titanium	548.2	1.00	"	500.0	ND	110	70-130	0.0365	20	
Thallium	511.6	4.00	"	500.0	ND	102	70-130	0.410	20	
Arsenic	551	10.0	"	500.0	ND	110	70-130	0.543	20	
Selenium	533.7	15.0	"	500.0	ND	107	70-130	0.0937	20	
Potassium	33800	50.0	"	25500	3090	121	70-130	0.0553	20	
Lead	523	10.0	"	500.0	ND	105	70-130	0.267	20	
Cobalt	536.8	1.00	"	500.0	ND	107	70-130	0.00	20	
Magnesium	2370	20.0	"	500.0	1870	102	70-130	0.0197	20	
Molybdenum	564.5	10.0	"	500.0	ND	113	70-130	0.586	20	
Barium	528.0	1.00	"	500.0	4.700	105	70-130	0.115	20	
Beryllium	545.1	1.00	"	500.0	ND	109	70-130	0.110	20	
Cadmium	521.4	1.00	"	500.0	ND	104	70-130	0.0767	20	
Calcium	57200	50.0	"	25500	30700	104	70-130	0.179	20	
Chromium	537.8	5.00	"	500.0	ND	108	70-130	0.0558	20	
Batch 22D0024 - EPA 3010A										
Blank (22D0024-BLK1)				Prepared & Analyzed: 04/07/2022						
Lithium	ND	25.0	ug/L							U

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 4/14/2022
Work Order # 22D0170
Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22D0024 - EPA 3010A										
LCS (22D0024-BS1)				Prepared & Analyzed: 04/07/2022						
Lithium	2370	25.0	ug/L	2500		95	85-115			
Matrix Spike (22D0024-MS1)	**Source: 22C1155-03**			Prepared & Analyzed: 04/07/2022						
Lithium	2380	25.0	ug/L	2500	ND	95	75-125			
Matrix Spike Dup (22D0024-MSD1)	**Source: 22C1155-03**			Prepared & Analyzed: 04/07/2022						
Lithium	2380	25.0	ug/L	2500	ND	95	75-125	0.3	20	

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 4/14/2022

Work Order # 22D0170

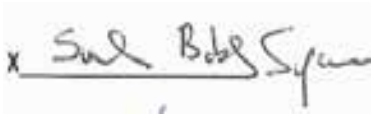
Project: CCR Monitoring Program
McIntosh Plant

Notes and Definitions

U	Indicated that the compound was analyzed for but not detected. This shall be used to indicate that the specific component was not detected. The value associated with the qualifier shall be the laboratory method detection limit.
J3	The matrix spike recovery outside method acceptance limits indicating matrix interference.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the detection limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
N.O.O.	No Odor Observed
REP	Field parameter measured by client
V	Indicated that the analyte was detected in both the sample and the associated method blank.
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
Z	Too many colonies were present for accurate counting.
SUB	Work performed by outside (subcontracted) labs denoted by SUB in analyst field.

QC=Qualifier Codes as defined by DEP 62-160
Unless indicated, soil results are reported on actual (wet) weight basis.
The Color SM2120B method is reported as (Color / pH)
Legionella analyzed under CDC acreditation program
Dilution factors >= 1000 are abreviated using k=1000 and M=1000000
Field parameters are not NELAP acredited.
Results relate only to this sample.

Suresh (Bobby) Supan - CSM



Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification# E86006

All NELAP certified analysis are performed in accordance with Chapter 64E-1 Florida Administrative code, which has been determined to be equivalent to NELAC standards. Analysis certified by programs other than NELAP are designated with a "~".

CHAIN OF CUSTODY RECORD

SUBMISSION # [illegible]

Logged into LIMS by: [illegible]

Florida Spectrum Environmental Services, Inc.

1460 W McNab Road Ft Lauderdale FL 33309 | Tel: (954) 978-6400 | Fax: (954) 978-2233
1112 NW Park Street, Okeechobee, FL 34972 | Tel: (863) 763-3336 | Fax: (863) 763-1541
630 Indian Street Savannah, GA 31401 | Tel: (912) 238-5050 | Fax (912) 234-4815
328 Gooch Road Fort Meade FL 33841 | Tel: (863) 285-8145 | Fax (863) 285-7030
1910 Harden Blvd # 101, Lakeland, FL 33803 | Tel: (863) 686-4271 | Fax (863) 686-4189

DUE DATE Requested

RUSH RESERVATION #

Rush Surcharges apply

Report to: Lakeland Electric | Report to Address:

Invoice to: Lakeland Electric | Purchase Order # 281095 | Invoice to Address:

Project Name and/or Number: CCR Monitoring Program | Site Location: McIntosh Plant

Project Mgr: Thomas Johnston | Phone: | Fax: | Email:

Sampler Name: (printed) | Sampler Signature: [signature]

ORDER # Lab Control Number (Shaded Areas For Laboratory Use Only)	Sample ID	Date Sampled	Time Sampled	Matrix (DW SW GW SED S EFF HW BIO SA OIL X)	Appendix III Metals	Appendix IV Metals	GC Suite Metals	App III Cl, F, SO4, TDS	GC Suite Bicarb, T-Alk	TEMP °C	PH	COND	CHLOR
01	SW-106A	4/5/2022	1022	GW	X	X	X						
02	SW-106B	4/5/2022	1022	GW				X	X				
03	CCR-11A	4/5/2022	1320	GW	X	X	X						
04	CCR-11B	4/5/2022	1320	GW				X	X				
05	CCR-12A	4/5/2022	1137	GW	X	X	X						
06	CCR-12B	4/5/2022	1137	GW				X	X				
07	K032 EqBlink A	4/5/2022	1430	GW	X	X	X						
08	K032 EqBlink B	4/5/2022	1430	GW				X	X				

Total

Special Comments: GUN 4

"I waive NELAC protocol" (sign here):

Deliverables | QA/QC Report Needed? Yes No (additional charges)

SAMPLE CUSTODY AND TRANSFER SIGNATURES | DATE / TIME

1	Relinquished by: [signature]	4/5/22	1432
1	Received by: Nina Duggers	4/5/22	14:39
2	Relinquished by: [signature]		
2	Received by: [signature]	4/6/22	[illegible]
3	Relinquished by:		
3	Received by:		

Sample Custody & FDEP Comments

Received on Ice: (Y) N

Temp as received 5.2 C

Custody Seals? Y N

GUN: eT650D

FIELD TIME: Sampling ___ hr Pick up ___ hr

Misc. Charges

Bottle Type

A- liter amber
B-Bacteria bag/bottle
F-500 ml | O-125ml
L-liter bottle | H-Plastic Amber
S-Soil jar | TED-Tedlar Air Bag
T-250 ml
V-40 ml vial
W-wide mouth
X-other

Preservatives

A-Ascorbic acid | P-H_3PO_4
C-HCL | S-H_2SO_4
Cu-$CuSO_4$ | T-$Na_2S_2O_3$-H_2O
H-HNO_3 | U-Unpreserved
M-MCAB | DI-DI Water
N-NaOH | Z-zinc acetate
NH_4-NH_4CL
Rex- Rex.Cr. Buffer
EDA-Ethylene Diamine

www.flenviro.com | COC Page of

1460 West McNab Road
Fort Lauderdale, FL 33309
1-800-ANALYTE Phone
(954) 978-6400 Phone
(954) 978-2233 Fax

NELAP Certificate No. E86006

25 March 2022
Lab Work Order (COC): 22C0792

Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland, FL 33805

RE: **CCR Monitoring Program**

Project Location: **McIntosh Plant**

Dear Thomas Johnston:

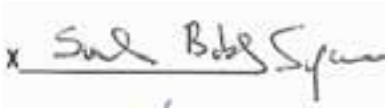
This report details the analytical results of samples collected at the above-referenced project location. These samples were received by Florida Spectrum Environmental Services at **03/17/2022 16:00**.

All Analyses were performed according to the TNI/NELAP standard unless indicated by a "~" on the report.

Your samples will be retained by Florida Spectrum Environmental for a period of at least 30 days following sample receipt or until the longest of the preparation and/or analytical hold times expires, whichever is shorter. After that time, they will be properly disposed without further notice, unless there exists an explicit contractual agreement to the contrary. We reserve the right to return any unused samples, extracts, or related materials or solutions to you if we consider it necessary. Examples might include those samples identified as hazardous wastes, submissions where the sample sizes significantly exceed those required for analysis, samples containing controlled substances, etc.

We thank you for selecting Florida Spectrum Environmental to serve your analytical needs. Should you have any questions or require additional information regarding any of the information in this report, please feel free to contact us at any time. We appreciate the opportunity to be of service.

Florida Spectrum Environmental Inc.



Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/25/2022
Work Order # 22C0792
Project: CCR Monitoring Program
McIntosh Plant

DETECTED ANALYTE SUMMARY

CCR-13A	22C0792-01	Water	Lithium	227	ug/L	3/16/2022	11:28
CCR-13A	22C0792-01	Water	Magnesium	20200	ug/L	3/16/2022	11:28
CCR-13A	22C0792-01	Water	Sodium	83300	ug/L	3/16/2022	11:28
CCR-13A	22C0792-01	Water	Calcium	470000	ug/L	3/16/2022	11:28
CCR-13A	22C0792-01	Water	Potassium	197000	ug/L	3/16/2022	11:28
CCR-13A	22C0792-01	Water	Boron	213	ug/L	3/16/2022	11:28
CCR-13A	22C0792-01	Water	Barium	38.4	ug/L	3/16/2022	11:28
CCR-13A	22C0792-01	Water	Chromium	2.20	ug/L	3/16/2022	11:28
CCR-13A	22C0792-01	Water	Beryllium	0.300	ug/L	3/16/2022	11:28
CCR-13A	22C0792-01	Water	Titanium	0.700	ug/L	3/16/2022	11:28
CCR-13B	22C0792-02	Water	Fluoride	2.64	mg/L	3/16/2022	11:28
CCR-13B	22C0792-02	Water	Sulfate	1530	mg/L	3/16/2022	11:28
CCR-13B	22C0792-02	Water	Chloride	273	mg/L	3/16/2022	11:28
CCR-13B	22C0792-02	Water	Total Dissolved Solids	2570	mg/L	3/16/2022	11:28
CCR-22A	22C0792-03	Water	Lithium	88.2	ug/L	3/16/2022	13:29
CCR-22A	22C0792-03	Water	Calcium	312000	ug/L	3/16/2022	13:29
CCR-22A	22C0792-03	Water	Potassium	88800	ug/L	3/16/2022	13:29
CCR-22A	22C0792-03	Water	Barium	25.9	ug/L	3/16/2022	13:29
CCR-22A	22C0792-03	Water	Sodium	36500	ug/L	3/16/2022	13:29
CCR-22A	22C0792-03	Water	Boron	493	ug/L	3/16/2022	13:29
CCR-22A	22C0792-03	Water	Chromium	1.50	ug/L	3/16/2022	13:29
CCR-22A	22C0792-03	Water	Titanium	0.800	ug/L	3/16/2022	13:29
CCR-22A	22C0792-03	Water	Magnesium	16400	ug/L	3/16/2022	13:29
CCR-22B	22C0792-04	Water	Total Dissolved Solids	1610	mg/L	3/16/2022	13:29

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/25/2022

Work Order # 22C0792

Project: CCR Monitoring Program
McIntosh Plant

DETECTED ANALYTE SUMMARY

Client Sample ID	Laboratory ID	Matrix	Analyte	Result	Units	Collection Date	Collection Time
CCR-22B	22C0792-04	Water	Sulfate	494	mg/L	3/16/2022	13:29
CCR-22B	22C0792-04	Water	Fluoride	0.993	mg/L	3/16/2022	13:29
CCR-22B	22C0792-04	Water	Chloride	40.1	mg/L	3/16/2022	13:29
CCR-22B	22C0792-04	Water	Total Alkalinity	13.6	mg/L	3/16/2022	13:29
CCR-22B	22C0792-04	Water	Bicarbonate	13.6	mg/L	3/16/2022	13:29

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/25/2022
Work Order # 22C0792
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22C0792-01
Client Sample ID: CCR-13A
Matrix: Water

Collection Date: 03/16/22 11:28
Received Date: 03/17/22 16:00
Collected By: Thomas Johnston

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	5.11	15.0	EPA 200.7/3010	03/18 08:30	03/18 11:19	MAZ
Arsenic	ND	U	ug/L	1	2.21	10.0	EPA 200.7/3010	03/18 08:30	03/18 11:19	MAZ
Barium	38.4		ug/L	1	0.0728	1.00	EPA 200.7/3010	03/18 08:30	03/18 11:19	MAZ
Beryllium	0.300	I	ug/L	1	0.101	1.00	EPA 200.7/3010	03/18 08:30	03/18 11:19	MAZ
Boron	213		ug/L	1	1.57	10.0	EPA 200.7/3010	03/18 08:30	03/18 11:19	MAZ
Cadmium	ND	U	ug/L	1	0.181	1.00	EPA 200.7/3010	03/18 08:30	03/18 11:19	MAZ
Calcium	470000		ug/L	10	57.9	500	EPA 200.7/3010	03/18 08:30	03/18 13:24	MAZ
Chromium	2.20	I	ug/L	1	0.339	5.00	EPA 200.7/3010	03/18 08:30	03/18 11:19	MAZ
Cobalt	ND	U	ug/L	1	0.361	1.00	EPA 200.7/3010	03/18 08:30	03/18 11:19	MAZ
Lead	ND	U	ug/L	1	1.19	10.0	EPA 200.7/3010	03/18 08:30	03/18 11:19	MAZ
Lithium	227		ug/L	1	2.72	25.0	EPA 200.7/3010	03/17 16:15	03/18 11:23	JF
Magnesium	20200		ug/L	100	374	2000	EPA 200.7/3010	03/18 08:30	03/18 13:38	MAZ
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	03/18 10:57	03/18 13:14	JF
Molybdenum	ND	U	ug/L	1	1.17	10.0	EPA 200.7/3010	03/18 08:30	03/18 11:19	MAZ
Potassium	197000		ug/L	10	173	500	EPA 200.7/3010	03/18 08:30	03/18 13:24	MAZ
Selenium	ND	U	ug/L	1	3.46	15.0	EPA 200.7/3010	03/18 08:30	03/18 11:19	MAZ
Sodium	83300		ug/L	2	892	4000	EPA 200.7/3010	03/18 08:30	03/18 13:30	MAZ
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	03/18 08:30	03/18 11:19	MAZ
Titanium	0.700	I	ug/L	1	0.201	1.00	EPA 200.7/3010	03/18 08:30	03/18 11:19	MAZ

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/25/2022
Work Order # 22C0792
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22C0792-02
Client Sample ID: CCR-13B
Matrix: Water

Collection Date: 03/16/22 11:28
Received Date: 03/17/22 16:00
Collected By: Thomas Johnston

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	ND	U	mg/L	1	2.49	7.46	EPA 310.2	03/17 17:27	03/17 17:27	OC
Bicarbonate	ND	U	mg/L	1	2.49	7.46	EPA 310.2	03/17 17:27	03/17 17:27	OC
Chloride	273		mg/L	20	2.52	10.0	EPA 300.0	03/18 13:01	03/19 10:19	OC
Fluoride	2.64		mg/L	20	0.104	0.500	EPA 300.0	03/18 13:01	03/19 10:19	OC
Sulfate	1530		mg/L	20	1.91	10.0	EPA 300.0	03/18 13:01	03/19 10:19	OC
Total Dissolved Solids	2570		mg/L	4	40.0	120	SM 2540C	03/19 15:31	03/23 12:49	HM

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/25/2022
Work Order # 22C0792
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22C0792-03
Client Sample ID: CCR-22A
Matrix: Water

Collection Date: 03/16/22 13:29
Received Date: 03/17/22 16:00
Collected By: Thomas Johnston

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	5.11	15.0	EPA 200.7/3010	03/18 08:30	03/18 11:16	MAZ
Arsenic	ND	U	ug/L	1	2.21	10.0	EPA 200.7/3010	03/18 08:30	03/18 11:16	MAZ
Barium	25.9		ug/L	1	0.0728	1.00	EPA 200.7/3010	03/18 08:30	03/18 11:16	MAZ
Beryllium	ND	U	ug/L	1	0.101	1.00	EPA 200.7/3010	03/18 08:30	03/18 11:16	MAZ
Boron	493		ug/L	1	1.57	10.0	EPA 200.7/3010	03/18 08:30	03/18 11:16	MAZ
Cadmium	ND	U	ug/L	1	0.181	1.00	EPA 200.7/3010	03/18 08:30	03/18 11:16	MAZ
Calcium	312000		ug/L	10	57.9	500	EPA 200.7/3010	03/18 08:30	03/18 13:27	MAZ
Chromium	1.50	I	ug/L	1	0.339	5.00	EPA 200.7/3010	03/18 08:30	03/18 11:16	MAZ
Cobalt	ND	U	ug/L	1	0.361	1.00	EPA 200.7/3010	03/18 08:30	03/18 11:16	MAZ
Lead	ND	U	ug/L	1	1.19	10.0	EPA 200.7/3010	03/18 08:30	03/18 11:16	MAZ
Lithium	88.2		ug/L	1	2.72	25.0	EPA 200.7/3010	03/17 16:15	03/18 11:25	JF
Magnesium	16400		ug/L	100	374	2000	EPA 200.7/3010	03/18 08:30	03/18 13:21	MAZ
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	03/18 10:57	03/18 13:17	JF
Molybdenum	ND	U	ug/L	1	1.17	10.0	EPA 200.7/3010	03/18 08:30	03/18 11:16	MAZ
Potassium	88800		ug/L	10	173	500	EPA 200.7/3010	03/18 08:30	03/18 13:27	MAZ
Selenium	ND	U	ug/L	1	3.46	15.0	EPA 200.7/3010	03/18 08:30	03/18 11:16	MAZ
Sodium	36500		ug/L	1	446	2000	EPA 200.7/3010	03/18 08:30	03/18 11:16	MAZ
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	03/18 08:30	03/18 11:16	MAZ
Titanium	0.800	I	ug/L	1	0.201	1.00	EPA 200.7/3010	03/18 08:30	03/18 11:16	MAZ

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/25/2022
Work Order # 22C0792
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22C0792-04
Client Sample ID: CCR-22B
Matrix: Water

Collection Date: 03/16/22 13:29
Received Date: 03/17/22 16:00
Collected By: Thomas Johnston

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	13.6		mg/L	1	2.49	7.46	EPA 310.2	03/17 17:27	03/17 17:27	OC
Bicarbonate	13.6		mg/L	1	2.49	7.46	EPA 310.2	03/17 17:27	03/17 17:27	OC
Chloride	40.1		mg/L	10	1.26	5.00	EPA 300.0	03/18 13:01	03/19 10:36	OC
Fluoride	0.993		mg/L	10	0.0520	0.250	EPA 300.0	03/18 13:01	03/19 10:36	OC
Sulfate	494		mg/L	10	0.953	5.00	EPA 300.0	03/18 13:01	03/19 10:36	OC
Total Dissolved Solids	1610		mg/L	4	40.0	120	SM 2540C	03/19 15:31	03/23 12:49	HM

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/25/2022

Work Order # 22C0792

Project: CCR Monitoring Program
McIntosh Plant

Wet Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22C0631 - Default Prep GenChem										
Blank (22C0631-BLK1)				Prepared & Analyzed: 03/17/2022						
Total Alkalinity	ND	7.46	mg/L							U
LCS (22C0631-BS1)				Prepared & Analyzed: 03/17/2022						
Total Alkalinity	265	7.46	mg/L	250.0		106	90-110			
Duplicate (22C0631-DUP1)		**Source: 22C0565-07**		Prepared & Analyzed: 03/17/2022						
Total Alkalinity	282	7.46	mg/L		282			0	20	
Matrix Spike (22C0631-MS1)		**Source: 22C0648-01**		Prepared & Analyzed: 03/17/2022						
Total Alkalinity	259	7.46	mg/L	250.0	91.7	67	90-110			J3
Matrix Spike (22C0631-MS2)		**Source: 22C0664-06**		Prepared & Analyzed: 03/17/2022						
Total Alkalinity	372	7.46	mg/L	250.0	156	86	90-110			J3
Batch 22C0663 - Default Prep GenChem										
Blank (22C0663-BLK1)				Prepared: 03/18/2022 Analyzed: 03/19/2022						
Fluoride	ND	0.0250	mg/L							U
Chloride	ND	0.500	"							U
Sulfate	ND	0.500	"							U
LCS (22C0663-BS1)				Prepared & Analyzed: 03/18/2022						
Fluoride	2.52	0.0250	mg/L	2.500		101	90-110			
Sulfate	49.3	0.500	"	50.00		99	90-110			
Chloride	50.1	0.500	"	50.00		100	90-110			
Duplicate (22C0663-DUP1)		**Source: 22C0738-01**		Prepared & Analyzed: 03/18/2022						
Fluoride	0.113	0.0250	mg/L		0.112			0.9	20	
Sulfate	4.42	0.500	"		4.74			7	20	
Chloride	6.01	0.500	"		6.82			13	20	

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/25/2022
Work Order # 22C0792
Project: CCR Monitoring Program
McIntosh Plant

Wet Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22C0663 - Default Prep GenChem										
Matrix Spike (22C0663-MS1)	**Source: 22C0738-01**			Prepared & Analyzed: 03/18/2022						
Fluoride	2.50	0.0250	mg/L	2.500	0.112	96	90-110			
Chloride	56.1	0.500	"	50.00	6.82	99	90-110			
Sulfate	54.2	0.500	"	50.00	4.74	99	90-110			
Matrix Spike (22C0663-MS2)	**Source: 22C0738-02**			Prepared & Analyzed: 03/18/2022						
Fluoride	2.44	0.0250	mg/L	2.500	0.119	93	90-110			
Sulfate	54.9	0.500	"	50.00	5.41	99	90-110			
Chloride	57.5	0.500	"	50.00	8.10	99	90-110			
Batch 22C0669 - Default Prep GenChem										
Blank (22C0669-BLK1)				Prepared: 03/19/2022 Analyzed: 03/23/2022						
Total Dissolved Solids	ND	30.0	mg/L							U
LCS (22C0669-BS1)				Prepared: 03/19/2022 Analyzed: 03/23/2022						
Total Dissolved Solids	500	120	mg/L	500.0		100	80-120			
Duplicate (22C0669-DUP1)	**Source: 22C0792-04**			Prepared: 03/19/2022 Analyzed: 03/23/2022						
Total Dissolved Solids	1630	120	mg/L		1610			1.48	20	
Duplicate (22C0669-DUP2)	**Source: 22C0807-08**			Prepared: 03/19/2022 Analyzed: 03/23/2022						
Total Dissolved Solids	1300	120	mg/L		1280			1.86	20	

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/25/2022
Work Order # 22C0792
Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22C0071 - EPA 3010A										
Blank (22C0071-BLK1)				Prepared: 03/17/2022 Analyzed: 03/18/2022						
Lithium	ND	25.0	ug/L							U
LCS (22C0071-BS1)				Prepared: 03/17/2022 Analyzed: 03/18/2022						
Lithium	2690	25.0	ug/L	2500		108	85-115			
Matrix Spike (22C0071-MS1)	**Source: 22C0792-03**			Prepared: 03/17/2022 Analyzed: 03/18/2022						
Lithium	2700	25.0	ug/L	2500	88.2	104	75-125			
Matrix Spike Dup (22C0071-MSD1)	**Source: 22C0792-03**			Prepared: 03/17/2022 Analyzed: 03/18/2022						
Lithium	2720	25.0	ug/L	2500	88.2	105	75-125	0.8	20	
Batch 22C0074 - EPA 3010A										
Blank (22C0074-BLK1)				Prepared & Analyzed: 03/18/2022						
Cadmium	ND	1.00	ug/L							U
Calcium	ND	50.0	"							U
Chromium	ND	5.00	"							U
Barium	ND	1.00	"							U
Antimony	ND	15.0	"							U
Arsenic	ND	10.0	"							U
Cobalt	ND	1.00	"							U
Boron	ND	10.0	"							U
Beryllium	ND	1.00	"							U
Sodium	ND	2000	"							U
Selenium	ND	15.0	"							U
Thallium	ND	4.00	"							U
Titanium	ND	1.00	"							U
Magnesium	ND	20.0	"							U
Lead	ND	10.0	"							U
Molybdenum	ND	10.0	"							U
Potassium	ND	50.0	"							U

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/25/2022

Work Order # 22C0792

Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22C0074 - EPA 3010A										
LCS (22C0074-BS1)				Prepared & Analyzed: 03/18/2022						
Cadmium	533.1	1.00	ug/L	500.0		107	85-115			
Boron	548.4	10.0	"	500.0		110	85-115			
Calcium	27300	50.0	"	25500		107	85-115			
Chromium	528.4	5.00	"	500.0		106	85-115			
Antimony	531.1	15.0	"	500.0		106	85-115			
Molybdenum	541.1	10.0	"	500.0		108	85-115			
Arsenic	538	10.0	"	500.0		108	85-115			
Barium	515.1	1.00	"	500.0		103	85-115			
Beryllium	550.8	1.00	"	500.0		110	85-115			
Thallium	516.8	4.00	"	500.0		103	85-115			
Cobalt	522.0	1.00	"	500.0		104	85-115			
Sodium	25500	2000	"	25500		99.8	85-115			
Selenium	548.2	15.0	"	500.0		110	85-115			
Titanium	541.2	1.00	"	500.0		108	85-115			
Lead	526	10.0	"	500.0		105	85-115			
Magnesium	521	20.0	"	500.0		104	85-115			
Potassium	24900	50.0	"	25500		97.6	85-115			
Matrix Spike (22C0074-MS1)	**Source: 22C0739-04**			Prepared & Analyzed: 03/18/2022						
Boron	559.6	10.0	ug/L	500.0	48.50	102	70-130			
Cadmium	482.5	1.00	"	500.0	ND	96.5	70-130			
Calcium	80400	50.0	"	25500	57200	90.9	70-130			
Chromium	498.0	5.00	"	500.0	1.500	99.3	70-130			
Antimony	542.6	15.0	"	500.0	ND	109	70-130			
Barium	571.0	1.00	"	500.0	91.20	96.0	70-130			
Beryllium	506.3	1.00	"	500.0	ND	101	70-130			
Arsenic	497	10.0	"	500.0	ND	99.3	70-130			
Selenium	488.3	15.0	"	500.0	ND	97.7	70-130			
Sodium	52600	2000	"	25500	27000	101	70-130			
Thallium	472.0	4.00	"	500.0	ND	94.4	70-130			
Titanium	508.3	1.00	"	500.0	0.7000	102	70-130			
Cobalt	489.2	1.00	"	500.0	ND	97.8	70-130			

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/25/2022
Work Order # 22C0792
Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22C0074 - EPA 3010A										
Matrix Spike (22C0074-MS1)	**Source: 22C0739-04**			Prepared & Analyzed: 03/18/2022						
Magnesium	2450	20.0	ug/L	500.0	2040	82.1	70-130			
Molybdenum	515.6	10.0	"	500.0	ND	103	70-130			
Potassium	29400	50.0	"	25500	4000	99.4	70-130			
Lead	481	10.0	"	500.0	ND	96.2	70-130			
Matrix Spike Dup (22C0074-MSD1)	**Source: 22C0739-04**			Prepared & Analyzed: 03/18/2022						
Boron	564.2	10.0	ug/L	500.0	48.50	103	70-130	0.896	20	
Antimony	545.6	15.0	"	500.0	ND	109	70-130	0.551	20	
Calcium	81100	50.0	"	25500	57200	93.6	70-130	2.88	20	
Chromium	501.1	5.00	"	500.0	1.500	99.9	70-130	0.622	20	
Cadmium	485.8	1.00	"	500.0	ND	97.2	70-130	0.682	20	
Arsenic	501	10.0	"	500.0	ND	100	70-130	0.882	20	
Barium	574.9	1.00	"	500.0	91.20	96.7	70-130	0.810	20	
Beryllium	510.7	1.00	"	500.0	ND	102	70-130	0.865	20	
Magnesium	2470	20.0	"	500.0	2040	86.5	70-130	5.17	20	
Thallium	476.5	4.00	"	500.0	ND	95.3	70-130	0.949	20	
Titanium	512.4	1.00	"	500.0	0.7000	102	70-130	0.804	20	
Sodium	53000	2000	"	25500	27000	102	70-130	1.36	20	
Cobalt	490.9	1.00	"	500.0	ND	98.2	70-130	0.347	20	
Selenium	493.9	15.0	"	500.0	ND	98.8	70-130	1.14	20	
Lead	485	10.0	"	500.0	ND	97.0	70-130	0.849	20	
Potassium	29500	50.0	"	25500	4000	100	70-130	0.592	20	
Molybdenum	524.7	10.0	"	500.0	ND	105	70-130	1.75	20	
Batch 22C0079 - EPA 245.1/245.2 Prep										
Blank (22C0079-BLK1)				Prepared & Analyzed: 03/18/2022						
Mercury	ND	1.00	ug/L							U

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 3/25/2022
Work Order # 22C0792
Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22C0079 - EPA 245.1/245.2 Prep										
LCS (22C0079-BS1)				Prepared & Analyzed: 03/18/2022						
Mercury	9.27	1.00	ug/L	10.00		93	85-115			
Matrix Spike (22C0079-MS1)	**Source: 22C0739-04**			Prepared & Analyzed: 03/18/2022						
Mercury	8.33	1.00	ug/L	10.00	ND	83	70-130			
Matrix Spike Dup (22C0079-MSD1)	**Source: 22C0739-04**			Prepared & Analyzed: 03/18/2022						
Mercury	8.16	1.00	ug/L	10.00	ND	82	70-130	2	20	

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

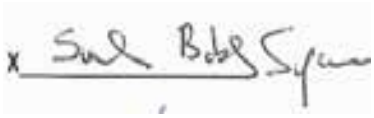
Report Printed: 3/25/2022
Work Order # 22C0792
Project: CCR Monitoring Program
McIntosh Plant

Notes and Definitions

U	Indicated that the compound was analyzed for but not detected. This shall be used to indicate that the specific component was not detected. The value associated with the qualifier shall be the laboratory method detection limit.
J3	The matrix spike recovery outside method acceptance limits indicating matrix interference.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the detection limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
N.O.O.	No Odor Observed
REP	Field parameter measured by client
V	Indicated that the analyte was detected in both the sample and the associated method blank.
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
Z	Too many colonies were present for accurate counting.
SUB	Work performed by outside (subcontracted) labs denoted by SUB in analyst field.

QC=Qualifier Codes as defined by DEP 62-160
Unless indicated, soil results are reported on actual (wet) weight basis.
The Color SM2120B method is reported as (Color / pH)
Legionella analyzed under CDC acreditation program
Dilution factors >= 1000 are abreviated using k=1000 and M=1000000
Field parameters are not NELAP acredited.
Results relate only to this sample.

Suresh (Bobby) Supan - CSM



Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification# E86006

All NELAP certified analysis are performed in accordance with Chapter 64E-1 Florida Administrative code, which has been determined to be equivalent to NELAC standards. Analysis certified by programs other than NELAP are designated with a "~".

CHAIN OF CUSTODY RECORD

SUBMISSION # 22C0792
Logged into LIMS by: [illegible]

Florida Spectrum Environmental Services, Inc.
Doc: [illegible] Date: [illegible]

Address	Tel	Fax
1460 W McNab Road Ft Lauderdale FL 33309	Tel: (954) 978-6400	Fax: (954) 978-2233
1112 NW Park Street, Okeechobee, FL 34972	Tel: (863) 763-3336	Fax: (863) 763-1544
630 Indian Street Savannah, GA 31401	Tel: (912) 238-5050	Fax (912) 234-4315
528 Gooch Road Fort Meade FL 33841	Tel: (863) 285-8145	Fax (863) 285-7030
1910 Harden Blvd # 101, Lakeland, FL 33803	Tel: (863) 686-1271	Fax (863) 686-4389

DUE DATE Requested

RUSH RESERVATION #

Rush Surcharges apply

Report to: Lakeland Electric
Report to Address:
Invoice to: Lakeland Electric
Purchase Order # 281095
Invoice to Address:
Project Name and/or Number: CCR Monitoring Program
Site Location: McIntosh Plant
Project Mgr: Thomas Johnston
Phone: 954-802-9143
Fax:
Email:
Sampler Name (printed): Thomas Johnston
Sampler Signature: [signature]

ORDER # Lab Control Number *Shaded Areas For Laboratory Use Only*	Sample ID	Date Sampled	Time Sampled	Matrix (DW SW GW SED S EFF HW BIO SA OIL X)	Appendix III Metals	Appendix IV Metals	CC Suite Metals	App III Cl, F, SO4, TDS	CC Suite Bicarb, T-Alk			TEMP °C	PH	COND	CHLOR
1 01	CCR-13A	3/16/2022	1128	GW	X	X	x								
2 02	CCR-13B	3/16/2022	1128	GW				X	x						
3 03	CCR-22A	3/16/2022	1329	GW	X	X	x								
4 04	CCR-22B	3/16/2022	1329	GW				X	x						
5															
6															
7															
8															
9															
10															

Special Comments: GUN 3 Except
"I waive NELAC protocol" (sign here) > TC thermometer
Deliverables   QA/QC Report Needed? (Yes) No (additional charge) ok

SAMPLE CUSTODY AND TRANSFER SIGNATURES

		DATE	TIME
1	Relinquished by: [signature]	3/16/2022	1550
1	Received by: [signature]	3/16/22	15:50
2	Relinquished by: [signature]		
2	Received by: [signature]	3/17/22	0813
3	Relinquished by: [signature]	03/17/22	16:00
3	Received by: [signature]	3/17/22	1[illegible]

Sample Custody & Field Comments
Received on Ice: (Y) N
Temp received 5.3 °C
Custody Seals? Y N
e T650D
GUN-4
FIELD TIME:
Sampling ___ hr Pick up ___ hr
Misc. Charges

Bottle Type
A- liter amber
B-Bacteria bag/bottle
F-500 ml
L-liter bottle
S-Soil jar
T-250 ml
V-40 ml vial
W-wide mouth
X-other
O-125ml
H-Plastic Amber
TED-Tedlar Air Bag

Preservatives
A-Ascorbic acid
C-HCL
Cu-CuSO4
H-HNO3
M-MCAB
N-NaOH
NH4-NH4CL
Bez- Bez.Ce. Buffer
EDA-Ethylene Diamine
P-H3PO4
S-H2SO4
T-Na2S2O3-H2O
U-Unpreserved
DI-DI Water
Z-zinc acetate

www.flenviro.com   COC Page [illegible] of [illegible]

SWEC 0752

Well ID	Well Type	Historical GWPS exceedances	SSL?	January & July Monitoring?	Rationale	Parameters
CCR-1	Background	None: background	NO	YES	Ongoing Assessment Monitoring	Appendix III, IV
CCR-2	Background	None: background	NO	YES	Ongoing Assessment Monitoring	Appendix III, IV
CCR-3	CCR Compliance	None	NO	NO	No Further Monitoring Warranted	
CCR-4	CCR Compliance	Boron	NO	YES	Ongoing Assessment Monitoring	Appendix III, IV
		Fluoride	NO			
		Arsenic	NO			
CCR-5	CCR Compliance	Boron	YES	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
		Beryllium	NO			
CCR-6	CCR Compliance	Lithium	YES	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
CCR-7	CCR Compliance	Arsenic	NO	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
		Boron	NO			
CCR-8	CCR Compliance	Arsenic	NO	YES	Ongoing Assessment Monitoring	Appendix III, IV
		Fluoride	NO			
CCR-9	CCR Compliance	Boron	YES	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
		Thallium	NO			
CCR-10S	CCR Compliance	No GWPS exceedances	NO	NO	No Further Monitoring Warranted	
CCR-11	CCR Compliance	Arsenic	YES	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
		Fluoride	YES			
CCR-12	CCR Compliance	Boron	NO	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
		Thallium	NO			
CCR-13	CCR Compliance	Lithium	YES	YES	Ongoing Assessment Monitoring	Appendix III, IV
CCR-14	CCR Compliance	No GWPS exceedances	NO	NO	No Further Monitoring Warranted	
CCR-15	Nature & Extent	NA	NA	YES	Evaluate Lithium mobility downgradient CCR-4	Appendix III, IV, GC suite
CCR-16	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-5	Appendix III, IV, GC suite
CCR-17	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-6	Appendix III, IV, GC suite
CCR-18	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-7	Appendix III, IV, GC suite
CCR-19	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-9	Appendix III, IV, GC suite
CCR-20	Nature & Extent	NA	NA	YES	Evaluate arsenic mobility downgradient CCR-11	Appendix III, IV, GC suite
CCR-21	Nature & Extent	NA	NA	YES	Evaluate arsenic mobility downgradient CCR-12	Appendix III, IV, GC suite
CCR-22	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-13	Appendix III, IV, GC suite
CCR-23	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-14	Appendix III, IV, GC suite
SW-10b	Nature & Extent	NA	NA	YES	Evaluate GWPS compliance at downgradient property boundary	Appendix III, IV, GC suite

Notes:
1. NA = not applicable
2. GWPS = Groundwater protection standard
3. SSL = statistically significant level
4. Appendix III = boron, calcium, chloride, fluoride, pH, sulfate, total dissolved solids
5. Appendix IV = antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, lead, lithium, mercury, molybdenum, selenium, thallium, radium 226 + radium 228
6. GC suite = Geochemical suite - magnesium, sodium, bicarbonate, potassium, chloride

1460 West McNab Road
Fort Lauderdale, FL 33309
1-800-ANALYTE Phone
(954) 978-6400 Phone
(954) 978-2233 Fax

NELAP Certificate No. E86006

27 June 2022
Lab Work Order (COC): 22C0212

Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland, FL 33805

RE: **CCR Monitoring Program**

Dear Thomas Johnston:

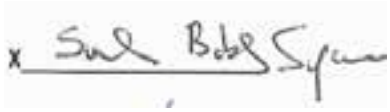
This report details the analytical results of samples collected at the above-referenced project location. These samples were received by Florida Spectrum Environmental Services at **03/04/2022 10:30**.

All Analyses were performed according to the TNI/NELAP standard unless indicated by a "~" on the report.

Your samples will be retained by Florida Spectrum Environmental for a period of at least 30 days following sample receipt or until the longest of the preparation and/or analytical hold times expires, whichever is shorter. After that time, they will be properly disposed without further notice, unless there exists an explicit contractual agreement to the contrary. We reserve the right to return any unused samples, extracts, or related materials or solutions to you if we consider it necessary. Examples might include those samples identified as hazardous wastes, submissions where the sample sizes significantly exceed those required for analysis, samples containing controlled substances, etc.

We thank you for selecting Florida Spectrum Environmental to serve your analytical needs. Should you have any questions or require additional information regarding any of the information in this report, please feel free to contact us at any time. We appreciate the opportunity to be of service.

Florida Spectrum Environmental Inc.



REV-1

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 6/27/2022

Work Order # 22C0212

Project: CCR Monitoring Program

.

DETECTED ANALYTE SUMMARY

CCR-19A	22C0212-01	Water	Sodium	143000	ug/L	3/2/2022	15:01
CCR-19A	22C0212-01	Water	Calcium	504000	ug/L	3/2/2022	15:01
CCR-19A	22C0212-01	Water	Magnesium	35300	ug/L	3/2/2022	15:01
CCR-19A	22C0212-01	Water	Boron	352	ug/L	3/2/2022	15:01
CCR-19A	22C0212-01	Water	Potassium	135000	ug/L	3/2/2022	15:01
CCR-19A	22C0212-01	Water	Barium	70.2	ug/L	3/2/2022	15:01
CCR-19A	22C0212-01	Water	Chromium	1.50	ug/L	3/2/2022	15:01
CCR-19A	22C0212-01	Water	Titanium	3.10	ug/L	3/2/2022	15:01
CCR-19B	22C0212-02	Water	Total Dissolved Solids	2480	mg/L	3/2/2022	15:01
CCR-19B	22C0212-02	Water	Chloride	789	mg/L	3/2/2022	15:01
CCR-19B	22C0212-02	Water	Total Alkalinity	10.7	mg/L	3/2/2022	15:01
CCR-19B	22C0212-02	Water	Sulfate	729	mg/L	3/2/2022	15:01
CCR-19B	22C0212-02	Water	Fluoride	0.844	mg/L	3/2/2022	15:01
CCR-19B	22C0212-02	Water	Bicarbonate	10.7	mg/L	3/2/2022	15:01
CCR-21A	22C0212-03	Water	Barium	44.1	ug/L	3/2/2022	17:06
CCR-21A	22C0212-03	Water	Sodium	19300	ug/L	3/2/2022	17:06
CCR-21A	22C0212-03	Water	Molybdenum	27.9	ug/L	3/2/2022	17:06
CCR-21A	22C0212-03	Water	Titanium	0.700	ug/L	3/2/2022	17:06
CCR-21A	22C0212-03	Water	Boron	389	ug/L	3/2/2022	17:06
CCR-21A	22C0212-03	Water	Chromium	0.500	ug/L	3/2/2022	17:06
CCR-21A	22C0212-03	Water	Potassium	20700	ug/L	3/2/2022	17:06
CCR-21A	22C0212-03	Water	Magnesium	16800	ug/L	3/2/2022	17:06
CCR-21A	22C0212-03	Water	Calcium	470000	ug/L	3/2/2022	17:06
CCR-21B	22C0212-04	Water	Total Dissolved Solids	1590	mg/L	3/2/2022	17:06

REV-1

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 6/27/2022

Work Order # 22C0212

Project: CCR Monitoring Program

.

DETECTED ANALYTE SUMMARY

Client Sample ID	Laboratory ID	Matrix	Analyte	Result	Units	Collection Date	Collection Time
CCR-21B	22C0212-04	Water	Sulfate	863	mg/L	3/2/2022	17:06
CCR-21B	22C0212-04	Water	Fluoride	1.08	mg/L	3/2/2022	17:06
CCR-21B	22C0212-04	Water	Total Alkalinity	278	mg/L	3/2/2022	17:06
CCR-21B	22C0212-04	Water	Bicarbonate	278	mg/L	3/2/2022	17:06
CCR-21B	22C0212-04	Water	Chloride	21.5	mg/L	3/2/2022	17:06
CCR-17A	22C0212-05	Water	Calcium	202000	ug/L	3/2/2022	12:31
CCR-17A	22C0212-05	Water	Magnesium	28500	ug/L	3/2/2022	12:31
CCR-17A	22C0212-05	Water	Molybdenum	2.50	ug/L	3/2/2022	12:31
CCR-17A	22C0212-05	Water	Chromium	1.60	ug/L	3/2/2022	12:31
CCR-17A	22C0212-05	Water	Sodium	25300	ug/L	3/2/2022	12:31
CCR-17A	22C0212-05	Water	Barium	4.00	ug/L	3/2/2022	12:31
CCR-17A	22C0212-05	Water	Boron	129	ug/L	3/2/2022	12:31
CCR-17A	22C0212-05	Water	Arsenic	5.90	ug/L	3/2/2022	12:31
CCR-17A	22C0212-05	Water	Titanium	1.10	ug/L	3/2/2022	12:31
CCR-17A	22C0212-05	Water	Potassium	15500	ug/L	3/2/2022	12:31
CCR-17B	22C0212-06	Water	Chloride	197	mg/L	3/2/2022	12:31
CCR-17B	22C0212-06	Water	Total Alkalinity	190	mg/L	3/2/2022	12:31
CCR-17B	22C0212-06	Water	Total Dissolved Solids	936	mg/L	3/2/2022	12:31
CCR-17B	22C0212-06	Water	Sulfate	231	mg/L	3/2/2022	12:31
CCR-17B	22C0212-06	Water	Bicarbonate	190	mg/L	3/2/2022	12:31
CCR-18A	22C0212-07	Water	Sodium	1870	ug/L	3/3/2022	13:52
CCR-18A	22C0212-07	Water	Molybdenum	4.10	ug/L	3/3/2022	13:52
CCR-18A	22C0212-07	Water	Magnesium	3600	ug/L	3/3/2022	13:52
CCR-18A	22C0212-07	Water	Chromium	1.30	ug/L	3/3/2022	13:52

REV-1

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 6/27/2022

Work Order # 22C0212

Project: CCR Monitoring Program

.

DETECTED ANALYTE SUMMARY

Client Sample ID	Laboratory ID	Matrix	Analyte	Result	Units	Collection Date	Collection Time
CCR-18A	22C0212-07	Water	Boron	46.5	ug/L	3/3/2022	13:52
CCR-18A	22C0212-07	Water	Potassium	2880	ug/L	3/3/2022	13:52
CCR-18A	22C0212-07	Water	Titanium	4.70	ug/L	3/3/2022	13:52
CCR-18A	22C0212-07	Water	Barium	1.00	ug/L	3/3/2022	13:52
CCR-18A	22C0212-07	Water	Calcium	75800	ug/L	3/3/2022	13:52
CCR-18B	22C0212-08	Water	Chloride	2.08	mg/L	3/3/2022	13:52
CCR-18B	22C0212-08	Water	Total Dissolved Solids	250	mg/L	3/3/2022	13:52
CCR-18B	22C0212-08	Water	Fluoride	0.280	mg/L	3/3/2022	13:52
CCR-18B	22C0212-08	Water	Sulfate	24.5	mg/L	3/3/2022	13:52
CCR-18B	22C0212-08	Water	Bicarbonate	177	mg/L	3/3/2022	13:52
CCR-18B	22C0212-08	Water	Total Alkalinity	177	mg/L	3/3/2022	13:52

REV-1

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 6/27/2022
Work Order # 22C0212
Project: CCR Monitoring Program
.

Lab ID: 22C0212-01
Client Sample ID: CCR-19A
Matrix: Water

Collection Date: 03/02/22 15:01
Received Date: 03/04/22 10:30
Collected By: Thomas Johnston

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	5.11	15.0	EPA 200.7/3010	03/07 09:57	03/07 10:58	JF
Arsenic	ND	U	ug/L	1	2.21	10.0	EPA 200.7/3010	03/07 09:57	03/07 10:58	JF
Barium	70.2		ug/L	1	0.0728	1.00	EPA 200.7/3010	03/07 09:57	03/07 10:58	JF
Beryllium	ND	U	ug/L	1	0.101	1.00	EPA 200.7/3010	03/07 09:57	03/07 10:58	JF
Boron	352		ug/L	1	1.57	10.0	EPA 200.7/3010	03/07 09:57	03/07 10:58	JF
Cadmium	ND	U	ug/L	1	0.181	1.00	EPA 200.7/3010	03/07 09:57	03/07 10:58	JF
Calcium	504000	J3	ug/L	10	57.9	500	EPA 200.7/3010	03/07 09:57	03/07 12:35	JF
Chromium	1.50	I	ug/L	1	0.339	5.00	EPA 200.7/3010	03/07 09:57	03/07 10:58	JF
Cobalt	ND	U	ug/L	1	0.361	1.00	EPA 200.7/3010	03/07 09:57	03/07 10:58	JF
Lead	ND	U	ug/L	1	1.19	10.0	EPA 200.7/3010	03/07 09:57	03/07 10:58	JF
Lithium	ND	U	ug/L	1	2.72	25.0	EPA 200.7/3010	03/07 10:02	03/08 12:06	MAZ
Magnesium	35300	J3	ug/L	100	374	2000	EPA 200.7/3010	03/07 09:57	03/07 12:23	JF
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	03/07 10:00	03/07 13:09	JF
Molybdenum	ND	U	ug/L	1	1.17	10.0	EPA 200.7/3010	03/07 09:57	03/07 10:58	JF
Potassium	135000	J3	ug/L	10	173	500	EPA 200.7/3010	03/07 09:57	03/07 12:35	JF
Selenium	ND	U	ug/L	1	3.46	15.0	EPA 200.7/3010	03/07 09:57	03/07 10:58	JF
Sodium	143000	J3	ug/L	10	4460	20000	EPA 200.7/3010	03/07 09:57	03/07 12:35	JF
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	03/07 09:57	03/07 10:58	JF
Titanium	3.10		ug/L	1	0.201	1.00	EPA 200.7/3010	03/07 09:57	03/07 10:58	JF

REV-1

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 6/27/2022
Work Order # 22C0212
Project: CCR Monitoring Program
.

Lab ID: 22C0212-02
Client Sample ID: CCR-19B
Matrix: Water

Collection Date: 03/02/22 15:01
Received Date: 03/04/22 10:30
Collected By: Thomas Johnston

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	10.7		mg/L	1	2.49	7.46	EPA 310.2	03/05 12:39	03/05 12:39	OC
Bicarbonate	10.7		mg/L	1	2.49	7.46	EPA 310.2	03/05 12:39	03/05 12:39	OC
Chloride	789		mg/L	10	1.26	5.00	EPA 300.0	03/04 18:15	03/04 22:55	PK
Fluoride	0.844		mg/L	1	0.00520	0.0250	EPA 300.0	03/04 18:15	03/04 20:10	PK
Sulfate	729		mg/L	10	0.953	5.00	EPA 300.0	03/04 18:15	03/04 22:55	PK
Total Dissolved Solids	2480		mg/L	4	40.0	120	SM 2540C	03/05 18:33	03/09 16:03	HM

REV-1

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 6/27/2022
Work Order # 22C0212
Project: CCR Monitoring Program
.

Lab ID: 22C0212-03
Client Sample ID: CCR-21A
Matrix: Water

Collection Date: 03/02/22 17:06
Received Date: 03/04/22 10:30
Collected By: Thomas Johnston

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	5.11	15.0	EPA 200.7/3010	03/07 09:57	03/07 10:49	JF
Arsenic	ND	U	ug/L	1	2.21	10.0	EPA 200.7/3010	03/07 09:57	03/07 10:49	JF
Barium	44.1		ug/L	1	0.0728	1.00	EPA 200.7/3010	03/07 09:57	03/07 10:49	JF
Beryllium	ND	U	ug/L	1	0.101	1.00	EPA 200.7/3010	03/07 09:57	03/07 10:49	JF
Boron	389		ug/L	1	1.57	10.0	EPA 200.7/3010	03/07 09:57	03/07 10:49	JF
Cadmium	ND	U	ug/L	1	0.181	1.00	EPA 200.7/3010	03/07 09:57	03/07 10:49	JF
Calcium	470000		ug/L	10	57.9	500	EPA 200.7/3010	03/07 09:57	03/07 12:38	JF
Chromium	0.500	I	ug/L	1	0.339	5.00	EPA 200.7/3010	03/07 09:57	03/07 10:49	JF
Cobalt	ND	U	ug/L	1	0.361	1.00	EPA 200.7/3010	03/07 09:57	03/07 10:49	JF
Lead	ND	U	ug/L	1	1.19	10.0	EPA 200.7/3010	03/07 09:57	03/07 10:49	JF
Lithium	ND	U	ug/L	1	2.72	25.0	EPA 200.7/3010	03/07 10:02	03/08 12:09	MAZ
Magnesium	16800		ug/L	100	374	2000	EPA 200.7/3010	03/07 09:57	03/07 12:26	JF
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	03/07 10:00	03/07 13:12	JF
Molybdenum	27.9		ug/L	1	1.17	10.0	EPA 200.7/3010	03/07 09:57	03/07 10:49	JF
Potassium	20700		ug/L	1	17.3	50.0	EPA 200.7/3010	03/07 09:57	03/07 10:49	JF
Selenium	ND	U	ug/L	1	3.46	15.0	EPA 200.7/3010	03/07 09:57	03/07 10:49	JF
Sodium	19300		ug/L	1	446	2000	EPA 200.7/3010	03/07 09:57	03/07 10:49	JF
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	03/07 09:57	03/07 10:49	JF
Titanium	0.700	I	ug/L	1	0.201	1.00	EPA 200.7/3010	03/07 09:57	03/07 10:49	JF

REV-1

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 6/27/2022
Work Order # 22C0212
Project: CCR Monitoring Program
.

Lab ID: 22C0212-04
Client Sample ID: CCR-21B
Matrix: Water

Collection Date: 03/02/22 17:06
Received Date: 03/04/22 10:30
Collected By: Thomas Johnston

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	278		mg/L	1	2.49	7.46	EPA 310.2	03/05 12:39	03/05 12:39	OC
Bicarbonate	278		mg/L	1	2.49	7.46	EPA 310.2	03/05 12:39	03/05 12:39	OC
Chloride	21.5		mg/L	10	1.26	5.00	EPA 300.0	03/05 13:52	03/05 15:31	PK
Fluoride	1.08		mg/L	10	0.0520	0.250	EPA 300.0	03/05 13:52	03/05 15:31	PK
Sulfate	863		mg/L	10	0.953	5.00	EPA 300.0	03/05 13:52	03/05 15:31	PK
Total Dissolved Solids	1590		mg/L	4	40.0	120	SM 2540C	03/05 18:33	03/09 16:03	HM

REV-1

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 6/27/2022
Work Order # 22C0212
Project: CCR Monitoring Program
.

Lab ID: 22C0212-05
Client Sample ID: CCR-17A
Matrix: Water

Collection Date: 03/02/22 12:31
Received Date: 03/04/22 10:30
Collected By: Thomas Johnston

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	5.11	15.0	EPA 200.7/3010	03/07 09:57	03/07 10:52	JF
Arsenic	5.90	I	ug/L	1	2.21	10.0	EPA 200.7/3010	03/07 09:57	03/07 10:52	JF
Barium	4.00		ug/L	1	0.0728	1.00	EPA 200.7/3010	03/07 09:57	03/07 10:52	JF
Beryllium	ND	U	ug/L	1	0.101	1.00	EPA 200.7/3010	03/07 09:57	03/07 10:52	JF
Boron	129		ug/L	1	1.57	10.0	EPA 200.7/3010	03/07 09:57	03/07 10:52	JF
Cadmium	ND	U	ug/L	1	0.181	1.00	EPA 200.7/3010	03/07 09:57	03/07 10:52	JF
Calcium	202000		ug/L	10	57.9	500	EPA 200.7/3010	03/07 09:57	03/07 12:41	JF
Chromium	1.60	I	ug/L	1	0.339	5.00	EPA 200.7/3010	03/07 09:57	03/07 10:52	JF
Cobalt	ND	U	ug/L	1	0.361	1.00	EPA 200.7/3010	03/07 09:57	03/07 10:52	JF
Lead	ND	U	ug/L	1	1.19	10.0	EPA 200.7/3010	03/07 09:57	03/07 10:52	JF
Lithium	ND	U	ug/L	1	2.72	25.0	EPA 200.7/3010	03/07 10:02	03/08 12:11	MAZ
Magnesium	28500		ug/L	100	374	2000	EPA 200.7/3010	03/07 09:57	03/07 12:29	JF
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	03/07 10:00	03/07 13:15	JF
Molybdenum	2.50	I	ug/L	1	1.17	10.0	EPA 200.7/3010	03/07 09:57	03/07 10:52	JF
Potassium	15500		ug/L	1	17.3	50.0	EPA 200.7/3010	03/07 09:57	03/07 10:52	JF
Selenium	ND	U	ug/L	1	3.46	15.0	EPA 200.7/3010	03/07 09:57	03/07 10:52	JF
Sodium	25300		ug/L	1	446	2000	EPA 200.7/3010	03/07 09:57	03/07 10:52	JF
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	03/07 09:57	03/07 10:52	JF
Titanium	1.10		ug/L	1	0.201	1.00	EPA 200.7/3010	03/07 09:57	03/07 10:52	JF

REV-1

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 6/27/2022
Work Order # 22C0212
Project: CCR Monitoring Program
.

Lab ID: 22C0212-06
Client Sample ID: CCR-17B
Matrix: Water

Collection Date: 03/02/22 12:31
Received Date: 03/04/22 10:30
Collected By: Thomas Johnston

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	190		mg/L	1	2.49	7.46	EPA 310.2	03/05 12:39	03/05 12:39	OC
Bicarbonate	190		mg/L	1	2.49	7.46	EPA 310.2	03/05 12:39	03/05 12:39	OC
Chloride	197		mg/L	5	0.630	2.50	EPA 300.0	03/04 18:15	03/04 20:43	PK
Fluoride	ND	U	mg/L	5	0.0260	0.125	EPA 300.0	03/04 18:15	03/04 20:43	PK
Sulfate	231		mg/L	5	0.476	2.50	EPA 300.0	03/04 18:15	03/04 20:43	PK
Total Dissolved Solids	936		mg/L	4	40.0	120	SM 2540C	03/05 18:33	03/09 16:03	HM

REV-1

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 6/27/2022
Work Order # 22C0212
Project: CCR Monitoring Program
.

Lab ID: 22C0212-07
Client Sample ID: CCR-18A
Matrix: Water

Collection Date: 03/03/22 13:52
Received Date: 03/04/22 10:30
Collected By: Thomas Johnston

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	5.11	15.0	EPA 200.7/3010	03/07 09:57	03/07 10:55	JF
Arsenic	ND	U	ug/L	1	2.21	10.0	EPA 200.7/3010	03/07 09:57	03/07 10:55	JF
Barium	1.00		ug/L	1	0.0728	1.00	EPA 200.7/3010	03/07 09:57	03/07 10:55	JF
Beryllium	ND	U	ug/L	1	0.101	1.00	EPA 200.7/3010	03/07 09:57	03/07 10:55	JF
Boron	46.5		ug/L	1	1.57	10.0	EPA 200.7/3010	03/07 09:57	03/07 10:55	JF
Cadmium	ND	U	ug/L	1	0.181	1.00	EPA 200.7/3010	03/07 09:57	03/07 10:55	JF
Calcium	75800		ug/L	10	57.9	500	EPA 200.7/3010	03/07 09:57	03/07 12:44	JF
Chromium	1.30	I	ug/L	1	0.339	5.00	EPA 200.7/3010	03/07 09:57	03/07 10:55	JF
Cobalt	ND	U	ug/L	1	0.361	1.00	EPA 200.7/3010	03/07 09:57	03/07 10:55	JF
Lead	ND	U	ug/L	1	1.19	10.0	EPA 200.7/3010	03/07 09:57	03/07 10:55	JF
Lithium	ND	U	ug/L	1	2.72	25.0	EPA 200.7/3010	03/07 10:02	03/08 12:14	MAZ
Magnesium	3600		ug/L	10	37.4	200	EPA 200.7/3010	03/07 09:57	03/07 12:44	JF
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	03/07 10:00	03/07 13:19	JF
Molybdenum	4.10	I	ug/L	1	1.17	10.0	EPA 200.7/3010	03/07 09:57	03/07 10:55	JF
Potassium	2880		ug/L	1	17.3	50.0	EPA 200.7/3010	03/07 09:57	03/07 10:55	JF
Selenium	ND	U	ug/L	1	3.46	15.0	EPA 200.7/3010	03/07 09:57	03/07 10:55	JF
Sodium	1870	I	ug/L	1	446	2000	EPA 200.7/3010	03/07 09:57	03/07 10:55	JF
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	03/07 09:57	03/07 10:55	JF
Titanium	4.70		ug/L	1	0.201	1.00	EPA 200.7/3010	03/07 09:57	03/07 10:55	JF

REV-1

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 6/27/2022
Work Order # 22C0212
Project: CCR Monitoring Program
.

Lab ID: 22C0212-08
Client Sample ID: CCR-18B
Matrix: Water

Collection Date: 03/03/22 13:52
Received Date: 03/04/22 10:30
Collected By: Thomas Johnston

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	177	J3	mg/L	1	2.49	7.46	EPA 310.2	03/05 12:39	03/05 12:39	OC
Bicarbonate	177		mg/L	1	2.49	7.46	EPA 310.2	03/05 12:39	03/05 12:39	OC
Chloride	2.08		mg/L	1	0.126	0.500	EPA 300.0	03/04 18:15	03/04 20:59	PK
Fluoride	0.280		mg/L	1	0.00520	0.0250	EPA 300.0	03/04 18:15	03/04 20:59	PK
Sulfate	24.5		mg/L	1	0.0953	0.500	EPA 300.0	03/04 18:15	03/04 20:59	PK
Total Dissolved Solids	250		mg/L	2	20.0	60.0	SM 2540C	03/05 18:33	03/09 16:03	HM

REV-1

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 6/27/2022

Work Order # 22C0212

Project: CCR Monitoring Program

.

Wet Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22C0296 - Default Prep GenChem										
Blank (22C0296-BLK1)				Prepared & Analyzed: 03/05/2022						
Total Alkalinity	ND	7.46	mg/L							U
LCS (22C0296-BS1)				Prepared & Analyzed: 03/05/2022						
Total Alkalinity	255	7.46	mg/L	250.0		102	90-110			
Duplicate (22C0296-DUP1)		**Source: 22C0066-06**		Prepared & Analyzed: 03/05/2022						
Total Alkalinity	2.55	7.46	mg/L		3.03			17	20	I
Matrix Spike (22C0296-MS1)		**Source: 22C0066-06**		Prepared & Analyzed: 03/05/2022						
Total Alkalinity	263	7.46	mg/L	250.0	3.03	104	90-110			
Matrix Spike (22C0296-MS2)		**Source: 22C0212-08**		Prepared & Analyzed: 03/05/2022						
Total Alkalinity	395	7.46	mg/L	250.0	177	87	90-110			J3
Batch 22C0299 - Default Prep GenChem										
Blank (22C0299-BLK1)				Prepared & Analyzed: 03/04/2022						
Fluoride	ND	0.0250	mg/L							U
Chloride	ND	0.500	"							U
Sulfate	ND	0.500	"							U
LCS (22C0299-BS1)				Prepared & Analyzed: 03/04/2022						
Fluoride	2.45	0.0250	mg/L	2.500		98	90-110			
Sulfate	49.0	0.500	"	50.00		98	90-110			
Chloride	50.0	0.500	"	50.00		100	90-110			
Duplicate (22C0299-DUP1)		**Source: 22C0212-08**		Prepared & Analyzed: 03/04/2022						
Fluoride	0.264	0.0250	mg/L		0.280			6	20	
Chloride	2.58	0.500	"		2.08			21	20	
Sulfate	24.7	0.500	"		24.5			1	20	

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 6/27/2022
Work Order # 22C0212
Project: CCR Monitoring Program
.

Wet Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22C0299 - Default Prep GenChem										
Matrix Spike (22C0299-MS1)	**Source: 22C0212-08**			Prepared & Analyzed: 03/04/2022						
Fluoride	2.76	0.0250	mg/L	2.500	0.280	99	90-110			
Chloride	52.7	0.500	"	50.00	2.08	101	90-110			
Sulfate	72.3	0.500	"	50.00	24.5	96	90-110			
Batch 22C0304 - Default Prep GenChem										
Blank (22C0304-BLK1)				Prepared: 03/05/2022 Analyzed: 03/09/2022						
Total Dissolved Solids	ND	30.0	mg/L							U
LCS (22C0304-BS1)				Prepared: 03/05/2022 Analyzed: 03/09/2022						
Total Dissolved Solids	528	120	mg/L	500.0		106	80-120			
Duplicate (22C0304-DUP1)	**Source: 22C0087-06**			Prepared: 03/05/2022 Analyzed: 03/09/2022						
Total Dissolved Solids	1340	120	mg/L		1320			1.81	20	
Duplicate (22C0304-DUP2)	**Source: 22C0212-06**			Prepared: 03/05/2022 Analyzed: 03/09/2022						
Total Dissolved Solids	920	120	mg/L		936			1.72	20	
Batch 22C0334 - Default Prep GenChem										
Blank (22C0334-BLK1)				Prepared & Analyzed: 03/05/2022						
Fluoride	ND	0.0250	mg/L							U
Sulfate	ND	0.500	"							U
Chloride	ND	0.500	"							U
LCS (22C0334-BS1)				Prepared & Analyzed: 03/05/2022						
Fluoride	2.47	0.0250	mg/L	2.500		99	90-110			
Sulfate	49.2	0.500	"	50.00		98	90-110			
Chloride	50.0	0.500	"	50.00		100	90-110			

REV-1

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 6/27/2022

Work Order # 22C0212

Project: CCR Monitoring Program

.

Wet Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22C0334 - Default Prep GenChem										
Duplicate (22C0334-DUP1)		**Source: 22C0212-04**		Prepared & Analyzed: 03/05/2022						
Fluoride	0.970	0.250	mg/L		1.08			11	20	
Sulfate	857	5.00	"		863			0.6	20	
Chloride	21.4	5.00	"		21.5			0.7	20	
Matrix Spike (22C0334-MS1)		**Source: 22C0212-04**		Prepared & Analyzed: 03/05/2022						
Fluoride	26.7	0.250	mg/L	25.00	1.08	102	90-110			
Chloride	526	5.00	"	500.0	21.5	101	90-110			
Sulfate	1360	5.00	"	500.0	863	99	90-110			

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 6/27/2022
Work Order # 22C0212
Project: CCR Monitoring Program
.

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22C0020 - EPA 3010A										
Blank (22C0020-BLK1)				Prepared & Analyzed: 03/07/2022						
Arsenic	ND	10.0	ug/L							U
Barium	ND	1.00	"							U
Antimony	ND	15.0	"							U
Beryllium	ND	1.00	"							U
Molybdenum	ND	10.0	"							U
Boron	ND	10.0	"							U
Potassium	ND	50.0	"							U
Magnesium	ND	20.0	"							U
Sodium	ND	2000	"							U
Thallium	ND	4.00	"							U
Titanium	ND	1.00	"							U
Selenium	ND	15.0	"							U
Cadmium	ND	1.00	"							U
Cobalt	ND	1.00	"							U
Chromium	ND	5.00	"							U
Calcium	ND	50.0	"							U
Lead	ND	10.0	"							U
LCS (22C0020-BS1)				Prepared & Analyzed: 03/07/2022						
Antimony	507.8	15.0	ug/L	500.0		102	85-115			
Arsenic	523	10.0	"	500.0		105	85-115			
Barium	497.3	1.00	"	500.0		99.5	85-115			
Magnesium	494	20.0	"	500.0		98.9	85-115			
Potassium	23800	50.0	"	25500		93.3	85-115			
Selenium	533.5	15.0	"	500.0		107	85-115			
Sodium	24400	2000	"	25500		95.7	85-115			
Thallium	498.4	4.00	"	500.0		99.7	85-115			
Titanium	515.0	1.00	"	500.0		103	85-115			
Beryllium	526.2	1.00	"	500.0		105	85-115			
Boron	522.7	10.0	"	500.0		105	85-115			
Cadmium	516.8	1.00	"	500.0		103	85-115			
Molybdenum	521.3	10.0	"	500.0		104	85-115			

REV-1

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 6/27/2022

Work Order # 22C0212

Project: CCR Monitoring Program

.

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22C0020 - EPA 3010A										
LCS (22C0020-BS1)				Prepared & Analyzed: 03/07/2022						
Calcium	26500	50.0	ug/L	25500		104	85-115			
Cobalt	502.7	1.00	"	500.0		101	85-115			
Chromium	509.1	5.00	"	500.0		102	85-115			
Lead	506	10.0	"	500.0		101	85-115			
Matrix Spike (22C0020-MS1)	**Source: 22C0212-01**			Prepared & Analyzed: 03/07/2022						
Lead	501	10.0	ug/L	500.0	ND	100	70-130			
Arsenic	561	10.0	"	500.0	ND	112	70-130			
Barium	579.2	1.00	"	500.0	70.20	102	70-130			
Beryllium	521.6	1.00	"	500.0	ND	104	70-130			
Boron	913.5	10.0	"	500.0	351.8	112	70-130			
Cadmium	529.2	1.00	"	500.0	ND	106	70-130			
Calcium	470000	50.0	"	25500	504000	NR	70-130			J3, L
Titanium	532.4	1.00	"	500.0	3.100	106	70-130			
Cobalt	518.2	1.00	"	500.0	ND	104	70-130			
Magnesium	33400	20.0	"	500.0	35300	NR	70-130			J3, L
Molybdenum	549.2	10.0	"	500.0	ND	110	70-130			
Potassium	195000	50.0	"	25500	135000	234	70-130			J3, L
Selenium	402.9	15.0	"	500.0	ND	80.6	70-130			
Sodium	223000	2000	"	25500	143000	315	70-130			J3, L
Thallium	488.4	4.00	"	500.0	ND	97.7	70-130			
Chromium	523.9	5.00	"	500.0	1.500	104	70-130			
Antimony	595.3	15.0	"	500.0	ND	119	70-130			
Matrix Spike Dup (22C0020-MSD1)	**Source: 22C0212-01**			Prepared & Analyzed: 03/07/2022						
Antimony	603.5	15.0	ug/L	500.0	ND	121	70-130	1.37	20	
Arsenic	572	10.0	"	500.0	ND	114	70-130	1.92	20	
Barium	586.2	1.00	"	500.0	70.20	103	70-130	1.37	20	
Boron	923.9	10.0	"	500.0	351.8	114	70-130	1.83	20	
Selenium	412.5	15.0	"	500.0	ND	82.5	70-130	2.35	20	
Molybdenum	560.7	10.0	"	500.0	ND	112	70-130	2.07	20	
Potassium	197000	50.0	"	25500	135000	241	70-130	2.88	20	J3, L

REV-1

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 6/27/2022

Work Order # 22C0212

Project: CCR Monitoring Program

.

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22C0020 - EPA 3010A										
Matrix Spike Dup (22C0020-MSD1)	**Source: 22C0212-01**			Prepared & Analyzed: 03/07/2022						
Magnesium	33900	20.0	ug/L	500.0	35300	NR	70-130	NR	20	J3, L
Sodium	225000	2000	"	25500	143000	324	70-130	2.73	20	J3, L
Thallium	495.5	4.00	"	500.0	ND	99.1	70-130	1.44	20	
Titanium	537.8	1.00	"	500.0	3.100	107	70-130	1.02	20	
Calcium	475000	50.0	"	25500	504000	NR	70-130	NR	20	J3, L
Beryllium	527.8	1.00	"	500.0	ND	106	70-130	1.18	20	
Cadmium	534.6	1.00	"	500.0	ND	107	70-130	1.02	20	
Lead	509	10.0	"	500.0	ND	102	70-130	1.52	20	
Chromium	531.4	5.00	"	500.0	1.500	106	70-130	1.43	20	
Cobalt	524.4	1.00	"	500.0	ND	105	70-130	1.19	20	
Batch 22C0021 - EPA 3010A										
Blank (22C0021-BLK1)				Prepared: 03/07/2022 Analyzed: 03/08/2022						
Lithium	ND	25.0	ug/L							U
LCS (22C0021-BS1)				Prepared: 03/07/2022 Analyzed: 03/08/2022						
Lithium	2520	25.0	ug/L	2500		101	85-115			
Matrix Spike (22C0021-MS1)	**Source: 22C0212-07**			Prepared: 03/07/2022 Analyzed: 03/08/2022						
Lithium	2550	25.0	ug/L	2500	ND	102	75-125			
Matrix Spike Dup (22C0021-MSD1)	**Source: 22C0212-07**			Prepared: 03/07/2022 Analyzed: 03/08/2022						
Lithium	2550	25.0	ug/L	2500	ND	102	75-125	0.04	20	
Batch 22C0023 - EPA 245.1/245.2 Prep										
Blank (22C0023-BLK1)				Prepared & Analyzed: 03/07/2022						
Mercury	ND	1.00	ug/L							U

REV-1

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 6/27/2022

Work Order # 22C0212

Project: CCR Monitoring Program

.

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22C0023 - EPA 245.1/245.2 Prep										
LCS (22C0023-BS1)				Prepared & Analyzed: 03/07/2022						
Mercury	10.6	1.00	ug/L	10.00		106	85-115			
Matrix Spike (22C0023-MS1)	**Source: 22C0008-10**			Prepared & Analyzed: 03/07/2022						
Mercury	8.98	1.00	ug/L	10.00	ND	90	70-130			
Matrix Spike Dup (22C0023-MSD1)	**Source: 22C0008-10**			Prepared & Analyzed: 03/07/2022						
Mercury	8.93	1.00	ug/L	10.00	ND	89	70-130	0.6	20	

REV-1

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 6/27/2022

Work Order # 22C0212

Project: CCR Monitoring Program

.

Notes and Definitions

U	Indicated that the compound was analyzed for but not detected. This shall be used to indicate that the specific component was not detected. The value associated with the qualifier shall be the laboratory method detection limit.
L	Off-Scale high. The concentration of the analyte was above the quantitation range of the calibration curve.
J3	The matrix spike recovery outside method acceptance limits indicating matrix interference.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the detection limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
N.O.O.	No Odor Observed
REP	Field parameter measured by client
V	Indicated that the analyte was detected in both the sample and the associated method blank.
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
Z	Too many colonies were present for accurate counting.
SUB	Work performed by outside (subcontracted) labs denoted by SUB in analyst field.

QC=Qualifier Codes as defined by DEP 62-160
Unless indicated, soil results are reported on actual (wet) weight basis.
The Color SM2120B method is reported as (Color / pH)
Legionella analyzed under CDC acreditation program
Dilution factors >= 1000 are abreviated using k=1000 and M=1000000
Field parameters are not NELAP acredited.
Results relate only to this sample.

Suresh (Bobby) Supan - CSM

x Suresh Bobby Supan

Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification# E86006

All NELAP certified analysis are performed in accordance with Chapter 64E-1 Florida Administrative code, which has been determined to be equivalent to NELAC standards. Analysis certified by programs other than NELAP are designated with a "~".

WORK ORDER # 2C0102

Logged in LIMS by ______ C
Meets Acceptance Criteria: Y N

Florida Spectrum
Doc. Ctrl: 0401 120-001
Date: 10/19/2020 Rev. 3

CHAIN OF CUSTODY RECORD

☐ 1460 W. McNab Road, Ft Laud, FL 33309 — Tel: (954) 978-6400 — Fax: (954) 978-2233
☐ 108 Airport Park Dr., Garden City, GA 31408 — Tel: (912) 238-5050 — Fax: (912) 234-4815
☐ 528 Gooch Rd., Fort Meade, FL 33841 — Tel: (863) 285-8145 — Fax: (863) 285-7030
☐ 610 Parrot Ave. N, Okeechobee, FL 34972 — Tel: (863) 763-3336 — Fax: (863) 763-1544
☐ 111 E. Easton Drive, Lakeland, FL 33803 — Tel: (863) 686-4271

COC# A 38701

DUE DATE Requested
RUSH RESERVATION #
Rush Surcharges apply

Original-Return w/report — Yellow-Lab File Copy — Pink - Sampler Copy

Report to: (company name)
Invoice to: (company name) Lakeland Electric
Purchase Order #
Project Name and/or Number: CCR Monitoring wells
Project Contact: Thomas Johnston
Phone: 954-802-9143
Sampler Name: (printed)
Affiliation:
Report to Address:
Invoice to Address:
Site Location:
Fax:
Email:
Sampler Signature: [signature]

ORDER # Lab Control Number (Shaded Areas For Laboratory Use Only)	Sample ID	Date Sampled	Time Sampled	Matrix (DW SW GW WW S SED HW BIO SEA OIL X AIR)	Bottle & Pres. Combo Codes	Number of Containers Received & NELAC Letter Suffixes # A-Z	Analysis Required: Appendix III, Ra, Ra, all gen. wells	Appendix IV + Appendix III, Ra, GW Sat ...	TEMP °C	PH	COND	CHLOR
01	CCR 19 A	3/2/22	1501	GW	H	10	X					
02	CCR 19 B	↓	1301	↓	ICE	4		X				
03	CCR 21 A		1706		H		X					
04	CCR 21 B		1706		ICE			X				
05	CCR 17 A		1231		[illegible]		X					
06	CCR 17 B	↓	1231	↓	ICE			X				
07	CCR [illegible]	3/3/22	1352		TH		X					
08	CCR [illegible]	3/3/22	1352	↓	TH			X				
9												
10												

Special Comments: [illegible handwriting] — Total
"I waive TNI protocol" (emergency) (sign here):
Deliverables: — QA/QC Report Needed? Yes No (additional charge)

	Signature	Affiliation	Date/Time
1	Relinquished by: [signature]	3/3/2022	of 20
1	Received by: [signature]	3-3-22	0925
2	Relinquished by: [signature]		
2	Received by: [signature]	3/4/22	10:30
3	Relinquished by:		
3	Received by:		

Sample, Custody & Field Comments
Received on Ice: (Y) N
Temp received: 3.5°
Custody seals? Y N
Rad: GUN # ETB112

FIELD TIME
Sampling ____ hrs Pick Up ____ hrs
Mi. Charges ______

Bottle Type
A-liter amber
B-Bacteria bag/bottle
F-500 ml
O-125 ml
R-Plastic Amber Liter
L-liter bottle
S1-2 oz soil jar
S4-4 oz soil jar / S8-8 oz soil jar
T-250 ml
V-40 ml vial
W-wide mouth
X-other
TEF-Tedlar Air Bag

Preservatives
A-ascorbic acid
C-HCL
Cu-CuSO4
DI-DI water
H-HNO3
M-MCAB
MeOH-Methanol
Z-zinc acetate
P-H3PO4
S-H2SO4
T-Na2S2O3
U-Unpreserved
N-NaOH
NH4-NH4CL
Y-Sterile

Additional Preservatives
Hex-Hex Cr Buffer
EDA-Ethylene Diamine

www.flenviro.com — COC Page 2 of 2

1460 West McNab Road
Fort Lauderdale, FL 33309
1-800-ANALYTE Phone
(954) 978-6400 Phone
(954) 978-2233 Fax

NELAP Certificate No. E86006

31 August 2022
Lab Work Order (COC): 22H0848

Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland, FL 33805

RE: **CCR Monitoring Program**

Project Location: **McIntosh Plant**

Dear Thomas Johnston:

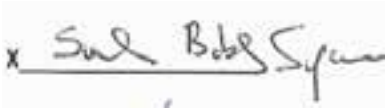
This report details the analytical results of samples collected at the above-referenced project location. These samples were received by Florida Spectrum Environmental Services at **08/18/2022 16:00**.

All Analyses were performed according to the TNI/NELAP standard unless indicated by a "~" on the report.

Your samples will be retained by Florida Spectrum Environmental for a period of at least 30 days following sample receipt or until the longest of the preparation and/or analytical hold times expires, whichever is shorter. After that time, they will be properly disposed without further notice, unless there exists an explicit contractual agreement to the contrary. We reserve the right to return any unused samples, extracts, or related materials or solutions to you if we consider it necessary. Examples might include those samples identified as hazardous wastes, submissions where the sample sizes significantly exceed those required for analysis, samples containing controlled substances, etc.

We thank you for selecting Florida Spectrum Environmental to serve your analytical needs. Should you have any questions or require additional information regarding any of the information in this report, please feel free to contact us at any time. We appreciate the opportunity to be of service.

Florida Spectrum Environmental Inc.



Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 8/31/2022
Work Order # 22H0848
Project: CCR Monitoring Program
McIntosh Plant

DETECTED ANALYTE SUMMARY

Client Sample ID	Laboratory ID	Matrix	Analyte	Result	Units	Collection Date	Collection Time
CCR-13A	22H0848-01	Water	Chromium	2.00	ug/L	8/17/2022	10:07
CCR-13A	22H0848-01	Water	Calcium	485000	ug/L	8/17/2022	10:07
CCR-13A	22H0848-01	Water	Potassium	190000	ug/L	8/17/2022	10:07
CCR-13A	22H0848-01	Water	Barium	37.2	ug/L	8/17/2022	10:07
CCR-13A	22H0848-01	Water	Magnesium	18300	ug/L	8/17/2022	10:07
CCR-13A	22H0848-01	Water	Lithium	175	ug/L	8/17/2022	10:07
CCR-13A	22H0848-01	Water	Boron	282	ug/L	8/17/2022	10:07
CCR-13A	22H0848-01	Water	Sodium	61800	ug/L	8/17/2022	10:07
CCR-13A	22H0848-01	Water	Cadmium	35.1	ug/L	8/17/2022	10:07
CCR-13B	22H0848-02	Water	Total Alkalinity	8.41	mg/L	8/17/2022	10:07
CCR-13B	22H0848-02	Water	Bicarbonate	8.41	mg/L	8/17/2022	10:07
CCR-13B	22H0848-02	Water	Chloride	217	mg/L	8/17/2022	10:07
CCR-13B	22H0848-02	Water	Fluoride	2.10	mg/L	8/17/2022	10:07
CCR-13B	22H0848-02	Water	Sulfate	1480	mg/L	8/17/2022	10:07
CCR-13B	22H0848-02	Water	Total Dissolved Solids	2410	mg/L	8/17/2022	10:07
CCR-22A	22H0848-03	Water	Calcium	420000	ug/L	8/17/2022	10:58
CCR-22A	22H0848-03	Water	Boron	447	ug/L	8/17/2022	10:58
CCR-22A	22H0848-03	Water	Potassium	112000	ug/L	8/17/2022	10:58
CCR-22A	22H0848-03	Water	Magnesium	18000	ug/L	8/17/2022	10:58
CCR-22A	22H0848-03	Water	Chromium	1.50	ug/L	8/17/2022	10:58
CCR-22A	22H0848-03	Water	Barium	32.2	ug/L	8/17/2022	10:58
CCR-22A	22H0848-03	Water	Lithium	88.5	ug/L	8/17/2022	10:58
CCR-22A	22H0848-03	Water	Sodium	45400	ug/L	8/17/2022	10:58
CCR-22B	22H0848-04	Water	Fluoride	1.57	mg/L	8/17/2022	10:58

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 8/31/2022
Work Order # 22H0848
Project: CCR Monitoring Program
McIntosh Plant

DETECTED ANALYTE SUMMARY

Client Sample ID	Laboratory ID	Matrix	Analyte	Result	Units	Collection Date	Collection Time
CCR-22B	22H0848-04	Water	Chloride	130	mg/L	8/17/2022	10:58
CCR-22B	22H0848-04	Water	Sulfate	1170	mg/L	8/17/2022	10:58
CCR-22B	22H0848-04	Water	Total Alkalinity	8.48	mg/L	8/17/2022	10:58
CCR-22B	22H0848-04	Water	Bicarbonate	8.48	mg/L	8/17/2022	10:58
CCR-22B	22H0848-04	Water	Total Dissolved Solids	1940	mg/L	8/17/2022	10:58
CCR-20A	22H0848-05	Water	Potassium	308000	ug/L	8/17/2022	13:52
CCR-20A	22H0848-05	Water	Magnesium	12600	ug/L	8/17/2022	13:52
CCR-20A	22H0848-05	Water	Calcium	605000	ug/L	8/17/2022	13:52
CCR-20A	22H0848-05	Water	Sodium	204000	ug/L	8/17/2022	13:52
CCR-20A	22H0848-05	Water	Chromium	1.60	ug/L	8/17/2022	13:52
CCR-20A	22H0848-05	Water	Barium	54.1	ug/L	8/17/2022	13:52
CCR-20A	22H0848-05	Water	Arsenic	82.0	ug/L	8/17/2022	13:52
CCR-20A	22H0848-05	Water	Boron	356	ug/L	8/17/2022	13:52
CCR-20B	22H0848-06	Water	Total Dissolved Solids	3400	mg/L	8/17/2022	13:52
CCR-20B	22H0848-06	Water	Total Alkalinity	16.9	mg/L	8/17/2022	13:52
CCR-20B	22H0848-06	Water	Chloride	474	mg/L	8/17/2022	13:52
CCR-20B	22H0848-06	Water	Fluoride	0.317	mg/L	8/17/2022	13:52
CCR-20B	22H0848-06	Water	Sulfate	1790	mg/L	8/17/2022	13:52
CCR-20B	22H0848-06	Water	Bicarbonate	16.9	mg/L	8/17/2022	13:52
CCR-21A	22H0848-07	Water	Boron	367	ug/L	8/17/2022	13:14
CCR-21A	22H0848-07	Water	Barium	43.1	ug/L	8/17/2022	13:14
CCR-21A	22H0848-07	Water	Potassium	21300	ug/L	8/17/2022	13:14
CCR-21A	22H0848-07	Water	Calcium	447000	ug/L	8/17/2022	13:14
CCR-21A	22H0848-07	Water	Sodium	18400	ug/L	8/17/2022	13:14

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 8/31/2022

Work Order # 22H0848

Project: CCR Monitoring Program
McIntosh Plant

DETECTED ANALYTE SUMMARY

Client Sample ID	Laboratory ID	Matrix	Analyte	Result	Units	Collection Date	Collection Time
CCR-21A	22H0848-07	Water	Molybdenum	28.1	ug/L	8/17/2022	13:14
CCR-21A	22H0848-07	Water	Magnesium	16800	ug/L	8/17/2022	13:14
CCR-21B	22H0848-08	Water	Chloride	19.9	mg/L	8/17/2022	13:14
CCR-21B	22H0848-08	Water	Total Alkalinity	254	mg/L	8/17/2022	13:14
CCR-21B	22H0848-08	Water	Bicarbonate	253	mg/L	8/17/2022	13:14
CCR-21B	22H0848-08	Water	Total Dissolved Solids	1500	mg/L	8/17/2022	13:14
CCR-21B	22H0848-08	Water	Sulfate	807	mg/L	8/17/2022	13:14
CCR-21B	22H0848-08	Water	Fluoride	1.10	mg/L	8/17/2022	13:14
CCR-23A	22H0848-09	Water	Chromium	1.50	ug/L	8/17/2022	8:54
CCR-23A	22H0848-09	Water	Boron	773	ug/L	8/17/2022	8:54
CCR-23A	22H0848-09	Water	Potassium	19500	ug/L	8/17/2022	8:54
CCR-23A	22H0848-09	Water	Magnesium	27900	ug/L	8/17/2022	8:54
CCR-23A	22H0848-09	Water	Calcium	270000	ug/L	8/17/2022	8:54
CCR-23A	22H0848-09	Water	Barium	9.50	ug/L	8/17/2022	8:54
CCR-23A	22H0848-09	Water	Sodium	46400	ug/L	8/17/2022	8:54
CCR-23B	22H0848-10	Water	Sulfate	630	mg/L	8/17/2022	8:54
CCR-23B	22H0848-10	Water	Fluoride	0.830	mg/L	8/17/2022	8:54
CCR-23B	22H0848-10	Water	Total Alkalinity	32.2	mg/L	8/17/2022	8:54
CCR-23B	22H0848-10	Water	Bicarbonate	32.2	mg/L	8/17/2022	8:54
CCR-23B	22H0848-10	Water	Total Dissolved Solids	1210	mg/L	8/17/2022	8:54
CCR-23B	22H0848-10	Water	Chloride	159	mg/L	8/17/2022	8:54

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 8/31/2022
Work Order # 22H0848
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H0848-01
Client Sample ID: CCR-13A
Matrix: Water

Collection Date: 08/17/22 10:07
Received Date: 08/18/22 16:00
Collected By: Client

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	6.20	15.0	EPA 200.7/3010	08/23 08:30	08/23 10:23	MAZ
Arsenic	ND	U	ug/L	1	3.96	10.0	EPA 200.7/3010	08/23 08:30	08/23 10:23	MAZ
Barium	37.2		ug/L	1	0.0962	1.00	EPA 200.7/3010	08/23 08:30	08/23 10:23	MAZ
Beryllium	ND	U	ug/L	1	0.107	1.00	EPA 200.7/3010	08/23 08:30	08/23 10:23	MAZ
Boron	282		ug/L	1	0.616	10.0	EPA 200.7/3010	08/23 08:30	08/23 10:23	MAZ
Cadmium	35.1		ug/L	1	0.217	1.00	EPA 200.7/3010	08/23 08:30	08/23 10:23	MAZ
Calcium	485000		ug/L	10	59.6	500	EPA 200.7/3010	08/23 08:30	08/23 13:20	MAZ
Chromium	2.00	I	ug/L	1	0.513	5.00	EPA 200.7/3010	08/23 08:30	08/23 10:23	MAZ
Cobalt	ND	U	ug/L	1	0.354	1.00	EPA 200.7/3010	08/23 08:30	08/23 10:23	MAZ
Lead	ND	U	ug/L	1	1.93	10.0	EPA 200.7/3010	08/23 08:30	08/23 10:23	MAZ
Lithium	175		ug/L	1	4.74	25.0	EPA 200.7/3010	08/25 10:41	08/25 12:13	JF
Magnesium	18300		ug/L	50	124	1000	EPA 200.7/3010	08/23 08:30	08/23 13:11	MAZ
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	08/22 14:20	08/23 12:05	JF
Molybdenum	ND	U	ug/L	1	1.43	10.0	EPA 200.7/3010	08/23 08:30	08/23 10:23	MAZ
Potassium	190000		ug/L	10	109	500	EPA 200.7/3010	08/23 08:30	08/23 13:20	MAZ
Selenium	ND	U	ug/L	1	4.39	15.0	EPA 200.7/3010	08/23 08:30	08/23 10:23	MAZ
Sodium	61800		ug/L	10	5210	20000	EPA 200.7/3010	08/23 08:30	08/23 13:20	MAZ
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	08/23 08:30	08/23 10:23	MAZ
Titanium	ND	U	ug/L	1	0.358	1.00	EPA 200.7/3010	08/23 08:30	08/23 10:23	MAZ

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 8/31/2022
Work Order # 22H0848
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H0848-02
Client Sample ID: CCR-13B
Matrix: Water

Collection Date: 08/17/22 10:07
Received Date: 08/18/22 16:00
Collected By: Client

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	8.41	J3	mg/L	1	2.49	7.46	EPA 310.2	08/25 19:12	08/25 19:12	OC
Bicarbonate	8.41		mg/L	1	2.49	7.46	EPA 310.2	08/25 19:12	08/25 19:12	OC
Chloride	217		mg/L	10	1.26	5.00	EPA 300.0	08/22 13:00	08/22 18:26	PK
Fluoride	2.10		mg/L	10	0.0520	0.250	EPA 300.0	08/22 13:00	08/22 18:26	PK
Sulfate	1480		mg/L	20	1.91	10.0	EPA 300.0	08/22 13:00	08/23 11:05	PK
Total Dissolved Solids	2410		mg/L	4	40.0	120	SM 2540C	08/23 21:25	08/27 10:30	PK

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 8/31/2022
Work Order # 22H0848
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H0848-03
Client Sample ID: CCR-22A
Matrix: Water

Collection Date: 08/17/22 10:58
Received Date: 08/18/22 16:00
Collected By: Client

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	6.20	15.0	EPA 200.7/3010	08/23 08:30	08/23 10:25	MAZ
Arsenic	ND	U	ug/L	1	3.96	10.0	EPA 200.7/3010	08/23 08:30	08/23 10:25	MAZ
Barium	32.2		ug/L	1	0.0962	1.00	EPA 200.7/3010	08/23 08:30	08/23 10:25	MAZ
Beryllium	ND	U	ug/L	1	0.107	1.00	EPA 200.7/3010	08/23 08:30	08/23 10:25	MAZ
Boron	447		ug/L	1	0.616	10.0	EPA 200.7/3010	08/23 08:30	08/23 10:25	MAZ
Cadmium	ND	U	ug/L	1	0.217	1.00	EPA 200.7/3010	08/23 08:30	08/23 10:25	MAZ
Calcium	420000		ug/L	10	59.6	500	EPA 200.7/3010	08/23 08:30	08/23 13:22	MAZ
Chromium	1.50	I	ug/L	1	0.513	5.00	EPA 200.7/3010	08/23 08:30	08/23 10:25	MAZ
Cobalt	ND	U	ug/L	1	0.354	1.00	EPA 200.7/3010	08/23 08:30	08/23 10:25	MAZ
Lead	ND	U	ug/L	1	1.93	10.0	EPA 200.7/3010	08/23 08:30	08/23 10:25	MAZ
Lithium	88.5		ug/L	1	4.74	25.0	EPA 200.7/3010	08/25 10:41	08/25 12:15	JF
Magnesium	18000		ug/L	50	124	1000	EPA 200.7/3010	08/23 08:30	08/23 13:13	MAZ
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	08/22 14:20	08/23 12:18	JF
Molybdenum	ND	U	ug/L	1	1.43	10.0	EPA 200.7/3010	08/23 08:30	08/23 10:25	MAZ
Potassium	112000		ug/L	10	109	500	EPA 200.7/3010	08/23 08:30	08/23 13:22	MAZ
Selenium	ND	U	ug/L	1	4.39	15.0	EPA 200.7/3010	08/23 08:30	08/23 10:25	MAZ
Sodium	45400		ug/L	1	521	2000	EPA 200.7/3010	08/23 08:30	08/23 10:25	MAZ
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	08/23 08:30	08/23 10:25	MAZ
Titanium	ND	U	ug/L	1	0.358	1.00	EPA 200.7/3010	08/23 08:30	08/23 10:25	MAZ

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 8/31/2022
Work Order # 22H0848
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H0848-04
Client Sample ID: CCR-22B
Matrix: Water

Collection Date: 08/17/22 10:58
Received Date: 08/18/22 16:00
Collected By: Client

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	8.48		mg/L	1	2.49	7.46	EPA 310.2	08/25 19:12	08/25 19:12	OC
Bicarbonate	8.48		mg/L	1	2.49	7.46	EPA 310.2	08/25 19:12	08/25 19:12	OC
Chloride	130		mg/L	10	1.26	5.00	EPA 300.0	08/22 13:00	08/22 18:10	PK
Fluoride	1.57		mg/L	10	0.0520	0.250	EPA 300.0	08/22 13:00	08/22 18:10	PK
Sulfate	1170		mg/L	20	1.91	10.0	EPA 300.0	08/22 13:00	08/23 11:22	PK
Total Dissolved Solids	1940		mg/L	4	40.0	120	SM 2540C	08/23 21:25	08/27 10:30	PK

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 8/31/2022
Work Order # 22H0848
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H0848-05
Client Sample ID: CCR-20A
Matrix: Water

Collection Date: 08/17/22 13:52
Received Date: 08/18/22 16:00
Collected By: Client

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	6.20	15.0	EPA 200.7/3010	08/23 08:30	08/23 10:27	MAZ
Arsenic	82.0		ug/L	1	3.96	10.0	EPA 200.7/3010	08/23 08:30	08/23 10:27	MAZ
Barium	54.1		ug/L	1	0.0962	1.00	EPA 200.7/3010	08/23 08:30	08/23 10:27	MAZ
Beryllium	ND	U	ug/L	1	0.107	1.00	EPA 200.7/3010	08/23 08:30	08/23 10:27	MAZ
Boron	356		ug/L	1	0.616	10.0	EPA 200.7/3010	08/23 08:30	08/23 10:27	MAZ
Cadmium	ND	U	ug/L	1	0.217	1.00	EPA 200.7/3010	08/23 08:30	08/23 10:27	MAZ
Calcium	605000		ug/L	50	298	2500	EPA 200.7/3010	08/23 08:30	08/23 13:15	MAZ
Chromium	1.60	I	ug/L	1	0.513	5.00	EPA 200.7/3010	08/23 08:30	08/23 10:27	MAZ
Cobalt	ND	U	ug/L	1	0.354	1.00	EPA 200.7/3010	08/23 08:30	08/23 10:27	MAZ
Lead	ND	U	ug/L	1	1.93	10.0	EPA 200.7/3010	08/23 08:30	08/23 10:27	MAZ
Lithium	ND	U	ug/L	1	4.74	25.0	EPA 200.7/3010	08/25 10:41	08/25 12:18	JF
Magnesium	12600		ug/L	50	124	1000	EPA 200.7/3010	08/23 08:30	08/23 13:15	MAZ
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	08/22 14:20	08/23 12:21	JF
Molybdenum	ND	U	ug/L	1	1.43	10.0	EPA 200.7/3010	08/23 08:30	08/23 10:27	MAZ
Potassium	308000		ug/L	10	109	500	EPA 200.7/3010	08/23 08:30	08/23 13:24	MAZ
Selenium	ND	U	ug/L	1	4.39	15.0	EPA 200.7/3010	08/23 08:30	08/23 10:27	MAZ
Sodium	204000		ug/L	10	5210	20000	EPA 200.7/3010	08/23 08:30	08/23 13:24	MAZ
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	08/23 08:30	08/23 10:27	MAZ
Titanium	ND	U	ug/L	1	0.358	1.00	EPA 200.7/3010	08/23 08:30	08/23 10:27	MAZ

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 8/31/2022
Work Order # 22H0848
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H0848-06
Client Sample ID: CCR-20B
Matrix: Water

Collection Date: 08/17/22 13:52
Received Date: 08/18/22 16:00
Collected By: Client

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	16.9		mg/L	1	2.49	7.46	EPA 310.2	08/25 19:12	08/25 19:12	OC
Bicarbonate	16.9		mg/L	1	2.49	7.46	EPA 310.2	08/25 19:12	08/25 19:12	OC
Chloride	474		mg/L	20	2.52	10.0	EPA 300.0	08/22 13:00	08/22 18:43	PK
Fluoride	0.317		mg/L	2	0.0104	0.0500	EPA 300.0	08/23 13:40	08/23 22:51	PK
Sulfate	1790		mg/L	20	1.91	10.0	EPA 300.0	08/22 13:00	08/22 18:43	PK
Total Dissolved Solids	3400		mg/L	4	40.0	120	SM 2540C	08/23 21:25	08/27 10:30	PK

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 8/31/2022
Work Order # 22H0848
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H0848-07
Client Sample ID: CCR-21A
Matrix: Water

Collection Date: 08/17/22 13:14
Received Date: 08/18/22 16:00
Collected By: Client

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	6.20	15.0	EPA 200.7/3010	08/23 08:30	08/23 10:29	MAZ
Arsenic	ND	U	ug/L	1	3.96	10.0	EPA 200.7/3010	08/23 08:30	08/23 10:29	MAZ
Barium	43.1		ug/L	1	0.0962	1.00	EPA 200.7/3010	08/23 08:30	08/23 10:29	MAZ
Beryllium	ND	U	ug/L	1	0.107	1.00	EPA 200.7/3010	08/23 08:30	08/23 10:29	MAZ
Boron	367		ug/L	1	0.616	10.0	EPA 200.7/3010	08/23 08:30	08/23 10:29	MAZ
Cadmium	ND	U	ug/L	1	0.217	1.00	EPA 200.7/3010	08/23 08:30	08/23 10:29	MAZ
Calcium	447000		ug/L	10	59.6	500	EPA 200.7/3010	08/23 08:30	08/23 13:25	MAZ
Chromium	ND	U	ug/L	1	0.513	5.00	EPA 200.7/3010	08/23 08:30	08/23 10:29	MAZ
Cobalt	ND	U	ug/L	1	0.354	1.00	EPA 200.7/3010	08/23 08:30	08/23 10:29	MAZ
Lead	ND	U	ug/L	1	1.93	10.0	EPA 200.7/3010	08/23 08:30	08/23 10:29	MAZ
Lithium	ND	U	ug/L	1	4.74	25.0	EPA 200.7/3010	08/25 10:41	08/25 12:21	JF
Magnesium	16800		ug/L	50	124	1000	EPA 200.7/3010	08/23 08:30	08/23 13:17	MAZ
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	08/22 14:20	08/23 12:24	JF
Molybdenum	28.1		ug/L	1	1.43	10.0	EPA 200.7/3010	08/23 08:30	08/23 10:29	MAZ
Potassium	21300		ug/L	1	10.9	50.0	EPA 200.7/3010	08/23 08:30	08/23 10:29	MAZ
Selenium	ND	U	ug/L	1	4.39	15.0	EPA 200.7/3010	08/23 08:30	08/23 10:29	MAZ
Sodium	18400		ug/L	1	521	2000	EPA 200.7/3010	08/23 08:30	08/23 10:29	MAZ
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	08/23 08:30	08/23 10:29	MAZ
Titanium	ND	U	ug/L	1	0.358	1.00	EPA 200.7/3010	08/23 08:30	08/23 10:29	MAZ

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 8/31/2022
Work Order # 22H0848
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H0848-08
Client Sample ID: CCR-21B
Matrix: Water

Collection Date: 08/17/22 13:14
Received Date: 08/18/22 16:00
Collected By: Client

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	254		mg/L	1	2.49	7.46	EPA 310.2	08/25 19:12	08/25 19:12	OC
Bicarbonate	253		mg/L	1	2.49	7.46	EPA 310.2	08/25 19:12	08/25 19:12	OC
Chloride	19.9		mg/L	10	1.26	5.00	EPA 300.0	08/22 13:00	08/22 18:59	PK
Fluoride	1.10		mg/L	10	0.0520	0.250	EPA 300.0	08/22 13:00	08/22 18:59	PK
Sulfate	807		mg/L	10	0.953	5.00	EPA 300.0	08/22 13:00	08/22 18:59	PK
Total Dissolved Solids	1500		mg/L	4	40.0	120	SM 2540C	08/23 21:25	08/27 10:30	PK

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 8/31/2022
Work Order # 22H0848
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H0848-09
Client Sample ID: CCR-23A
Matrix: Water

Collection Date: 08/17/22 08:54
Received Date: 08/18/22 16:00
Collected By: Client

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	6.20	15.0	EPA 200.7/3010	08/23 08:30	08/23 10:31	MAZ
Arsenic	ND	U	ug/L	1	3.96	10.0	EPA 200.7/3010	08/23 08:30	08/23 10:31	MAZ
Barium	9.50		ug/L	1	0.0962	1.00	EPA 200.7/3010	08/23 08:30	08/23 10:31	MAZ
Beryllium	ND	U	ug/L	1	0.107	1.00	EPA 200.7/3010	08/23 08:30	08/23 10:31	MAZ
Boron	773		ug/L	1	0.616	10.0	EPA 200.7/3010	08/23 08:30	08/23 10:31	MAZ
Cadmium	ND	U	ug/L	1	0.217	1.00	EPA 200.7/3010	08/23 08:30	08/23 10:31	MAZ
Calcium	270000		ug/L	10	59.6	500	EPA 200.7/3010	08/23 08:30	08/23 13:27	MAZ
Chromium	1.50	I	ug/L	1	0.513	5.00	EPA 200.7/3010	08/23 08:30	08/23 10:31	MAZ
Cobalt	ND	U	ug/L	1	0.354	1.00	EPA 200.7/3010	08/23 08:30	08/23 10:31	MAZ
Lead	ND	U	ug/L	1	1.93	10.0	EPA 200.7/3010	08/23 08:30	08/23 10:31	MAZ
Lithium	ND	U	ug/L	1	4.74	25.0	EPA 200.7/3010	08/25 10:41	08/25 12:23	JF
Magnesium	27900		ug/L	50	124	1000	EPA 200.7/3010	08/23 08:30	08/23 13:18	MAZ
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	08/22 14:20	08/23 12:26	JF
Molybdenum	ND	U	ug/L	1	1.43	10.0	EPA 200.7/3010	08/23 08:30	08/23 10:31	MAZ
Potassium	19500		ug/L	1	10.9	50.0	EPA 200.7/3010	08/23 08:30	08/23 10:31	MAZ
Selenium	ND	U	ug/L	1	4.39	15.0	EPA 200.7/3010	08/23 08:30	08/23 10:31	MAZ
Sodium	46400		ug/L	10	5210	20000	EPA 200.7/3010	08/23 08:30	08/23 13:27	MAZ
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	08/23 08:30	08/23 10:31	MAZ
Titanium	ND	U	ug/L	1	0.358	1.00	EPA 200.7/3010	08/23 08:30	08/23 10:31	MAZ

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 8/31/2022
Work Order # 22H0848
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H0848-10
Client Sample ID: CCR-23B
Matrix: Water

Collection Date: 08/17/22 08:54
Received Date: 08/18/22 16:00
Collected By: Client

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	32.2		mg/L	1	2.49	7.46	EPA 310.2	08/25 19:12	08/25 19:12	OC
Bicarbonate	32.2		mg/L	1	2.49	7.46	EPA 310.2	08/25 19:12	08/25 19:12	OC
Chloride	159		mg/L	10	1.26	5.00	EPA 300.0	08/22 13:00	08/22 19:16	PK
Fluoride	0.830		mg/L	10	0.0520	0.250	EPA 300.0	08/22 13:00	08/22 19:16	PK
Sulfate	630		mg/L	10	0.953	5.00	EPA 300.0	08/22 13:00	08/22 19:16	PK
Total Dissolved Solids	1210		mg/L	4	40.0	120	SM 2540C	08/23 21:25	08/27 10:30	PK

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 8/31/2022
Work Order # 22H0848
Project: CCR Monitoring Program
McIntosh Plant

Wet Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0735 - Default Prep GenChem										
Blank (22H0735-BLK1)				Prepared & Analyzed: 08/22/2022						
Fluoride	ND	0.0250	mg/L							U
Chloride	ND	0.500	"							U
Sulfate	ND	0.500	"							U
LCS (22H0735-BS1)				Prepared & Analyzed: 08/22/2022						
Fluoride	2.48	0.0250	mg/L	2.500		99	90-110			
Chloride	49.0	0.500	"	50.00		98	90-110			
Sulfate	49.3	0.500	"	50.00		99	90-110			
Duplicate (22H0735-DUP1)	**Source: 22H0842-08**			Prepared & Analyzed: 08/22/2022						
Fluoride	0.204	0.0250	mg/L		0.218			7	20	
Chloride	28.9	0.500	"		28.8			0.08	20	
Sulfate	5.30	0.500	"		5.76			8	20	
Matrix Spike (22H0735-MS1)	**Source: 22H0842-08**			Prepared & Analyzed: 08/22/2022						
Fluoride	2.49	0.0250	mg/L	2.500	0.218	91	90-110			
Sulfate	56.0	0.500	"	50.00	5.76	100	90-110			
Chloride	75.7	0.500	"	50.00	28.8	94	90-110			
Matrix Spike (22H0735-MS2)	**Source: 22H0844-04**			Prepared & Analyzed: 08/22/2022						
Fluoride	2.54	0.0250	mg/L	2.500	0.249	92	90-110			
Sulfate	57.0	0.500	"	50.00	6.20	102	90-110			
Chloride	64.8	0.500	"	50.00	16.4	97	90-110			
Batch 22H0774 - Default Prep GenChem										
Blank (22H0774-BLK1)				Prepared & Analyzed: 08/23/2022						
Fluoride	ND	0.0250	mg/L							U

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 8/31/2022

Work Order # 22H0848

Project: CCR Monitoring Program
McIntosh Plant

Wet Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0774 - Default Prep GenChem										
LCS (22H0774-BS1)				Prepared & Analyzed: 08/23/2022						
Fluoride	2.54	0.0250	mg/L	2.500		102	90-110			
Duplicate (22H0774-DUP1)		**Source: 22H0956-01**		Prepared & Analyzed: 08/23/2022						
Fluoride	0.0560	0.0250	mg/L		0.0600			7	20	
Matrix Spike (22H0774-MS1)		**Source: 22H0956-01**		Prepared & Analyzed: 08/23/2022						
Fluoride	2.66	0.0250	mg/L	2.500	0.0600	104	90-110			
Matrix Spike (22H0774-MS2)		**Source: 22H0987-02**		Prepared & Analyzed: 08/23/2022						
Fluoride	2.29	0.0250	mg/L	2.500	0.0980	88	90-110			J3
Batch 22H0786 - Default Prep GenChem										
Blank (22H0786-BLK1)				Prepared: 08/23/2022 Analyzed: 08/27/2022						
Total Dissolved Solids	ND	30.0	mg/L							U
LCS (22H0786-BS1)				Prepared: 08/23/2022 Analyzed: 08/27/2022						
Total Dissolved Solids	488	120	mg/L	500.0		97.6	80-120			
Duplicate (22H0786-DUP1)		**Source: 22H0770-02**		Prepared: 08/23/2022 Analyzed: 08/27/2022						
Total Dissolved Solids	748	120	mg/L		728			2.71	20	
Duplicate (22H0786-DUP2)		**Source: 22H0848-10**		Prepared: 08/23/2022 Analyzed: 08/27/2022						
Total Dissolved Solids	1260	120	mg/L		1210			3.57	20	
Batch 22H0833 - Default Prep GenChem										
Blank (22H0833-BLK1)				Prepared & Analyzed: 08/25/2022						
Total Alkalinity	ND	7.46	mg/L							U

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 8/31/2022
Work Order # 22H0848
Project: CCR Monitoring Program
McIntosh Plant

Wet Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0833 - Default Prep GenChem										
LCS (22H0833-BS1)				Prepared & Analyzed: 08/25/2022						
Total Alkalinity	236	7.46	mg/L	250.0		94	90-110			
Duplicate (22H0833-DUP1)		**Source: 22H0848-02**		Prepared & Analyzed: 08/25/2022						
Total Alkalinity	8.07	7.46	mg/L		8.41			4	20	
Matrix Spike (22H0833-MS1)		**Source: 22H0848-02**		Prepared & Analyzed: 08/25/2022						
Total Alkalinity	191	7.46	mg/L	250.0	8.41	73	90-110			J3
Matrix Spike (22H0833-MS2)		**Source: 22H0848-06**		Prepared & Analyzed: 08/25/2022						
Total Alkalinity	243	7.46	mg/L	250.0	16.9	90	90-110			
Batch 22H0834 - Default Prep GenChem										
Blank (22H0834-BLK1)				Prepared & Analyzed: 08/25/2022						
Total Alkalinity	ND	7.46	mg/L							U
LCS (22H0834-BS1)				Prepared & Analyzed: 08/25/2022						
Total Alkalinity	240	7.46	mg/L	250.0		96	90-110			
Duplicate (22H0834-DUP1)		**Source: 22H0864-06**		Prepared & Analyzed: 08/25/2022						
Total Alkalinity	20.5	7.46	mg/L		20.4			0.5	20	
Matrix Spike (22H0834-MS1)		**Source: 22H0864-06**		Prepared & Analyzed: 08/25/2022						
Total Alkalinity	261	7.46	mg/L	250.0	20.4	96	90-110			
Matrix Spike (22H0834-MS2)		**Source: 22H0860-04**		Prepared & Analyzed: 08/25/2022						
Total Alkalinity	210	7.46	mg/L	250.0	2.97	83	90-110			J3

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 8/31/2022
Work Order # 22H0848
Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0101 - EPA 245.1/245.2 Prep										
Blank (22H0101-BLK1)				Prepared: 08/22/2022 Analyzed: 08/23/2022						
Mercury	ND	1.00	ug/L							U
LCS (22H0101-BS1)				Prepared: 08/22/2022 Analyzed: 08/23/2022						
Mercury	10.5	1.00	ug/L	10.00		105	85-115			
Matrix Spike (22H0101-MS1)		**Source: 22H0848-01**		Prepared: 08/22/2022 Analyzed: 08/23/2022						
Mercury	7.10	1.00	ug/L	10.00	ND	71	70-130			
Matrix Spike Dup (22H0101-MSD1)		**Source: 22H0848-01**		Prepared: 08/22/2022 Analyzed: 08/23/2022						
Mercury	7.17	1.00	ug/L	10.00	ND	72	70-130	1	20	
Batch 22H0102 - EPA 3010A										
Blank (22H0102-BLK1)				Prepared & Analyzed: 08/23/2022						
Barium	ND	1.00	ug/L							U
Cadmium	ND	1.00	"							U
Boron	ND	10.0	"							U
Beryllium	ND	1.00	"							U
Titanium	ND	1.00	"							U
Arsenic	ND	10.0	"							U
Antimony	ND	15.0	"							U
Thallium	ND	4.00	"							U
Selenium	ND	15.0	"							U
Potassium	ND	50.0	"							U
Sodium	ND	2000	"							U
Magnesium	ND	20.0	"							U
Calcium	ND	50.0	"							U
Chromium	ND	5.00	"							U
Cobalt	ND	1.00	"							U
Lead	ND	10.0	"							U
Molybdenum	ND	10.0	"							U

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 8/31/2022
Work Order # 22H0848
Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0102 - EPA 3010A										
LCS (22H0102-BS1)				Prepared & Analyzed: 08/23/2022						
Cadmium	502.1	1.00	ug/L	500.0		100	85-115			
Boron	506.0	10.0	"	500.0		101	85-115			
Beryllium	508.4	1.00	"	500.0		102	85-115			
Barium	485.1	1.00	"	500.0		97.0	85-115			
Arsenic	502	10.0	"	500.0		100	85-115			
Antimony	510.0	15.0	"	500.0		102	85-115			
Titanium	508.7	1.00	"	500.0		102	85-115			
Cobalt	490.5	1.00	"	500.0		98.1	85-115			
Thallium	484.1	4.00	"	500.0		96.8	85-115			
Magnesium	490	20.0	"	500.0		98.1	85-115			
Selenium	510.9	15.0	"	500.0		102	85-115			
Potassium	24400	50.0	"	25500		95.8	85-115			
Sodium	24900	2000	"	25500		97.7	85-115			
Calcium	26900	50.0	"	25500		105	85-115			
Lead	493	10.0	"	500.0		98.6	85-115			
Molybdenum	508.9	10.0	"	500.0		102	85-115			
Chromium	495.0	5.00	"	500.0		99.0	85-115			
Matrix Spike (22H0102-MS1)	**Source: 22H0844-05**			Prepared & Analyzed: 08/23/2022						
Boron	495.7	10.0	ug/L	500.0	ND	99.1	70-130			
Beryllium	501.5	1.00	"	500.0	ND	100	70-130			
Cadmium	494.1	1.00	"	500.0	ND	98.8	70-130			
Arsenic	499	10.0	"	500.0	ND	99.8	70-130			
Antimony	460.7	15.0	"	500.0	ND	92.1	70-130			
Titanium	479.9	1.00	"	500.0	ND	96.0	70-130			
Barium	471.2	1.00	"	500.0	ND	94.2	70-130			
Magnesium	477	20.0	"	500.0	ND	95.5	70-130			
Selenium	532.8	15.0	"	500.0	ND	107	70-130			
Thallium	474.8	4.00	"	500.0	ND	95.0	70-130			
Potassium	23300	50.0	"	25500	ND	91.5	70-130			
Sodium	23900	2000	"	25500	ND	93.8	70-130			
Calcium	26000	50.0	"	25500	ND	102	70-130			

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 8/31/2022
Work Order # 22H0848
Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0102 - EPA 3010A										
Matrix Spike (22H0102-MS1)	**Source: 22H0844-05**			Prepared & Analyzed: 08/23/2022						
Chromium	481.8	5.00	ug/L	500.0	ND	96.4	70-130			
Cobalt	477.9	1.00	"	500.0	ND	95.6	70-130			
Lead	476	10.0	"	500.0	ND	95.2	70-130			
Molybdenum	473.0	10.0	"	500.0	ND	94.6	70-130			
Matrix Spike Dup (22H0102-MSD1)	**Source: 22H0844-05**			Prepared & Analyzed: 08/23/2022						
Boron	495.8	10.0	ug/L	500.0	ND	99.2	70-130	0.0202	20	
Beryllium	502.0	1.00	"	500.0	ND	100	70-130	0.0996	20	
Barium	471.1	1.00	"	500.0	ND	94.2	70-130	0.0212	20	
Arsenic	498	10.0	"	500.0	ND	99.6	70-130	0.201	20	
Antimony	474.9	15.0	"	500.0	ND	95.0	70-130	3.04	20	
Titanium	483.6	1.00	"	500.0	ND	96.7	70-130	0.768	20	
Cobalt	478.4	1.00	"	500.0	ND	95.7	70-130	0.105	20	
Cadmium	492.0	1.00	"	500.0	ND	98.4	70-130	0.426	20	
Lead	478	10.0	"	500.0	ND	95.7	70-130	0.503	20	
Molybdenum	477.8	10.0	"	500.0	ND	95.6	70-130	1.01	20	
Selenium	534.6	15.0	"	500.0	ND	107	70-130	0.337	20	
Chromium	479.8	5.00	"	500.0	ND	96.0	70-130	0.416	20	
Calcium	26000	50.0	"	25500	ND	102	70-130	0.116	20	
Sodium	23900	2000	"	25500	ND	93.7	70-130	0.133	20	
Potassium	23300	50.0	"	25500	ND	91.5	70-130	0.0188	20	
Thallium	474.6	4.00	"	500.0	ND	94.9	70-130	0.0421	20	
Magnesium	477	20.0	"	500.0	ND	95.3	70-130	0.147	20	
Batch 22H0107 - EPA 3010A										
Blank (22H0107-BLK1)				Prepared & Analyzed: 08/25/2022						
Lithium	ND	25.0	ug/L							U

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 8/31/2022
Work Order # 22H0848
Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0107 - EPA 3010A										
LCS (22H0107-BS1)				Prepared & Analyzed: 08/25/2022						
Lithium	2810	25.0	ug/L	2500		112	85-115			
Matrix Spike (22H0107-MS1)	**Source: 22H0950-01**			Prepared & Analyzed: 08/25/2022						
Lithium	4940	25.0	ug/L	2500	3130	72	75-125			J3
Matrix Spike Dup (22H0107-MSD1)	**Source: 22H0950-01**			Prepared & Analyzed: 08/25/2022						
Lithium	4790	25.0	ug/L	2500	3130	66	75-125	3	20	J3

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

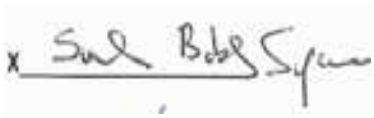
Report Printed: 8/31/2022
Work Order # 22H0848
Project: CCR Monitoring Program
McIntosh Plant

Notes and Definitions

U	Indicated that the compound was analyzed for but not detected. This shall be used to indicate that the specific component was not detected. The value associated with the qualifier shall be the laboratory method detection limit.
J3	The matrix spike recovery outside method acceptance limits indicating matrix interference.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the detection limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
N.O.O.	No Odor Observed
REP	Field parameter measured by client
V	Indicated that the analyte was detected in both the sample and the associated method blank.
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
Z	Too many colonies were present for accurate counting.
SUB	Work performed by outside (subcontracted) labs denoted by SUB in analyst field.

QC=Qualifier Codes as defined by DEP 62-160
Unless indicated, soil results are reported on actual (wet) weight basis.
The Color SM2120B method is reported as (Color / pH)
Legionella analyzed under CDC acreditation program
Dilution factors >= 1000 are abreviated using k=1000 and M=1000000
Field parameters are not NELAP acredited.
Results relate only to this sample.

Suresh (Bobby) Supan - CSM



Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification# E86006

All NELAP certified analysis are performed in accordance with Chapter 64E-1 Florida Administrative code, which has been determined to be equivalent to NELAC standards. Analysis certified by programs other than NELAP are designated with a "~".

J21H0848

CHAIN OF CUSTODY RECORD

SUBMISSION #

Logged into LIMS by: L

Doc. Ctrl: 0401117-001
Date: 12/6/17

Florida Spectrum Environmental Services, Inc.

1460 W McNab Road Ft Lauderdale FL 33309 Tel: (954) 978-6400 Fax: (954) 978-2233
1112 NW Park Street, Okeechobee, FL 34972 Tel: (863) 763-3336 Fax: (863) 763-1544
630 Indian Street Savannah, GA 31401 Tel: (912) 238-5050 Fax (912) 234-4815
528 Gooch Road Fort Meade FL 33841 Tel: (863) 285-8145 Fax (863) 285-7030
1910 Harden Blvd # 101, Lakeland, FL 33803 Tel: (863) 686-4271 Fax (863) 686-4389

DUE DATE Requested

RUSH RESERVATION #

Rush Surcharges apply

Report to: Lakeland Electric
Report to Address: 3030 East Lake Parker Drive, Lakeland FL 33805
Invoice to: Lakeland Electric
Purchase Order # 289273
Invoice to Address: 501 East Lemon Street, Lakeland FL 33801
Project Name and/or Number: July 2022 CCR Monitoring Program
Site Location: McIntosh Plant
Project Mgr: Thomas Johnston
Phone: 863-834-6623
Fax:
Email: Thomas.Johnston@lakelandelectric.com
Sampler Name: (printed)
Sampler Signature

ORDER # (Lab Control Number — Shaded Areas For Laboratory Use Only)	Sample ID	Date Sampled	Time Sampled	Matrix (DW GW S HW SA / SW SED EFF BIO OIL X)	Bottle & Preservative Combo Codes	Number of Containers Received & NELAC Letter Suffixes from A-Z	Analysis Required: Appendix III Metals	Appendix IV Metals	GC Suite Metals	App III Cl, F-, SO4, TDS	GC Suite Bicarb, T-Alk			Field Tests: TEMP-C	PH	COND	CHLOR
1 01	CCR-13A	8/17/2022	1007	GW		1	X	X	x								
2 02	CCR-13B	8/17/2022	1007	GW		1				X	x						
3 03	CCR-22A	8/17/2022	1058	GW		1	X	X	x								
4 04	CCR-22B	8/17/2022	1058	GW		1				X	x						
5 05	CCR-20A	8/17/2022	1352	GW		1	x	x	x								
6 06	CCR-20B	8/17/2022	1352	GW		1				x	x						
7 07	CCR-21A	8/17/2022	1314	GW		1	x	x	x								
8 08	CCR-21B	8/17/2022	1314	GW		1				x	x						
9 09	CCR-23A	8/17/2022	0854	GW		1	x	x	x								
10 10	CCR-23B	8/17/2022	0854	GW		1				x	x						
						Total											

Special Comments: 44.4 GUN 1
"I waive NELAC protocol" (sign here) >

Deliverables QA/QC Report Needed? Yes No (additional charge)

	SAMPLE CUSTODY AND TRANSFER SIGNATURES		DATE / TIME
1	Relinquished by:	8-17-22	1350
1	Received by: Omar Cloud FIE	8-17-22	1450
2	Relinquished by: Nina Duggus FSES	8/18/22	12:35
2	Received by: FSES	8-18-22	14:22
3	Relinquished by: FSES	8-18-22	16:00
3	Received by: FSES	8/18/22	16:00

www.flenviro.com COC Page 1 of 1

Sample Custody & Field Comments
Received on Ice: Y N
Temp as received 1.3 °C
Custody Seals? Y N
RAD-9 GUN-1 1830
FIELD TIME:
Sampling hr Pick up hr
Misc. Charges

Bottle Type
A- liter amber
B-Bacteria bag/bottle
P-500 ml O-125ml
L-liter bottle B-Plastic Amber
S-Soil jar TKD-Tedlar Air Bag
T-250 ml
V-40 ml vial
W-wide mouth
X-other

Preservatives
A-Ascorbic acid P-H_3PO_4
C-HCL S-H_2SO_4
Ca-$CaSO_4$ T-$Na_2S_2O_3$-H_2O
H-HNO_3 U-Unpreserved
M-MCAB DI-DI Water
N-NaOH Z-zinc acetate
NH_4-NH_4CL
Hex- Hex.Cr. Buffer
EDA-Ethylene Diamine

2210848

CCR Monitoring Program - 2021
Byproduct Storage Area
C.D. McIntosh Plant

Well ID	Well Type	Historical GWPS exceedances	SSL?	Jul-21 & Jan-22 Monitoring?	Rationale	Parameters
CCR-1	Background	None- background	NO	YES	Ongoing Assessment Monitoring	Appendix III, IV
CCR-2	Background	None- background	NO	YES	Ongoing Assessment Monitoring	Appendix III, IV
CCR-3	CCR Compliance	arsenic	NO	**NO**	No Further Monitoring Warranted	–
CCR-4	CCR Compliance	lithium thallium	NO NO	YES	Ongoing Assessment Monitoring	Appendix III, IV
CCR-5	CCR Compliance	arsenic lithium thallium	NO YES NO	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
CCR-6	CCR Compliance	lithium	YES	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
CCR-7	CCR Compliance	arsenic lithium	NO NO	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
CCR-8	CCR Compliance	arsenic	NO	YES	Ongoing Assessment Monitoring	Appendix III, IV
CCR-9	CCR Compliance	arsenic lithium thallium	NO YES NO	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
CCR-10	CCR Compliance	No GWPS exceedances	NO	**NO**	No Further Monitoring Warranted	–
CCR-11	CCR Compliance	arsenic	YES	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
CCR-12	CCR Compliance	arsenic lithium thallium	YES NO NO	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
CCR-13	CCR Compliance	lithium	YES	YES	Ongoing Assessment Monitoring	Appendix III, IV
CCR-14	CCR Compliance	No GWPS exceedances	NO	**NO**	No Further Monitoring Warranted	–
CCR-15	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-4	Appendix III, IV, GC suite
CCR-16	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-5	Appendix III, IV, GC suite
CCR-17	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-6	Appendix III, IV, GC suite
CCR-18	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-7	Appendix III, IV, GC suite
CCR-19	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-9	Appendix III, IV, GC suite
CCR-20	Nature & Extent	NA	NA	YES	Evaluate arsenic mobility downgradient CCR-11	Appendix III, IV, GC suite
CCR-21	Nature & Extent	NA	NA	YES	Evaluate arsenic mobility downgradient CCR-12	Appendix III, IV, GC suite
CCR-22	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-13	Appendix III, IV, GC suite
CCR-23	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-13	Appendix III, IV, GC suite
SW-106	Nature & Extent	NA	NA	YES	Evaluate GWPS compliance at downgradient property boundary	Appendix III, IV, GC suite

Notes:

1. NA -not applicable
2. GWPS - Groundwater protection standards
3. SSL - statistically significant level
4. Appendix III - boron, calcium, chloride, fluoride, sulfate, total dissolved solides
5. Appendix IV - arsenic, antimony, barium, beryllium, cadmium, chromium, cobalt, lead lithium, mercury, molybdenum, selenium, thallium (Radium eliminated via ASD).
6. GC Suite - Geochemical suite: magnesium, sodium, bicarbonate, potassium, alkalinity

1460 West McNab Road
Fort Lauderdale, FL 33309
1-800-ANALYTE Phone
(954) 978-6400 Phone
(954) 978-2233 Fax

NELAP Certificate No. E86006

24 August 2022
Lab Work Order (COC): 22H0497

Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland, FL 33805

RE: **CCR Monitoring Program**

Project Location: **McIntosh Plant**

Dear Thomas Johnston:

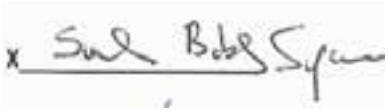
This report details the analytical results of samples collected at the above-referenced project location. These samples were received by Florida Spectrum Environmental Services at **08/11/2022 10:35**.

All Analyses were performed according to the TNI/NELAP standard unless indicated by a "~" on the report.

Your samples will be retained by Florida Spectrum Environmental for a period of at least 30 days following sample receipt or until the longest of the preparation and/or analytical hold times expires, whichever is shorter. After that time, they will be properly disposed without further notice, unless there exists an explicit contractual agreement to the contrary. We reserve the right to return any unused samples, extracts, or related materials or solutions to you if we consider it necessary. Examples might include those samples identified as hazardous wastes, submissions where the sample sizes significantly exceed those required for analysis, samples containing controlled substances, etc.

We thank you for selecting Florida Spectrum Environmental to serve your analytical needs. Should you have any questions or require additional information regarding any of the information in this report, please feel free to contact us at any time. We appreciate the opportunity to be of service.

Florida Spectrum Environmental Inc.



Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 8/24/2022
Work Order # 22H0497
Project: CCR Monitoring Program
McIntosh Plant

DETECTED ANALYTE SUMMARY

CCR-1A	22H0497-01	Water	Barium	8.40	ug/L	8/10/2022	10:06
CCR-1A	22H0497-01	Water	Chromium	1.10	ug/L	8/10/2022	10:06
CCR-1A	22H0497-01	Water	Boron	61.0	ug/L	8/10/2022	10:06
CCR-1A	22H0497-01	Water	Titanium	1.10	ug/L	8/10/2022	10:06
CCR-1A	22H0497-01	Water	Calcium	45200	ug/L	8/10/2022	10:06
CCR-1B	22H0497-02	Water	Sulfate	70.5	mg/L	8/10/2022	10:06
CCR-1B	22H0497-02	Water	Chloride	6.17	mg/L	8/10/2022	10:06
CCR-1B	22H0497-02	Water	Fluoride	0.0990	mg/L	8/10/2022	10:06
CCR-1B	22H0497-02	Water	Total Dissolved Solids	88.0	mg/L	8/10/2022	10:06
CCR-2A	22H0497-03	Water	Titanium	10.8	ug/L	8/10/2022	12:52
CCR-2A	22H0497-03	Water	Boron	34.4	ug/L	8/10/2022	12:52
CCR-2A	22H0497-03	Water	Chromium	1.00	ug/L	8/10/2022	12:52
CCR-2A	22H0497-03	Water	Barium	7.10	ug/L	8/10/2022	12:52
CCR-2A	22H0497-03	Water	Calcium	44700	ug/L	8/10/2022	12:52
CCR-2B	22H0497-04	Water	Chloride	6.55	mg/L	8/10/2022	12:52
CCR-2B	22H0497-04	Water	Sulfate	72.1	mg/L	8/10/2022	12:52
CCR-2B	22H0497-04	Water	Fluoride	0.182	mg/L	8/10/2022	12:52
CCR-2B	22H0497-04	Water	Total Dissolved Solids	210	mg/L	8/10/2022	12:52
CCR-4A	22H0497-05	Water	Boron	607	ug/L	8/10/2022	13:59
CCR-4A	22H0497-05	Water	Chromium	1.60	ug/L	8/10/2022	13:59
CCR-4A	22H0497-05	Water	Calcium	1710000	ug/L	8/10/2022	13:59
CCR-4A	22H0497-05	Water	Sodium	639000	ug/L	8/10/2022	13:59
CCR-4A	22H0497-05	Water	Barium	262	ug/L	8/10/2022	13:59
CCR-4A	22H0497-05	Water	Potassium	433000	ug/L	8/10/2022	13:59

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 8/24/2022
Work Order # 22H0497
Project: CCR Monitoring Program
McIntosh Plant

DETECTED ANALYTE SUMMARY

Client Sample ID	Laboratory ID	Matrix	Analyte	Result	Units	Collection Date	Collection Time
CCR-4A	22H0497-05	Water	Lithium	251	ug/L	8/10/2022	13:59
CCR-4A	22H0497-05	Water	Magnesium	70000	ug/L	8/10/2022	13:59
CCR-4B	22H0497-06	Water	Total Alkalinity	18.6	mg/L	8/10/2022	13:59
CCR-4B	22H0497-06	Water	Fluoride	0.470	mg/L	8/10/2022	13:59
CCR-4B	22H0497-06	Water	Chloride	4310	mg/L	8/10/2022	13:59
CCR-4B	22H0497-06	Water	Bicarbonate	18.6	mg/L	8/10/2022	13:59
CCR-4B	22H0497-06	Water	Total Dissolved Solids	9780	mg/L	8/10/2022	13:59
CCR-4B	22H0497-06	Water	Sulfate	1030	mg/L	8/10/2022	13:59
SW-106A	22H0497-07	Water	Chromium	1.10	ug/L	8/10/2022	8:57
SW-106A	22H0497-07	Water	Magnesium	2210	ug/L	8/10/2022	8:57
SW-106A	22H0497-07	Water	Calcium	9700	ug/L	8/10/2022	8:57
SW-106A	22H0497-07	Water	Boron	41.8	ug/L	8/10/2022	8:57
SW-106A	22H0497-07	Water	Titanium	51.2	ug/L	8/10/2022	8:57
SW-106A	22H0497-07	Water	Sodium	2390	ug/L	8/10/2022	8:57
SW-106A	22H0497-07	Water	Potassium	4660	ug/L	8/10/2022	8:57
SW-106A	22H0497-07	Water	Barium	16.3	ug/L	8/10/2022	8:57
SW-106B	22H0497-08	Water	Chloride	1.73	mg/L	8/10/2022	8:57
SW-106B	22H0497-08	Water	Total Alkalinity	11.1	mg/L	8/10/2022	8:57
SW-106B	22H0497-08	Water	Bicarbonate	11.1	mg/L	8/10/2022	8:57
SW-106B	22H0497-08	Water	Total Dissolved Solids	76.0	mg/L	8/10/2022	8:57
SW-106B	22H0497-08	Water	Sulfate	23.2	mg/L	8/10/2022	8:57

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 8/24/2022
Work Order # 22H0497
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H0497-01
Client Sample ID: CCR-1A
Matrix: Water

Collection Date: 08/10/22 10:06
Received Date: 08/11/22 10:35
Collected By: Jason Gross

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	6.20	15.0	EPA 200.7/3010	08/12 09:30	08/12 11:25	MAZ
Arsenic	ND	U	ug/L	1	3.96	10.0	EPA 200.7/3010	08/12 09:30	08/12 11:25	MAZ
Barium	8.40		ug/L	1	0.0962	1.00	EPA 200.7/3010	08/12 09:30	08/12 11:25	MAZ
Beryllium	ND	U	ug/L	1	0.107	1.00	EPA 200.7/3010	08/12 09:30	08/12 11:25	MAZ
Boron	61.0		ug/L	1	0.616	10.0	EPA 200.7/3010	08/12 09:30	08/12 11:25	MAZ
Cadmium	ND	U	ug/L	1	0.217	1.00	EPA 200.7/3010	08/12 09:30	08/12 11:25	MAZ
Calcium	45200		ug/L	1	5.96	50.0	EPA 200.7/3010	08/12 09:30	08/12 11:25	MAZ
Chromium	1.10	I	ug/L	1	0.513	5.00	EPA 200.7/3010	08/12 09:30	08/12 11:25	MAZ
Cobalt	ND	U	ug/L	1	0.354	1.00	EPA 200.7/3010	08/12 09:30	08/12 11:25	MAZ
Lead	ND	U	ug/L	1	1.93	10.0	EPA 200.7/3010	08/12 09:30	08/12 11:25	MAZ
Lithium	ND	U	ug/L	1	4.74	25.0	EPA 200.7/3010	08/12 13:30	08/17 11:22	JF
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	08/15 13:20	08/16 11:10	JF
Molybdenum	ND	U	ug/L	1	1.43	10.0	EPA 200.7/3010	08/12 09:30	08/12 11:25	MAZ
Selenium	ND	U	ug/L	1	4.39	15.0	EPA 200.7/3010	08/12 09:30	08/12 11:25	MAZ
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	08/12 09:30	08/12 11:25	MAZ
Titanium	1.10		ug/L	1	0.358	1.00	EPA 200.7/3010	08/12 09:30	08/12 11:25	MAZ

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 8/24/2022
Work Order # 22H0497
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H0497-02
Client Sample ID: CCR-1B
Matrix: Water

Collection Date: 08/10/22 10:06
Received Date: 08/11/22 10:35
Collected By: Jason Gross

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Chloride	6.17		mg/L	1	0.126	0.500	EPA 300.0	08/11 15:10	08/11 21:04	PK
Fluoride	0.0990		mg/L	1	0.00520	0.0250	EPA 300.0	08/11 15:10	08/11 21:04	PK
Sulfate	70.5		mg/L	1	0.0953	0.500	EPA 300.0	08/11 15:10	08/11 21:04	PK
Total Dissolved Solids	88.0		mg/L	2	20.0	60.0	SM 2540C	08/16 10:03	08/18 10:00	LE

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 8/24/2022
Work Order # 22H0497
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H0497-03
Client Sample ID: CCR-2A
Matrix: Water

Collection Date: 08/10/22 12:52
Received Date: 08/11/22 10:35
Collected By: Jason Gross

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	6.20	15.0	EPA 200.7/3010	08/12 09:30	08/12 11:27	MAZ
Arsenic	ND	U	ug/L	1	3.96	10.0	EPA 200.7/3010	08/12 09:30	08/12 11:27	MAZ
Barium	7.10		ug/L	1	0.0962	1.00	EPA 200.7/3010	08/12 09:30	08/12 11:27	MAZ
Beryllium	ND	U	ug/L	1	0.107	1.00	EPA 200.7/3010	08/12 09:30	08/12 11:27	MAZ
Boron	34.4		ug/L	1	0.616	10.0	EPA 200.7/3010	08/12 09:30	08/12 11:27	MAZ
Cadmium	ND	U	ug/L	1	0.217	1.00	EPA 200.7/3010	08/12 09:30	08/12 11:27	MAZ
Calcium	44700		ug/L	1	5.96	50.0	EPA 200.7/3010	08/12 09:30	08/12 11:27	MAZ
Chromium	1.00	I	ug/L	1	0.513	5.00	EPA 200.7/3010	08/12 09:30	08/12 11:27	MAZ
Cobalt	ND	U	ug/L	1	0.354	1.00	EPA 200.7/3010	08/12 09:30	08/12 11:27	MAZ
Lead	ND	U	ug/L	1	1.93	10.0	EPA 200.7/3010	08/12 09:30	08/12 11:27	MAZ
Lithium	ND	U	ug/L	1	4.74	25.0	EPA 200.7/3010	08/12 13:30	08/17 11:24	JF
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	08/15 13:20	08/16 11:13	JF
Molybdenum	ND	U	ug/L	1	1.43	10.0	EPA 200.7/3010	08/12 09:30	08/12 11:27	MAZ
Selenium	ND	U	ug/L	1	4.39	15.0	EPA 200.7/3010	08/12 09:30	08/12 11:27	MAZ
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	08/12 09:30	08/12 11:27	MAZ
Titanium	10.8		ug/L	1	0.358	1.00	EPA 200.7/3010	08/12 09:30	08/12 11:27	MAZ

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 8/24/2022
Work Order # 22H0497
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H0497-04
Client Sample ID: CCR-2B
Matrix: Water

Collection Date: 08/10/22 12:52
Received Date: 08/11/22 10:35
Collected By: Jason Gross

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Chloride	6.55		mg/L	1	0.126	0.500	EPA 300.0	08/11 15:10	08/11 21:20	PK
Fluoride	0.182		mg/L	1	0.00520	0.0250	EPA 300.0	08/11 15:10	08/11 21:20	PK
Sulfate	72.1		mg/L	1	0.0953	0.500	EPA 300.0	08/11 15:10	08/11 21:20	PK
Total Dissolved Solids	210		mg/L	2	20.0	60.0	SM 2540C	08/16 10:03	08/18 10:00	LE

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 8/24/2022
Work Order # 22H0497
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H0497-05
Client Sample ID: CCR-4A
Matrix: Water

Collection Date: 08/10/22 13:59
Received Date: 08/11/22 10:35
Collected By: Jason Gross

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	6.20	15.0	EPA 200.7/3010	08/12 09:30	08/12 11:29	MAZ
Arsenic	ND	U	ug/L	1	3.96	10.0	EPA 200.7/3010	08/12 09:30	08/12 11:29	MAZ
Barium	262		ug/L	1	0.0962	1.00	EPA 200.7/3010	08/12 09:30	08/12 11:29	MAZ
Beryllium	ND	U	ug/L	1	0.107	1.00	EPA 200.7/3010	08/12 09:30	08/12 11:29	MAZ
Boron	607		ug/L	1	0.616	10.0	EPA 200.7/3010	08/12 09:30	08/12 11:29	MAZ
Cadmium	ND	U	ug/L	1	0.217	1.00	EPA 200.7/3010	08/12 09:30	08/12 11:29	MAZ
Calcium	1710000		ug/L	100	596	5000	EPA 200.7/3010	08/12 09:30	08/12 13:16	MAZ
Chromium	1.60	I	ug/L	1	0.513	5.00	EPA 200.7/3010	08/12 09:30	08/12 11:29	MAZ
Cobalt	ND	U	ug/L	1	0.354	1.00	EPA 200.7/3010	08/12 09:30	08/12 11:29	MAZ
Lead	ND	U	ug/L	1	1.93	10.0	EPA 200.7/3010	08/12 09:30	08/12 11:29	MAZ
Lithium	251		ug/L	1	4.74	25.0	EPA 200.7/3010	08/12 13:30	08/17 11:27	JF
Magnesium	70000		ug/L	100	248	2000	EPA 200.7/3010	08/12 09:30	08/12 13:16	MAZ
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	08/15 13:20	08/16 11:29	JF
Molybdenum	ND	U	ug/L	1	1.43	10.0	EPA 200.7/3010	08/12 09:30	08/12 11:29	MAZ
Potassium	433000		ug/L	100	1090	5000	EPA 200.7/3010	08/12 09:30	08/12 13:16	MAZ
Selenium	ND	U	ug/L	1	4.39	15.0	EPA 200.7/3010	08/12 09:30	08/12 11:29	MAZ
Sodium	639000		ug/L	100	52100	200000	EPA 200.7/3010	08/12 09:30	08/12 13:16	MAZ
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	08/12 09:30	08/12 11:29	MAZ
Titanium	ND	U	ug/L	1	0.358	1.00	EPA 200.7/3010	08/12 09:30	08/12 11:29	MAZ

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 8/24/2022
Work Order # 22H0497
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H0497-06
Client Sample ID: CCR-4B
Matrix: Water

Collection Date: 08/10/22 13:59
Received Date: 08/11/22 10:35
Collected By: Jason Gross

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	18.6		mg/L	1	2.49	7.46	EPA 310.2	08/17 19:12	08/17 19:12	OC
Bicarbonate	18.6		mg/L	1	2.49	7.46	EPA 310.2	08/17 19:12	08/17 19:12	OC
Chloride	4310		mg/L	40	5.04	20.0	EPA 300.0	08/15 13:10	08/15 14:56	PK
Fluoride	0.470		mg/L	5	0.0260	0.125	EPA 300.0	08/11 15:10	08/11 21:36	PK
Sulfate	1030		mg/L	40	3.81	20.0	EPA 300.0	08/15 13:10	08/15 14:56	PK
Total Dissolved Solids	9780		mg/L	4	40.0	120	SM 2540C	08/16 10:03	08/18 10:00	LE

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 8/24/2022
Work Order # 22H0497
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H0497-07
Client Sample ID: SW-106A
Matrix: Water

Collection Date: 08/10/22 08:57
Received Date: 08/11/22 10:35
Collected By: Jason Gross

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	6.20	15.0	EPA 200.7/3010	08/12 09:30	08/12 11:31	MAZ
Arsenic	ND	U	ug/L	1	3.96	10.0	EPA 200.7/3010	08/12 09:30	08/12 11:31	MAZ
Barium	16.3		ug/L	1	0.0962	1.00	EPA 200.7/3010	08/12 09:30	08/12 11:31	MAZ
Beryllium	ND	U	ug/L	1	0.107	1.00	EPA 200.7/3010	08/12 09:30	08/12 11:31	MAZ
Boron	41.8		ug/L	1	0.616	10.0	EPA 200.7/3010	08/12 09:30	08/12 11:31	MAZ
Cadmium	ND	U	ug/L	1	0.217	1.00	EPA 200.7/3010	08/12 09:30	08/12 11:31	MAZ
Calcium	9700		ug/L	1	5.96	50.0	EPA 200.7/3010	08/12 09:30	08/12 11:31	MAZ
Chromium	1.10	I	ug/L	1	0.513	5.00	EPA 200.7/3010	08/12 09:30	08/12 11:31	MAZ
Cobalt	ND	U	ug/L	1	0.354	1.00	EPA 200.7/3010	08/12 09:30	08/12 11:31	MAZ
Lead	ND	U	ug/L	1	1.93	10.0	EPA 200.7/3010	08/12 09:30	08/12 11:31	MAZ
Lithium	ND	U	ug/L	1	4.74	25.0	EPA 200.7/3010	08/12 13:30	08/17 11:30	JF
Magnesium	2210		ug/L	1	2.48	20.0	EPA 200.7/3010	08/12 09:30	08/12 11:31	MAZ
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	08/15 13:20	08/16 11:52	JF
Molybdenum	ND	U	ug/L	1	1.43	10.0	EPA 200.7/3010	08/12 09:30	08/12 11:31	MAZ
Potassium	4660		ug/L	1	10.9	50.0	EPA 200.7/3010	08/12 09:30	08/12 11:31	MAZ
Selenium	ND	U	ug/L	1	4.39	15.0	EPA 200.7/3010	08/12 09:30	08/12 11:31	MAZ
Sodium	2390		ug/L	1	521	2000	EPA 200.7/3010	08/12 09:30	08/12 11:31	MAZ
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	08/12 09:30	08/12 11:31	MAZ
Titanium	51.2		ug/L	1	0.358	1.00	EPA 200.7/3010	08/12 09:30	08/12 11:31	MAZ

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 8/24/2022
Work Order # 22H0497
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H0497-08
Client Sample ID: SW-106B
Matrix: Water

Collection Date: 08/10/22 08:57
Received Date: 08/11/22 10:35
Collected By: Jason Gross

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	11.1		mg/L	1	2.49	7.46	EPA 310.2	08/17 19:12	08/17 19:12	OC
Bicarbonate	11.1		mg/L	1	2.49	7.46	EPA 310.2	08/17 19:12	08/17 19:12	OC
Chloride	1.73		mg/L	1	0.126	0.500	EPA 300.0	08/11 15:10	08/11 21:53	PK
Fluoride	ND	J3, U	mg/L	1	0.00520	0.0250	EPA 300.0	08/11 15:10	08/11 21:53	PK
Sulfate	23.2		mg/L	1	0.0953	0.500	EPA 300.0	08/11 15:10	08/11 21:53	PK
Total Dissolved Solids	76.0		mg/L	2	20.0	60.0	SM 2540C	08/16 10:03	08/18 10:00	LE

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 8/24/2022
Work Order # 22H0497
Project: CCR Monitoring Program
McIntosh Plant

Wet Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0446 - Default Prep GenChem										
Blank (22H0446-BLK1)				Prepared & Analyzed: 08/11/2022						
Fluoride	ND	0.0250	mg/L							U
Chloride	ND	0.500	"							U
Sulfate	ND	0.500	"							U
LCS (22H0446-BS1)				Prepared & Analyzed: 08/11/2022						
Fluoride	2.48	0.0250	mg/L	2.500		99	90-110			
Chloride	49.1	0.500	"	50.00		98	90-110			
Sulfate	49.3	0.500	"	50.00		99	90-110			
Duplicate (22H0446-DUP1)		**Source: 22H0457-04**		Prepared & Analyzed: 08/11/2022						
Fluoride	0.229	0.0250	mg/L		0.232			1	20	
Chloride	33.0	0.500	"		33.1			0.1	20	
Sulfate	8.78	0.500	"		8.82			0.5	20	
Matrix Spike (22H0446-MS1)		**Source: 22H0457-04**		Prepared & Analyzed: 08/11/2022						
Fluoride	2.48	0.0250	mg/L	2.500	0.232	90	90-110			
Chloride	79.1	0.500	"	50.00	33.1	92	90-110			
Sulfate	58.6	0.500	"	50.00	8.82	100	90-110			
Matrix Spike (22H0446-MS2)		**Source: 22H0497-08**		Prepared & Analyzed: 08/11/2022						
Fluoride	2.80	0.0250	mg/L	2.500	ND	112	90-110			J3
Chloride	51.5	0.500	"	50.00	1.73	100	90-110			
Sulfate	71.6	0.500	"	50.00	23.2	97	90-110			
Batch 22H0524 - Default Prep GenChem										
Blank (22H0524-BLK1)				Prepared: 08/15/2022 Analyzed: 08/16/2022						
Sulfate	ND	0.500	mg/L							U
Chloride	ND	0.500	"							U

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 8/24/2022
Work Order # 22H0497
Project: CCR Monitoring Program
McIntosh Plant

Wet Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0524 - Default Prep GenChem										
LCS (22H0524-BS1)				Prepared & Analyzed: 08/15/2022						
Sulfate	49.4	0.500	mg/L	50.00		99	90-110			
Chloride	49.2	0.500	"	50.00		98	90-110			
Duplicate (22H0524-DUP1)	**Source: 22H0597-01**			Prepared & Analyzed: 08/15/2022						
Sulfate	11.2	0.500	mg/L		11.3			1	20	
Chloride	36.3	0.500	"		36.7			1	20	
Matrix Spike (22H0524-MS1)	**Source: 22H0597-01**			Prepared & Analyzed: 08/15/2022						
Chloride	82.9	0.500	mg/L	50.00	36.7	92	90-110			
Sulfate	60.6	0.500	"	50.00	11.3	99	90-110			
Matrix Spike (22H0524-MS2)	**Source: 22H0636-01**			Prepared & Analyzed: 08/15/2022						
Chloride	131	1.00	mg/L	100.0	31.9	100	90-110			
Sulfate	110	1.00	"	100.0	9.40	101	90-110			
Batch 22H0598 - Default Prep GenChem										
Blank (22H0598-BLK1)				Prepared: 08/16/2022 Analyzed: 08/18/2022						
Total Dissolved Solids	ND	30.0	mg/L							U
LCS (22H0598-BS1)				Prepared: 08/16/2022 Analyzed: 08/18/2022						
Total Dissolved Solids	512	120	mg/L	500.0		102	80-120			
Duplicate (22H0598-DUP1)	**Source: 22H0497-06**			Prepared: 08/16/2022 Analyzed: 08/18/2022						
Total Dissolved Solids	9840	120	mg/L		9780			0.693	20	
Duplicate (22H0598-DUP2)	**Source: 22H0542-04**			Prepared: 08/16/2022 Analyzed: 08/18/2022						
Total Dissolved Solids	1680	120	mg/L		1660			0.957	20	

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 8/24/2022
Work Order # 22H0497
Project: CCR Monitoring Program
McIntosh Plant

Wet Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0625 - Default Prep GenChem										
Blank (22H0625-BLK1)				Prepared & Analyzed: 08/17/2022						
Total Alkalinity	ND	7.46	mg/L							U
LCS (22H0625-BS1)				Prepared & Analyzed: 08/17/2022						
Total Alkalinity	237	7.46	mg/L	250.0		95	90-110			
Duplicate (22H0625-DUP1)	**Source: 22H0448-03**			Prepared & Analyzed: 08/17/2022						
Total Alkalinity	37.0	7.46	mg/L		37.2			0.5	20	
Matrix Spike (22H0625-MS1)	**Source: 22H0448-03**			Prepared & Analyzed: 08/17/2022						
Total Alkalinity	266	7.46	mg/L	250.0	37.2	92	90-110			
Matrix Spike (22H0625-MS2)	**Source: 22H0497-08**			Prepared & Analyzed: 08/17/2022						
Total Alkalinity	255	7.46	mg/L	250.0	11.1	98	90-110			

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 8/24/2022
Work Order # 22H0497
Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0059 - EPA 3010A										
Blank (22H0059-BLK1)				Prepared & Analyzed: 08/12/2022						
Boron	ND	10.0	ug/L							U
Cadmium	ND	1.00	"							U
Calcium	ND	50.0	"							U
Arsenic	ND	10.0	"							U
Chromium	ND	5.00	"							U
Titanium	ND	1.00	"							U
Antimony	ND	15.0	"							U
Barium	ND	1.00	"							U
Beryllium	ND	1.00	"							U
Selenium	ND	15.0	"							U
Cobalt	ND	1.00	"							U
Sodium	ND	2000	"							U
Thallium	ND	4.00	"							U
Potassium	ND	50.0	"							U
Lead	ND	10.0	"							U
Molybdenum	ND	10.0	"							U
Magnesium	ND	20.0	"							U
LCS (22H0059-BS1)				Prepared & Analyzed: 08/12/2022						
Boron	496.2	10.0	ug/L	500.0		99.2	85-115			
Cadmium	491.6	1.00	"	500.0		98.3	85-115			
Calcium	26200	50.0	"	25500		103	85-115			
Chromium	478.4	5.00	"	500.0		95.7	85-115			
Arsenic	492	10.0	"	500.0		98.3	85-115			
Titanium	486.7	1.00	"	500.0		97.3	85-115			
Antimony	486.2	15.0	"	500.0		97.2	85-115			
Barium	472.9	1.00	"	500.0		94.6	85-115			
Beryllium	504.1	1.00	"	500.0		101	85-115			
Sodium	24100	2000	"	25500		94.3	85-115			
Potassium	23000	50.0	"	25500		90.3	85-115			
Selenium	508.5	15.0	"	500.0		102	85-115			
Thallium	465.0	4.00	"	500.0		93.0	85-115			

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 8/24/2022

Work Order # 22H0497

Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0059 - EPA 3010A										
LCS (22H0059-BS1)				Prepared & Analyzed: 08/12/2022						
Molybdenum	490.7	10.0	ug/L	500.0		98.1	85-115			
Lead	476	10.0	"	500.0		95.2	85-115			
Magnesium	468	20.0	"	500.0		93.7	85-115			
Cobalt	474.9	1.00	"	500.0		95.0	85-115			
Matrix Spike (22H0059-MS1)		**Source: 22H0502-06**		Prepared & Analyzed: 08/12/2022						
Boron	539.1	10.0	ug/L	500.0	41.60	99.5	70-130			
Cadmium	475.4	1.00	"	500.0	ND	95.1	70-130			
Calcium	102000	50.0	"	25500	78100	95.2	70-130			
Chromium	488.2	5.00	"	500.0	ND	97.6	70-130			
Titanium	493.7	1.00	"	500.0	ND	98.7	70-130			
Arsenic	494	10.0	"	500.0	ND	98.8	70-130			
Beryllium	496.0	1.00	"	500.0	ND	99.2	70-130			
Barium	490.0	1.00	"	500.0	16.20	94.8	70-130			
Antimony	540.0	15.0	"	500.0	ND	108	70-130			
Potassium	32700	50.0	"	25500	6540	103	70-130			
Selenium	486.4	15.0	"	500.0	ND	97.3	70-130			
Sodium	54800	2000	"	25500	28000	105	70-130			
Thallium	460.3	4.00	"	500.0	ND	92.1	70-130			
Cobalt	478.3	1.00	"	500.0	ND	95.7	70-130			
Lead	470	10.0	"	500.0	ND	94.1	70-130			
Magnesium	7220	20.0	"	500.0	6820	80.2	70-130			
Molybdenum	509.3	10.0	"	500.0	ND	102	70-130			
Matrix Spike Dup (22H0059-MSD1)		**Source: 22H0502-06**		Prepared & Analyzed: 08/12/2022						
Boron	539.8	10.0	ug/L	500.0	41.60	99.6	70-130	0.141	20	
Cadmium	476.2	1.00	"	500.0	ND	95.2	70-130	0.168	20	
Calcium	102000	50.0	"	25500	78100	92.6	70-130	2.74	20	
Beryllium	492.9	1.00	"	500.0	ND	98.6	70-130	0.627	20	
Molybdenum	510.6	10.0	"	500.0	ND	102	70-130	0.255	20	
Chromium	488.6	5.00	"	500.0	ND	97.7	70-130	0.0819	20	
Antimony	538.7	15.0	"	500.0	ND	108	70-130	0.241	20	

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 8/24/2022

Work Order # 22H0497

Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0059 - EPA 3010A										
Matrix Spike Dup (22H0059-MSD1)	**Source: 22H0502-06**			Prepared & Analyzed: 08/12/2022						
Arsenic	495	10.0	ug/L	500.0	ND	99.0	70-130	0.182	20	
Barium	491.3	1.00	"	500.0	16.20	95.0	70-130	0.274	20	
Potassium	32800	50.0	"	25500	6540	103	70-130	0.348	20	
Sodium	54800	2000	"	25500	28000	105	70-130	0.235	20	
Titanium	495.1	1.00	"	500.0	ND	99.0	70-130	0.283	20	
Cobalt	479.3	1.00	"	500.0	ND	95.9	70-130	0.209	20	
Selenium	488.6	15.0	"	500.0	ND	97.7	70-130	0.451	20	
Lead	472	10.0	"	500.0	ND	94.4	70-130	0.297	20	
Magnesium	7240	20.0	"	500.0	6820	85.5	70-130	6.44	20	
Thallium	461.6	4.00	"	500.0	ND	92.3	70-130	0.282	20	
Batch 22H0069 - EPA 245.1/245.2 Prep										
Blank (22H0069-BLK1)				Prepared: 08/15/2022 Analyzed: 08/16/2022						
Mercury	ND	1.00	ug/L							U
LCS (22H0069-BS1)				Prepared: 08/15/2022 Analyzed: 08/16/2022						
Mercury	10.0	1.00	ug/L	10.00		100	85-115			
Matrix Spike (22H0069-MS1)	**Source: 22H0438-01**			Prepared: 08/15/2022 Analyzed: 08/16/2022						
Mercury	9.27	1.00	ug/L	10.00	ND	93	70-130			
Matrix Spike Dup (22H0069-MSD1)	**Source: 22H0438-01**			Prepared: 08/15/2022 Analyzed: 08/16/2022						
Mercury	9.46	1.00	ug/L	10.00	ND	95	70-130	2	20	
Batch 22H0076 - EPA 3010A										
Blank (22H0076-BLK1)				Prepared: 08/12/2022 Analyzed: 08/17/2022						
Lithium	ND	25.0	ug/L							U

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 8/24/2022
Work Order # 22H0497
Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0076 - EPA 3010A										
LCS (22H0076-BS1)				Prepared & Analyzed: 08/17/2022						
Lithium	2640	25.0	ug/L	2500		105	85-115			
Matrix Spike (22H0076-MS1)	**Source: 22H0497-07**			Prepared: 08/12/2022 Analyzed: 08/17/2022						
Lithium	2620	25.0	ug/L	2500	ND	105	75-125			
Matrix Spike (22H0076-MS2)	**Source: 22H0723-01**			Prepared & Analyzed: 08/17/2022						
Lithium	2620	25.0	ug/L	2500	ND	105	75-125			
Matrix Spike Dup (22H0076-MSD1)	**Source: 22H0497-07**			Prepared: 08/12/2022 Analyzed: 08/17/2022						
Lithium	2600	25.0	ug/L	2500	ND	104	75-125	0.5	20	
Matrix Spike Dup (22H0076-MSD2)	**Source: 22H0723-01**			Prepared & Analyzed: 08/17/2022						
Lithium	2610	25.0	ug/L	2500	ND	104	75-125	0.5	20	

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

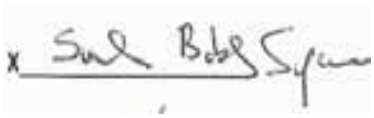
Report Printed: 8/24/2022
Work Order # 22H0497
Project: CCR Monitoring Program
McIntosh Plant

Notes and Definitions

U	Indicated that the compound was analyzed for but not detected. This shall be used to indicate that the specific component was not detected. The value associated with the qualifier shall be the laboratory method detection limit.
J3	The matrix spike recovery outside method acceptance limits indicating matrix interference.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the detection limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
N.O.O.	No Odor Observed
REP	Field parameter measured by client
V	Indicated that the analyte was detected in both the sample and the associated method blank.
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
Z	Too many colonies were present for accurate counting.
SUB	Work performed by outside (subcontracted) labs denoted by SUB in analyst field.

QC=Qualifier Codes as defined by DEP 62-160
Unless indicated, soil results are reported on actual (wet) weight basis.
The Color SM2120B method is reported as (Color / pH)
Legionella analyzed under CDC acreditation program
Dilution factors >= 1000 are abreviated using k=1000 and M=1000000
Field parameters are not NELAP acredited.
Results relate only to this sample.

Suresh (Bobby) Supan - CSM



Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification# E86006

All NELAP certified analysis are performed in accordance with Chapter 64E-1 Florida Administrative code, which has been determined to be equivalent to NELAC standards. Analysis certified by programs other than NELAP are designated with a "~".

CHAIN OF CUSTODY RECORD

SUBMISSION # 22 H04?6

Logged into LIMS by: C 0497

Florida Spectrum Environmental Services, Inc.

Doc: COC-Approx Form
Date: 1/26-1?

1460 W McNab Road Ft Lauderdale FL 33309 — Tel: (954) 978-6400 — Fax: (954) 978-2233
1112 NW Park Street, Okeechobee, FL 34972 — Tel: (863) 763-3336 — Fax: (863) 763-1544
630 Indian Street Savannah, GA 31401 — Tel: (912) 238-5050 — Fax (912) 234-4815
528 Gooch Road Fort Meade FL 33841 — Tel. (863) 285-8145 — Fax (863) 285-7030
1010 Harden Blvd = 101, Lakeland, FL 33803 — Tel: (863) 686-4271 — Fax (863) 686-4389

DUE DATE Requested

RUSH RESERVATION #

Rush Surcharges apply

Report to: Lakeland Electric
Report to Address: 3030 East Lake Parker Drive, Lakeland FL 33805

Invoice to: Lakeland Electric
Purchase Order # 289273
Invoice to Address: 501 East Lemon Street, Lakeland FL 33801

Project Name and/or Number: July 2022 CCR Monitoring Program
Site Location: McIntosh Plant

Project Mgr: Thomas Johnston
Phone: 863-834-6623
Fax:
Email: Thomas.Johnston@lakelandelectric.com

Sampler Name (printed): Cross Jason
Sampler Signature: [signature]

ORDER # Lab Control Number (Shaded Areas For Laboratory Use Only)	Sample ID	Date Sampled	Time Sampled	Matrix (DW SW GW SED S EFF HW BIO SA OIL X)	Bottle & Pres Combo Codes	Number of Containers Received & NELAC Letter Suffixes # A-Z	Appendix III Metals	Appendix IV Metals	GC Suite Metals	App III - CL, F, SO_4, TDS	GC Suite Bicarb, T-Alk	TEMP-C	PH	COND	CHLOR
01	CCR-1A	8/10/2022	1006	GW	TH		X	X							
02	CCR-1B	8/10/2022	1006	GW	TU					X					
03	CCR-2A	8/10/2022	12:52	GW	TH		X	X							
04	CCR-2B	8/10/2022	12:52	GW	TU					X					
05	CCR-4A	8/10/2022	1359	GW	TH		x	x	x						
06	CCR-4B	8/10/2022	1359	GW	TU					x	x				
07	SW-106A	8/10/2022	657	GW	TH		x	x	x						
08	SW-106B	8/10/2022	657	GW	TU					x	x				

Total

Special Comments: 5/1 [illegible]

"I waive NELAC protocol" (sign here) >

Deliverables — QA/QC Report Needed? Yes No (additional charge)

SAMPLE CUSTODY AND TRANSFER SIGNATURES

#		Signature	Date / Time
1	Relinquished by:	[signature]	08/10/22 1520
1	Received by:	[signature] FSE	8.10.22 1525
2	Relinquished by:	[signature]	
2	Received by:	[signature] FSE	8/11/22 10:25
3	Relinquished by:		
3	Received by:		

Sample Custody & Field Comments
Received on Ice: (Y) N
Temp as received 1.6 C
Custody Seals? Y N
R 9 ______ GUN-1 E(630)
FIELD TIME:
Sampling ____ hr Pick up ____ hr
Other Charges

Bottle Type
A- liter amber
B-Bacteria bag/bottle
F-500 ml
L-liter bottle
S-Soil jar
T-250 ml
V-40 ml vial
W-wide mouth
X-other
O-125ml
H-Plastic Amber
TED-Tedlar Air Bag

Preservatives
A-Ascorbic acid
C-HCL
Cu-$CuSO_4$
H-HNO_3
M-MCAB
N-NaOH
NH_4-NH_4CL
Hex- Hex.Cr. Buffer
EDA-Ethylene Diamine
P-H_3PO_4
S-H_2SO_4
T-$Na_2S_2O_3$-H_2O
U-Unpreserved
DI-DI Water
Z-zinc acetate

www.flenviro.com — COC Page ___ of ___

CCR Monitoring Program - 2021
Byproduct Storage Area
C.D. McIntosh Plant

Well ID	Well Type	Historical GWPS exceedances	SSL?	Jul-21 & Jan-22 Monitoring?	Rationale	Parameters
CCR-1	Background	Above background	NO	YES	Ongoing Assessment Monitoring	Appendix III, IV
CCR-2	Background	Above background	NO	YES	Ongoing Assessment Monitoring	Appendix III, IV
CCR-3	CCR Compliance	arsenic	NO	NO	No Further Monitoring Warranted	-
CCR-4	CCR Compliance	lithium thallium arsenic	NO NO NO	YES	Ongoing Assessment Monitoring	Appendix III, IV
CCR-5	CCR Compliance	lithium thallium	YES NO	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
CCR-6	CCR Compliance	lithium	YES	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
CCR-7	CCR Compliance	arsenic lithium	NO NO	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
CCR-8	CCR Compliance	arsenic	NO	YES	Ongoing Assessment Monitoring	Appendix III, IV
CCR-9	CCR Compliance	arsenic lithium thallium	NO YES NO	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
CCR-10	CCR Compliance	No GWPS exceedances	NO	NO	No Further Monitoring Warranted	--
CCR-11	CCR Compliance	arsenic	YES	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
CCR-12	CCR Compliance	arsenic lithium thallium	YES NO NO	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
CCR-13	CCR Compliance	lithium	YES	YES	Ongoing Assessment Monitoring	Appendix III, IV
CCR-14	CCR Compliance	No GWPS exceedances	NO	NO	No Further Monitoring Warranted	--
CCR-15	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-4	Appendix III, IV, GC suite
CCR-16	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-5	Appendix III, IV, GC suite
CCR-17	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-6	Appendix III, IV, GC suite
CCR-18	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-7	Appendix III, IV, GC suite
CCR-19	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-9	Appendix III, IV, GC suite
CCR-20	Nature & Extent	NA	NA	YES	Evaluate arsenic mobility downgradient CCR-11	Appendix III, IV, GC suite
CCR-21	Nature & Extent	NA	NA	YES	Evaluate arsenic mobility downgradient CCR-12	Appendix III, IV, GC suite
CCR-22	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-13	Appendix III, IV, GC suite
CCR-23	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-13	Appendix III, IV, GC suite
SW-106	Nature & Extent	NA	NA	YES	Evaluate GWPS compliance at downgradient property boundary	Appendix III, IV, GC suite

Notes:
1. NA = not applicable
2. GWPS = groundwater protection standards
3. SSL = statistically significant level
4. Appendix III = boron, calcium, chloride, fluoride, pH, sulfate, total dissolved solids [illegible]
5. Appendix IV = antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, fluoride, lead, lithium, mercury, molybdenum, selenium, thallium [illegible]
6. GC Suite = [illegible]

Geosyntec consultants

1460 West McNab Road
Fort Lauderdale, FL 33309
1-800-ANALYTE Phone
(954) 978-6400 Phone
(954) 978-2233 Fax

NELAP Certificate No. E86006

01 September 2022
Lab Work Order (COC): 22H0860

Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland, FL 33805

RE: July 2022 **CCR Monitoring Program**

Project Location: McIntosh Plant

Dear Thomas Johnston:

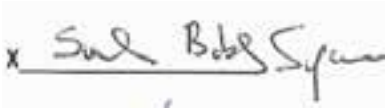
This report details the analytical results of samples collected at the above-referenced project location. These samples were received by Florida Spectrum Environmental Services at **08/19/2022 10:20**.

All Analyses were performed according to the TNI/NELAP standard unless indicated by a "~" on the report.

Your samples will be retained by Florida Spectrum Environmental for a period of at least 30 days following sample receipt or until the longest of the preparation and/or analytical hold times expires, whichever is shorter. After that time, they will be properly disposed without further notice, unless there exists an explicit contractual agreement to the contrary. We reserve the right to return any unused samples, extracts, or related materials or solutions to you if we consider it necessary. Examples might include those samples identified as hazardous wastes, submissions where the sample sizes significantly exceed those required for analysis, samples containing controlled substances, etc.

We thank you for selecting Florida Spectrum Environmental to serve your analytical needs. Should you have any questions or require additional information regarding any of the information in this report, please feel free to contact us at any time. We appreciate the opportunity to be of service.

Florida Spectrum Environmental Inc.



Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022
Work Order # 22H0860
Project: CCR Monitoring Program
McIntosh Plant

DETECTED ANALYTE SUMMARY

CCR-15A	22H0860-01	Water	Sodium	7830	ug/L	8/18/2022	10:25
CCR-15A	22H0860-01	Water	Calcium	96000	ug/L	8/18/2022	10:25
CCR-15A	22H0860-01	Water	Boron	46.5	ug/L	8/18/2022	10:25
CCR-15A	22H0860-01	Water	Chromium	1.70	ug/L	8/18/2022	10:25
CCR-15A	22H0860-01	Water	Potassium	3570	ug/L	8/18/2022	10:25
CCR-15A	22H0860-01	Water	Magnesium	2560	ug/L	8/18/2022	10:25
CCR-15A	22H0860-01	Water	Barium	45.0	ug/L	8/18/2022	10:25
CCR-15B	22H0860-02	Water	Sulfate	264	mg/L	8/18/2022	10:25
CCR-15B	22H0860-02	Water	Chloride	24.3	mg/L	8/18/2022	10:25
CCR-15B	22H0860-02	Water	Total Dissolved Solids	412	mg/L	8/18/2022	10:25
CCR-15B	22H0860-02	Water	Fluoride	0.162	mg/L	8/18/2022	10:25
CCR-16A	22H0860-03	Water	Calcium	1300000	ug/L	8/18/2022	11:09
CCR-16A	22H0860-03	Water	Chromium	1.20	ug/L	8/18/2022	11:09
CCR-16A	22H0860-03	Water	Potassium	432000	ug/L	8/18/2022	11:09
CCR-16A	22H0860-03	Water	Sodium	480000	ug/L	8/18/2022	11:09
CCR-16A	22H0860-03	Water	Magnesium	18700	ug/L	8/18/2022	11:09
CCR-16A	22H0860-03	Water	Barium	125	ug/L	8/18/2022	11:09
CCR-16A	22H0860-03	Water	Boron	489	ug/L	8/18/2022	11:09
CCR-16B	22H0860-04	Water	Sulfate	994	mg/L	8/18/2022	11:09
CCR-16B	22H0860-04	Water	Total Alkalinity	2.97	mg/L	8/18/2022	11:09
CCR-16B	22H0860-04	Water	Fluoride	0.279	mg/L	8/18/2022	11:09
CCR-16B	22H0860-04	Water	Chloride	2900	mg/L	8/18/2022	11:09
CCR-16B	22H0860-04	Water	Total Dissolved Solids	6570	mg/L	8/18/2022	11:09
CCR-16B	22H0860-04	Water	Bicarbonate	2.97	mg/L	8/18/2022	11:09

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022

Work Order # 22H0860

Project: CCR Monitoring Program
McIntosh Plant

DETECTED ANALYTE SUMMARY

Client Sample ID	Laboratory ID	Matrix	Analyte	Result	Units	Collection Date	Collection Time
CCR-17A	22H0860-05	Water	Magnesium	11300	ug/L	8/18/2022	11:52
CCR-17A	22H0860-05	Water	Molybdenum	4.00	ug/L	8/18/2022	11:52
CCR-17A	22H0860-05	Water	Chromium	1.00	ug/L	8/18/2022	11:52
CCR-17A	22H0860-05	Water	Sodium	20100	ug/L	8/18/2022	11:52
CCR-17A	22H0860-05	Water	Arsenic	9.50	ug/L	8/18/2022	11:52
CCR-17A	22H0860-05	Water	Barium	3.20	ug/L	8/18/2022	11:52
CCR-17A	22H0860-05	Water	Potassium	25200	ug/L	8/18/2022	11:52
CCR-17A	22H0860-05	Water	Calcium	173000	ug/L	8/18/2022	11:52
CCR-17A	22H0860-05	Water	Boron	147	ug/L	8/18/2022	11:52
CCR-17B	22H0860-06	Water	Bicarbonate	218	mg/L	8/18/2022	11:52
CCR-17B	22H0860-06	Water	Fluoride	0.116	mg/L	8/18/2022	11:52
CCR-17B	22H0860-06	Water	Sulfate	109	mg/L	8/18/2022	11:52
CCR-17B	22H0860-06	Water	Total Alkalinity	218	mg/L	8/18/2022	11:52
CCR-17B	22H0860-06	Water	Total Dissolved Solids	748	mg/L	8/18/2022	11:52
CCR-17B	22H0860-06	Water	Chloride	137	mg/L	8/18/2022	11:52
CCR-19A	22H0860-07	Water	Sodium	116000	ug/L	8/18/2022	14:13
CCR-19A	22H0860-07	Water	Potassium	103000	ug/L	8/18/2022	14:13
CCR-19A	22H0860-07	Water	Calcium	406000	ug/L	8/18/2022	14:13
CCR-19A	22H0860-07	Water	Barium	54.4	ug/L	8/18/2022	14:13
CCR-19A	22H0860-07	Water	Magnesium	29800	ug/L	8/18/2022	14:13
CCR-19A	22H0860-07	Water	Boron	301	ug/L	8/18/2022	14:13
CCR-19A	22H0860-07	Water	Chromium	1.40	ug/L	8/18/2022	14:13
CCR-19B	22H0860-08	Water	Chloride	676	mg/L	8/18/2022	14:13
CCR-19B	22H0860-08	Water	Fluoride	1.29	mg/L	8/18/2022	14:13

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022
Work Order # 22H0860
Project: CCR Monitoring Program
McIntosh Plant

DETECTED ANALYTE SUMMARY

Client Sample ID	Laboratory ID	Matrix	Analyte	Result	Units	Collection Date	Collection Time
CCR-19B	22H0860-08	Water	Total Alkalinity	9.90	mg/L	8/18/2022	14:13
CCR-19B	22H0860-08	Water	Bicarbonate	9.89	mg/L	8/18/2022	14:13
CCR-19B	22H0860-08	Water	Total Dissolved Solids	2340	mg/L	8/18/2022	14:13
CCR-19B	22H0860-08	Water	Sulfate	629	mg/L	8/18/2022	14:13

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022
Work Order # 22H0860
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H0860-01
Client Sample ID: CCR-15A
Matrix: Water

Collection Date: 08/18/22 10:25
Received Date: 08/19/22 10:20
Collected By: Jason Gross

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Total Recoverable Metals by EPA 200 Series Methods										
Antimony	ND	U	ug/L	1	6.20	15.0	EPA 200.7/3010	08/23 09:00	08/23 12:18	MAZ
Arsenic	ND	U	ug/L	1	3.96	10.0	EPA 200.7/3010	08/23 09:00	08/23 12:18	MAZ
Barium	45.0		ug/L	1	0.0962	1.00	EPA 200.7/3010	08/23 09:00	08/23 12:18	MAZ
Beryllium	ND	U	ug/L	1	0.107	1.00	EPA 200.7/3010	08/23 09:00	08/23 12:18	MAZ
Boron	46.5		ug/L	1	0.616	10.0	EPA 200.7/3010	08/23 09:00	08/23 12:18	MAZ
Cadmium	ND	U	ug/L	1	0.217	1.00	EPA 200.7/3010	08/23 09:00	08/23 12:18	MAZ
Calcium	96000		ug/L	1	5.96	50.0	EPA 200.7/3010	08/23 09:00	08/23 12:18	MAZ
Chromium	1.70	I	ug/L	1	0.513	5.00	EPA 200.7/3010	08/23 09:00	08/23 12:18	MAZ
Cobalt	ND	U	ug/L	1	0.354	1.00	EPA 200.7/3010	08/23 09:00	08/23 12:18	MAZ
Lead	ND	U	ug/L	1	1.93	10.0	EPA 200.7/3010	08/23 09:00	08/23 12:18	MAZ
Lithium	ND	U	ug/L	1	4.74	25.0	EPA 200.7/3010	08/25 10:41	08/25 12:26	JF
Magnesium	2560		ug/L	1	2.48	20.0	EPA 200.7/3010	08/23 09:00	08/23 12:18	MAZ
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	08/22 14:20	08/23 12:29	JF
Molybdenum	ND	U	ug/L	1	1.43	10.0	EPA 200.7/3010	08/23 09:00	08/23 12:18	MAZ
Potassium	3570		ug/L	1	10.9	50.0	EPA 200.7/3010	08/23 09:00	08/23 12:18	MAZ
Selenium	ND	U	ug/L	1	4.39	15.0	EPA 200.7/3010	08/23 09:00	08/23 12:18	MAZ
Sodium	7830		ug/L	1	521	2000	EPA 200.7/3010	08/23 09:00	08/23 12:18	MAZ
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	08/23 09:00	08/23 12:18	MAZ
Titanium	ND	U	ug/L	1	0.358	1.00	EPA 200.7/3010	08/23 09:00	08/23 12:18	MAZ

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022
Work Order # 22H0860
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H0860-02
Client Sample ID: CCR-15B
Matrix: Water

Collection Date: 08/18/22 10:25
Received Date: 08/19/22 10:20
Collected By: Jason Gross

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	ND	U	mg/L	1	2.49	7.46	EPA 310.2	08/25 19:12	08/25 19:12	OC
Bicarbonate	ND	U	mg/L	1	2.49	7.46	EPA 310.2	08/25 19:12	08/25 19:12	OC
Chloride	24.3		mg/L	2	0.252	1.00	EPA 300.0	08/22 13:00	08/22 20:22	PK
Fluoride	0.162		mg/L	2	0.0104	0.0500	EPA 300.0	08/22 13:00	08/22 20:22	PK
Sulfate	264		mg/L	5	0.476	2.50	EPA 300.0	08/22 13:00	08/23 11:38	PK
Total Dissolved Solids	412		mg/L	2	20.0	60.0	SM 2540C	08/24 21:00	08/27 10:25	HM

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022
Work Order # 22H0860
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H0860-03
Client Sample ID: CCR-16A
Matrix: Water

Collection Date: 08/18/22 11:09
Received Date: 08/19/22 10:20
Collected By: Jason Gross

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	6.20	15.0	EPA 200.7/3010	08/23 09:00	08/23 12:19	MAZ
Arsenic	ND	U	ug/L	1	3.96	10.0	EPA 200.7/3010	08/23 09:00	08/23 12:19	MAZ
Barium	125		ug/L	1	0.0962	1.00	EPA 200.7/3010	08/23 09:00	08/23 12:19	MAZ
Beryllium	ND	U	ug/L	1	0.107	1.00	EPA 200.7/3010	08/23 09:00	08/23 12:19	MAZ
Boron	489		ug/L	1	0.616	10.0	EPA 200.7/3010	08/23 09:00	08/23 12:19	MAZ
Cadmium	ND	U	ug/L	1	0.217	1.00	EPA 200.7/3010	08/23 09:00	08/23 12:19	MAZ
Calcium	1300000		ug/L	50	298	2500	EPA 200.7/3010	08/23 09:00	08/23 15:33	MAZ
Chromium	1.20	I	ug/L	1	0.513	5.00	EPA 200.7/3010	08/23 09:00	08/23 12:19	MAZ
Cobalt	ND	U	ug/L	1	0.354	1.00	EPA 200.7/3010	08/23 09:00	08/23 12:19	MAZ
Lead	ND	U	ug/L	1	1.93	10.0	EPA 200.7/3010	08/23 09:00	08/23 12:19	MAZ
Lithium	ND	U	ug/L	1	4.74	25.0	EPA 200.7/3010	08/25 10:41	08/25 12:29	JF
Magnesium	18700		ug/L	50	124	1000	EPA 200.7/3010	08/23 09:00	08/23 15:33	MAZ
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	08/22 14:20	08/23 12:31	JF
Molybdenum	ND	U	ug/L	1	1.43	10.0	EPA 200.7/3010	08/23 09:00	08/23 12:19	MAZ
Potassium	432000		ug/L	50	545	2500	EPA 200.7/3010	08/23 09:00	08/23 15:33	MAZ
Selenium	ND	U	ug/L	1	4.39	15.0	EPA 200.7/3010	08/23 09:00	08/23 12:19	MAZ
Sodium	480000		ug/L	50	26000	100000	EPA 200.7/3010	08/23 09:00	08/23 15:33	MAZ
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	08/23 09:00	08/23 12:19	MAZ

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022
Work Order # 22H0860
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H0860-04
Client Sample ID: CCR-16B
Matrix: Water

Collection Date: 08/18/22 11:09
Received Date: 08/19/22 10:20
Collected By: Jason Gross

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	2.97	J3I	mg/L	1	2.49	7.46	EPA 310.2	08/25 19:12	08/25 19:12	OC
Bicarbonate	2.97	I	mg/L	1	2.49	7.46	EPA 310.2	08/25 19:12	08/25 19:12	OC
Chloride	2900		mg/L	40	5.04	20.0	EPA 300.0	08/22 16:00	08/22 22:17	PK
Fluoride	0.279		mg/L	5	0.0260	0.125	EPA 300.0	08/23 13:40	08/23 22:35	PK
Sulfate	994		mg/L	40	3.81	20.0	EPA 300.0	08/22 16:00	08/22 22:17	PK
Total Dissolved Solids	6570		mg/L	4	40.0	120	SM 2540C	08/24 21:00	08/27 10:25	HM

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022
Work Order # 22H0860
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H0860-05
Client Sample ID: CCR-17A
Matrix: Water

Collection Date: 08/18/22 11:52
Received Date: 08/19/22 10:20
Collected By: Jason Gross

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	6.20	15.0	EPA 200.7/3010	08/23 09:00	08/23 12:21	MAZ
Arsenic	9.50	I	ug/L	1	3.96	10.0	EPA 200.7/3010	08/23 09:00	08/23 12:21	MAZ
Barium	3.20		ug/L	1	0.0962	1.00	EPA 200.7/3010	08/23 09:00	08/23 12:21	MAZ
Beryllium	ND	U	ug/L	1	0.107	1.00	EPA 200.7/3010	08/23 09:00	08/23 12:21	MAZ
Boron	147		ug/L	1	0.616	10.0	EPA 200.7/3010	08/23 09:00	08/23 12:21	MAZ
Cadmium	ND	U	ug/L	1	0.217	1.00	EPA 200.7/3010	08/23 09:00	08/23 12:21	MAZ
Calcium	173000		ug/L	10	59.6	500	EPA 200.7/3010	08/23 09:00	08/23 15:35	MAZ
Chromium	1.00	I	ug/L	1	0.513	5.00	EPA 200.7/3010	08/23 09:00	08/23 12:21	MAZ
Cobalt	ND	U	ug/L	1	0.354	1.00	EPA 200.7/3010	08/23 09:00	08/23 12:21	MAZ
Lead	ND	U	ug/L	1	1.93	10.0	EPA 200.7/3010	08/23 09:00	08/23 12:21	MAZ
Lithium	ND	U	ug/L	1	4.74	25.0	EPA 200.7/3010	08/25 10:41	08/25 12:31	JF
Magnesium	11300		ug/L	10	24.8	200	EPA 200.7/3010	08/23 09:00	08/23 15:35	MAZ
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	08/22 14:20	08/23 12:34	JF
Molybdenum	4.00	I	ug/L	1	1.43	10.0	EPA 200.7/3010	08/23 09:00	08/23 12:21	MAZ
Potassium	25200		ug/L	1	10.9	50.0	EPA 200.7/3010	08/23 09:00	08/23 12:21	MAZ
Selenium	ND	U	ug/L	1	4.39	15.0	EPA 200.7/3010	08/23 09:00	08/23 12:21	MAZ
Sodium	20100		ug/L	1	521	2000	EPA 200.7/3010	08/23 09:00	08/23 12:21	MAZ
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	08/23 09:00	08/23 12:21	MAZ
Titanium	ND	U	ug/L	1	0.358	1.00	EPA 200.7/3010	08/23 09:00	08/23 12:21	MAZ

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022
Work Order # 22H0860
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H0860-06
Client Sample ID: CCR-17B
Matrix: Water

Collection Date: 08/18/22 11:52
Received Date: 08/19/22 10:20
Collected By: Jason Gross

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	218		mg/L	1	2.49	7.46	EPA 310.2	08/25 19:12	08/25 19:12	OC
Bicarbonate	218		mg/L	1	2.49	7.46	EPA 310.2	08/25 19:12	08/25 19:12	OC
Chloride	137		mg/L	2	0.252	1.00	EPA 300.0	08/22 16:00	08/22 22:33	PK
Fluoride	0.116		mg/L	2	0.0104	0.0500	EPA 300.0	08/22 16:00	08/22 22:33	PK
Sulfate	109		mg/L	2	0.191	1.00	EPA 300.0	08/22 16:00	08/22 22:33	PK
Total Dissolved Solids	748		mg/L	4	40.0	120	SM 2540C	08/24 21:00	08/27 10:25	HM

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022
Work Order # 22H0860
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H0860-07
Client Sample ID: CCR-19A
Matrix: Water

Collection Date: 08/18/22 14:13
Received Date: 08/19/22 10:20
Collected By: Jason Gross

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	6.20	15.0	EPA 200.7/3010	08/23 09:00	08/23 12:23	MAZ
Arsenic	ND	U	ug/L	1	3.96	10.0	EPA 200.7/3010	08/23 09:00	08/23 12:23	MAZ
Barium	54.4		ug/L	1	0.0962	1.00	EPA 200.7/3010	08/23 09:00	08/23 12:23	MAZ
Beryllium	ND	U	ug/L	1	0.107	1.00	EPA 200.7/3010	08/23 09:00	08/23 12:23	MAZ
Boron	301		ug/L	1	0.616	10.0	EPA 200.7/3010	08/23 09:00	08/23 12:23	MAZ
Cadmium	ND	U	ug/L	1	0.217	1.00	EPA 200.7/3010	08/23 09:00	08/23 12:23	MAZ
Calcium	406000		ug/L	10	59.6	500	EPA 200.7/3010	08/23 09:00	08/23 15:36	MAZ
Chromium	1.40	I	ug/L	1	0.513	5.00	EPA 200.7/3010	08/23 09:00	08/23 12:23	MAZ
Cobalt	ND	U	ug/L	1	0.354	1.00	EPA 200.7/3010	08/23 09:00	08/23 12:23	MAZ
Lead	ND	U	ug/L	1	1.93	10.0	EPA 200.7/3010	08/23 09:00	08/23 12:23	MAZ
Lithium	ND	U	ug/L	1	4.74	25.0	EPA 200.7/3010	08/25 10:41	08/25 12:34	JF
Magnesium	29800		ug/L	10	24.8	200	EPA 200.7/3010	08/23 09:00	08/23 15:36	MAZ
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	08/22 14:20	08/23 12:37	JF
Molybdenum	ND	U	ug/L	1	1.43	10.0	EPA 200.7/3010	08/23 09:00	08/23 12:23	MAZ
Potassium	103000		ug/L	10	109	500	EPA 200.7/3010	08/23 09:00	08/23 15:36	MAZ
Selenium	ND	U	ug/L	1	4.39	15.0	EPA 200.7/3010	08/23 09:00	08/23 12:23	MAZ
Sodium	116000		ug/L	10	5210	20000	EPA 200.7/3010	08/23 09:00	08/23 15:36	MAZ
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	08/23 09:00	08/23 12:23	MAZ
Titanium	ND	U	ug/L	1	0.358	1.00	EPA 200.7/3010	08/23 09:00	08/23 12:23	MAZ

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022
Work Order # 22H0860
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H0860-08
Client Sample ID: CCR-19B
Matrix: Water

Collection Date: 08/18/22 14:13
Received Date: 08/19/22 10:20
Collected By: Jason Gross

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	9.90		mg/L	1	2.49	7.46	EPA 310.2	08/25 19:12	08/25 19:12	OC
Bicarbonate	9.89		mg/L	1	2.49	7.46	EPA 310.2	08/25 19:12	08/25 19:12	OC
Chloride	676		mg/L	10	1.26	5.00	EPA 300.0	08/22 16:00	08/22 22:50	PK
Fluoride	1.29		mg/L	10	0.0520	0.250	EPA 300.0	08/22 16:00	08/22 22:50	PK
Sulfate	629		mg/L	10	0.953	5.00	EPA 300.0	08/22 16:00	08/22 22:50	PK
Total Dissolved Solids	2340		mg/L	4	40.0	120	SM 2540C	08/24 21:00	08/27 10:25	HM

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022
Work Order # 22H0860
Project: CCR Monitoring Program
McIntosh Plant

Wet Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0735 - Default Prep GenChem										
Blank (22H0735-BLK1)				Prepared & Analyzed: 08/22/2022						
Fluoride	ND	0.0250	mg/L							U
Chloride	ND	0.500	"							U
Sulfate	ND	0.500	"							U
LCS (22H0735-BS1)				Prepared & Analyzed: 08/22/2022						
Fluoride	2.48	0.0250	mg/L	2.500		99	90-110			
Chloride	49.0	0.500	"	50.00		98	90-110			
Sulfate	49.3	0.500	"	50.00		99	90-110			
Duplicate (22H0735-DUP1)	**Source: 22H0842-08**			Prepared & Analyzed: 08/22/2022						
Fluoride	0.204	0.0250	mg/L		0.218			7	20	
Chloride	28.9	0.500	"		28.8			0.08	20	
Sulfate	5.30	0.500	"		5.76			8	20	
Matrix Spike (22H0735-MS1)	**Source: 22H0842-08**			Prepared & Analyzed: 08/22/2022						
Fluoride	2.49	0.0250	mg/L	2.500	0.218	91	90-110			
Chloride	75.7	0.500	"	50.00	28.8	94	90-110			
Sulfate	56.0	0.500	"	50.00	5.76	100	90-110			
Matrix Spike (22H0735-MS2)	**Source: 22H0844-04**			Prepared & Analyzed: 08/22/2022						
Fluoride	2.54	0.0250	mg/L	2.500	0.249	92	90-110			
Sulfate	57.0	0.500	"	50.00	6.20	102	90-110			
Chloride	64.8	0.500	"	50.00	16.4	97	90-110			
Batch 22H0736 - Default Prep GenChem										
Blank (22H0736-BLK1)				Prepared & Analyzed: 08/22/2022						
Fluoride	ND	0.0250	mg/L							U
Sulfate	ND	0.500	"							U
Chloride	ND	0.500	"							U

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022
Work Order # 22H0860
Project: CCR Monitoring Program
McIntosh Plant

Wet Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0736 - Default Prep GenChem										
LCS (22H0736-BS1)				Prepared & Analyzed: 08/22/2022						
Fluoride	2.58	0.0250	mg/L	2.500		103	90-110			
Sulfate	49.5	0.500	"	50.00		99	90-110			
Chloride	49.3	0.500	"	50.00		99	90-110			
Duplicate (22H0736-DUP1)		**Source: 22H0935-01**		Prepared & Analyzed: 08/22/2022						
Fluoride	ND	0.0250	mg/L		ND				20	U
Chloride	5.60	0.500	"		5.61			0.1	20	
Sulfate	0.804	0.500	"		0.807			0.4	20	
Matrix Spike (22H0736-MS1)		**Source: 22H0935-01**		Prepared & Analyzed: 08/22/2022						
Fluoride	2.21	0.0250	mg/L	2.500	ND	88	90-110			J3
Chloride	54.9	0.500	"	50.00	5.61	99	90-110			
Sulfate	50.2	0.500	"	50.00	0.807	99	90-110			
Batch 22H0774 - Default Prep GenChem										
Blank (22H0774-BLK1)				Prepared & Analyzed: 08/23/2022						
Fluoride	ND	0.0250	mg/L							U
LCS (22H0774-BS1)				Prepared & Analyzed: 08/23/2022						
Fluoride	2.54	0.0250	mg/L	2.500		102	90-110			
Duplicate (22H0774-DUP1)		**Source: 22H0956-01**		Prepared & Analyzed: 08/23/2022						
Fluoride	0.0560	0.0250	mg/L		0.0600			7	20	
Matrix Spike (22H0774-MS1)		**Source: 22H0956-01**		Prepared & Analyzed: 08/23/2022						
Fluoride	2.66	0.0250	mg/L	2.500	0.0600	104	90-110			

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022
Work Order # 22H0860
Project: CCR Monitoring Program
McIntosh Plant

Wet Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0774 - Default Prep GenChem										
Matrix Spike (22H0774-MS2)		**Source: 22H0987-02**		Prepared & Analyzed: 08/23/2022						
Fluoride	2.29	0.0250	mg/L	2.500	0.0980	88	90-110			J3
Batch 22H0814 - Default Prep GenChem										
Blank (22H0814-BLK1)				Prepared: 08/24/2022 Analyzed: 08/27/2022						
Total Dissolved Solids	ND	30.0	mg/L							U
LCS (22H0814-BS1)				Prepared: 08/24/2022 Analyzed: 08/27/2022						
Total Dissolved Solids	504	120	mg/L	500.0		101	80-120			
Duplicate (22H0814-DUP1)		**Source: 22H0860-02**		Prepared: 08/24/2022 Analyzed: 08/27/2022						
Total Dissolved Solids	400	60.0	mg/L		412			2.96	20	
Duplicate (22H0814-DUP2)		**Source: 22H1011-04**		Prepared: 08/24/2022 Analyzed: 08/27/2022						
Total Dissolved Solids	4840	120	mg/L		4700			2.77	20	
Batch 22H0834 - Default Prep GenChem										
Blank (22H0834-BLK1)				Prepared & Analyzed: 08/25/2022						
Total Alkalinity	ND	7.46	mg/L							U
LCS (22H0834-BS1)				Prepared & Analyzed: 08/25/2022						
Total Alkalinity	240	7.46	mg/L	250.0		96	90-110			
Duplicate (22H0834-DUP1)		**Source: 22H0864-06**		Prepared & Analyzed: 08/25/2022						
Total Alkalinity	20.5	7.46	mg/L		20.4			0.5	20	

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022
Work Order # 22H0860
Project: CCR Monitoring Program
McIntosh Plant

Wet Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0834 - Default Prep GenChem										
Matrix Spike (22H0834-MS1)	**Source: 22H0864-06**			Prepared & Analyzed: 08/25/2022						
Total Alkalinity	261	7.46	mg/L	250.0	20.4	96	90-110			
Matrix Spike (22H0834-MS2)	**Source: 22H0860-04**			Prepared & Analyzed: 08/25/2022						
Total Alkalinity	210	7.46	mg/L	250.0	2.97	83	90-110			J3

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022

Work Order # 22H0860

Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0101 - EPA 245.1/245.2 Prep										
Blank (22H0101-BLK1)				Prepared: 08/22/2022 Analyzed: 08/23/2022						
Mercury	ND	1.00	ug/L							U
LCS (22H0101-BS1)				Prepared: 08/22/2022 Analyzed: 08/23/2022						
Mercury	10.5	1.00	ug/L	10.00		105	85-115			
Matrix Spike (22H0101-MS1)		**Source: 22H0848-01**		Prepared: 08/22/2022 Analyzed: 08/23/2022						
Mercury	7.10	1.00	ug/L	10.00	ND	71	70-130			
Matrix Spike Dup (22H0101-MSD1)		**Source: 22H0848-01**		Prepared: 08/22/2022 Analyzed: 08/23/2022						
Mercury	7.17	1.00	ug/L	10.00	ND	72	70-130	1	20	
Batch 22H0104 - EPA 3010A										
Blank (22H0104-BLK1)				Prepared & Analyzed: 08/23/2022						
Beryllium	ND	1.00	ug/L							U
Boron	ND	10.0	"							U
Cadmium	ND	1.00	"							U
Barium	ND	1.00	"							U
Antimony	ND	15.0	"							U
Arsenic	ND	10.0	"							U
Lead	ND	10.0	"							U
Selenium	ND	15.0	"							U
Calcium	ND	50.0	"							U
Thallium	ND	4.00	"							U
Titanium	ND	1.00	"							U
Sodium	ND	2000	"							U
Chromium	ND	5.00	"							U
Cobalt	ND	1.00	"							U
Magnesium	ND	20.0	"							U
Molybdenum	ND	10.0	"							U
Potassium	ND	50.0	"							U

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022
Work Order # 22H0860
Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0104 - EPA 3010A										
LCS (22H0104-BS1)				Prepared & Analyzed: 08/23/2022						
Boron	499.4	10.0	ug/L	500.0		99.9	85-115			
Beryllium	497.9	1.00	"	500.0		99.6	85-115			
Cadmium	492.5	1.00	"	500.0		98.5	85-115			
Barium	475.2	1.00	"	500.0		95.0	85-115			
Arsenic	495	10.0	"	500.0		99.0	85-115			
Antimony	496.1	15.0	"	500.0		99.2	85-115			
Calcium	26400	50.0	"	25500		104	85-115			
Selenium	502.8	15.0	"	500.0		101	85-115			
Sodium	24600	2000	"	25500		96.6	85-115			
Thallium	478.0	4.00	"	500.0		95.6	85-115			
Titanium	494.9	1.00	"	500.0		99.0	85-115			
Lead	486	10.0	"	500.0		97.2	85-115			
Chromium	486.9	5.00	"	500.0		97.4	85-115			
Cobalt	482.4	1.00	"	500.0		96.5	85-115			
Magnesium	478	20.0	"	500.0		95.6	85-115			
Molybdenum	494.6	10.0	"	500.0		98.9	85-115			
Potassium	23600	50.0	"	25500		92.7	85-115			
Matrix Spike (22H0104-MS1)	**Source: 22H0852-03**			Prepared & Analyzed: 08/23/2022						
Boron	24220	500	ug/L	25000	107.4	96.5	70-130			
Antimony	23520	750	"	25000	ND	94.1	70-130			
Beryllium	24140	50.0	"	25000	ND	96.6	70-130			
Barium	23140	50.0	"	25000	46.60	92.4	70-130			
Arsenic	24000	500	"	25000	ND	95.9	70-130			
Cadmium	23790	50.0	"	25000	ND	95.2	70-130			
Lead	23400	500	"	25000	ND	93.7	70-130			
Sodium	1610000	100000	"	1275000	397000	94.9	70-130			
Selenium	24200	750	"	25000	ND	96.8	70-130			
Thallium	22990	200	"	25000	ND	92.0	70-130			
Titanium	23960	50.0	"	25000	ND	95.8	70-130			
Chromium	23580	250	"	25000	ND	94.3	70-130			
Calcium	1410000	2500	"	1275000	141000	99.2	70-130			

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022
Work Order # 22H0860
Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0104 - EPA 3010A										
Matrix Spike (22H0104-MS1)		**Source: 22H0852-03**		Prepared & Analyzed: 08/23/2022						
Potassium	1200000	2500	ug/L	1275000	21600	92.7	70-130			
Magnesium	102000	1000	"	25000	81100	84.7	70-130			
Molybdenum	23980	500	"	25000	ND	95.9	70-130			
Cobalt	23420	50.0	"	25000	ND	93.7	70-130			
Matrix Spike Dup (22H0104-MSD1)		**Source: 22H0852-03**		Prepared & Analyzed: 08/23/2022						
Boron	24220	500	ug/L	25000	107.4	96.5	70-130	0.0207	20	
Beryllium	24040	50.0	"	25000	ND	96.1	70-130	0.436	20	
Barium	23010	50.0	"	25000	46.60	91.9	70-130	0.565	20	
Arsenic	24000	500	"	25000	ND	96.0	70-130	0.0625	20	
Antimony	24060	750	"	25000	ND	96.3	70-130	2.27	20	
Calcium	1400000	2500	"	1275000	141000	98.6	70-130	0.605	20	
Potassium	1200000	2500	"	1275000	21600	92.4	70-130	0.219	20	
Selenium	24160	750	"	25000	ND	96.6	70-130	0.145	20	
Cadmium	23690	50.0	"	25000	ND	94.8	70-130	0.421	20	
Sodium	1600000	100000	"	1275000	397000	94.6	70-130	0.324	20	
Thallium	22940	200	"	25000	ND	91.7	70-130	0.240	20	
Titanium	23970	50.0	"	25000	ND	95.9	70-130	0.0626	20	
Chromium	23570	250	"	25000	ND	94.3	70-130	0.0424	20	
Cobalt	23380	50.0	"	25000	ND	93.5	70-130	0.150	20	
Lead	23400	500	"	25000	ND	93.6	70-130	0.0641	20	
Magnesium	102000	1000	"	25000	81100	84.1	70-130	0.687	20	
Molybdenum	24000	500	"	25000	ND	96.0	70-130	0.125	20	
Batch 22H0107 - EPA 3010A										
Blank (22H0107-BLK1)				Prepared & Analyzed: 08/25/2022						
Lithium	ND	25.0	ug/L							U

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022
Work Order # 22H0860
Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0107 - EPA 3010A										
LCS (22H0107-BS1)				Prepared & Analyzed: 08/25/2022						
Lithium	2810	25.0	ug/L	2500		112	85-115			
Matrix Spike (22H0107-MS1)	**Source: 22H0950-01**			Prepared & Analyzed: 08/25/2022						
Lithium	4940	25.0	ug/L	2500	3130	72	75-125			J3
Matrix Spike Dup (22H0107-MSD1)	**Source: 22H0950-01**			Prepared & Analyzed: 08/25/2022						
Lithium	4790	25.0	ug/L	2500	3130	66	75-125	3	20	J3

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

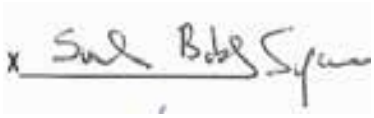
Report Printed: 9/1/2022
Work Order # 22H0860
Project: CCR Monitoring Program
McIntosh Plant

Notes and Definitions

U	Indicated that the compound was analyzed for but not detected. This shall be used to indicate that the specific component was not detected. The value associated with the qualifier shall be the laboratory method detection limit.
J3	The matrix spike recovery outside method acceptance limits indicating matrix interference.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the detection limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
N.O.O.	No Odor Observed
REP	Field parameter measured by client
V	Indicated that the analyte was detected in both the sample and the associated method blank.
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
Z	Too many colonies were present for accurate counting.
SUB	Work performed by outside (subcontracted) labs denoted by SUB in analyst field.

QC=Qualifier Codes as defined by DEP 62-160
Unless indicated, soil results are reported on actual (wet) weight basis.
The Color SM2120B method is reported as (Color / pH)
Legionella analyzed under CDC acreditation program
Dilution factors >= 1000 are abreviated using k=1000 and M=1000000
Field parameters are not NELAP acredited.
Results relate only to this sample.

Suresh (Bobby) Supan - CSM



Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification# E86006

All NELAP certified analysis are performed in accordance with Chapter 64E-1 Florida Administrative code, which has been determined to be equivalent to NELAC standards. Analysis certified by programs other than NELAP are designated with a "~".

CHAIN OF CUSTODY RECORD

SUBMISSION # 22H0840

Logged into LIMS by: *(initials)*

Florida Spectrum Environmental Services, Inc.

1460 W. McNab Road Ft Lauderdale FL 33309 — Tel. (954) 978-6400 — Fax (954) 978-2233
1112 NW Park Street, Okeechobee, FL 34972 — Tel. (863) 763-3336 — Fax (863) 763-1544
630 Indian Street Savannah, GA 31401 — Tel. (912) 238-5050 — Fax (912) 234-4815
326 Gooch Road Fort Meade FL 33841 — Tel. (863) 285-8145 — Fax (863) 285-7030
1910 Harden Blvd # 101, Lakeland, FL 33803 — Tel. (863) 686-4271 — Fax (863) 686-4389

DUE DATE Requested

RUSH RESERVATION #

Rush Surcharges apply

Report to: Lakeland Electric — Report to Address: 3030 East Lake Parker Drive, Lakeland FL 33805

Invoice to: Lakeland Electric — Purchase Order # 389273 — Invoice to Address: 501 East Lemon Street, Lakeland FL 33801

Project Name and/or Number: July 2022 CCR Monitoring Program — Site Location: McIntosh Plant

Project Mgr: Thomas Johnston — Phone: 863-834-6623 — Fax: — Email: Thomas.Johnston@lakelandelectric.com

Sampler Name (Printed): Cross Saxon — Sampler Signature:

ORDER # Lab Control Number (*Shaded Areas For Laboratory Use Only*)	Sample ID	Date Sampled	Time Sampled	Matrix (DW SW GW SED S EFF HW BIO SA OIL X)	Appendix III Metals	Appendix IV Metals	CCR Suite Metals	App III CL, F, SO4, TDS	CCR Suite Bicarb, T-Alk	Field Tests: TEMP-C	PH	COND	CHLOR
01	CCR-15A	8/18/2022	1025	GW	x	x	x						
02	CCR-15B	8/18/2022	1025	GW				x	x				
03	CCR-16A	8/18/2022	1109	GW	x	x	x						
04	CCR-16B	8/18/2022	1109	GW				x	x				
05	CCR-17A	8/18/2022	1152	GW	x	x	x						
06	CCR-17B	8/18/2022	1152	GW				x	x				
07	CCR-19A	8/18/2022	1413	GW	x	x	x						
08	CCR-19B	8/18/2022	1413	GW				x	x				

Special Comments: 4.7, 2.0

"I waive NELAC protocol" (sign here) >

Deliverables — QA/QC Report Needed? Yes No (additional charge)

Sample Custody & Field Comments
Received on Ice: (Y) N — 1.2 °C
Temp as received
Custody Seals? Y N
pH-9 ____ GUN-3 E1600S
FIELD TIME:
Sampling ____ hr Pick up ____ hr
Misc. Charges

Bottle Type
A- liter amber
B-Bacteria bag/bottle
F-500 ml
O-125ml
L-liter bottle
H-Plastic Amber
S-Soil jar
TED-Tedlar Air Bag
T-250 ml
V-40 ml vial
W-wide mouth
X-other

Preservatives
A-ascorbic acid
P-H_3PO_4
C-HCL
S-H_2SO_4
Cu-$CuSO_4$
T-$Na_2S_2O_3$-H_2O
H-HNO_3
U-Unpreserved
M-MCAB
DI-DI Water
N-NaOH
Z-zinc acetate
NH_4-NH_4Cl
Bcr- Bcn-Cr. Buffer
EDA-Ethylene Diamine

SAMPLE CUSTODY AND TRANSFER SIGNATURES — DATE / TIME

		Signature	Date	Time
1	Relinquished by:	(signature) LE	8-18-22	1510
1	Received by:	(signature) FIE	8-18-22	1512
2	Relinquished by:	(signature)	8/19/22	
2	Received by:	(signature) FSES	8/19/22	
3	Relinquished by:			
3	Received by:			

www.flenviro.com

COC Page 1 of 1

Well ID	Well Type	Historical GWPS exceedances	SSI?	Jul-21 & Jan-22 Monitoring?	Rationale	Parameters
CCR-1	Background	None - background	NO	YES	Ongoing Assessment Monitoring	Appendix III, IV
CCR-2	Background	None - background	NO	YES	Ongoing Assessment Monitoring	Appendix III, IV
CCR-3	CCR Compliance	arsenic	NO	NO	No Further Monitoring Warranted	-
CCR-4	CCR Compliance	lithium thallium	NO NO	YES	Ongoing Assessment Monitoring	Appendix III, IV
CCR-5	CCR Compliance	arsenic lithium thallium	NO YES NO	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
CCR-6	CCR Compliance	lithium	YES	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
CCR-7	CCR Compliance	arsenic lithium	NO NO	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
CCR-8	CCR Compliance	arsenic	NO	YES	Ongoing Assessment Monitoring	Appendix III, IV
CCR-9	CCR Compliance	arsenic lithium thallium	NO YES NO	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
CCR-10	CCR Compliance	No GWPS exceedances	NO	NO	No Further Monitoring Warranted	-
CCR-11	CCR Compliance	arsenic	YES	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
CCR-12	CCR Compliance	arsenic lithium thallium	YES NO NO	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
CCR-13	CCR Compliance	lithium	YES	YES	Ongoing Assessment Monitoring	Appendix III, IV
CCR-14	CCR Compliance	No GWPS exceedances	NO	NO	No Further Monitoring Warranted	-
CCR-15	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-4	Appendix III, IV, GC suite
CCR-16	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-5	Appendix III, IV, GC suite
CCR-17	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-6	Appendix III, IV, GC suite
CCR-18	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-7	Appendix III, IV, GC suite
CCR-19	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-9	Appendix III, IV, GC suite
CCR-20	Nature & Extent	NA	NA	YES	Evaluate arsenic mobility downgradient CCR-11	Appendix III, IV, GC suite
CCR-21	Nature & Extent	NA	NA	YES	Evaluate arsenic mobility downgradient CCR-12	Appendix III, IV, GC suite
CCR-22	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-13	Appendix III, IV, GC suite
CCR-23	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-13	Appendix III, IV, GC suite
SW-106	Nature & Extent	NA	NA	YES	Evaluate GWPS compliance at downgradient property boundary	Appendix III, IV, GC suite

Notes:
1. NA - not applicable
2. GWPS - Groundwater protection standards
3. SSI - statistically significant increase
4. Appendix III - boron, calcium, chloride, fluoride, pH, sulfate, total dissolved solids
5. Appendix IV - antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, lead, lithium, mercury, molybdenum, selenium, thallium, [illegible]
6. GC Suite - Geochemical suite: magnesium, sodium, bicarbonate, potassium, alkalinity

1460 West McNab Road
Fort Lauderdale, FL 33309
1-800-ANALYTE Phone
(954) 978-6400 Phone
(954) 978-2233 Fax

NELAP Certificate No. E86006

01 September 2022
Lab Work Order (COC): 22H0950

Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland, FL 33805

RE: July 2022 **CCR Monitoring Program**

Project Location: McIntosh Plant

Dear Thomas Johnston:

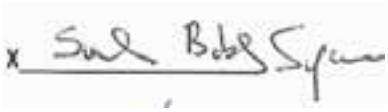
This report details the analytical results of samples collected at the above-referenced project location. These samples were received by Florida Spectrum Environmental Services at **08/23/2022 10:15**.

All Analyses were performed according to the TNI/NELAP standard unless indicated by a "~" on the report.

Your samples will be retained by Florida Spectrum Environmental for a period of at least 30 days following sample receipt or until the longest of the preparation and/or analytical hold times expires, whichever is shorter. After that time, they will be properly disposed without further notice, unless there exists an explicit contractual agreement to the contrary. We reserve the right to return any unused samples, extracts, or related materials or solutions to you if we consider it necessary. Examples might include those samples identified as hazardous wastes, submissions where the sample sizes significantly exceed those required for analysis, samples containing controlled substances, etc.

We thank you for selecting Florida Spectrum Environmental to serve your analytical needs. Should you have any questions or require additional information regarding any of the information in this report, please feel free to contact us at any time. We appreciate the opportunity to be of service.

Florida Spectrum Environmental Inc.



Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022
Work Order # 22H0950
Project: CCR Monitoring Program
McIntosh Plant

DETECTED ANALYTE SUMMARY

Client Sample ID	Laboratory ID	Matrix	Analyte	Result	Units	Collection Date	Collection Time
CCR-5A	22H0950-01	Water	Calcium	1860000	ug/L	8/22/2022	8:32
CCR-5A	22H0950-01	Water	Lithium	3130	ug/L	8/22/2022	8:32
CCR-5A	22H0950-01	Water	Magnesium	14400	ug/L	8/22/2022	8:32
CCR-5A	22H0950-01	Water	Potassium	606000	ug/L	8/22/2022	8:32
CCR-5A	22H0950-01	Water	Sodium	845000	ug/L	8/22/2022	8:32
CCR-5A	22H0950-01	Water	Boron	508	ug/L	8/22/2022	8:32
CCR-5A	22H0950-01	Water	Barium	81.3	ug/L	8/22/2022	8:32
CCR-5A	22H0950-01	Water	Chromium	0.900	ug/L	8/22/2022	8:32
CCR-5A	22H0950-01	Water	Titanium	2.10	ug/L	8/22/2022	8:32
CCR-5B	22H0950-02	Water	Fluoride	0.560	mg/L	8/22/2022	8:32
CCR-5B	22H0950-02	Water	Total Alkalinity	17.8	mg/L	8/22/2022	8:32
CCR-5B	22H0950-02	Water	Total Dissolved Solids	9520	mg/L	8/22/2022	8:32
CCR-5B	22H0950-02	Water	Sulfate	789	mg/L	8/22/2022	8:32
CCR-5B	22H0950-02	Water	Chloride	5440	mg/L	8/22/2022	8:32
CCR-5B	22H0950-02	Water	Bicarbonate	17.8	mg/L	8/22/2022	8:32
CCR-6A	22H0950-03	Water	Calcium	532000	ug/L	8/22/2022	9:30
CCR-6A	22H0950-03	Water	Lithium	760	ug/L	8/22/2022	9:30
CCR-6A	22H0950-03	Water	Potassium	157000	ug/L	8/22/2022	9:30
CCR-6A	22H0950-03	Water	Chromium	0.900	ug/L	8/22/2022	9:30
CCR-6A	22H0950-03	Water	Sodium	193000	ug/L	8/22/2022	9:30
CCR-6A	22H0950-03	Water	Magnesium	10700	ug/L	8/22/2022	9:30
CCR-6A	22H0950-03	Water	Boron	525	ug/L	8/22/2022	9:30
CCR-6A	22H0950-03	Water	Barium	26.4	ug/L	8/22/2022	9:30
CCR-6A	22H0950-03	Water	Molybdenum	5.50	ug/L	8/22/2022	9:30

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022
Work Order # 22H0950
Project: CCR Monitoring Program
McIntosh Plant

DETECTED ANALYTE SUMMARY

Client Sample ID	Laboratory ID	Matrix	Analyte	Result	Units	Collection Date	Collection Time
CCR-6B	22H0950-04	Water	Fluoride	0.738	mg/L	8/22/2022	9:30
CCR-6B	22H0950-04	Water	Total Dissolved Solids	2920	mg/L	8/22/2022	9:30
CCR-6B	22H0950-04	Water	Chloride	942	mg/L	8/22/2022	9:30
CCR-6B	22H0950-04	Water	Sulfate	673	mg/L	8/22/2022	9:30
CCR-6B	22H0950-04	Water	Bicarbonate	97.1	mg/L	8/22/2022	9:30
CCR-6B	22H0950-04	Water	Total Alkalinity	97.1	mg/L	8/22/2022	9:30
CCR-7A	22H0950-05	Water	Barium	10.0	ug/L	8/22/2022	10:34
CCR-7A	22H0950-05	Water	Chromium	1.90	ug/L	8/22/2022	10:34
CCR-7A	22H0950-05	Water	Lithium	61.8	ug/L	8/22/2022	10:34
CCR-7A	22H0950-05	Water	Calcium	104000	ug/L	8/22/2022	10:34
CCR-7A	22H0950-05	Water	Magnesium	3950	ug/L	8/22/2022	10:34
CCR-7A	22H0950-05	Water	Potassium	48600	ug/L	8/22/2022	10:34
CCR-7A	22H0950-05	Water	Titanium	13.8	ug/L	8/22/2022	10:34
CCR-7A	22H0950-05	Water	Sodium	36200	ug/L	8/22/2022	10:34
CCR-7A	22H0950-05	Water	Boron	428	ug/L	8/22/2022	10:34
CCR-7B	22H0950-06	Water	Total Alkalinity	8.08	mg/L	8/22/2022	10:34
CCR-7B	22H0950-06	Water	Bicarbonate	8.08	mg/L	8/22/2022	10:34
CCR-7B	22H0950-06	Water	Sulfate	341	mg/L	8/22/2022	10:34
CCR-7B	22H0950-06	Water	Chloride	45.0	mg/L	8/22/2022	10:34
CCR-7B	22H0950-06	Water	Fluoride	0.218	mg/L	8/22/2022	10:34
CCR-7B	22H0950-06	Water	Total Dissolved Solids	642	mg/L	8/22/2022	10:34
CCR-8A	22H0950-07	Water	Sodium	2660	ug/L	8/22/2022	11:11
CCR-8A	22H0950-07	Water	Magnesium	2770	ug/L	8/22/2022	11:11
CCR-8A	22H0950-07	Water	Barium	27.0	ug/L	8/22/2022	11:11

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022

Work Order # 22H0950

Project: CCR Monitoring Program
McIntosh Plant

DETECTED ANALYTE SUMMARY

Client Sample ID	Laboratory ID	Matrix	Analyte	Result	Units	Collection Date	Collection Time
CCR-8A	22H0950-07	Water	Calcium	87000	ug/L	8/22/2022	11:11
CCR-8A	22H0950-07	Water	Boron	74.0	ug/L	8/22/2022	11:11
CCR-8A	22H0950-07	Water	Molybdenum	11.0	ug/L	8/22/2022	11:11
CCR-8A	22H0950-07	Water	Potassium	4350	ug/L	8/22/2022	11:11
CCR-8B	22H0950-08	Water	Fluoride	0.379	mg/L	8/22/2022	11:11
CCR-8B	22H0950-08	Water	Sulfate	73.3	mg/L	8/22/2022	11:11
CCR-8B	22H0950-08	Water	Total Alkalinity	131	mg/L	8/22/2022	11:11
CCR-8B	22H0950-08	Water	Bicarbonate	131	mg/L	8/22/2022	11:11
CCR-8B	22H0950-08	Water	Total Dissolved Solids	268	mg/L	8/22/2022	11:11
CCR-8B	22H0950-08	Water	Chloride	3.12	mg/L	8/22/2022	11:11
CCR-9A	22H0950-09	Water	Magnesium	34600	ug/L	8/22/2022	13:30
CCR-9A	22H0950-09	Water	Barium	47.9	ug/L	8/22/2022	13:30
CCR-9A	22H0950-09	Water	Lithium	58.9	ug/L	8/22/2022	13:30
CCR-9A	22H0950-09	Water	Sodium	132000	ug/L	8/22/2022	13:30
CCR-9A	22H0950-09	Water	Potassium	131000	ug/L	8/22/2022	13:30
CCR-9A	22H0950-09	Water	Chromium	1.00	ug/L	8/22/2022	13:30
CCR-9A	22H0950-09	Water	Calcium	593000	ug/L	8/22/2022	13:30
CCR-9A	22H0950-09	Water	Boron	532	ug/L	8/22/2022	13:30
CCR-9B	22H0950-10	Water	Chloride	478	mg/L	8/22/2022	13:30
CCR-9B	22H0950-10	Water	Fluoride	0.690	mg/L	8/22/2022	13:30
CCR-9B	22H0950-10	Water	Total Alkalinity	19.9	mg/L	8/22/2022	13:30
CCR-9B	22H0950-10	Water	Bicarbonate	19.9	mg/L	8/22/2022	13:30
CCR-9B	22H0950-10	Water	Total Dissolved Solids	2780	mg/L	8/22/2022	13:30
CCR-9B	22H0950-10	Water	Sulfate	1360	mg/L	8/22/2022	13:30

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022
Work Order # 22H0950
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H0950-01
Client Sample ID: CCR-5A
Matrix: Water

Collection Date: 08/22/22 08:32
Received Date: 08/23/22 10:15
Collected By: Client

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	6.20	15.0	EPA 200.7/3010	08/24 10:00	08/24 14:09	MAZ
Arsenic	ND	U	ug/L	1	3.96	10.0	EPA 200.7/3010	08/24 10:00	08/24 14:09	MAZ
Barium	81.3		ug/L	1	0.0962	1.00	EPA 200.7/3010	08/24 10:00	08/24 14:09	MAZ
Beryllium	ND	U	ug/L	1	0.107	1.00	EPA 200.7/3010	08/24 10:00	08/24 14:09	MAZ
Boron	508		ug/L	1	0.616	10.0	EPA 200.7/3010	08/24 10:00	08/24 14:09	MAZ
Cadmium	ND	U	ug/L	1	0.217	1.00	EPA 200.7/3010	08/24 10:00	08/24 14:09	MAZ
Calcium	1860000		ug/L	50	298	2500	EPA 200.7/3010	08/24 10:00	08/24 16:37	MAZ
Chromium	0.900	I	ug/L	1	0.513	5.00	EPA 200.7/3010	08/24 10:00	08/24 14:09	MAZ
Cobalt	ND	U	ug/L	1	0.354	1.00	EPA 200.7/3010	08/24 10:00	08/24 14:09	MAZ
Lead	ND	U	ug/L	1	1.93	10.0	EPA 200.7/3010	08/24 10:00	08/24 14:09	MAZ
Lithium	3130	J3	ug/L	1	4.74	25.0	EPA 200.7/3010	08/25 10:41	08/25 12:37	JF
Magnesium	14400		ug/L	50	124	1000	EPA 200.7/3010	08/24 10:00	08/24 16:37	MAZ
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	08/26 09:00	08/26 14:10	JF
Molybdenum	ND	U	ug/L	1	1.43	10.0	EPA 200.7/3010	08/24 10:00	08/24 14:09	MAZ
Potassium	606000		ug/L	50	545	2500	EPA 200.7/3010	08/24 10:00	08/24 16:37	MAZ
Selenium	ND	U	ug/L	1	4.39	15.0	EPA 200.7/3010	08/24 10:00	08/24 14:09	MAZ
Sodium	845000		ug/L	50	26000	100000	EPA 200.7/3010	08/24 10:00	08/24 16:37	MAZ
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	08/24 10:00	08/24 14:09	MAZ
Titanium	2.10		ug/L	1	0.358	1.00	EPA 200.7/3010	08/24 10:00	08/24 14:09	MAZ

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022
Work Order # 22H0950
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H0950-02
Client Sample ID: CCR-5B
Matrix: Water

Collection Date: 08/22/22 08:32
Received Date: 08/23/22 10:15
Collected By: Client

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	17.8		mg/L	1	2.49	7.46	EPA 310.2	08/31 18:48	08/31 18:48	OC
Bicarbonate	17.8		mg/L	1	2.49	7.46	EPA 310.2	08/31 18:48	08/31 18:48	OC
Chloride	5440		mg/L	50	6.30	25.0	EPA 300.0	08/23 13:40	08/23 23:08	PK
Fluoride	0.560		mg/L	10	0.0520	0.250	EPA 300.0	08/23 16:30	08/24 01:03	PK
Sulfate	789		mg/L	50	4.76	25.0	EPA 300.0	08/23 13:40	08/23 23:08	PK
Total Dissolved Solids	9520		mg/L	4	40.0	120	SM 2540C	08/28 23:39	08/31 14:40	HM

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022
Work Order # 22H0950
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H0950-03
Client Sample ID: CCR-6A
Matrix: Water

Collection Date: 08/22/22 09:30
Received Date: 08/23/22 10:15
Collected By: Client

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	6.20	15.0	EPA 200.7/3010	08/24 10:00	08/24 14:11	MAZ
Arsenic	ND	U	ug/L	1	3.96	10.0	EPA 200.7/3010	08/24 10:00	08/24 14:11	MAZ
Barium	26.4		ug/L	1	0.0962	1.00	EPA 200.7/3010	08/24 10:00	08/24 14:11	MAZ
Beryllium	ND	U	ug/L	1	0.107	1.00	EPA 200.7/3010	08/24 10:00	08/24 14:11	MAZ
Boron	525		ug/L	1	0.616	10.0	EPA 200.7/3010	08/24 10:00	08/24 14:11	MAZ
Cadmium	ND	U	ug/L	1	0.217	1.00	EPA 200.7/3010	08/24 10:00	08/24 14:11	MAZ
Calcium	532000		ug/L	10	59.6	500	EPA 200.7/3010	08/24 10:00	08/24 16:41	MAZ
Chromium	0.900	I	ug/L	1	0.513	5.00	EPA 200.7/3010	08/24 10:00	08/24 14:11	MAZ
Cobalt	ND	U	ug/L	1	0.354	1.00	EPA 200.7/3010	08/24 10:00	08/24 14:11	MAZ
Lead	ND	U	ug/L	1	1.93	10.0	EPA 200.7/3010	08/24 10:00	08/24 14:11	MAZ
Lithium	760		ug/L	1	4.74	25.0	EPA 200.7/3010	08/25 10:41	08/25 13:32	JF
Magnesium	10700		ug/L	50	124	1000	EPA 200.7/3010	08/24 10:00	08/24 16:39	MAZ
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	08/26 09:00	08/26 14:12	JF
Molybdenum	5.50	I	ug/L	1	1.43	10.0	EPA 200.7/3010	08/24 10:00	08/24 14:11	MAZ
Potassium	157000		ug/L	10	109	500	EPA 200.7/3010	08/24 10:00	08/24 16:41	MAZ
Selenium	ND	U	ug/L	1	4.39	15.0	EPA 200.7/3010	08/24 10:00	08/24 14:11	MAZ
Sodium	193000		ug/L	10	5210	20000	EPA 200.7/3010	08/24 10:00	08/24 16:41	MAZ
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	08/24 10:00	08/24 14:11	MAZ
Titanium	ND	U	ug/L	1	0.358	1.00	EPA 200.7/3010	08/24 10:00	08/24 14:11	MAZ

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022
Work Order # 22H0950
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H0950-04
Client Sample ID: CCR-6B
Matrix: Water

Collection Date: 08/22/22 09:30
Received Date: 08/23/22 10:15
Collected By: Client

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	97.1		mg/L	1	2.49	7.46	EPA 310.2	08/31 18:48	08/31 18:48	OC
Bicarbonate	97.1		mg/L	1	2.49	7.46	EPA 310.2	08/31 18:48	08/31 18:48	OC
Chloride	942		mg/L	20	2.52	10.0	EPA 300.0	08/23 13:40	08/23 23:24	PK
Fluoride	0.738		mg/L	2	0.0104	0.0500	EPA 300.0	08/24 15:47	08/24 16:37	PK
Sulfate	673		mg/L	20	1.91	10.0	EPA 300.0	08/23 13:40	08/23 23:24	PK
Total Dissolved Solids	2920		mg/L	4	40.0	120	SM 2540C	08/28 23:39	08/31 14:40	HM

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022
Work Order # 22H0950
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H0950-05
Client Sample ID: CCR-7A
Matrix: Water

Collection Date: 08/22/22 10:34
Received Date: 08/23/22 10:15
Collected By: Client

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	6.20	15.0	EPA 200.7/3010	08/24 10:00	08/24 14:13	MAZ
Arsenic	ND	U	ug/L	1	3.96	10.0	EPA 200.7/3010	08/24 10:00	08/24 14:13	MAZ
Barium	10.0		ug/L	1	0.0962	1.00	EPA 200.7/3010	08/24 10:00	08/24 14:13	MAZ
Beryllium	ND	U	ug/L	1	0.107	1.00	EPA 200.7/3010	08/24 10:00	08/24 14:13	MAZ
Boron	428		ug/L	1	0.616	10.0	EPA 200.7/3010	08/24 10:00	08/24 14:13	MAZ
Cadmium	ND	U	ug/L	1	0.217	1.00	EPA 200.7/3010	08/24 10:00	08/24 14:13	MAZ
Calcium	104000		ug/L	5	29.8	250	EPA 200.7/3010	08/24 10:00	08/24 16:48	MAZ
Chromium	1.90	I	ug/L	1	0.513	5.00	EPA 200.7/3010	08/24 10:00	08/24 14:13	MAZ
Cobalt	ND	U	ug/L	1	0.354	1.00	EPA 200.7/3010	08/24 10:00	08/24 14:13	MAZ
Lead	ND	U	ug/L	1	1.93	10.0	EPA 200.7/3010	08/24 10:00	08/24 14:13	MAZ
Lithium	61.8		ug/L	1	4.74	25.0	EPA 200.7/3010	08/25 10:41	08/25 13:34	JF
Magnesium	3950		ug/L	5	12.4	100	EPA 200.7/3010	08/24 10:00	08/24 16:48	MAZ
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	08/26 09:00	08/26 14:15	JF
Molybdenum	ND	U	ug/L	1	1.43	10.0	EPA 200.7/3010	08/24 10:00	08/24 14:13	MAZ
Potassium	48600		ug/L	5	54.5	250	EPA 200.7/3010	08/24 10:00	08/24 16:48	MAZ
Selenium	ND	U	ug/L	1	4.39	15.0	EPA 200.7/3010	08/24 10:00	08/24 14:13	MAZ
Sodium	36200		ug/L	1	521	2000	EPA 200.7/3010	08/24 10:00	08/24 14:13	MAZ
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	08/24 10:00	08/24 14:13	MAZ
Titanium	13.8		ug/L	1	0.358	1.00	EPA 200.7/3010	08/24 10:00	08/24 14:13	MAZ

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022
Work Order # 22H0950
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H0950-06
Client Sample ID: CCR-7B
Matrix: Water

Collection Date: 08/22/22 10:34
Received Date: 08/23/22 10:15
Collected By: Client

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	8.08		mg/L	1	2.49	7.46	EPA 310.2	08/31 18:48	08/31 18:48	OC
Bicarbonate	8.08		mg/L	1	2.49	7.46	EPA 310.2	08/31 18:48	08/31 18:48	OC
Chloride	45.0		mg/L	2	0.252	1.00	EPA 300.0	08/23 13:40	08/23 23:41	PK
Fluoride	0.218		mg/L	2	0.0104	0.0500	EPA 300.0	08/23 13:40	08/23 23:41	PK
Sulfate	341		mg/L	5	0.476	2.50	EPA 300.0	08/23 13:40	08/24 11:34	PK
Total Dissolved Solids	642		mg/L	2	20.0	60.0	SM 2540C	08/28 23:39	08/31 14:40	HM

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022
Work Order # 22H0950
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H0950-07
Client Sample ID: CCR-8A
Matrix: Water

Collection Date: 08/22/22 11:11
Received Date: 08/23/22 10:15
Collected By: Client

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	6.20	15.0	EPA 200.7/3010	08/24 10:00	08/24 14:15	MAZ
Arsenic	ND	U	ug/L	1	3.96	10.0	EPA 200.7/3010	08/24 10:00	08/24 14:15	MAZ
Barium	27.0		ug/L	1	0.0962	1.00	EPA 200.7/3010	08/24 10:00	08/24 14:15	MAZ
Beryllium	ND	U	ug/L	1	0.107	1.00	EPA 200.7/3010	08/24 10:00	08/24 14:15	MAZ
Boron	74.0		ug/L	1	0.616	10.0	EPA 200.7/3010	08/24 10:00	08/24 14:15	MAZ
Cadmium	ND	U	ug/L	1	0.217	1.00	EPA 200.7/3010	08/24 10:00	08/24 14:15	MAZ
Calcium	87000		ug/L	5	29.8	250	EPA 200.7/3010	08/24 10:00	08/24 16:50	MAZ
Chromium	ND	U	ug/L	1	0.513	5.00	EPA 200.7/3010	08/24 10:00	08/24 14:15	MAZ
Cobalt	ND	U	ug/L	1	0.354	1.00	EPA 200.7/3010	08/24 10:00	08/24 14:15	MAZ
Lead	ND	U	ug/L	1	1.93	10.0	EPA 200.7/3010	08/24 10:00	08/24 14:15	MAZ
Lithium	ND	U	ug/L	1	4.74	25.0	EPA 200.7/3010	08/25 10:41	08/25 13:37	JF
Magnesium	2770		ug/L	5	12.4	100	EPA 200.7/3010	08/24 10:00	08/24 16:50	MAZ
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	08/26 09:00	08/26 14:17	JF
Molybdenum	11.0		ug/L	1	1.43	10.0	EPA 200.7/3010	08/24 10:00	08/24 14:15	MAZ
Potassium	4350		ug/L	1	10.9	50.0	EPA 200.7/3010	08/24 10:00	08/24 14:15	MAZ
Selenium	ND	U	ug/L	1	4.39	15.0	EPA 200.7/3010	08/24 10:00	08/24 14:15	MAZ
Sodium	2660		ug/L	1	521	2000	EPA 200.7/3010	08/24 10:00	08/24 14:15	MAZ
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	08/24 10:00	08/24 14:15	MAZ

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022
Work Order # 22H0950
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H0950-08
Client Sample ID: CCR-8B
Matrix: Water

Collection Date: 08/22/22 11:11
Received Date: 08/23/22 10:15
Collected By: Client

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	131		mg/L	1	2.49	7.46	EPA 310.2	08/31 18:48	08/31 18:48	OC
Bicarbonate	131		mg/L	1	2.49	7.46	EPA 310.2	08/31 18:48	08/31 18:48	OC
Chloride	3.12		mg/L	1	0.126	0.500	EPA 300.0	08/23 13:40	08/23 23:57	PK
Fluoride	0.379		mg/L	1	0.00520	0.0250	EPA 300.0	08/23 13:40	08/23 23:57	PK
Sulfate	73.3		mg/L	1	0.0953	0.500	EPA 300.0	08/23 13:40	08/23 23:57	PK
Total Dissolved Solids	268		mg/L	2	20.0	60.0	SM 2540C	08/28 23:39	08/31 14:40	HM

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022
Work Order # 22H0950
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H0950-09
Client Sample ID: CCR-9A
Matrix: Water

Collection Date: 08/22/22 13:30
Received Date: 08/23/22 10:15
Collected By: Client

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	6.20	15.0	EPA 200.7/3010	08/24 10:00	08/24 12:58	MAZ
Arsenic	ND	U	ug/L	1	3.96	10.0	EPA 200.7/3010	08/24 10:00	08/24 12:58	MAZ
Barium	47.9		ug/L	1	0.0962	1.00	EPA 200.7/3010	08/24 10:00	08/24 12:58	MAZ
Beryllium	ND	U	ug/L	1	0.107	1.00	EPA 200.7/3010	08/24 10:00	08/24 12:58	MAZ
Boron	532		ug/L	1	0.616	10.0	EPA 200.7/3010	08/24 10:00	08/24 12:58	MAZ
Cadmium	ND	U	ug/L	1	0.217	1.00	EPA 200.7/3010	08/24 10:00	08/24 12:58	MAZ
Calcium	593000		ug/L	25	149	1250	EPA 200.7/3010	08/24 10:00	08/24 16:52	MAZ
Chromium	1.00	I	ug/L	1	0.513	5.00	EPA 200.7/3010	08/24 10:00	08/24 12:58	MAZ
Cobalt	ND	U	ug/L	1	0.354	1.00	EPA 200.7/3010	08/24 10:00	08/24 12:58	MAZ
Lead	ND	U	ug/L	1	1.93	10.0	EPA 200.7/3010	08/24 10:00	08/24 12:58	MAZ
Lithium	58.9		ug/L	1	4.74	25.0	EPA 200.7/3010	08/25 10:41	08/25 13:40	JF
Magnesium	34600		ug/L	25	62.0	500	EPA 200.7/3010	08/24 10:00	08/24 16:52	MAZ
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	08/26 09:00	08/26 14:20	JF
Molybdenum	ND	U	ug/L	1	1.43	10.0	EPA 200.7/3010	08/24 10:00	08/24 12:58	MAZ
Potassium	131000		ug/L	10	109	500	EPA 200.7/3010	08/24 10:00	08/24 16:53	MAZ
Selenium	ND	U	ug/L	1	4.39	15.0	EPA 200.7/3010	08/24 10:00	08/24 12:58	MAZ
Sodium	132000		ug/L	10	5210	20000	EPA 200.7/3010	08/24 10:00	08/24 16:53	MAZ
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	08/24 10:00	08/24 12:58	MAZ
Titanium	ND	U	ug/L	1	0.358	1.00	EPA 200.7/3010	08/24 10:00	08/24 12:58	MAZ

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022
Work Order # 22H0950
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H0950-10
Client Sample ID: CCR-9B
Matrix: Water

Collection Date: 08/22/22 13:30
Received Date: 08/23/22 10:15
Collected By: Client

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	19.9		mg/L	1	2.49	7.46	EPA 310.2	08/31 18:48	08/31 18:48	OC
Bicarbonate	19.9		mg/L	1	2.49	7.46	EPA 310.2	08/31 18:48	08/31 18:48	OC
Chloride	478		mg/L	20	2.52	10.0	EPA 300.0	08/23 16:30	08/24 01:19	PK
Fluoride	0.690		mg/L	2	0.0104	0.0500	EPA 300.0	08/24 15:47	08/24 16:53	PK
Sulfate	1360		mg/L	20	1.91	10.0	EPA 300.0	08/23 16:30	08/24 01:19	PK
Total Dissolved Solids	2780		mg/L	4	40.0	120	SM 2540C	08/28 23:39	08/31 14:40	HM

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022
Work Order # 22H0950
Project: CCR Monitoring Program
McIntosh Plant

Wet Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0774 - Default Prep GenChem										
Blank (22H0774-BLK1)				Prepared & Analyzed: 08/23/2022						
Fluoride	ND	0.0250	mg/L							U
Sulfate	ND	0.500	"							U
Chloride	ND	0.500	"							U
LCS (22H0774-BS1)				Prepared & Analyzed: 08/23/2022						
Fluoride	2.54	0.0250	mg/L	2.500		102	90-110			
Sulfate	49.3	0.500	"	50.00		99	90-110			
Chloride	49.0	0.500	"	50.00		98	90-110			
Duplicate (22H0774-DUP1)		**Source: 22H0956-01**		Prepared & Analyzed: 08/23/2022						
Fluoride	0.0560	0.0250	mg/L		0.0600			7	20	
Sulfate	0.398	0.500	"		0.392			2	20	I
Chloride	10.7	0.500	"		10.5			1	20	
Matrix Spike (22H0774-MS1)		**Source: 22H0956-01**		Prepared & Analyzed: 08/23/2022						
Fluoride	2.66	0.0250	mg/L	2.500	0.0600	104	90-110			
Sulfate	51.0	0.500	"	50.00	0.392	101	90-110			
Chloride	59.6	0.500	"	50.00	10.5	98	90-110			
Matrix Spike (22H0774-MS2)		**Source: 22H0987-02**		Prepared & Analyzed: 08/23/2022						
Fluoride	2.29	0.0250	mg/L	2.500	0.0980	88	90-110			J3
Sulfate	54.4	0.500	"	50.00	3.45	102	90-110			
Chloride	55.6	0.500	"	50.00	6.55	98	90-110			
Batch 22H0775 - Default Prep GenChem										
Blank (22H0775-BLK1)				Prepared: 08/23/2022 Analyzed: 08/24/2022						
Fluoride	ND	0.0250	mg/L							U
Sulfate	ND	0.500	"							U
Chloride	ND	0.500	"							U

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022
Work Order # 22H0950
Project: CCR Monitoring Program
McIntosh Plant

Wet Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0775 - Default Prep GenChem										
LCS (22H0775-BS1)				Prepared: 08/23/2022 Analyzed: 08/24/2022						
Fluoride	2.48	0.0250	mg/L	2.500		99	90-110			
Sulfate	50.0	0.500	"	50.00		100	90-110			
Chloride	49.3	0.500	"	50.00		99	90-110			
Duplicate (22H0775-DUP1)		**Source: 22H0975-10**		Prepared: 08/23/2022 Analyzed: 08/24/2022						
Fluoride	0.286	0.0500	mg/L		0.286			0	20	
Sulfate	19.5	1.00	"		19.5			0.3	20	
Chloride	108	1.00	"		108			0.3	20	
Matrix Spike (22H0775-MS1)		**Source: 22H0975-10**		Prepared: 08/23/2022 Analyzed: 08/24/2022						
Fluoride	4.48	0.0500	mg/L	5.000	0.286	84	90-110			J3
Sulfate	121	1.00	"	100.0	19.5	101	90-110			
Chloride	212	1.00	"	100.0	108	103	90-110			
Batch 22H0802 - Default Prep GenChem										
Blank (22H0802-BLK1)				Prepared & Analyzed: 08/24/2022						
Fluoride	ND	0.0250	mg/L							U
LCS (22H0802-BS1)				Prepared & Analyzed: 08/24/2022						
Fluoride	2.47	0.0250	mg/L	2.500		99	90-110			
Duplicate (22H0802-DUP1)		**Source: 22H1006-02**		Prepared & Analyzed: 08/24/2022						
Fluoride	0.526	0.0250	mg/L		0.532			1	20	
Matrix Spike (22H0802-MS1)		**Source: 22H1006-02**		Prepared & Analyzed: 08/24/2022						
Fluoride	2.76	0.0250	mg/L	2.500	0.532	89	90-110			J3

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022
Work Order # 22H0950
Project: CCR Monitoring Program
McIntosh Plant

Wet Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0802 - Default Prep GenChem										
Matrix Spike (22H0802-MS2)		**Source: 22H1032-01**		Prepared & Analyzed: 08/24/2022						
Fluoride	2.50	0.0250	mg/L	2.500	0.245	90	90-110			
Batch 22H0851 - Default Prep GenChem										
Blank (22H0851-BLK1)				Prepared: 08/28/2022 Analyzed: 08/31/2022						
Total Dissolved Solids	ND	30.0	mg/L							U
LCS (22H0851-BS1)				Prepared: 08/28/2022 Analyzed: 08/31/2022						
Total Dissolved Solids	472	120	mg/L	500.0		94.4	80-120			
Duplicate (22H0851-DUP1)		**Source: 22H0950-04**		Prepared: 08/28/2022 Analyzed: 08/31/2022						
Total Dissolved Solids	2970	120	mg/L		2920			1.77	20	
Duplicate (22H0851-DUP2)		**Source: 22H1047-02**		Prepared: 08/28/2022 Analyzed: 08/31/2022						
Total Dissolved Solids	724	120	mg/L		688			5.10	20	
Batch 22H0972 - Default Prep GenChem										
Blank (22H0972-BLK1)				Prepared & Analyzed: 08/31/2022						
Total Alkalinity	ND	7.46	mg/L							U
LCS (22H0972-BS1)				Prepared & Analyzed: 08/31/2022						
Total Alkalinity	237	7.46	mg/L	250.0		95	90-110			
Duplicate (22H0972-DUP1)		**Source: 22H1013-01**		Prepared & Analyzed: 08/31/2022						
Total Alkalinity	60.8	7.46	mg/L		60.3			0.8	20	

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022
Work Order # 22H0950
Project: CCR Monitoring Program
McIntosh Plant

Wet Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0972 - Default Prep GenChem										
Matrix Spike (22H0972-MS1)	**Source: 22H1013-01**			Prepared & Analyzed: 08/31/2022						
Total Alkalinity	257	7.46	mg/L	250.0	60.3	79	90-110			J3
Matrix Spike (22H0972-MS2)	**Source: 22H1053-03**			Prepared & Analyzed: 08/31/2022						
Total Alkalinity	259	7.46	mg/L	250.0	17.5	97	90-110			

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022

Work Order # 22H0950

Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0106 - EPA 3010A										
Blank (22H0106-BLK1)				Prepared & Analyzed: 08/24/2022						
Cadmium	ND	1.00	ug/L							U
Boron	ND	10.0	"							U
Beryllium	ND	1.00	"							U
Calcium	ND	50.0	"							U
Barium	ND	1.00	"							U
Potassium	ND	50.0	"							U
Thallium	ND	4.00	"							U
Titanium	ND	1.00	"							U
Magnesium	ND	20.0	"							U
Selenium	ND	15.0	"							U
Lead	ND	10.0	"							U
Cobalt	ND	1.00	"							U
Antimony	ND	15.0	"							U
Arsenic	ND	10.0	"							U
Chromium	ND	5.00	"							U
Molybdenum	ND	10.0	"							U
Sodium	ND	2000	"							U
LCS (22H0106-BS1)				Prepared & Analyzed: 08/24/2022						
Titanium	496.3	1.00	ug/L	500.0		99.3	85-115			
Boron	508.5	10.0	"	500.0		102	85-115			
Cadmium	499.9	1.00	"	500.0		100	85-115			
Calcium	26500	50.0	"	25500		104	85-115			
Barium	480.0	1.00	"	500.0		96.0	85-115			
Beryllium	508.4	1.00	"	500.0		102	85-115			
Thallium	475.9	4.00	"	500.0		95.2	85-115			
Molybdenum	498.0	10.0	"	500.0		99.6	85-115			
Cobalt	484.4	1.00	"	500.0		96.9	85-115			
Lead	488	10.0	"	500.0		97.5	85-115			
Magnesium	478	20.0	"	500.0		95.7	85-115			
Potassium	23400	50.0	"	25500		91.6	85-115			
Selenium	507.1	15.0	"	500.0		101	85-115			

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022
Work Order # 22H0950
Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0106 - EPA 3010A										
LCS (22H0106-BS1)				Prepared & Analyzed: 08/24/2022						
Antimony	507.3	15.0	ug/L	500.0		101	85-115			
Arsenic	494	10.0	"	500.0		98.7	85-115			
Sodium	24800	2000	"	25500		97.4	85-115			
Chromium	494.1	5.00	"	500.0		98.8	85-115			
Matrix Spike (22H0106-MS1)		**Source: 22H0950-09**		Prepared & Analyzed: 08/24/2022						
Calcium	3150000	5000	ug/L	2550000	593000	100	70-130			
Antimony	48450	1500	"	50000	ND	96.9	70-130			
Arsenic	48900	1000	"	50000	ND	97.8	70-130			
Barium	47330	100	"	50000	47.90	94.6	70-130			
Beryllium	49960	100	"	50000	ND	99.9	70-130			
Cadmium	49000	100	"	50000	ND	98.0	70-130			
Chromium	48620	500	"	50000	ND	97.2	70-130			
Cobalt	47910	100	"	50000	ND	95.8	70-130			
Lead	48000	1000	"	50000	ND	96.1	70-130			
Magnesium	80900	2000	"	50000	34600	92.6	70-130			
Molybdenum	48860	1000	"	50000	ND	97.7	70-130			
Potassium	2450000	5000	"	2550000	131000	90.8	70-130			
Boron	49170	1000	"	50000	531.6	97.3	70-130			
Selenium	49900	1500	"	50000	ND	99.8	70-130			
Thallium	46900	400	"	50000	ND	93.8	70-130			
Titanium	48630	100	"	50000	ND	97.3	70-130			
Sodium	2580000	200000	"	2550000	132000	95.9	70-130			
Matrix Spike Dup (22H0106-MSD1)		**Source: 22H0950-09**		Prepared & Analyzed: 08/24/2022						
Titanium	48770	100	ug/L	50000	ND	97.5	70-130	0.287	20	
Barium	47440	100	"	50000	47.90	94.8	70-130	0.232	20	
Boron	49310	1000	"	50000	531.6	97.6	70-130	0.287	20	
Beryllium	49790	100	"	50000	ND	99.6	70-130	0.341	20	
Calcium	3140000	5000	"	2550000	593000	99.9	70-130	0.427	20	
Cadmium	48990	100	"	50000	ND	98.0	70-130	0.0204	20	
Lead	47900	1000	"	50000	ND	95.8	70-130	0.292	20	

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022
Work Order # 22H0950
Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0106 - EPA 3010A										
Matrix Spike Dup (22H0106-MSD1)		**Source: 22H0950-09**		Prepared & Analyzed: 08/24/2022						
Sodium	2580000	200000	ug/L	2550000	132000	96.0	70-130	0.144	20	
Cobalt	47920	100	"	50000	ND	95.8	70-130	0.0209	20	
Thallium	46950	400	"	50000	ND	93.9	70-130	0.107	20	
Magnesium	81000	2000	"	50000	34600	92.7	70-130	0.151	20	
Potassium	2450000	5000	"	2550000	131000	90.8	70-130	0.0553	20	
Antimony	50160	1500	"	50000	ND	100	70-130	3.47	20	
Chromium	48790	500	"	50000	ND	97.6	70-130	0.349	20	
Arsenic	49000	1000	"	50000	ND	98.0	70-130	0.184	20	
Molybdenum	48970	1000	"	50000	ND	97.9	70-130	0.225	20	
Selenium	49520	1500	"	50000	ND	99.0	70-130	0.764	20	
Batch 22H0107 - EPA 3010A										
Blank (22H0107-BLK1)				Prepared & Analyzed: 08/25/2022						
Lithium	ND	25.0	ug/L							U
LCS (22H0107-BS1)				Prepared & Analyzed: 08/25/2022						
Lithium	2810	25.0	ug/L	2500		112	85-115			
Matrix Spike (22H0107-MS1)		**Source: 22H0950-01**		Prepared & Analyzed: 08/25/2022						
Lithium	4940	25.0	ug/L	2500	3130	72	75-125			J3
Matrix Spike Dup (22H0107-MSD1)		**Source: 22H0950-01**		Prepared & Analyzed: 08/25/2022						
Lithium	4790	25.0	ug/L	2500	3130	66	75-125	3	20	J3
Batch 22H0113 - EPA 245.1/245.2 Prep										
Blank (22H0113-BLK1)				Prepared & Analyzed: 08/26/2022						
Mercury	ND	1.00	ug/L							U

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/1/2022
Work Order # 22H0950
Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0113 - EPA 245.1/245.2 Prep										
LCS (22H0113-BS1)				Prepared & Analyzed: 08/26/2022						
Mercury	9.52	1.00	ug/L	10.00		95	85-115			
Matrix Spike (22H0113-MS1)	**Source: 22H0972-02**			Prepared & Analyzed: 08/26/2022						
Mercury	8.57	1.00	ug/L	10.00	ND	86	70-130			
Matrix Spike Dup (22H0113-MSD1)	**Source: 22H0972-02**			Prepared & Analyzed: 08/26/2022						
Mercury	8.55	1.00	ug/L	10.00	ND	86	70-130	0.3	20	

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

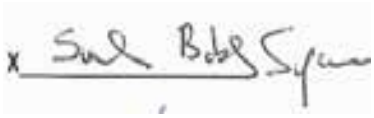
Report Printed: 9/1/2022
Work Order # 22H0950
Project: CCR Monitoring Program
McIntosh Plant

Notes and Definitions

U	Indicated that the compound was analyzed for but not detected. This shall be used to indicate that the specific component was not detected. The value associated with the qualifier shall be the laboratory method detection limit.
J3	The matrix spike recovery outside method acceptance limits indicating matrix interference.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the detection limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
N.O.O.	No Odor Observed
REP	Field parameter measured by client
V	Indicated that the analyte was detected in both the sample and the associated method blank.
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
Z	Too many colonies were present for accurate counting.
SUB	Work performed by outside (subcontracted) labs denoted by SUB in analyst field.

QC=Qualifier Codes as defined by DEP 62-160
Unless indicated, soil results are reported on actual (wet) weight basis.
The Color SM2120B method is reported as (Color / pH)
Legionella analyzed under CDC acreditation program
Dilution factors >= 1000 are abreviated using k=1000 and M=1000000
Field parameters are not NELAP acredited.
Results relate only to this sample.

Suresh (Bobby) Supan - CSM



Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification# E86006

All NELAP certified analysis are performed in accordance with Chapter 64E-1 Florida Administrative code, which has been determined to be equivalent to NELAC standards. Analysis certified by programs other than NELAP are designated with a "~".

SUBMISSION # [illegible]

Logged into LIMS by: [illegible]

Florida Spectrum

CHAIN OF CUSTODY RECORD

1460 W McNab Road Ft Lauderdale FL 33309 Tel (954) 978-6400 Fax (954) 978-2233
1112 NW Park Street Okeechobee FL 34972 Tel (863) 763-3336 Fax (863) 763-1514
620 Indian Street Savannah GA 31401 Tel (912) 238-5050 Fax (912) 234-4813
528 Gooch Road Fort Meade FL 33841 Tel (863) 285-8145 Fax (863) 285-7030
1910 Harden Blvd # 101, Lakeland, FL 33803 Tel (863) 680-4271 Fax (863) 680-1389

DUE DATE Requested
RUSH RESERVATION #
Rush Surcharges apply

Report to: Lakeland Electric
Report to Address: 3030 East Lake Parker Drive, Lakeland FL 33805
Invoice to: Lakeland Electric
Purchase Order # 289273
Invoice to Address: 501 East Lemon Street, Lakeland FL 33801
Project Name and/or Number: July 2022 CCR Monitoring Program
Site Location: McIntosh Plant
Project Mgr: Thomas Johnston
Phone: 863-834-6615
Fax:
Email: Thomas.Johnston@lakelandelectric.com
Sampler Name: [illegible]
Sampler Signature:

ORDER # Lab Control Number (*Shaded Areas For Laboratory Use Only*)	Sample ID	Date Sampled	Time Sampled	Matrix (DW SW GW SED S EFF HW RIO SA OIL X)	Bottle & Pres - Combo Codes	Number of Containers Received & NELAC Letter Suffixes # A-T	Appendix III Metals	Appendix IV Metals	GC Suite Metals	App III - Cl, F, SO4, TDS	GC Suite Bicarb, T-Alk	TEMP-C	PH	COND	CHLOR
[illegible]	CCR-5A	8/22/2022	0832	GW	TH	1	x	x	x						
[illegible]	CCR-5B	8/22/2022	0832	GW	TU	1				x	x				
[illegible]	CCR-6A	8/22/2022	0930	GW	TH	1	x	x	x						
[illegible]	CCR-6B	8/22/2022	0930	GW	TU	1				x	x				
[illegible]	CCR-7A	8/22/2022	1034	GW	TH	1	x	x	x						
[illegible]	CCR-7B	8/22/2022	1034	GW	TU	1				x	x				
[illegible]	CCR-8A	8/22/2022	1111	GW	TH	1	x	x	x						
[illegible]	CCR-8B	8/22/2022	1111	GW	TU	1				x	x				
[illegible]	CCR-9A	8/22/2022	1330	GW	TH	1	x	x	x						
[illegible]	CCR-9B	8/22/2022	1330	GW	TU	1				x	x				
						Total									

Special Comments: [illegible]

"If using NELAC protocol" (sign here):

Deliverables: QA/QC Report Needed? Yes No (additional charge)

SAMPLE CUSTODY AND TRANSFER SIGNATURES

			DATE	TIME
1	Relinquished by:	Brian Juergens [illegible]	8-22-22	1504
1	Received by:	[illegible] FSES	8/22/22	1504
2	Relinquished by:			
2	Received by:			
3	Relinquished by:			
3	Received by:			

Sample Custody & Field Comments
Received on Ice: Y N
Temp as received 4.2 C
Custody Seals? Y N e76 50D
RAD-9 ____ GEN-1 ____
FIELD TIME:
Sampling ____ hr Pick-up ____ hr
Misc. Charges ____

Bottle Type
A-Liter amber
B-Bacteria bag/bottle
F-500 ml
L-liter bottle
S-Soil jar
T-250 ml
V-40 ml vial
W-wide mouth
X-other
O-125ml
H-Plastic Amber
TED-Tedlar Air Bag

Preservatives
A-Ascorbic acid
C-HCL
Cu-CuSO$_4$
H-HNO$_3$
M-MCAB
N-NaOH
NH$_4$-NH$_4$CL
Hex- Hex.Cr. Buffer
EDA-Ethylene Diamine
P-H$_3$PO$_4$
S-H$_2$SO$_4$
T-Na$_2$S$_2$O$_3$-H$_2$O
U-Unpreserved
DI-DI Water
Z-zinc acetate

www.flenviro.com

CCR Monitoring Program - 2021
Byproduct Storage Area
C.D. McIntosh Plant

Well ID	Well Type	Historical GWPS exceedances	SSL?	Jul-21 & Jan-22 Monitoring?	Rationale	Parameters
CCR-1	Background	None - background	NO	YES	Ongoing Assessment Monitoring	Appendix III, IV
CCR-2	Background	None - background	NO	YES	Ongoing Assessment Monitoring	Appendix III, IV
CCR-3	CCR Compliance	arsenic	NO	NO	No Further Monitoring Warranted	
CCR-4	CCR Compliance	lithium thallium	NO NO	YES	Ongoing Assessment Monitoring	Appendix III, IV
CCR-5	CCR Compliance	arsenic lithium thallium	NO YES NO	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
CCR-6	CCR Compliance	lithium	YES	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
CCR-7	CCR Compliance	arsenic lithium	NO NO	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
CCR-8	CCR Compliance	arsenic	NO	YES	Ongoing Assessment Monitoring	Appendix III, IV
CCR-9	CCR Compliance	arsenic lithium thallium	NO YES NO	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
CCR-10	CCR Compliance	No GWPS exceedances	NO	NO	No Further Monitoring Warranted	
CCR-11	CCR Compliance	arsenic	YES	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
CCR-12	CCR Compliance	arsenic lithium thallium	YES NO NO	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
CCR-13	CCR Compliance	lithium	YES	YES	Ongoing Assessment Monitoring	Appendix III, IV
CCR-14	CCR Compliance	No GWPS exceedances	NO	NO	No Further Monitoring Warranted	--
CCR-15	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-4	Appendix III, IV, GC suite
CCR-16	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-5	Appendix III, IV, GC suite
CCR-17	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-6	Appendix III, IV, GC suite
CCR-18	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-7	Appendix III, IV, GC suite
CCR-19	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-9	Appendix III, IV, GC suite
CCR-20	Nature & Extent	NA	NA	YES	Evaluate arsenic mobility downgradient CCR-11	Appendix III, IV, GC suite
CCR-21	Nature & Extent	NA	NA	YES	Evaluate arsenic mobility downgradient CCR-12	Appendix III, IV, GC suite
CCR-22	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-13	Appendix III, IV, GC suite
CCR-23	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-1[illegible]	Appendix III, IV, GC suite
SW-1D6	Nature & Extent	NA	NA	YES	Evaluate GWPS compliance at downgradient property boundary	Appendix III, IV, GC suite

Notes:

1. NA - not applicable
2. GWPS - Groundwater protection standards
3. SSL - statistically significant level
4. Appendix III - boron, calcium, chloride, fluoride, pH, sulfate, total dissolved solids
5. Appendix IV - antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, lead, lithium, mercury, molybdenum, selenium, thallium, Radium 226 and 228 combined
6. GC suite - Geochemical suite: magnesium, sodium, carbonate, bicarbonate, potassium, alkalinity

1460 West McNab Road
Fort Lauderdale, FL 33309
1-800-ANALYTE Phone
(954) 978-6400 Phone
(954) 978-2233 Fax

NELAP Certificate No. E86006

08 September 2022
Lab Work Order (COC): 22H1106

Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland, FL 33805

RE: July 2022 **CCR Monitoring Program**

Project Location: McIntosh Plant

Dear Thomas Johnston:

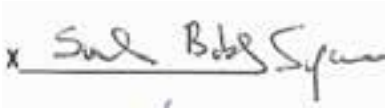
This report details the analytical results of samples collected at the above-referenced project location. These samples were received by Florida Spectrum Environmental Services at **08/25/2022 15:40**.

All Analyses were performed according to the TNI/NELAP standard unless indicated by a "~" on the report.

Your samples will be retained by Florida Spectrum Environmental for a period of at least 30 days following sample receipt or until the longest of the preparation and/or analytical hold times expires, whichever is shorter. After that time, they will be properly disposed without further notice, unless there exists an explicit contractual agreement to the contrary. We reserve the right to return any unused samples, extracts, or related materials or solutions to you if we consider it necessary. Examples might include those samples identified as hazardous wastes, submissions where the sample sizes significantly exceed those required for analysis, samples containing controlled substances, etc.

We thank you for selecting Florida Spectrum Environmental to serve your analytical needs. Should you have any questions or require additional information regarding any of the information in this report, please feel free to contact us at any time. We appreciate the opportunity to be of service.

Florida Spectrum Environmental Inc.



Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/8/2022

Work Order # 22H1106

Project: CCR Monitoring Program
McIntosh Plant

DETECTED ANALYTE SUMMARY

Client Sample ID	Laboratory ID	Matrix	Analyte	Result	Units	Collection Date	Collection Time
CCR-18A	22H1106-01	Water	Chromium	1.20	ug/L	8/24/2022	13:10
CCR-18A	22H1106-01	Water	Barium	1.40	ug/L	8/24/2022	13:10
CCR-18A	22H1106-01	Water	Magnesium	4510	ug/L	8/24/2022	13:10
CCR-18A	22H1106-01	Water	Calcium	78700	ug/L	8/24/2022	13:10
CCR-18A	22H1106-01	Water	Molybdenum	2.60	ug/L	8/24/2022	13:10
CCR-18A	22H1106-01	Water	Boron	41.9	ug/L	8/24/2022	13:10
CCR-18A	22H1106-01	Water	Titanium	4.40	ug/L	8/24/2022	13:10
CCR-18A	22H1106-01	Water	Potassium	2630	ug/L	8/24/2022	13:10
CCR-18A	22H1106-01	Water	Sodium	2010	ug/L	8/24/2022	13:10
CCR-18B	22H1106-02	Water	Sulfate	29.6	mg/L	8/24/2022	13:10
CCR-18B	22H1106-02	Water	Chloride	3.01	mg/L	8/24/2022	13:10
CCR-18B	22H1106-02	Water	Fluoride	0.382	mg/L	8/24/2022	13:10
CCR-18B	22H1106-02	Water	Total Dissolved Solids	310	mg/L	8/24/2022	13:10
CCR-18B	22H1106-02	Water	Bicarbonate	154	mg/L	8/24/2022	13:10
CCR-18B	22H1106-02	Water	Total Alkalinity	154	mg/L	8/24/2022	13:10

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/8/2022
Work Order # 22H1106
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H1106-01
Client Sample ID: CCR-18A
Matrix: Water

Collection Date: 08/24/22 13:10
Received Date: 08/25/22 15:40
Collected By: Thomas Johnston

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	6.20	15.0	EPA 200.7/3010	08/26 10:30	08/26 13:33	MAZ
Arsenic	ND	U	ug/L	1	3.96	10.0	EPA 200.7/3010	08/26 10:30	08/26 13:33	MAZ
Barium	1.40		ug/L	1	0.0962	1.00	EPA 200.7/3010	08/26 10:30	08/26 13:33	MAZ
Beryllium	ND	U	ug/L	1	0.107	1.00	EPA 200.7/3010	08/26 10:30	08/26 13:33	MAZ
Boron	41.9		ug/L	1	0.616	10.0	EPA 200.7/3010	08/26 10:30	08/26 13:33	MAZ
Cadmium	ND	U	ug/L	1	0.217	1.00	EPA 200.7/3010	08/26 10:30	08/26 13:33	MAZ
Calcium	78700		ug/L	1	5.96	50.0	EPA 200.7/3010	08/26 10:30	08/26 13:33	MAZ
Chromium	1.20	I	ug/L	1	0.513	5.00	EPA 200.7/3010	08/26 10:30	08/26 13:33	MAZ
Cobalt	ND	U	ug/L	1	0.354	1.00	EPA 200.7/3010	08/26 10:30	08/26 13:33	MAZ
Lead	ND	U	ug/L	1	1.93	10.0	EPA 200.7/3010	08/26 10:30	08/26 13:33	MAZ
Lithium	ND	U	ug/L	1	4.74	25.0	EPA 200.7/3010	08/26 10:00	09/01 09:23	JF
Magnesium	4510		ug/L	1	2.48	20.0	EPA 200.7/3010	08/26 10:30	08/26 13:33	MAZ
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	08/30 08:24	08/30 14:08	JF
Molybdenum	2.60	I	ug/L	1	1.43	10.0	EPA 200.7/3010	08/26 10:30	08/26 13:33	MAZ
Potassium	2630		ug/L	1	10.9	50.0	EPA 200.7/3010	08/26 10:30	08/26 13:33	MAZ
Selenium	ND	U	ug/L	1	4.39	15.0	EPA 200.7/3010	08/26 10:30	08/26 13:33	MAZ
Sodium	2010		ug/L	1	521	2000	EPA 200.7/3010	08/26 10:30	08/26 13:33	MAZ
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	08/26 10:30	08/26 13:33	MAZ
Titanium	4.40		ug/L	1	0.358	1.00	EPA 200.7/3010	08/26 10:30	08/26 13:33	MAZ

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/8/2022
Work Order # 22H1106
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H1106-02
Client Sample ID: CCR-18B
Matrix: Water

Collection Date: 08/24/22 13:10
Received Date: 08/25/22 15:40
Collected By: Thomas Johnston

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	154		mg/L	1	2.49	7.46	EPA 310.2	08/31 18:48	08/31 18:48	OC
Bicarbonate	154		mg/L	1	2.49	7.46	EPA 310.2	08/31 18:48	08/31 18:48	OC
Chloride	3.01		mg/L	1	0.126	0.500	EPA 300.0	08/26 14:07	08/26 16:35	PK
Fluoride	0.382		mg/L	1	0.00520	0.0250	EPA 300.0	08/26 14:07	08/26 16:35	PK
Sulfate	29.6		mg/L	1	0.0953	0.500	EPA 300.0	08/26 14:07	08/26 16:35	PK
Total Dissolved Solids	310		mg/L	2	20.0	60.0	SM 2540C	08/30 09:45	09/02 17:30	LE

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/8/2022
Work Order # 22H1106
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H1106-03
Client Sample ID: 82422 EQBLKA
Matrix: Water

Collection Date: 08/24/22 14:00
Received Date: 08/25/22 15:40
Collected By: Thomas Johnston

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	6.20	15.0	EPA 200.7/3010	08/26 10:30	08/26 13:34	MAZ
Arsenic	ND	U	ug/L	1	3.96	10.0	EPA 200.7/3010	08/26 10:30	08/26 13:34	MAZ
Barium	ND	U	ug/L	1	0.0962	1.00	EPA 200.7/3010	08/26 10:30	08/26 13:34	MAZ
Beryllium	ND	U	ug/L	1	0.107	1.00	EPA 200.7/3010	08/26 10:30	08/26 13:34	MAZ
Boron	ND	U	ug/L	1	0.616	10.0	EPA 200.7/3010	08/26 10:30	08/26 13:34	MAZ
Cadmium	ND	U	ug/L	1	0.217	1.00	EPA 200.7/3010	08/26 10:30	08/26 13:34	MAZ
Calcium	ND	U	ug/L	1	5.96	50.0	EPA 200.7/3010	08/26 10:30	08/26 13:34	MAZ
Chromium	ND	U	ug/L	1	0.513	5.00	EPA 200.7/3010	08/26 10:30	08/26 13:34	MAZ
Cobalt	ND	U	ug/L	1	0.354	1.00	EPA 200.7/3010	08/26 10:30	08/26 13:34	MAZ
Lead	ND	U	ug/L	1	1.93	10.0	EPA 200.7/3010	08/26 10:30	08/26 13:34	MAZ
Lithium	ND	U	ug/L	1	4.74	25.0	EPA 200.7/3010	08/26 10:00	09/01 09:26	JF
Magnesium	ND	U	ug/L	1	2.48	20.0	EPA 200.7/3010	08/26 10:30	08/26 13:34	MAZ
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	08/30 08:24	08/30 14:10	JF
Molybdenum	ND	U	ug/L	1	1.43	10.0	EPA 200.7/3010	08/26 10:30	08/26 13:34	MAZ
Potassium	ND	U	ug/L	1	10.9	50.0	EPA 200.7/3010	08/26 10:30	08/26 13:34	MAZ
Selenium	ND	U	ug/L	1	4.39	15.0	EPA 200.7/3010	08/26 10:30	08/26 13:34	MAZ
Sodium	ND	U	ug/L	1	521	2000	EPA 200.7/3010	08/26 10:30	08/26 13:34	MAZ
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	08/26 10:30	08/26 13:34	MAZ
Titanium	ND	U	ug/L	1	0.358	1.00	EPA 200.7/3010	08/26 10:30	08/26 13:34	MAZ

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/8/2022
Work Order # 22H1106
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H1106-04
Client Sample ID: 82422 EQBLKB
Matrix: Water

Collection Date: 08/24/22 14:00
Received Date: 08/25/22 15:40
Collected By: Thomas Johnston

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	ND	U	mg/L	1	2.49	7.46	EPA 310.2	08/31 18:48	08/31 18:48	OC
Bicarbonate	ND	U	mg/L	1	2.49	7.46	EPA 310.2	08/31 18:48	08/31 18:48	OC
Chloride	ND	U	mg/L	1	0.126	0.500	EPA 300.0	08/26 14:07	08/26 17:25	PK
Fluoride	ND	U	mg/L	1	0.00520	0.0250	EPA 300.0	08/26 14:07	08/26 17:25	PK
Sulfate	ND	U	mg/L	1	0.0953	0.500	EPA 300.0	08/26 14:07	08/26 17:25	PK
Total Dissolved Solids	ND	U	mg/L	1	10.0	30.0	SM 2540C	08/30 09:45	09/02 17:30	LE

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/8/2022
Work Order # 22H1106
Project: CCR Monitoring Program
McIntosh Plant

Wet Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0856 - Default Prep GenChem										
Blank (22H0856-BLK1)				Prepared & Analyzed: 08/26/2022						
Fluoride	ND	0.0250	mg/L							U
Sulfate	ND	0.500	"							U
Chloride	ND	0.500	"							U
LCS (22H0856-BS1)				Prepared & Analyzed: 08/26/2022						
Fluoride	2.47	0.0250	mg/L	2.500		99	90-110			
Chloride	49.0	0.500	"	50.00		98	90-110			
Sulfate	49.3	0.500	"	50.00		99	90-110			
Duplicate (22H0856-DUP1)	**Source: 22H1106-02**			Prepared & Analyzed: 08/26/2022						
Fluoride	0.398	0.0250	mg/L		0.382			4	20	
Chloride	2.77	0.500	"		3.01			8	20	
Sulfate	29.5	0.500	"		29.6			0.1	20	
Matrix Spike (22H0856-MS1)	**Source: 22H1106-02**			Prepared & Analyzed: 08/26/2022						
Fluoride	2.74	0.0250	mg/L	2.500	0.382	94	90-110			
Chloride	52.1	0.500	"	50.00	3.01	98	90-110			
Sulfate	76.7	0.500	"	50.00	29.6	94	90-110			
Batch 22H0935 - Default Prep GenChem										
Blank (22H0935-BLK1)				Prepared: 08/30/2022 Analyzed: 09/02/2022						
Total Dissolved Solids	ND	30.0	mg/L							U
LCS (22H0935-BS1)				Prepared: 08/30/2022 Analyzed: 09/02/2022						
Total Dissolved Solids	496	120	mg/L	500.0		99.2	80-120			

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/8/2022
Work Order # 22H1106
Project: CCR Monitoring Program
McIntosh Plant

Wet Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0935 - Default Prep GenChem										
Duplicate (22H0935-DUP1)	**Source: 22H1095-01**			Prepared: 08/30/2022 Analyzed: 09/02/2022						
Total Dissolved Solids	580	120	mg/L		548			5.67	20	
Duplicate (22H0935-DUP2)	**Source: 22H1194-01**			Prepared: 08/30/2022 Analyzed: 09/02/2022						
Total Dissolved Solids	896	120	mg/L		912			1.77	20	
Batch 22H0972 - Default Prep GenChem										
Blank (22H0972-BLK1)				Prepared & Analyzed: 08/31/2022						
Total Alkalinity	ND	7.46	mg/L							U
LCS (22H0972-BS1)				Prepared & Analyzed: 08/31/2022						
Total Alkalinity	237	7.46	mg/L	250.0		95	90-110			
Duplicate (22H0972-DUP1)	**Source: 22H1013-01**			Prepared & Analyzed: 08/31/2022						
Total Alkalinity	60.8	7.46	mg/L		60.3			0.8	20	
Matrix Spike (22H0972-MS1)	**Source: 22H1013-01**			Prepared & Analyzed: 08/31/2022						
Total Alkalinity	257	7.46	mg/L	250.0	60.3	79	90-110			J3
Matrix Spike (22H0972-MS2)	**Source: 22H1053-03**			Prepared & Analyzed: 08/31/2022						
Total Alkalinity	259	7.46	mg/L	250.0	17.5	97	90-110			
Batch 22H0973 - Default Prep GenChem										
Blank (22H0973-BLK1)				Prepared & Analyzed: 08/31/2022						
Total Alkalinity	ND	7.46	mg/L							U

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/8/2022
Work Order # 22H1106
Project: CCR Monitoring Program
McIntosh Plant

Wet Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0973 - Default Prep GenChem										
LCS (22H0973-BS1)				Prepared & Analyzed: 08/31/2022						
Total Alkalinity	237	7.46	mg/L	250.0		95	90-110			
Duplicate (22H0973-DUP1)		**Source: 22H1265-03**		Prepared & Analyzed: 08/31/2022						
Total Alkalinity	3.98	7.46	mg/L		3.54			12	20	I
Matrix Spike (22H0973-MS1)		**Source: 22H1265-03**		Prepared & Analyzed: 08/31/2022						
Total Alkalinity	248	7.46	mg/L	250.0	3.54	98	90-110			
Matrix Spike (22H0973-MS2)		**Source: 22H1191-04**		Prepared & Analyzed: 08/31/2022						
Total Alkalinity	266	7.46	mg/L	250.0	44.3	89	90-110			J3

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/8/2022

Work Order # 22H1106

Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0117 - EPA 3010A										
Blank (22H0117-BLK1)				Prepared & Analyzed: 08/26/2022						
Cobalt	ND	1.00	ug/L							U
Antimony	ND	15.0	"							U
Arsenic	ND	10.0	"							U
Barium	ND	1.00	"							U
Cadmium	ND	1.00	"							U
Boron	ND	10.0	"							U
Calcium	ND	50.0	"							U
Chromium	ND	5.00	"							U
Selenium	ND	15.0	"							U
Molybdenum	ND	10.0	"							U
Magnesium	ND	20.0	"							U
Lead	ND	10.0	"							U
Thallium	ND	4.00	"							U
Sodium	ND	2000	"							U
Potassium	ND	50.0	"							U
Beryllium	ND	1.00	"							U
Titanium	ND	1.00	"							U
LCS (22H0117-BS1)				Prepared & Analyzed: 08/26/2022						
Cobalt	493.2	1.00	ug/L	500.0		98.6	85-115			
Antimony	501.2	15.0	"	500.0		100	85-115			
Arsenic	511	10.0	"	500.0		102	85-115			
Barium	487.5	1.00	"	500.0		97.5	85-115			
Beryllium	505.3	1.00	"	500.0		101	85-115			
Boron	504.7	10.0	"	500.0		101	85-115			
Cadmium	495.9	1.00	"	500.0		99.2	85-115			
Calcium	26400	50.0	"	25500		104	85-115			
Chromium	493.6	5.00	"	500.0		98.7	85-115			
Lead	491	10.0	"	500.0		98.3	85-115			
Sodium	24700	2000	"	25500		96.8	85-115			
Molybdenum	508.2	10.0	"	500.0		102	85-115			
Selenium	520.8	15.0	"	500.0		104	85-115			

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/8/2022
Work Order # 22H1106
Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0117 - EPA 3010A										
LCS (22H0117-BS1)				Prepared & Analyzed: 08/26/2022						
Thallium	479.8	4.00	ug/L	500.0		96.0	85-115			
Magnesium	481	20.0	"	500.0		96.1	85-115			
Potassium	23300	50.0	"	25500		91.5	85-115			
Titanium	507.3	1.00	"	500.0		101	85-115			
Matrix Spike (22H0117-MS1)		**Source: 22H1073-03**		Prepared & Analyzed: 08/26/2022						
Cobalt	477.6	1.00	ug/L	500.0	ND	95.5	70-130			
Antimony	527.2	15.0	"	500.0	ND	105	70-130			
Arsenic	501	10.0	"	500.0	ND	100	70-130			
Barium	479.6	1.00	"	500.0	10.60	93.8	70-130			
Beryllium	484.5	1.00	"	500.0	ND	96.9	70-130			
Boron	633.3	10.0	"	500.0	138.5	99.0	70-130			
Cadmium	467.2	1.00	"	500.0	ND	93.4	70-130			
Calcium	97400	50.0	"	25500	74000	92.0	70-130			
Chromium	478.9	5.00	"	500.0	ND	95.8	70-130			
Lead	467	10.0	"	500.0	ND	93.4	70-130			
Selenium	485.5	15.0	"	500.0	ND	97.1	70-130			
Thallium	453.5	4.00	"	500.0	ND	90.7	70-130			
Molybdenum	500.3	10.0	"	500.0	ND	100	70-130			
Magnesium	5270	20.0	"	500.0	4890	75.9	70-130			
Sodium	68400	2000	"	25500	41100	107	70-130			
Titanium	492.8	1.00	"	500.0	0.4000	98.5	70-130			
Potassium	35400	50.0	"	25500	8900	104	70-130			
Matrix Spike Dup (22H0117-MSD1)		**Source: 22H1073-03**		Prepared & Analyzed: 08/26/2022						
Antimony	529.8	15.0	ug/L	500.0	ND	106	70-130	0.492	20	
Arsenic	498	10.0	"	500.0	ND	99.6	70-130	0.581	20	
Barium	482.4	1.00	"	500.0	10.60	94.4	70-130	0.595	20	
Cobalt	479.6	1.00	"	500.0	ND	95.9	70-130	0.418	20	
Beryllium	486.8	1.00	"	500.0	ND	97.4	70-130	0.474	20	
Boron	636.2	10.0	"	500.0	138.5	99.5	70-130	0.584	20	
Chromium	481.4	5.00	"	500.0	ND	96.3	70-130	0.521	20	

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/8/2022

Work Order # 22H1106

Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0117 - EPA 3010A										
Matrix Spike Dup (22H0117-MSD1)	**Source: 22H1073-03**			Prepared & Analyzed: 08/26/2022						
Cadmium	469.0	1.00	ug/L	500.0	ND	93.8	70-130	0.385	20	
Calcium	97900	50.0	"	25500	74000	93.8	70-130	1.88	20	
Sodium	68800	2000	"	25500	41100	109	70-130	1.36	20	
Lead	468	10.0	"	500.0	ND	93.5	70-130	0.150	20	
Molybdenum	502.6	10.0	"	500.0	ND	101	70-130	0.459	20	
Selenium	484.5	15.0	"	500.0	ND	96.9	70-130	0.206	20	
Thallium	453.1	4.00	"	500.0	ND	90.6	70-130	0.0882	20	
Magnesium	5290	20.0	"	500.0	4890	79.2	70-130	4.25	20	
Potassium	35600	50.0	"	25500	8900	105	70-130	0.710	20	
Titanium	495.5	1.00	"	500.0	0.4000	99.0	70-130	0.547	20	
Batch 22H0122 - EPA 245.1/245.2 Prep										
Blank (22H0122-BLK1)				Prepared & Analyzed: 08/30/2022						
Mercury	ND	1.00	ug/L							U
LCS (22H0122-BS1)				Prepared & Analyzed: 08/30/2022						
Mercury	10.3	1.00	ug/L	10.00		103	85-115			
Matrix Spike (22H0122-MS1)	**Source: 22H1106-03**			Prepared & Analyzed: 08/30/2022						
Mercury	9.18	1.00	ug/L	10.00	ND	92	70-130			
Matrix Spike Dup (22H0122-MSD1)	**Source: 22H1106-03**			Prepared & Analyzed: 08/30/2022						
Mercury	9.17	1.00	ug/L	10.00	ND	92	70-130	0.08	20	
Batch 22I0001 - EPA 3010A										
Blank (22I0001-BLK1)				Prepared: 08/26/2022 Analyzed: 09/01/2022						
Lithium	ND	25.0	ug/L							U

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/8/2022
Work Order # 22H1106
Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22I0001 - EPA 3010A										
LCS (22I0001-BS1)				Prepared: 08/26/2022 Analyzed: 09/01/2022						
Lithium	2650	25.0	ug/L	2500		106	85-115			
Matrix Spike (22I0001-MS1)	**Source: 22H1107-03**			Prepared: 08/26/2022 Analyzed: 09/01/2022						
Lithium	2650	25.0	ug/L	2500	ND	106	75-125			
Matrix Spike Dup (22I0001-MSD1)	**Source: 22H1107-03**			Prepared: 08/26/2022 Analyzed: 09/01/2022						
Lithium	2610	25.0	ug/L	2500	ND	104	75-125	1	20	

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

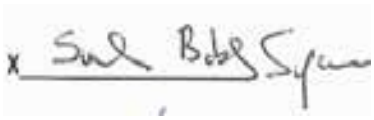
Report Printed: 9/8/2022
Work Order # 22H1106
Project: CCR Monitoring Program
McIntosh Plant

Notes and Definitions

U	Indicated that the compound was analyzed for but not detected. This shall be used to indicate that the specific component was not detected. The value associated with the qualifier shall be the laboratory method detection limit.
J3	The matrix spike recovery outside method acceptance limits indicating matrix interference.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the detection limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
N.O.O.	No Odor Observed
REP	Field parameter measured by client
V	Indicated that the analyte was detected in both the sample and the associated method blank.
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
Z	Too many colonies were present for accurate counting.
SUB	Work performed by outside (subcontracted) labs denoted by SUB in analyst field.

QC=Qualifier Codes as defined by DEP 62-160
Unless indicated, soil results are reported on actual (wet) weight basis.
The Color SM2120B method is reported as (Color / pH)
Legionella analyzed under CDC acreditation program
Dilution factors >= 1000 are abreviated using k=1000 and M=1000000
Field parameters are not NELAP acredited.
Results relate only to this sample.

Suresh (Bobby) Supan - CSM



Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification# E86006

All NELAP certified analysis are performed in accordance with Chapter 64E-1 Florida Administrative code, which has been determined to be equivalent to NELAC standards. Analysis certified by programs other than NELAP are designated with a "~".

SUBMISSION # 32H1104

Logged into LIMS by: L

Florida Spectrum Environmental Services, Inc

Doc. Ctrl 0401117-001
Date: 12/5/17

CHAIN OF CUSTODY RECORD

1460 W McNab Road Ft Lauderdale FL 33309 Tel: (954) 978-6400 Fax: (954) 978-2233
1112 NW Park Street, Okeechobee, FL 34972 Tel: (863) 763-3336 Fax: (863) 763-1544
630 Indian Street Savannah, GA 31401 Tel: (912) 238-5050 Fax (912) 234-4815
528 Gooch Road Fort Meade FL 33841 Tel: (863) 285-8145 Fax (863) 285-7030
1910 Harden Blvd # 101, Lakeland, FL 33803 Tel: (863) 686-4271 Fax (863) 686-4389

DUE DATE Requested

RUSH RESERVATION #

Rush Surcharges apply

Report to: Lakeland Electric

Report to Address: 3030 East Lake Parker Drive, Lakeland FL. 33805

Invoice to: Lakeland Electric

Purchase Order # 289273

Invoice to Address: 501 East Lemon Street, Lakeland FL. 33801

Project Name and/or Number: July 2022 CCR Monitoring Program

Site Location: McIntosh Plant

Project Mgr: Thomas Johnston

Phone: 863-834-6623

Fax:

Email: Thomas.Johnston@lakelandelectric.com

Sampler Name: (printed)

Sampler Signature

ORDER # Lab Control Number (Shaded Areas For Laboratory Use Only)	Sample ID	Date Sampled	Time Sampled	Matrix (DW GW S HW SA SW SED EFF BIO OIL X)	Bottle & Press Combo Codes	Number of Containers Received & NELAC Letter Suffixes # A-Z	Analysis Required: Appendix III Metals	Appendix IV Metals	GC Suite Metals	App III CLF-, SO4, TDS	GC Suite Bicarb, T-Alk			Field Tests: TEMP-C	PH	COND	CHLOR
01	CCR-18A	8/24/2022	1310	GW	2	1	x	x	x								
02	CCR-18B	8/24/2022	1310	GW	2	1				x	x						
03	82422EQBLKA	08/24/22	1400	GW	1+		x	x	x								
04	82422EQBLKB	8/24/22	1400	GW	1+					x	x						
						Total											

Special Comments: 4.8, ice GUN 1

"I waive NELAC protocol" (sign here) >

Deliverables QA/QC Report Needed? Yes No *(additional charge)*

	SAMPLE CUSTODY AND TRANSFER SIGNATURES	DATE / TIME
1	Relinquished by: BRIAN JUSTIN	82422 1500
1	Received by: Omar Cuevas FSE	8.24.22 1505
2	Relinquished by: FSE	08-25-22 15:40
2	Received by: FSE	8/25/22 1540
3	Relinquished by:	
3	Received by:	

Sample Custody & Field Comments

Received on Ice: (Y) N

Temp as received 1.8 C

Custody Seals? Y N

RAD-9 _____ GUN-1 ET6500

FIELD TIME:

Sampling _____ hr Pick up _____ hr

Misc. Charges

Bottle Type

A- liter amber
B-Bacteria bag/bottle
C-500 ml O-125ml
L-liter bottle H-Plastic Amber
S-Soil jar TED-Tedlar Air Bag
T-250 ml
V-40 ml vial
W-wide mouth
X-other

Preservatives

A-Ascorbic acid P-H_3PO_4
C-HCL S-H_2SO_4
Cu-$CuSO_4$ T-$Na_2S_2O_3$-H_2O
H-HNO_3 U-Unpreserved
M-MCAB DI-DI Water
N-NaOH Z-zinc acetate
NH_4-NH_4CL
Hex- Hex.Cr. Buffer
EDA-Ethylene Diamine

www.flenviro.com COC Page 1 of 1

CCR Monitoring Programs - 2021
Byproduct Storage Area
C.C. Warrick Plant

		Historical GWPS exceedances	SSL?	Jul-21 & Jan-22 Monitoring?	Rationale	Parameters
CCR-1	Background	None - background	NO	YES	Ongoing Assessment Monitoring	Appendix III, IV
CCR-2	Background	None - background	NO	YES	Ongoing Assessment Monitoring	Appendix III, IV
CCR-3	CCR Compliance	arsenic	NO	NO	No Further Monitoring Warranted	-
CCR-4	CCR Compliance	lithium	ND	YES	Ongoing Assessment Monitoring	Appendix III, IV
		thallium	NO			
		arsenic	YES			
CCR-5	CCR Compliance	chloride	YES	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
		thallium	NO			
CCR-6	CCR Compliance	lithium	YES	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
CCR-7	CCR Compliance	arsenic	NO	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
		lithium	NO			
CCR-8	CCR Compliance	arsenic	NO	YES	Ongoing Assessment Monitoring	Appendix III, IV
		antimony	NO			
CCR-9	CCR Compliance	lithium	YES	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
		thallium	NO			
CCR-10	CCR Compliance	No GWPS exceedances	NO	NO	No Further Monitoring Warranted	-
CCR-11	CCR Compliance	arsenic	YES	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
		arsenic	YES			
CCR-12	CCR Compliance	lithium	NO	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
		thallium	NO			
CCR-13	CCR Compliance	lithium	YES	YES	Ongoing Assessment Monitoring	Appendix III, IV
CCR-14	CCR Compliance	No GWPS exceedances	NO	NO	No Further Monitoring Warranted	-
CCR-15	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-4	Appendix III, IV, GC suite
CCR-16	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-5	Appendix III, IV, GC suite
CCR-17	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-6	Appendix III, IV, GC suite
CCR-18	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-7	Appendix III, IV, GC suite
CCR-19	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-9	Appendix III, IV, GC suite
CCR-20	Nature & Extent	NA	NA	YES	Evaluate arsenic mobility downgradient CCR-11	Appendix III, IV, GC suite
CCR-21	Nature & Extent	NA	NA	YES	Evaluate arsenic mobility downgradient CCR-12	Appendix III, IV, GC suite
CCR-22	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-14	Appendix III, IV, GC suite
CCR-23	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-13	Appendix III, IV, GC suite
MW-106	Nature & Extent	NA	NA	YES	Evaluate GWPS exceedances at downgradient property boundary	Appendix III, IV, GC suite

Notes:
1. NA - not applicable
2. GWPS - Groundwater protection standards
3. SSL - statistically significant level
4. Appendix III - Boron, chloride, fluoride, pH, sulfate, total dissolved solids
5. Appendix IV - antimony, arsenic, barium, beryllium, cadmium, chromium (total), cobalt, fluoride, lead, lithium, mercury (inorganic), molybdenum, selenium, thallium
6. GC Suite - Geochemical suite - magnesium, sodium, bicarbonate alkalinity, sulfate

1460 West McNab Road
Fort Lauderdale, FL 33309
1-800-ANALYTE Phone
(954) 978-6400 Phone
(954) 978-2233 Fax

NELAP Certificate No. E86006

09 September 2022
Lab Work Order (COC): 22H1107

Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland, FL 33805

RE: July 2022 **CCR Monitoring Program**

Project Location: McIntosh Plant

Dear Thomas Johnston:

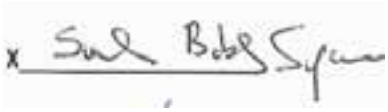
This report details the analytical results of samples collected at the above-referenced project location. These samples were received by Florida Spectrum Environmental Services at **08/25/2022 15:40**.

All Analyses were performed according to the TNI/NELAP standard unless indicated by a "~" on the report.

Your samples will be retained by Florida Spectrum Environmental for a period of at least 30 days following sample receipt or until the longest of the preparation and/or analytical hold times expires, whichever is shorter. After that time, they will be properly disposed without further notice, unless there exists an explicit contractual agreement to the contrary. We reserve the right to return any unused samples, extracts, or related materials or solutions to you if we consider it necessary. Examples might include those samples identified as hazardous wastes, submissions where the sample sizes significantly exceed those required for analysis, samples containing controlled substances, etc.

We thank you for selecting Florida Spectrum Environmental to serve your analytical needs. Should you have any questions or require additional information regarding any of the information in this report, please feel free to contact us at any time. We appreciate the opportunity to be of service.

Florida Spectrum Environmental Inc.



Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/9/2022

Work Order # 22H1107

Project: CCR Monitoring Program
McIntosh Plant

DETECTED ANALYTE SUMMARY

CCR-11A	22H1107-01	Water	Sodium	192000	ug/L	8/24/2022	10:01
CCR-11A	22H1107-01	Water	Potassium	321000	ug/L	8/24/2022	10:01
CCR-11A	22H1107-01	Water	Calcium	581000	ug/L	8/24/2022	10:01
CCR-11A	22H1107-01	Water	Boron	367	ug/L	8/24/2022	10:01
CCR-11A	22H1107-01	Water	Barium	51.7	ug/L	8/24/2022	10:01
CCR-11A	22H1107-01	Water	Chromium	1.80	ug/L	8/24/2022	10:01
CCR-11A	22H1107-01	Water	Arsenic	65.9	ug/L	8/24/2022	10:01
CCR-11A	22H1107-01	Water	Magnesium	11400	ug/L	8/24/2022	10:01
CCR-11B	22H1107-02	Water	Fluoride	1.44	mg/L	8/24/2022	10:01
CCR-11B	22H1107-02	Water	Chloride	545	mg/L	8/24/2022	10:01
CCR-11B	22H1107-02	Water	Bicarbonate	7.90	mg/L	8/24/2022	10:01
CCR-11B	22H1107-02	Water	Sulfate	1730	mg/L	8/24/2022	10:01
CCR-11B	22H1107-02	Water	Total Dissolved Solids	3350	mg/L	8/24/2022	10:01
CCR-11B	22H1107-02	Water	Total Alkalinity	7.90	mg/L	8/24/2022	10:01
CCR-12A	22H1107-03	Water	Chromium	1.10	ug/L	8/24/2022	10:38
CCR-12A	22H1107-03	Water	Magnesium	5680	ug/L	8/24/2022	10:38
CCR-12A	22H1107-03	Water	Calcium	530000	ug/L	8/24/2022	10:38
CCR-12A	22H1107-03	Water	Potassium	55900	ug/L	8/24/2022	10:38
CCR-12A	22H1107-03	Water	Boron	484	ug/L	8/24/2022	10:38
CCR-12A	22H1107-03	Water	Barium	17.8	ug/L	8/24/2022	10:38
CCR-12A	22H1107-03	Water	Titanium	0.700	ug/L	8/24/2022	10:38
CCR-12A	22H1107-03	Water	Molybdenum	24.7	ug/L	8/24/2022	10:38
CCR-12A	22H1107-03	Water	Sodium	24600	ug/L	8/24/2022	10:38
CCR-12A	22H1107-03	Water	Arsenic	63.5	ug/L	8/24/2022	10:38

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/9/2022

Work Order # 22H1107

Project: CCR Monitoring Program
McIntosh Plant

DETECTED ANALYTE SUMMARY

Client Sample ID	Laboratory ID	Matrix	Analyte	Result	Units	Collection Date	Collection Time
CCR-12B	22H1107-04	Water	Total Dissolved Solids	2070	mg/L	8/24/2022	10:38
CCR-12B	22H1107-04	Water	Chloride	19.5	mg/L	8/24/2022	10:38
CCR-12B	22H1107-04	Water	Fluoride	1.08	mg/L	8/24/2022	10:38
CCR-12B	22H1107-04	Water	Sulfate	1200	mg/L	8/24/2022	10:38
CCR-12B	22H1107-04	Water	Total Alkalinity	188	mg/L	8/24/2022	10:38
CCR-12B	22H1107-04	Water	Bicarbonate	188	mg/L	8/24/2022	10:38

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/9/2022
Work Order # 22H1107
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H1107-01
Client Sample ID: CCR-11A
Matrix: Water

Collection Date: 08/24/22 10:01
Received Date: 08/25/22 15:40
Collected By: Client

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	6.20	15.0	EPA 200.7/3010	08/26 10:30	08/26 13:36	MAZ
Arsenic	65.9		ug/L	1	3.96	10.0	EPA 200.7/3010	08/26 10:30	08/26 13:36	MAZ
Barium	51.7		ug/L	1	0.0962	1.00	EPA 200.7/3010	08/26 10:30	08/26 13:36	MAZ
Beryllium	ND	U	ug/L	1	0.107	1.00	EPA 200.7/3010	08/26 10:30	08/26 13:36	MAZ
Boron	367		ug/L	1	0.616	10.0	EPA 200.7/3010	08/26 10:30	08/26 13:36	MAZ
Cadmium	ND	U	ug/L	1	0.217	1.00	EPA 200.7/3010	08/26 10:30	08/26 13:36	MAZ
Calcium	581000		ug/L	10	59.6	500	EPA 200.7/3010	08/26 10:30	08/26 15:10	MAZ
Chromium	1.80	I	ug/L	1	0.513	5.00	EPA 200.7/3010	08/26 10:30	08/26 13:36	MAZ
Cobalt	ND	U	ug/L	1	0.354	1.00	EPA 200.7/3010	08/26 10:30	08/26 13:36	MAZ
Lead	ND	U	ug/L	1	1.93	10.0	EPA 200.7/3010	08/26 10:30	08/26 13:36	MAZ
Lithium	ND	U	ug/L	1	4.74	25.0	EPA 200.7/3010	08/26 10:00	09/01 09:28	JF
Magnesium	11400		ug/L	1	2.48	20.0	EPA 200.7/3010	08/26 10:30	08/26 13:36	MAZ
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	08/30 08:24	08/30 13:47	JF
Molybdenum	ND	U	ug/L	1	1.43	10.0	EPA 200.7/3010	08/26 10:30	08/26 13:36	MAZ
Potassium	321000		ug/L	10	109	500	EPA 200.7/3010	08/26 10:30	08/26 15:10	MAZ
Selenium	ND	U	ug/L	1	4.39	15.0	EPA 200.7/3010	08/26 10:30	08/26 13:36	MAZ
Sodium	192000		ug/L	10	5210	20000	EPA 200.7/3010	08/26 10:30	08/26 15:10	MAZ
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	08/26 10:30	08/26 13:36	MAZ
Titanium	ND	U	ug/L	1	0.358	1.00	EPA 200.7/3010	08/26 10:30	08/26 13:36	MAZ

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/9/2022
Work Order # 22H1107
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H1107-02
Client Sample ID: CCR-11B
Matrix: Water

Collection Date: 08/24/22 10:01
Received Date: 08/25/22 15:40
Collected By: Client

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	7.90		mg/L	1	2.49	7.46	EPA 310.2	08/31 18:48	08/31 18:48	OC
Bicarbonate	7.90		mg/L	1	2.49	7.46	EPA 310.2	08/31 18:48	08/31 18:48	OC
Chloride	545		mg/L	20	2.52	10.0	EPA 300.0	08/26 14:07	08/26 17:41	PK
Fluoride	1.44		mg/L	5	0.0260	0.125	EPA 300.0	08/29 18:41	08/29 19:47	PK
Sulfate	1730		mg/L	20	1.91	10.0	EPA 300.0	08/26 14:07	08/26 17:41	PK
Total Dissolved Solids	3350		mg/L	4	40.0	120	SM 2540C	08/30 09:45	09/02 17:30	LE

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/9/2022
Work Order # 22H1107
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H1107-03
Client Sample ID: CCR-12A
Matrix: Water

Collection Date: 08/24/22 10:38
Received Date: 08/25/22 15:40
Collected By: Client

Laboratory Analysis Report

Total Recoverable Metals by EPA 200 Series Methods

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Antimony	ND	U	ug/L	1	6.20	15.0	EPA 200.7/3010	08/26 10:30	08/26 13:38	MAZ
Arsenic	63.5		ug/L	1	3.96	10.0	EPA 200.7/3010	08/26 10:30	08/26 13:38	MAZ
Barium	17.8		ug/L	1	0.0962	1.00	EPA 200.7/3010	08/26 10:30	08/26 13:38	MAZ
Beryllium	ND	U	ug/L	1	0.107	1.00	EPA 200.7/3010	08/26 10:30	08/26 13:38	MAZ
Boron	484		ug/L	1	0.616	10.0	EPA 200.7/3010	08/26 10:30	08/26 13:38	MAZ
Cadmium	ND	U	ug/L	1	0.217	1.00	EPA 200.7/3010	08/26 10:30	08/26 13:38	MAZ
Calcium	530000		ug/L	10	59.6	500	EPA 200.7/3010	08/26 10:30	08/26 15:12	MAZ
Chromium	1.10	I	ug/L	1	0.513	5.00	EPA 200.7/3010	08/26 10:30	08/26 13:38	MAZ
Cobalt	ND	U	ug/L	1	0.354	1.00	EPA 200.7/3010	08/26 10:30	08/26 13:38	MAZ
Lead	ND	U	ug/L	1	1.93	10.0	EPA 200.7/3010	08/26 10:30	08/26 13:38	MAZ
Lithium	ND	U	ug/L	1	4.74	25.0	EPA 200.7/3010	08/26 10:00	09/01 09:31	JF
Magnesium	5680		ug/L	1	2.48	20.0	EPA 200.7/3010	08/26 10:30	08/26 13:38	MAZ
Mercury	ND	U	ug/L	1	0.120	1.00	EPA 245.1	08/30 08:24	08/30 13:50	JF
Molybdenum	24.7		ug/L	1	1.43	10.0	EPA 200.7/3010	08/26 10:30	08/26 13:38	MAZ
Potassium	55900		ug/L	10	109	500	EPA 200.7/3010	08/26 10:30	08/26 15:12	MAZ
Selenium	ND	U	ug/L	1	4.39	15.0	EPA 200.7/3010	08/26 10:30	08/26 13:38	MAZ
Sodium	24600		ug/L	1	521	2000	EPA 200.7/3010	08/26 10:30	08/26 13:38	MAZ
Thallium	ND	U	ug/L	1	0.925	4.00	EPA 200.7/3010	08/26 10:30	08/26 13:38	MAZ
Titanium	0.700	I	ug/L	1	0.358	1.00	EPA 200.7/3010	08/26 10:30	08/26 13:38	MAZ

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/9/2022
Work Order # 22H1107
Project: CCR Monitoring Program
McIntosh Plant

Lab ID: 22H1107-04
Client Sample ID: CCR-12B
Matrix: Water

Collection Date: 08/24/22 10:38
Received Date: 08/25/22 15:40
Collected By: Client

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Wet Chemistry										
Total Alkalinity	188		mg/L	1	2.49	7.46	EPA 310.2	08/31 18:48	08/31 18:48	OC
Bicarbonate	188		mg/L	1	2.49	7.46	EPA 310.2	08/31 18:48	08/31 18:48	OC
Chloride	19.5		mg/L	10	1.26	5.00	EPA 300.0	08/29 18:41	08/29 20:03	PK
Fluoride	1.08		mg/L	10	0.0520	0.250	EPA 300.0	08/29 18:41	08/29 20:03	PK
Sulfate	1200		mg/L	20	1.91	10.0	EPA 300.0	08/29 18:41	08/30 10:51	PK
Total Dissolved Solids	2070		mg/L	4	40.0	120	SM 2540C	08/30 09:45	09/02 17:30	LE

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/9/2022

Work Order # 22H1107

Project: CCR Monitoring Program
McIntosh Plant

Wet Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0856 - Default Prep GenChem										
Blank (22H0856-BLK1)				Prepared & Analyzed: 08/26/2022						
Chloride	ND	0.500	mg/L							U
Sulfate	ND	0.500	"							U
LCS (22H0856-BS1)				Prepared & Analyzed: 08/26/2022						
Sulfate	49.3	0.500	mg/L	50.00		99	90-110			
Chloride	49.0	0.500	"	50.00		98	90-110			
Duplicate (22H0856-DUP1)	**Source: 22H1106-02**			Prepared & Analyzed: 08/26/2022						
Sulfate	29.5	0.500	mg/L		29.6			0.1	20	
Chloride	2.77	0.500	"		3.01			8	20	
Matrix Spike (22H0856-MS1)	**Source: 22H1106-02**			Prepared & Analyzed: 08/26/2022						
Sulfate	76.7	0.500	mg/L	50.00	29.6	94	90-110			
Chloride	52.1	0.500	"	50.00	3.01	98	90-110			
Batch 22H0891 - Default Prep GenChem										
Blank (22H0891-BLK1)				Prepared & Analyzed: 08/29/2022						
Fluoride	ND	0.0250	mg/L							U
Chloride	ND	0.500	"							U
Sulfate	ND	0.500	"							U
LCS (22H0891-BS1)				Prepared & Analyzed: 08/29/2022						
Fluoride	2.50	0.0250	mg/L	2.500		100	90-110			
Chloride	48.9	0.500	"	50.00		98	90-110			
Sulfate	49.1	0.500	"	50.00		98	90-110			

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/9/2022
Work Order # 22H1107
Project: CCR Monitoring Program
McIntosh Plant

Wet Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0891 - Default Prep GenChem										
Duplicate (22H0891-DUP1)		**Source: 22H1120-01**		Prepared & Analyzed: 08/29/2022						
Fluoride	0.256	0.0250	mg/L		0.257			0.4	20	
Chloride	4.64	0.500	"		4.65			0.1	20	
Sulfate	2.34	0.500	"		2.34			0.09	20	
Matrix Spike (22H0891-MS1)		**Source: 22H1120-01**		Prepared & Analyzed: 08/29/2022						
Fluoride	2.48	0.0250	mg/L	2.500	0.257	89	90-110			J3
Chloride	54.3	0.500	"	50.00	4.65	99	90-110			
Sulfate	52.7	0.500	"	50.00	2.34	101	90-110			
Matrix Spike (22H0891-MS2)		**Source: 22H1191-04**		Prepared: 08/29/2022 Analyzed: 08/30/2022						
Fluoride	2.36	0.0250	mg/L	2.500	0.100	90	90-110			
Chloride	53.2	0.500	"	50.00	3.92	99	90-110			
Sulfate	51.4	0.500	"	50.00	1.60	100	90-110			
Batch 22H0935 - Default Prep GenChem										
Blank (22H0935-BLK1)				Prepared: 08/30/2022 Analyzed: 09/02/2022						
Total Dissolved Solids	ND	30.0	mg/L							U
LCS (22H0935-BS1)				Prepared: 08/30/2022 Analyzed: 09/02/2022						
Total Dissolved Solids	496	120	mg/L	500.0		99.2	80-120			
Duplicate (22H0935-DUP1)		**Source: 22H1095-01**		Prepared: 08/30/2022 Analyzed: 09/02/2022						
Total Dissolved Solids	580	120	mg/L		548			5.67	20	
Duplicate (22H0935-DUP2)		**Source: 22H1194-01**		Prepared: 08/30/2022 Analyzed: 09/02/2022						
Total Dissolved Solids	896	120	mg/L		912			1.77	20	

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/9/2022
Work Order # 22H1107
Project: CCR Monitoring Program
McIntosh Plant

Wet Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0973 - Default Prep GenChem										
Blank (22H0973-BLK1)				Prepared & Analyzed: 08/31/2022						
Total Alkalinity	ND	7.46	mg/L							U
LCS (22H0973-BS1)				Prepared & Analyzed: 08/31/2022						
Total Alkalinity	237	7.46	mg/L	250.0		95	90-110			
Duplicate (22H0973-DUP1)	**Source: 22H1265-03**			Prepared & Analyzed: 08/31/2022						
Total Alkalinity	3.98	7.46	mg/L		3.54			12	20	I
Matrix Spike (22H0973-MS1)	**Source: 22H1265-03**			Prepared & Analyzed: 08/31/2022						
Total Alkalinity	248	7.46	mg/L	250.0	3.54	98	90-110			
Matrix Spike (22H0973-MS2)	**Source: 22H1191-04**			Prepared & Analyzed: 08/31/2022						
Total Alkalinity	266	7.46	mg/L	250.0	44.3	89	90-110			J3

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/9/2022

Work Order # 22H1107

Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0117 - EPA 3010A										
Blank (22H0117-BLK1)				Prepared & Analyzed: 08/26/2022						
Cadmium	ND	1.00	ug/L							U
Calcium	ND	50.0	"							U
Chromium	ND	5.00	"							U
Cobalt	ND	1.00	"							U
Barium	ND	1.00	"							U
Antimony	ND	15.0	"							U
Lead	ND	10.0	"							U
Arsenic	ND	10.0	"							U
Beryllium	ND	1.00	"							U
Boron	ND	10.0	"							U
Titanium	ND	1.00	"							U
Thallium	ND	4.00	"							U
Sodium	ND	2000	"							U
Magnesium	ND	20.0	"							U
Selenium	ND	15.0	"							U
Molybdenum	ND	10.0	"							U
Potassium	ND	50.0	"							U
LCS (22H0117-BS1)				Prepared & Analyzed: 08/26/2022						
Cadmium	495.9	1.00	ug/L	500.0		99.2	85-115			
Calcium	26400	50.0	"	25500		104	85-115			
Chromium	493.6	5.00	"	500.0		98.7	85-115			
Cobalt	493.2	1.00	"	500.0		98.6	85-115			
Antimony	501.2	15.0	"	500.0		100	85-115			
Selenium	520.8	15.0	"	500.0		104	85-115			
Arsenic	511	10.0	"	500.0		102	85-115			
Boron	504.7	10.0	"	500.0		101	85-115			
Barium	487.5	1.00	"	500.0		97.5	85-115			
Beryllium	505.3	1.00	"	500.0		101	85-115			
Titanium	507.3	1.00	"	500.0		101	85-115			
Thallium	479.8	4.00	"	500.0		96.0	85-115			
Lead	491	10.0	"	500.0		98.3	85-115			

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/9/2022
Work Order # 22H1107
Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0117 - EPA 3010A										
LCS (22H0117-BS1)				Prepared & Analyzed: 08/26/2022						
Sodium	24700	2000	ug/L	25500		96.8	85-115			
Molybdenum	508.2	10.0	"	500.0		102	85-115			
Potassium	23300	50.0	"	25500		91.5	85-115			
Magnesium	481	20.0	"	500.0		96.1	85-115			
Matrix Spike (22H0117-MS1)		**Source: 22H1073-03**		Prepared & Analyzed: 08/26/2022						
Calcium	97400	50.0	ug/L	25500	74000	92.0	70-130			
Cobalt	477.6	1.00	"	500.0	ND	95.5	70-130			
Cadmium	467.2	1.00	"	500.0	ND	93.4	70-130			
Chromium	478.9	5.00	"	500.0	ND	95.8	70-130			
Boron	633.3	10.0	"	500.0	138.5	99.0	70-130			
Antimony	527.2	15.0	"	500.0	ND	105	70-130			
Barium	479.6	1.00	"	500.0	10.60	93.8	70-130			
Beryllium	484.5	1.00	"	500.0	ND	96.9	70-130			
Arsenic	501	10.0	"	500.0	ND	100	70-130			
Titanium	492.8	1.00	"	500.0	0.4000	98.5	70-130			
Thallium	453.5	4.00	"	500.0	ND	90.7	70-130			
Sodium	68400	2000	"	25500	41100	107	70-130			
Selenium	485.5	15.0	"	500.0	ND	97.1	70-130			
Lead	467	10.0	"	500.0	ND	93.4	70-130			
Magnesium	5270	20.0	"	500.0	4890	75.9	70-130			
Molybdenum	500.3	10.0	"	500.0	ND	100	70-130			
Potassium	35400	50.0	"	25500	8900	104	70-130			
Matrix Spike Dup (22H0117-MSD1)		**Source: 22H1073-03**		Prepared & Analyzed: 08/26/2022						
Boron	636.2	10.0	ug/L	500.0	138.5	99.5	70-130	0.584	20	
Cadmium	469.0	1.00	"	500.0	ND	93.8	70-130	0.385	20	
Calcium	97900	50.0	"	25500	74000	93.8	70-130	1.88	20	
Chromium	481.4	5.00	"	500.0	ND	96.3	70-130	0.521	20	
Cobalt	479.6	1.00	"	500.0	ND	95.9	70-130	0.418	20	
Antimony	529.8	15.0	"	500.0	ND	106	70-130	0.492	20	
Arsenic	498	10.0	"	500.0	ND	99.6	70-130	0.581	20	

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/9/2022
Work Order # 22H1107
Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22H0117 - EPA 3010A										
Matrix Spike Dup (22H0117-MSD1)	**Source: 22H1073-03**			Prepared & Analyzed: 08/26/2022						
Barium	482.4	1.00	ug/L	500.0	10.60	94.4	70-130	0.595	20	
Beryllium	486.8	1.00	"	500.0	ND	97.4	70-130	0.474	20	
Selenium	484.5	15.0	"	500.0	ND	96.9	70-130	0.206	20	
Titanium	495.5	1.00	"	500.0	0.4000	99.0	70-130	0.547	20	
Thallium	453.1	4.00	"	500.0	ND	90.6	70-130	0.0882	20	
Sodium	68800	2000	"	25500	41100	109	70-130	1.36	20	
Potassium	35600	50.0	"	25500	8900	105	70-130	0.710	20	
Magnesium	5290	20.0	"	500.0	4890	79.2	70-130	4.25	20	
Lead	468	10.0	"	500.0	ND	93.5	70-130	0.150	20	
Molybdenum	502.6	10.0	"	500.0	ND	101	70-130	0.459	20	
Batch 22H0122 - EPA 245.1/245.2 Prep										
Blank (22H0122-BLK1)				Prepared & Analyzed: 08/30/2022						
Mercury	ND	1.00	ug/L							U
LCS (22H0122-BS1)				Prepared & Analyzed: 08/30/2022						
Mercury	10.3	1.00	ug/L	10.00		103	85-115			
Matrix Spike (22H0122-MS1)	**Source: 22H1106-03**			Prepared & Analyzed: 08/30/2022						
Mercury	9.18	1.00	ug/L	10.00	ND	92	70-130			
Matrix Spike Dup (22H0122-MSD1)	**Source: 22H1106-03**			Prepared & Analyzed: 08/30/2022						
Mercury	9.17	1.00	ug/L	10.00	ND	92	70-130	0.08	20	
Batch 22I0001 - EPA 3010A										
Blank (22I0001-BLK1)				Prepared: 08/26/2022 Analyzed: 09/01/2022						
Lithium	ND	25.0	ug/L							U

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/9/2022
Work Order # 22H1107
Project: CCR Monitoring Program
McIntosh Plant

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22I0001 - EPA 3010A										
LCS (22I0001-BS1)				Prepared: 08/26/2022 Analyzed: 09/01/2022						
Lithium	2650	25.0	ug/L	2500		106	85-115			
Matrix Spike (22I0001-MS1)	**Source: 22H1107-03**			Prepared: 08/26/2022 Analyzed: 09/01/2022						
Lithium	2650	25.0	ug/L	2500	ND	106	75-125			
Matrix Spike Dup (22I0001-MSD1)	**Source: 22H1107-03**			Prepared: 08/26/2022 Analyzed: 09/01/2022						
Lithium	2610	25.0	ug/L	2500	ND	104	75-125	1	20	

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 9/9/2022
Work Order # 22H1107
Project: CCR Monitoring Program
McIntosh Plant

Notes and Definitions

U	Indicated that the compound was analyzed for but not detected. This shall be used to indicate that the specific component was not detected. The value associated with the qualifier shall be the laboratory method detection limit.
J3	The matrix spike recovery outside method acceptance limits indicating matrix interference.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the detection limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
N.O.O.	No Odor Observed
REP	Field parameter measured by client
V	Indicated that the analyte was detected in both the sample and the associated method blank.
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
Z	Too many colonies were present for accurate counting.
SUB	Work performed by outside (subcontracted) labs denoted by SUB in analyst field.

QC=Qualifier Codes as defined by DEP 62-160
Unless indicated, soil results are reported on actual (wet) weight basis.
The Color SM2120B method is reported as (Color / pH)
Legionella analyzed under CDC acreditation program
Dilution factors >= 1000 are abreviated using k=1000 and M=1000000
Field parameters are not NELAP acredited.
Results relate only to this sample.

Suresh (Bobby) Supan - CSM

x Suresh Bobby Supan

Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification# E86006

All NELAP certified analysis are performed in accordance with Chapter 64E-1 Florida Administrative code, which has been determined to be equivalent to NELAC standards. Analysis certified by programs other than NELAP are designated with a "~".

SUBMISSION # 92411C7

Logged into LIMS by: L

CHAIN OF CUSTODY RECORD

DUE DATE Requested

RUSH RESERVATION #

Rush Surcharges apply

Florida Spectrum Environmental Services, Inc.

1460 W McNab Road Ft Lauderdale FL 33309 Tel: (954) 978-6480 Fax: (954) 978-6483

3132 NW Park Street, Okeechobee, FL 34972 Tel: (863) 763-3256 Fax: (863) 763-1544

630 Indian Street Savannah, GA 31401 Tel: (912) 238-5050 Fax (912) 234-4815

520 Grooch Road Fort Meade FL 33841 Tel: (863) 285-8143 Fax (863) 285-7030

1910 Harden Blvd # 101, Lakeland, FL 33803 Tel: (863) 619-4721 Fax (863) 686-4589

Report to: Lakeland Electric

Report to Address: 3030 East Lake Parker Drive, Lakeland FL 33805

Invoice to: Lakeland Electric

Purchase Order # 289273

Invoice to Address: 501 East Lemon Street, Lakeland FL 33801

Project Name and/or Number: July 2022 CCR Monitoring Program

Site Location: McIntosh Plant

Project Mgr: Thomas Johnston

Phone: 863-834-6623

Fax:

Email: Thomas.Johnston@lakelandelectric.com

Sampler Name: (printed)

Sampler Signature

ORDER # Lab Control Number (Shaded Areas For Laboratory Use Only)	Sample ID	Date Sampled	Time Sampled	Matrix (DW GW S HW SA X; SW SLD EFF BIO OIL)	Bottle & Preservative Combo Codes	Number of Containers Received & NELAC Letter Suffixes #	Analysis Required: Appendix III Metals	Appendix IV Metals	GW Suite Metals	App III CL/F/SO4/TDS	GW Suite Radium, Radon	Field Tests: T E M P °C	P H	C O N D	C H L O R
01	CCR-11A	8/24/2022	1001	GW	TH	1 C	X	X	X						
02	CCR-11B	8/24/2022	1001	GW	TU	1 A				X	X				
03	CCR-12A	8/24/2022	1038	GW	TH	1 C	X	X	X						
04	CCR-12B	8/24/2022	1038	GW	TU	1 A				X	X				
						Total									

Special Comments: 4Y

"I waive NELAC protocol" (sign here) >

Deliverables

QA/QC Report Needed? Yes No (additional charges)

SAMPLE CUSTODY AND TRANSFER SIGNATURES — DATE / TIME

1 Relinquished by: 8-24-22 1210

1 Received by: 8.24.22 1215

2 Relinquished by: 8/25/22 15:40

2 Received by: 8/25/22 0854

3 Relinquished by:

3 Received by:

Sample Custody & Field Comments

Received on Ice: (Y) N

Temp received: 5.2 °C

Custody Seals: Y N

RAD: CUN-1 FB(D)

FIELD TIME:

Sampler: hr Pick up: hr

Charges:

Bottle Type

A-1 liter amber

B-Bacteria bag/bottle

F-500 ml O-125ml

L-liter bottle H-Plastic Amber

S-Soil jar TED-Tedlar Air Bag

T-250 ml

V-40 ml vial

W-wide mouth

X-other

Preservatives

A-Ascorbic acid P-H_3PO_4

C-HCL S-H_2SO_4

Cu-$CuSO_4$ T-$Na_2S_2O_3$-H_2O

H-HNO_3 U-Unpreserved

M-MCAB DI-DI Water

N-NaOH Z-zinc acetate

NH_4-NH_4Cl

Hex-Hex.Cr. Buffer

EDA-Ethylene Diamine

www.flenviro.com

COC Page 1 of 1

Page 16 of 17

CCR Monitoring Program - 2021
Byproduct Storage Area
C.D. McIntosh Plant

Well ID	Well Type	Historical GWPS Exceedances	SSL?	Jul-21 & Jan-22 Monitoring?	Rationale	Parameters
CCR-1	Background	Not in background	NO	YES	Ongoing Assessment Monitoring	Appendix III, IV
CCR-2	Background	Not in background	NO	YES	Ongoing Assessment Monitoring	Appendix III, IV
CCR-3	CCR Compliance	arsenic	NO	NO	No Further Monitoring Warranted	--
CCR-4	CCR Compliance	lithium thallium	NO NO	YES	Ongoing Assessment Monitoring	Appendix III, IV
CCR-5	CCR Compliance	arsenic lithium thallium	NO YES NO	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
CCR-6	CCR Compliance	lithium	YES	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
CCR-7	CCR Compliance	arsenic lithium	NO NO	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
CCR-8	CCR Compliance	arsenic	NO	YES	Ongoing Assessment Monitoring	Appendix III, IV
CCR-9	CCR Compliance	arsenic lithium thallium	NO YES NO	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
CCR-10	CCR Compliance	No GWPS exceedances	NO	NO	No Further Monitoring Warranted	
CCR-11	CCR Compliance	arsenic	YES	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
CCR-12	CCR Compliance	arsenic lithium thallium	YES NO NO	YES	Ongoing Assessment Monitoring	Appendix III, IV, GC suite
CCR-13	CCR Compliance	lithium	YES	YES	Ongoing Assessment Monitoring	Appendix III, IV
CCR-14	CCR Compliance	No GWPS exceedances	NO	NO	No Further Monitoring Warranted	--
CCR-15	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-5	Appendix III, IV, GC suite
CCR-16	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-5	Appendix III, IV, GC suite
CCR-17	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-6	Appendix III, IV, GC suite
CCR-18	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-7	Appendix III, IV, GC suite
CCR-19	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-9	Appendix III, IV, GC suite
CCR-20	Nature & Extent	NA	NA	YES	Evaluate arsenic mobility downgradient CCR-11	Appendix III, IV, GC suite
CCR-21	Nature & Extent	NA	NA	YES	Evaluate arsenic mobility downgradient CCR-12	Appendix III, IV, GC suite
CCR-22	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-13	Appendix III, IV, GC suite
CCR-23	Nature & Extent	NA	NA	YES	Evaluate lithium mobility downgradient CCR-13	Appendix III, IV, GC suite
SW-306	Nature & Extent	NA	NA	YES	Evaluate GWPS compliance at downgradient property boundary	Appendix III, IV, GC suite

Notes:
1. NA - not applicable
2. GWPS - Groundwater protection standards
3. SSL - statistically significant level
4. Appendix III - boron, calcium, chloride, fluoride, pH, sulfate, total dissolved solids
5. Appendix IV - antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, fluoride, lead, lithium, mercury, molybdenum, selenium, thallium [illegible]
6. GC Suite - Geochemical suite: [illegible], sodium, bicarbonate, potassium, [illegible]

1460 West McNab Road
Fort Lauderdale, FL 33309
1-800-ANALYTE Phone
(954) 978-6400 Phone
(954) 978-2233 Fax

NELAP Certificate No. E86006

21 December 2022
Lab Work Order (COC): 22L0839

Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland, FL 33805

RE: **292466/December 2022 CCR Monit. Program Resample**

Project Location: **McIntosh Plant**

Dear Thomas Johnston:

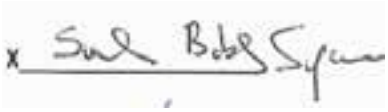
This report details the analytical results of samples collected at the above-referenced project location. These samples were received by Florida Spectrum Environmental Services at **12/19/2022 16:00**.

All Analyses were performed according to the TNI/NELAP standard unless indicated by a "~" on the report.

Your samples will be retained by Florida Spectrum Environmental for a period of at least 30 days following sample receipt or until the longest of the preparation and/or analytical hold times expires, whichever is shorter. After that time, they will be properly disposed without further notice, unless there exists an explicit contractual agreement to the contrary. We reserve the right to return any unused samples, extracts, or related materials or solutions to you if we consider it necessary. Examples might include those samples identified as hazardous wastes, submissions where the sample sizes significantly exceed those required for analysis, samples containing controlled substances, etc.

We thank you for selecting Florida Spectrum Environmental to serve your analytical needs. Should you have any questions or require additional information regarding any of the information in this report, please feel free to contact us at any time. We appreciate the opportunity to be of service.

Florida Spectrum Environmental Inc.



Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 12/21/2022

Work Order # 22L0839

Project: 292466/December 2022 CCR Monit. Program Resample McIntosh Plant

DETECTED ANALYTE SUMMARY

Client Sample ID	Laboratory ID	Matrix	Analyte	Result	Units	Collection Date	Collection Time
CCR-4A	22L0839-01	Water	Lithium	472	ug/L	12/19/2022	12:45

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 12/21/2022
Work Order # 22L0839
Project: 292466/December 2022 CCR Monit. Program Resample McIntosh Plant

Lab ID: 22L0839-01
Client Sample ID: CCR-4A
Matrix: Water

Collection Date: 12/19/22 12:45
Received Date: 12/19/22 16:00
Collected By: Thomas Johnston

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Total Recoverable Metals by EPA 200 Series Methods										
Lithium	472		ug/L	1	4.74	25.0	EPA 200.7/3010	12/21 08:30	12/21 10:42	JF

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 12/21/2022

Work Order # 22L0839

Project: 292466/December 2022 CCR Monit. Program Resample McIntosh Plant

Lab ID: 22L0839-02
Client Sample ID: CCR-7A
Matrix: Water

Collection Date: 12/19/22 14:12
Received Date: 12/19/22 16:00
Collected By: Thomas Johnston

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Total Recoverable Metals by EPA 200 Series Methods										
Lithium	ND	U	ug/L	1	4.74	25.0	EPA 200.7/3010	12/21 08:30	12/21 10:45	JF

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 12/21/2022
Work Order # 22L0839
Project: 292466/December 2022 CCR Monit. Program Resample McIntosh Plant 1

Lab ID: 22L0839-03
Client Sample ID: EqBlnk
Matrix: Water

Collection Date: 12/19/22 14:23
Received Date: 12/19/22 16:00
Collected By: Thomas Johnston

Laboratory Analysis Report

Parameter	Result	QC	Units	Dil	MDL	PQL	Method	Date Ext.	Date Analy.	Analyst
Total Recoverable Metals by EPA 200 Series Methods										
Lithium	ND	U	ug/L	1	4.74	25.0	EPA 200.7/3010	12/21 08:30	12/21 10:47	JF

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 12/21/2022

Work Order # 22L0839

Project: 292466/December 2022 CCR Monit. Program Resample McIntosh Plant 1

Total Recoverable Metals by EPA 200 Series Methods - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 22L0092 - EPA 3010A										
Blank (22L0092-BLK1)				Prepared & Analyzed: 12/21/2022						
Lithium	ND	25.0	ug/L							U
LCS (22L0092-BS1)				Prepared & Analyzed: 12/21/2022						
Lithium	2370	25.0	ug/L	2500		95	85-115			
Matrix Spike (22L0092-MS1)	**Source: 22L0839-03**			Prepared & Analyzed: 12/21/2022						
Lithium	2380	25.0	ug/L	2500	ND	95	75-125			
Matrix Spike Dup (22L0092-MSD1)	**Source: 22L0839-03**			Prepared & Analyzed: 12/21/2022						
Lithium	2380	25.0	ug/L	2500	ND	95	75-125	0.02	20	

Report To:
Thomas Johnston
Lakeland Electric - McIntosh
3030 East Lake Parker Drive
Lakeland FL, 33805

Report Printed: 12/21/2022

Work Order # 22L0839

Project: 292466/December 2022 CCR Monit. Program Resample McIntosh Plant

Notes and Definitions

U	Indicated that the compound was analyzed for but not detected. This shall be used to indicate that the specific component was not detected. The value associated with the qualifier shall be the laboratory method detection limit.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the detection limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
N.O.O.	No Odor Observed
REP	Field parameter measured by client
V	Indicated that the analyte was detected in both the sample and the associated method blank.
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
Z	Too many colonies were present for accurate counting.
SUB	Work performed by outside (subcontracted) labs denoted by SUB in analyst field.

QC=Qualifier Codes as defined by DEP 62-160
Unless indicated, soil results are reported on actual (wet) weight basis.
The Color SM2120B method is reported as (Color / pH)
Legionella analyzed under CDC acreditation program
Dilution factors >= 1000 are abreviated using k=1000 and M=1000000
Field parameters are not NELAP acredited.
Results relate only to this sample.

Suresh (Bobby) Supan - CSM

x Suresh Bobby Supan

Authorized CSM Signature (954) 978-6400
Florida-Spectrum Environmental Services,Inc.
Certification# E86006

All NELAP certified analysis are performed in accordance with Chapter 64E-1 Florida Administrative code, which has been determined to be equivalent to NELAC standards. Analysis certified by programs other than NELAP are designated with a "~".

CHAIN OF CUSTODY RECORD

SUBMISSION # 2212139
Logged into LIMS by: 2

Florida Spectrum Environmental Services, Inc.
1460 W McNab Road Ft Lauderdale FL 33309 Tel: (954) 978-6400 Fax: (954) 978-2233
1112 NW Park Street, Okeechobee, FL 34972 Tel: (863) 763-3336 Fax: (863) 763-3344
650 Indian Street Savannah, GA 31401 Tel: (912) 238-5050 Fax: (912) 234-4815
528 Gooch Road Fort Meade FL 33841 Tel: (863) 285-8145 Fax: (863) 285-7030
1910 Harden Blvd # 101, Lakeland, FL 33803 Tel: (863) 686-4271 Fax: (863) 686-4359

DUE DATE Requested: 2 27 22
RUSH RESERVATION #: SS1077
Rush Surcharges apply

Report to: Lakeland Electric
Report to Address: 3030 East Lake Parker Drive, Lakeland FL 33805
Invoice to: Lakeland Electric
Purchase Order #: 292466
Invoice to Address: 501 East Lemon Street, Lakeland FL 33801
Project Name and/or Number: December 2022 CCR Monitoring Program Resample
Site Location: McIntosh Plant
Email: Thomas.Johnston@lakelandelectric.com
Project Mgr: Thomas Johnston
Phone: 863-834-6623
Fax:
Sampler Name (printed): Thomas Johnston
Sampler Signature: [signature]

ORDER # Lab Control Number (Shaded Areas For Laboratory Use Only)	Sample ID	Date Sampled	Time Sampled	Matrix (DW SW GW SED S EFF HW BIO SA OIL X)	Bottle & Pres Combo Codes	Number of Containers Received & NELAC Letter Suffixes # A-?	Lithium
1	CCR-4A	12/19/2022	1245	GW	TH	1	X
2	CCR-7A	12/19/2022	1412	GW	TH	1	X
3	EqBlnk	12/19/2022	1423	DW	TH	1	X

Field Tests: TEMP, pH, COND, CHSOR

Total

Special Comments: 4.0
"I waive NELAC protocol" (sign here) > [signature]
Deliverables
QA/QC Report Needed? Yes / No (additional charge)

SAMPLE CUSTODY AND TRANSFER SIGNATURES

			DATE	TIME
1	Relinquished by:	[signature]	12/19/22	1545
1	Received by:	[signature]	12-19-22	1545
2	Relinquished by:	[signature] FSES	12-19-22	1600
2	Received by:	[signature] TED	12/19/22	[illegible]
3	Relinquished by:			
3	Received by:			

Sample Custody & Field Comments
Received on Ice: (Y) N
Temp as received 2.1 °C
Custody Seals? Y N
RAD-9 ____ GUN-1 E160 (1)
FIELD TIME:
Sampling ____ hr Pick up ____ hr
Misc. Charges

Bottle Type
A-liter amber
B-Bacteria bag/bottle
F-500 ml
L-liter bottle
S-Soil Jar
T-250 ml
V-40 ml vial
W-wide mouth
X-other
O-125ml
H-Plastic Amber
TED-Tedlar Air Bag

Preservatives
A-Ascorbic acid
C-HCL
Cu-$CuSO_4$
H-HNO_3
M-MCAB
N-NaOH
NH_4-NH_4Cl
Hex- Hex.Cr. Buffer
EDA-Ethylene Diamine
P-H_3PO_4
S-H_2SO_4
T-$Na_2S_2O_3$-H_2O
U-Unpreserved
DI-DI Water
Z-zinc acetate

www.flenviro.com
COC Page 1 of 1

February 2022 Water Level Measurements
Lakeland Electric - C.D. McIntosh Power Plant, Polk County, Florida

Well ID	Elevation		Depth to Water Reading	Well Depth (BGS)
	Top	Ground		
CCR-1	141.30		13.52	25.71
CCR-2	140.57		12.35	25.79
CCR-3	137.04		9.31	25.80
CCR-4	143.13		15.70	25.69
CCR-5	141.07		11.95	26.21
CCR-6	141.34		11.21	25.72
CCR-7	142.10		11.62	25.79
CCR-8	142.12		11.32	25.96
CCR-9	141.67		7.25	25.61
CCR-10R	133.56		4.50	24.70
CCR-11	137.12		8.22	25.64
CCR-12	136.99		8.55	25.75
CCR-13	137.95		9.41	25.66
CCR-14	138.70		10.65	25.51
CCR-15	144.65		17.62	25.67
CCR-16	144.10		16.51	25.64
CCR-17	145.80		16.08	25.67
CCR-18	140.81		10.52	25.91
CCR-19	136.47		6.70	25.82
CCR-20	136.05		8.28	25.21
CCR-21	137.12		8.54	25.87
CCR-22	137.51		8.90	25.13
CCR-23	135.78		7.57	25.44
MW-24S	143.91		13.21	21.54
MW-25S	144.40		15.97	26.09
SW-106			17.00	38.40

Readings taken 0836-1545 on Feb 24, 2022

U - Unobtainable

July 2022 Water Level Measurements
Lakeland Electric - C.D. McIntosh Power Plant, Polk County, Florida

Well ID	Elevation		Depth to Water Reading	Well Depth (BGS)
	Top	Ground		
CCR-1	141.30		12.06	25.71
CCR-2	140.57		11.24	25.79
CCR-3	137.04		6.10	25.80
CCR-4	143.13		14.82	25.69
CCR-5	141.07		11.67	26.21
CCR-6	141.34		10.66	25.72
CCR-7	142.10		10.83	25.79
CCR-8	142.12		10.82	25.96
CCR-9	141.67		8.96	25.61
CCR-10R	133.56		4.04	24.70
CCR-11	137.12		7.89	25.64
CCR-12	136.99		7.69	25.75
CCR-13	137.95		8.93	25.66
CCR-14	138.70		9.47	25.51
CCR-15	144.65		17.05	25.67
CCR-16	144.10		15.85	25.64
CCR-17	145.80		15.49	25.67
CCR-18	140.81		9.67	25.91
CCR-19	136.47		6.74	25.82
CCR-20	136.05		7.21	25.21
CCR-21	137.12		8.86	25.87
CCR-22	137.51		8.84	25.13
CCR-23	135.78		6.64	25.44
MW-24S	143.91		12.67	21.54
MW-25S	144.40		15.31	26.09
SW-106			15.33	38.40

Readings taken 05:30-10:19 military time on July 21, 2022

U - Unobtainable

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name:	McIntosh Power Plant			Site Location:	Lakeland, FL
Well No:	CCR-1	Sample ID:	CCR-1	Date:	2/28/22

PURGING DATA

Well Diameter		Tubing Diameter		Well Screen Interval				Static depth to water		Purge pump type
(inches):	2	(inches):	3/8	Depth:	15.7	to	25.2	(feet):	13.54	PP

Well Volume Purge:	total well depth		static depth to water		well capacity (gal/ft)			
One well volume =		-		X		=	0	gal

Equipment Volume Purge:	pump vol (gal)		flow cell volume (gal)		tubing length (ft)		Tubing capacity		
1 equipment volume =	0.05	+	0.101	gal +	25.71	X	0.008	=	0.31526 gal

Initial pump or tubing Depth in well (feet):	Final pump or tubing Depth in well (feet):	Purging initiated at:	Purging Ended at:	Total Volume Purged (gallons):
20.45	HF 20.50	1037	1052	

Time (Military)	Vol. Purged (gal)	Cumul. Vol. Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp °C	Cond. (µS/cm)	pH (SU)	Color by observation	DO (mg/L or %)	Turbidity (NTUs)	Sheen by observation
1049	1.98	1.98	0.165	13.60	24.7	311.1	5.92	Clear	0.41	0.99	None
1053	0.66	2.64	0.66	13.65	24.8	306.9	5.89	Clear	0.37	1.00	None
1057	0.66	3.30	0.66	13.65	24.9	303.7	5.87	Clear	0.38	1.05	None
			0.165 TS								
			0.165 TS								

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing Inside Dia. Capacity (Gal/Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: BA=Baiter, BP=Bladder Pump ESP=Electric Submersible Pump, PP=peristaltic Pump Other(specify)

SAMPLING DATA

Sampled by (Print) Affiliation	Sampler(s) Signature(s)	Sampling initiated at:	Sampling Ended at:
Thomas Johnston		1057	1107

Pump or Tubing Depth in well (feet):	Tubing Material Code	Field-Filtered: Y (N) Filtration Equipment Type:	Filter Size: µm
20.50	PE		

Field Decontamination: Y (N)	Tubing (Y) N (replaced)	Duplicate: Y (N)

Sample Container Specification				Sample Preservation				Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm x 3785
Sample I.D. Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)		Final pH			
CCR-1A	1	PP	250mL	1:1 HNO_3	None	None	NA	Metals	ESP	
CCR-1B	1	PP	250mL	Ice	None	None	NA	Anions	ESP	
Elevation Meas										

Remarks:

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APP= After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; FIPP = Peristaltic Pump; SM=Straw Method(tubing Gravity Drain); OtOther (Specify)

NOTES: 1 The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Range of Variation of Last Three Consecutive Readings (See FS 2212, section 3):

pH = +/- 0.2; Temperature = +/- 0.2°; Specific Conductance = +/- 5%, Dissolved Oxygen = ≤ 20% saturation(see Table FS 2200-2), optionally +/-0.2 mg/L or 10% (whichever is greater); Turbidity: all readings ≤20 NTU: optionally +/- 5 NTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name:	McIntosh Power Plant		Site Location:	Lakeland, FL	
Well No:	CCR-2	Sample ID:	FD9000-24	Date:	2/28/2022

PURGING DATA

Well Diameter		Tubing Diameter		Well Screen Interval			Static depth to water	Purge pump type
(inches)	2	(inches)	3/8	Depth:	15.7	to 25.7	(feet): 12.35	PP

Well Volume Purge:	total well depth		static depth to water		well capacity (gal/ft)		
One well volume =		-		X		= 0	gal

Equipment Volume Purge:	pump vol (gal)		flow cell volume (gal)		tubing length (ft)		Tubing capacity		
1 equipment volume =	0.06	+	0.191	gal +	25.71	X	0.006	= 0.31526	gal

Initial pump or tubing Depth in well (feet):	Final pump or tubing Depth in well (feet):	Purging Initiated at:	Purging Ended at:	Total Volume Purged (gallons):
20.65	20.65	1232	1257	2.63

Time (Military)	Vol Purged (gal)	Cumul. Vol. Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp °C	Cond. (uS/cm)	pH (SU)	Color by observation	DO (mg/L or %)	Turbidity (NTUs)	Sheen by observation
1236	0.20	0.20	0.05			N/A		yellowish TS			
1246	1.11	0.91	0.11	12.50	25.7	304.5	5.58	Clear	0.99	4.95	None
1250	0.44	1.75	0.11	12.50	25.7	304.9	5.58	Yellowish	0.89	6.02	None
1254	0.44	2.19	0.11	12.50	25.7	302.9	5.54	Yellowish	0.75	5.15	None
1257	0.44	2.63	0.11	12.50	25.6	304.8	5.52	Yellowish	0.68	5.05	None

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing Inside Dia. Capacity (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer; BP=Bladder Pump; ESP=Electric Submersible Pump; PP=Peristaltic Pump; O=Other(Specify)

SAMPLING DATA

Sampled By (Print) Affiliation:	Sampler(s) Signature(s):	Sampling Initiated at:	Sampling Ended at:
Thomas Johnston		1257	1301

Pump or Tubing Depth in well (feet):	Tubing Material Code:	Field-Filtered: Y (N)	Filter Size: ____um
20.65	PE	Filtration Equipment Type:	

Field Decontamination: Y (N)	Tubing (Y) N (replaced)	Duplicate: Y (N)

Sample Container Specification				Sample Preservation			Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm x 3785
Sample ID Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)		Final pH			
CCR-2A	1	PP	250mL	1:1 HNO_3	None	None	NA	Metals	RFPP	
CCR-2B	1	PP	250mL	Ice	None	None	NA	Anions	RFPP	

Remarks:

< purge rate was discovered to be too low @ 1236 based on volume pumped, changed rate @ 1236

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APP= After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Peristaltic Pump; SM=Straw Method(tubing Gravity Drain); O=Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Range of Variation of Last Three Consecutive Readings (See FS 2212, section 3).

pH = +/- 0.2; Temperature = +/- 0.2°; Specific Conductance = +/- 5%; Dissolved Oxygen = ≤ 20% saturation (see Table FS 2200-2); optionally, +/-0.2 mg/L or 10% (whichever is greater). Turbidity: all readings ≤ 20 NTU: optionally +/- 5 NTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name:	McIntosh Power Plant			Site Location:	Lakeland, FL		
Well No:	CCR-4	Sample ID:	[illegible]		Date:	3/15/22	

PURGING DATA

Well Diameter		Tubing Diameter		Well Screen Interval				Static depth to water		Purge pump type
(inches)	2	(inches)	3/8	Depth:	15.6	to	25.1	(feet):	15.80	PP

Well Volume Purge:	total well depth		static depth to water		well capacity (gal/ft)			
One well volume =	25.10	-	15.80	X	0.16	=	1.488	gal

Equipment Volume Purge:	pump vol (gal)		flow cell volume (gal)		tubing length (ft)		Tubing capacity		
1 equipment volume =	0.06	+	0.501	gal +	25.60	X	0.006	=	0.31011 gal

Initial pump or tubing Depth in well (feet):	Final pump or tubing Depth in well (feet):	Purging initiated at:	Purging Ended at:	Total Volume Purged (gallons):
20.35	17.00	11:10	1139	2.442

Time (Military)	Vol. Purged (gal)	Cumul. Vol. Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp °C	Cond. (µS/cm)	pH (SU)	Color by observation	DO (mg/L or %)	Turbidity (NTUs)	Sheen by observation
11:29	1.577	1.577	0.083	15.92	24.5	13934	3.79	Clear	0.52	6.96	None
11:34	0.415	1.992	0.083	15.92	24.6	13839	3.74	Clear	0.65	6.01	None
11:39	0.415	2.442	0.083	15.90	24.6	13855	3.81	Clear	0.60	4.95	None

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing Inside Dia. Capacity (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer, BP=Bladder Pump; ESP=Electric Submersible Pump, PP=peristaltic Pump; O=other(specify)

SAMPLING DATA

Sampled By (Print) Affiliation:	Sample(s) Signature(s):	Sampling initiated at:	Sampling Ended at:
Thomas Johnston	[signature]	11:39	11:45

Pump or Tubing Depth in well (feet):	Tubing Material Code:	Field-Filtered: Y (N) Filtration Equipment type:	Filter Size: ____µm
17.00	PE		

Field Decontamination: Y (N)	Tubing: (Y) N (replaced)	Duplicate: Y (N)

Sample Container Specification				Sample Preservation				Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm x 3785
Sample I.D. Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)		Final pH			
CCR-4A	1	PP	250mL	1:1 HNO_3	None	None	NA		ESP	
CCR-4B	1	PP	250mL	Ice	None	None	NA		ESP	

Remarks: Vol. purged collected

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Peristaltic Pump; Submersible Method/tubing Gravity Drain; O=Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Range of Variation of Last Three Consecutive Readings (See FS 2212, section 3):

pH = +/- 0.2 Temperature = +/- 0.2° C; Specific Conductance = +/- 5%; Dissolved Oxygen = ±20% saturation(see Table FS 2200-2); optionally, +/-0.2 mg/L or (3% (whichever is greater). Turbidity, all readings ≤20 NTU; optionally +/- 3 NTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name:	Mcintosh Power Plant			Site Location:	Lakeland, FL	
Well No:	CCR-6	Sample ID:		Date:	3/15/22	

PURGING DATA

Well Diameter		Tubing Diameter		Well Screen Interval			Static depth to water	Purge pump type
(inches)	2	(inches)	3/8	Depth:	15.2	to 25.7	(feet): 12.38	PP

Well Volume Purge:	total well depth		static depth to water		well capacity (gal/ft)		
One well volume =	28.2	-		x		= 0	gal

Equipment Volume Purge:	pump vol (gal)		flow cell volume (gal)		tubing length (ft)		Tubing capacity		
1 equipment volume =	0.00	+	0.101	gal +	26.21	x	0.005	= 0.31826	gal

Initial pump or tubing Depth in well (feet):	Final pump or tubing Depth in well (feet):	Purging Initiated at:	Purging Ended at:	Total Volume Purged (gal):
20.95	20.40	1346	1406	1.66

Time (Military)	Vol. Purged (gal)	Cumul. Vol Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp ° C	Cond (uS/cm)	pH (SU)	Color by observation	DO (mg/L or %)	Turbidity (NTUs)	Steam by observation
1358	0.996	0.996	0.083	12.40	24.8	16779	5.07	Clear	0.66	2.99	None
1402	0.332	1.328	0.083	12.42	24.7	16743	5.09	Clear	0.51	3.07	None
1406	0.332	1.660	0.083	12.40	24.9	16747	5.09	Clear	0.47	2.94	None

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.84

Tubing Inside Dia. Capacity (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer, BP=Bladder Pump ESP=Electric Submersible Pump, PP=peristaltic Pump OT=Other(specify)

SAMPLING DATA

Sampled By (Print) Affiliation:	Sampler(s) Signature(s):	Sampling Initiated at:	Sampling Ended at:
Thomas Johnston		1406	1414

Pump or Tubing Depth in well (feet):	Tubing Material Code	Field-Filtered: Y (N) Filtration Equipment Type	Filter Size: ____ um
20.40	PE		

Field Decontamination: Y (N)	Tubing: (Y) N (replaced)	Duplicate: Y (N)

Sample Container Specification				Sample Preservation				Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm x 3785
Sample I.D. Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)		Final pH			
CCR-5A	1	PP	250 mL	1:1 HNO_3	None	None	NA	Metals	RFPP	
CCR-5B	1	PP	250 mL	Ice	None	None	NA	[illegible]	RFPP	

Remarks:

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Peristaltic Pump; SM=Straw Method(tubing Gravity Drain); OT=Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Range of Variation of Last Three Consecutive Readings (See FS 2212, section 3):
pH = +/- 0.2; Temperature = +/- 0.2° ; Specific Conductance = +/- 5%, Dissolved Oxygen = ≤ 20% saturation(see Table FS 2200-2); optionally, +/-0.2 mg/L or 10% (whichever is greater); Turbidity: all readings ≤20 NTU, optionally +/- 5 NTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name:	McIntosh Power Plant			Site Location:	Lakeland, FL
Well No:	CCR-6	Sample ID:		Date:	3/15/22

PURGING DATA

Well Diameter		Tubing Diameter		Well Screen Interval			Static depth to water	Purge pump type
(inches)	2	(inches)	3/8	Depth:	15.7	to 25.2	(feet): 11.27	PP

Well Volume Purge:	total well depth		static depth to water		well capacity (gal/ft)		
One well volume =		-		X		= 0	gal

Equipment Volume Purge:	pump vol (gal)		flow cell volume (gal)		tubing length (ft)		Tubing capacity		
1 equipment volume =	0.06	+	0.101	gal +	26.72	X	0.006	= 0.31532	gal

Initial pump or tubing Depth in well (feet):	Final pump or tubing Depth in well (feet):	Purging Initiated at:	Purging Ended at:	Total Volume Purged (gallons):
20.45	20.50	1436 1439	1515	3.988

Time (Military)	Vol. Purged (gal)	Cumul. Vol. Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp °C	Cond. (µS/cm)	pH (SU)	Color by observation	DO (mg/L or %)	Turbidity (NTUs)	Sheen by observation
1451	0.996	0.996	0.083	11.31	24.9	2240	6.36	Clear	0.64	0.81	None
1455	0.332	1.328	0.083	11.31	24.7	2791	6.25	Clear	0.51	1.34	None
1459	0.332	1.660	0.083	11.32	24.7	3899	6.13	Clear	0.45	0.99	None
1503	0.332	1.992	0.083	11.32	24.8	4694	6.07	Clear	0.41	0.82	None
1507	0.332	2.324	0.083	11.32	24.8	5560	6.03	Clear	0.41	0.86	None
1511	0.332	2.656	0.083	11.32	24.7	6078	6.00	Clear	0.38	0.84	None
1515	0.332	3.988	0.083	11.32	24.8	6311	6.97	Clear	0.36	0.93	None

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing Inside Dia. Capacity (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer, BP=Bladder Pump, ESP=Electric Submersible Pump, PP=peristaltic Pump, O=Other(specify)

SAMPLING DATA

Sampled By (Print) Affiliation:	Sampler(s) Signature(s):	Sampling Initiated at:	Sampling Ended at:
Thomas Johnston		1515	1542

Pump or Tubing Depth in well (feet):	Tubing Material Code:	Field-Filtered: Y (N) Filtration Equipment Type:	Filter Size: ____ µm
20.50	PE		

Field Decontamination: Y (N)	Tubing (Y) N (replaced)	Duplicate: Y (N)

Sample Container Specification				Sample Preservation				Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute; gpm x 3785)
Sample I.D. Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)		Final pH			
CCR-6A	1	PP	250 mL	1:1 HNO_3	None	None	NA	Metals	RFPP	
CCR-6B	1	PP	250 mL	Ice	None	None	NA	[illegible]	RFPP	

Remarks:

Short hold due by 15

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Peristaltic Pump; SM=Straw Method(tubing Gravity Drain); O=Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Ranges of Variation of Last Three Consecutive Readings (See FS 2212, section 3):

pH = +/- 0.2; Temperature = +/- 0.2° ; Specific Conductance = +/- 5%, Dissolved Oxygen = ≤ 20% saturation(see Table FS 2200-2) optionally, +/- 2 mg/L or 10% (whichever is greater). Turbidity: all readings ≤20 NTU: optionally +/- 5 NTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name:	McIntosh Power Plant		Site Location:	Lakeland, FL	
Well No:	CCR-7	Sample ID:		Date:	3/17/22

PURGING DATA

Well Diameter		Tubing Diameter		Well Screen Interval				Static depth to water	Purge pump type
(inches)	2	(inches)	3/8	Depth:	15.7	to	25.2	(feet): 11.65	PP

Well Volume Purge:	total well depth		static depth to water		well capacity (gal/ft)		
One well volume =		-		X		= 0	gal

Equipment Volume Purge:	pump vol (gal)		flow cell volume (gal)		tubing length (ft)		Tubing capacity		
1 equipment volume =	0.06	+	0.101	gal +	25.78	X	0.006	= 0.31574	gal

Initial pump or tubing Depth in well (feet):	Final pump or tubing Depth in well (feet):	Purging Initiated at:	Purging Ended at:	Total Volume Purged (gallons)
20.45	20.45	1345		

Time (military)	Vol. Purged (gal)	Cumul. Vol. Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp °C	Cond. (µS/cm)	pH (SU)	Color by observation	DO (mg/L) or %	Turbidity (NTUs)	Sheen by observation
1357	.998	.998	.083	11.70	24.1	888	4.48	Clear	.60	7.78	None
1401	.332	1.328	.083	11.70	24.3	1332	4.56	Clear	.47	2.07	None
1405	.332	1.660	.083	11.70	24.3	1522	4.57	Clear	0.37	1.74	None
1409	.332	1.992	.083	11.70	24.2	1690	4.58	Clear	0.33	1.35	None
1413	.332	2.324	.083	11.70	24.2	1794	4.59	Clear	0.32	1.51	None
1417	.332	2.656	.083	11.70	24.4	1863	4.60	Clear	0.27	1.23	None
1421	.332	2.988	.083	11.70	24.4	1890	4.60	Clear	0.28	1.20	None
1425	.332	3.320	.083	11.70	24.4	1900	4.61	Clear	0.24	1.24	None

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing Inside Dia. Capacity (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.0040; 3/8" = 0.0058; 1.25" = 0.0100; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer, BP=Bladder Pump, ESP=Electric Submersible Pump, PP=peristaltic Pump, O=other(specify)

SAMPLING DATA

Sampled by (Print) Affiliation:	Sampler(s) Signature(s)	Sampling Initiated at:	Sampling Ended at:
Thomas Johnston		1425	1430

Pump or Tubing Depth in well (feet):	Tubing Material Code	Field-Filtered: Y (N)	Filter Size: ____ µm
20.45	PE	Filtration Equipment Type:	

Filter Declaration: Y (N) Tubing: (Y) N (replaced) Duplicate: Y (N)

Sample Container Specification				Sample Preservation				Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm x 3785
Sample I.D. Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)		Final pH			
CCR-7A	1	PP	250 mL	1:1 HNO_3	None	None	NA	Metals	BPPP	
CCR-7B	1	PP	250 mL	Ice	None	None	NA	[illegible]	BPPP	

Remarks:

Material Codes: AG = Amber Glass, CG = Clear Glass, PE = Polyethylene; PP = Polypropylene; S = Silicone, T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APPP After (Through) Peristaltic Pump; B = Bailer, BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Peristaltic Pump; SM=Straw Method(tubing Gravity Drain); O=Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Range of Variation of Last Three Consecutive Readings (See FS 2212, section 3).

pH = +/- 0.2; Temperature = +/- 0.2° ; Specific Conductance = +/- 3%, Dissolved Oxygen = ≤ 20% saturation(see Table FS 2200-2), optionally, +/-0.2 mg/L or 10% (whichever is greater) Turbidity at readings ≤ 20 NTU optionally +/- 5 NTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name:	McIntosh Power Plant			Site Location:		Lakeland, FL	
Well No.:	CCR-8	Sample ID.				Date:	3/29/22

R

PURGING DATA

Well Diameter		Tubing Diameter		Well Screen Interval				Static depth to water		Purge pump type	
(inches)	2	(inches)	3/8	Depth:	15.9	to	25.4	(feet):	11.52	PP	
Well Volume Purge:		total well depth		static depth to water			well capacity (gal/ft)			2.3008 gal	
One well volume =		25.9	−	11.52		x	.16 ~~0.16~~		=	0	gal
Equipment Volume Purge:		pump vol (gal)		flow cell volume (gal)		tubing length (ft)		Tubing capacity			
1 equipment volume =		0.06	+	0.101	gal +	25.96	x	0.006		= 0.31876	gal
Initial pump or tubing Depth in well (feet):		20.65	Final pump or tubing Depth in well (feet):		20.65	Purging Initiated at:	1351	Purging Ended at:		Total Volume Purged (gallons):	

Time (Military)	Vol. Purged (gal)	Cumul. Vol Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp °C	Cond (µS/cm)	pH (SU)	Color by observation	DO (mg/L) or %	Turbidity (NTUs)	Sheen by observation
1428	2.331	2.331	.063	11.72	24.3	643	6.57	Yellowbrown	0.91	13.8	None
1437	0.567	2.898	.063	11.72	24.1	646	6.55	Yellowish	0.67	5.54	None
1446	0.567	3.465	.063	11.72	24.3	~~687~~ 673	6.54	Yellowish	0.59	2.12	None

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing Inside Dia. Capacity (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer, BP=Bladder Pump ESP=Electric Submersible Pump, PP=peristaltic Pump O=other(specify)

SAMPLING DATA

Sampled By (Print) Affiliation: Thomas Johnson	Sampler(s) Signature(s): [signature]	Sampling Initiated at:	1446	Sampling Ended at:	1455
Pump or Tubing Depth in well (feet): 20.65	Tubing Material Code: PE	Field-Filtered: Y (N) Filtration Equipment Type:		Filter Size: ____ µm	
Field Decontamination: Y (N)	Tubing Y (N) (replaced)			Duplicate: Y (N)	

Sample Container Specification				Sample Preservation				Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm x 3785
Sample I.D. Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)		Final pH			
CCR-8A	1	PP	250 mL	1:1 HNO_3	None	None	NA	Metals	RFPP	
CCR-8B	1	PP	250 mL	Ice	None	None	NA	[illegible]	RFPP	

Remarks:

close well volume purge.

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APP= After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Peristaltic Pump; SM=Straw Method(Tubing Gravity Drain); O=Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Range of Variation of Last Three Consecutive Readings (See FS 2212, section 3):
pH = +/- 0.2 Temperature = +/- 0.2° ; Specific Conductance = +/- 5%, Dissolved Oxygen = ≤ 20% saturation (see Table FS 2200-2); optionally, +/-0.2 mg/L or 10% (whichever is greater). Turbidity: all readings ≤20 NTU; optionally +/- 5 NTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name:	McIntosh Power Plant		Site Location:	Lakeland, FL	
Well ID:	CCR-9	Sample ID:		Date:	3/17/22

PURGING DATA

Well Diameter		Tubing Diameter		Well Screen Interval			Static depth to water	Purge pump type
(inches)	2	(inches)	3/8	Depth:	15.5	to 25	(feet): 9.45	PP

Well Volume Purge:	total well depth		static depth to water		well capacity (gal/ft)		10.05	
One well volume =	25.6	-		X		=	0	gal

Equipment Volume Purge:	pump vol (gal)		flow cell volume (gal)		tubing length (ft)		Tubing capacity	.3147	
1 equipment volume =	.06	+	.101	gal +	25.61	X	.006	= 0	gal

Initial pump or tubing Depth in well (feet):	Final pump or tubing Depth in well (feet):	Purging Initiated at:	Purging Ended at:	Total Volume Purged (gallons):
20.25 21.00	21.00	1107	1147	3.310

Time (Military)	Vol. Purged (gal)	Cumul. Vol Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp. °C	Cond. (µS/cm)	pH (SU)	Color by observation	DO (mg/L or %)	Turbidity (NTUs)	Odors by observation
1119	.996	.996	.083	9.41	24.0	4093	5.10	Clear	0.41	15.1	None
1123	.332	1.328	0.083	10.15	24.0	4080	5.10	Clear	0.27	17.7	None
1127	.332	1.660	.083	10.10	24.1	4073	5.10	Clear	0.26	20.1	None
1131	.332	1.992	.083	10.10	24.1	4074	5.10	Clear	0.24	19.3	None
1135	.332	2.324	.083	10.10	24.1	4066	5.11	Clear	0.23	12.6	None
1139	.332	2.656	.083	10.11	24.1	4065	5.11	Clear	0.23	19.2	None
1143	.332	2.988	.083	10.11	24.1	4068	5.11	Clear	0.24	11.9	None
1147	.332	3.310	.083	10.11	24.1	4062	5.11	Clear	0.21	15.9	None

Well Capacity (Gallons per Foot): 0.75" = 0.03; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing Inside Dia. Capacity (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer; BP=Bladder Pump; ESP=Electric Submersible Pump; PP=peristaltic Pump; O=other(specify)

SAMPLING DATA

Sampled By (Print) Affiliation:	Sampler(s) Signature(s):	Sampling Initiated at:	Sampling Ended at:
Thomas Johnston		1147	1152

Pump or Tubing Depth in well (feet):	Tubing Material Code:	Field-Filtered: Y (N) Filtration Equipment Type:	Filter Size: ____ µm
21.00	PE		

Field Decontamination: Y (N) Tubing: (Y) N (Treated) Duplicate: Y (N)

Sample Container Specification				Sample Preservation				Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm x 3785
Sample I.D. Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)		Final pH			
CCR-9A	1	PP	250 mL	1:1 HNO_3	None	None	NA	Metals	RFPP	
CCR-9B	1	PP	250 mL	Ice	None	None	NA	[illegible]	RFPP	

Remarks:

* check depth on well may because we got many false depth to waters during well sampling

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Peristaltic Pump; SM=Straw Method(tubing Gravity Drain); O=Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Range of Variation of Last Three Consecutive Readings (See FS 2200, section 3):
pH = +/- 0.2; Temperature = +/- 0.2°; Specific Conductance = +/- 5%, Dissolved Oxygen = 5-20% saturation(see Table FS 2200-2); optionally, +/-0.2 mg/L or 10% (whichever is greater) Turbidity all readings ≤20 NTU, optionally +/- 5 NTU or +/- 10 %, (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name	McIntosh Power Plant			Site Location:	Lakeland, FL
Well No:	CCR-11	Sample ID:		Date:	4/5/22

PURGING DATA

Well Diameter		Tubing Diameter		Well Screen Interval			Static depth to water	Purge pump type
(inches)	2	(inches)	3/8	Depth:	15.6	to 25.4	(feet): 7.84	PP

Well Volume Purge:	total well depth		static depth to water		well capacity (gal/ft)		
One well volume =		-		X		= 0	gal

Equipment Volume Purge:	pump vol (gal)		flow cell volume (gal)		tubing length (ft)		Tubing capacity		
1 equipment volume =	0.06	+	0.161	gal +	25.64	X	0.006	= 0.31484	gal

Initial pump or tubing Depth in well (feet):	20.35	Final pump or tubing Depth in well (feet):	20.47	Purging Initiated at:	1210	Purging Ended at:	1300	Total Volume Purged (gallons):	3.984

Time (Military)	Vol. Purged (gal)	Cumul. Vol. Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp. °C	Cond. (µS/cm)	pH (SU)	Color by observation	DO mg/L or %	Turbidity (NTUs)	Sheen by observation
1224	0.996	0.996	0.083	7.91	24.3	5220	4.15	Clear	0.45	54.7	None
1228	0.332	1.328	0.083			missed					
1232	0.332	1.660	0.083	7.91	24.2	5253	4.25	Clear	0.38	44.0	None
1236	0.332	1.992	0.083	7.91	24.3	5228	4.26	Clear	0.37	47.1	None
1240	0.332	2.324	0.083	7.91	24.3	5203	4.28	Clear	0.36	34.1	None
1244	0.332	2.656	.083	7.92	24.2	5208	4.29	Clear	0.36	40.7	None
1248	0.332	2.988	.083	7.91	24.3	5201	4.29	Clear	0.35	31.7	None
1252	0.332	3.320	.083	7.91	24.4	5185	4.30	Clear	0.34	58.2	None
1256	0.332	3.652	.083	7.91	24.5	5180	4.30	Clear	0.33	20.1	None
1300	0.332	3.984	.083	7.91	24.3	5172	4.29	Clear	0.33	38.5	None

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing Inside Dia. Capacity (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer, BP=Bladder Pump, ESP=Electric Submersible Pump, PP=peristaltic Pump, O=other(specify)

SAMPLING DATA

Sampled By (Print) Affiliation:	Thomas Johnston	Sampler(s) Signature(s):		Sampling initiated at:	1300	Sampling Ended at:	1310
Pump or Tubing Depth in well (feet):	20.47	Tubing Material Code:	PE	Field-Filtered: Y (N) Filtration Equipment Type:		Filter Size:	µm
Field Decontamination:	Y (N)	Tubing: (Y) N (replaced)				Duplicate:	Y (N)

Sample Container Specification				Sample Preservation				Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm x 3785
Sample I.D. Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)		Final pH			
CCR-11A	1	PP	250 mL	1:1 HNO_3	None	None	NA	Metals	RFPP	
CCR-11B	1	PP	250 mL	Ice	None	None	NA	[illegible]	RFPP	

Remarks:

white flec initially

Material Codes: AG = Amber Glass, CG = Clear Glass, PE = Polyethylene, PP = Polypropylene, S = Silicone, T = Teflon, O = Other (Specify)

Sampling Equipment Codes: APP = After (Through) Peristaltic Pump, B = Bailer, BP = Bladder Pump, ESP = Electric Submersible Pump, RFPP = Peristaltic Pump, SM = Straw Method (tubing Gravity Drain), O=Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Ranges of Variation of Last Three Consecutive Readings (See FS 2212, section 3):

pH = +/- 0.2, Temperature = +/- 0.2° ; Specific Conductance = +/- 5%, Dissolved Oxygen = ≤ 20% saturation(see Table FS 2200-2) optionally, +/-0.2 mg/L or 10% (whichever is greater). Turbidity, all readings ≤20 NTU: optionally +/- 5 NTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name:	McIntosh Power Plant			Site Location:		Lakeland, FL	
Well No:	CCR-12	Sample ID:		Date:		4/5/22	

PURGING DATA

Well Diameter		Tubing Diameter		Well Screen Interval				Static depth to water		Purge pump type
(inches)	2	(inches)	3/8	Depth:	15.7	to	25.2	(feet):	7.71	PP

Well Volume Purge:	total well depth		static depth to water		well capacity (gal/ft)			
One well volume =		–		X		=	0	gal

Equipment Volume Purge:	pump vol (gal)		flow cell volume (gal)		tubing length (ft)		Tubing capacity			
1 equipment volume =	0.08	+	0.101	gal +	25.75	X	0.006	=	0.3155	gal

Initial pump or tubing Depth in well (feet):	20.45	Final pump or tubing Depth in well (feet):	2	Purging Initiated at:	1108	Purging Ended at:	1137	Total Volume Purged (gallons):	2.407

Time (Military)	Vol. Purged (gal)	Cumul. Vol. Purged (gal)	Purge Rate (gpm)	Depth to Water (ft)	Temp °C	Cond (µS/cm)	pH (SU)	Color by observation	DO mg/L or %	Turbidity (NTUs)	Sheen by observation
1121	1.079	1.079	0.083	8.27	23.6	2293	6.57	m/Clear Greenish	0.65	9.96	None
1125	0.332	1.411	0.083	8.28	23.6	2408	6.58	Slightly dark	0.52	10.6	None
1129	0.332	1.743	0.083	8.29	23.7	2482	6.58	Slightly darkish	0.46	14.9	None
1133	0.332	2.075	0.083	8.23	23.7	2551	6.58	Slightly darkish	0.40	6.92	None
1137	0.332	2.407	0.083	8.29	23.7	2599	6.58	Slightly darkish	0.36	6.50	None

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing Inside Dia. Capacity (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer, BP=Bladder Pump ESP=Electric Submersible Pump, PP=peristaltic Pump O=other(specify)

SAMPLING DATA

Sampled By (Print) Affiliation:	Sampler(s) Signature(s):	Sampling Initiated at:	Sampling Ended at:
Thomas Johnston	[signature]	1132	1142

Pump or Tubing Depth in well (feet):		Tubing Material Code: PE	Field-Filtered: Y (N) Filtration Equipment Type:	Filter Size: ____ µm
Field Decontamination: Y (N)		Tubing Y N (replaced)		Duplicate: Y (N)

Sample Container Specification				Sample Preservation				Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm × 3785
Sample I.D. Code	# Containers	Material Code	Volume	Preservative Used	Total Volume Added in Field (mL)		Final pH			
CCR-12A	1	PP	250 mL	1:1 HNO_3	None	None	NA	Metals	RFPP	
CCR-12B	1	PP	250 mL	Ice	None	None	NA	[illegible]	RFPP	

Remarks:

Water Clear w/ reddish floc visible occasionally
Sample was clearish but turned dark

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APP= After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Peristaltic Pump; SM=Straw Method(tubing Gravity Drain); O=Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Range of Variation of Last Three Consecutive Readings (See FS 2212, section 3):
pH = +/- 0.2; Temperature = +/- 0.2°; Specific Conductance = +/- 5%; Dissolved Oxygen = ≤ 20% saturation (see Table FS 2200-2); optionally, +/-0.2 mg/L or 10% (whichever is greater); Turbidity: all readings ≤ 20 NTU; optionally +/- 5 NTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name:	McIntosh Power Plant			Site Location:	Lakeland, FL
Well No.:	CCR-MW13	Sample ID:	CCR-13	Date:	3/16/12

PURGING DATA

Well Diameter (inches):	2	Tubing Diameter (inches):	3/8	Well Screen Interval Depth:	feet: 15.6 to 25.1	Static depth to water (feet):	9.12	Purge pump type:	PP

Well Volume Purge:	total well depth		static depth to water		well capacity (gal/ft)		
One well volume =		-		X		=	0 gal

Equipment Volume Purge:	pump vol (gal)		flow cell volume (gal)		tubing length (ft)		Tubing capacity		
1 equipment volume =	0.05	+	0.101	gal +	25.64	X	0.006	=	0.31484 gal

Initial pump or tubing Depth in well (feet):	Final pump or tubing Depth in well (feet):	Purging Initiated at:	Purging Ended at:	Total Volume Purged (gallons):
20.1	19.5	0953	1128	

Time (Military)	Vol. Purged (gal)	Cumul. Vol. Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp °C	Cond (mS/cm)	pH (SU)	Color by observation	DO (mg/L or %)	Turbidity (NTUs)	Sheen by observation
1105	.996	.996	.093	9.12	23.9	3288	3.77	Clear	0.78	15.6	None
1109	.332	1.328	0.083	9.12	23.9	3285	3.78	Clear	0.68	15.8	None
1113	.332	1.660	.083	9.23	23.8	3289	3.79	Clear	0.63	13.1	None
1117	.332	1.992	.083	9.25	23.9	3288	3.80	Clear	0.55	21.3	None
1121	.332	2.324	.083	9.25	23.9	3282	3.82	Clear	0.49	8.12	None
1124	.332	2.656	.083	9.25	23.7	3281	3.83	Clear	0.50	10.70	None
1128	.332	2.988	.093	9.25	23.7	3281	3.84	Clear	0.50	11.8	None

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing Inside Dia. Capacity (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer, BP=Bladder Pump, ESP=Electric Submersible Pump, PP=peristaltic Pump, O=other(specify)

SAMPLING DATA

Sampled By (Print) Affiliation:	Sample(s) Signature(s):	Sampling Initiated at:	Sampling Ended at:
Thomas Johnston		1128	1134

Pump or Tubing Depth in well (feet):	Tubing Material Code:	Field-Filtered: Y (N) Filtration Equipment Type:	Filter Size: ____ um
19.5	PE		

Field Decontamination: Y (N)	Tubing: (Y) N (replaced)	Duplicate: Y (N)

Sample Container Specification				Sample Preservation				Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm x 3785
Sample I.D. Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)		Final pH			
CCR-13A	1	PP	250 mL	1:1 HNO_3	None	None	NA	Metals	ESP	
CCR-13B	1	PP	250 mL	Ice	None	None	NA	Cl, F, SO4, TDS	ESP	

Remarks:

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer, BP = Bladder Pump, ESP = Electric Submersible Pump, FSPP = Peristaltic Pump; Sib=Straw Method (tubing Gravity Drain); O=Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Range of Variation of Last Three Consecutive Readings (See FS 2212, section 3):

pH = +/- 0.2; Temperature = +/- 0.2°; Specific Conductance = +/- 5%, Dissolved Oxygen = ≤ 20% saturation (see Table FS 2200-2); optionally, +/-0.2 mg/L or 10% (whichever is greater). Turbidity: all readings ≤ 20 NTU: optionally +/- 5 NTU or +/- 10% (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name:	McIntosh Power Plant			Site Location:	Lakeland, FL		
Well No:	CCR-15	Sample ID:	202822CCR15	Date:	2/28/22		

PURGING DATA

Well Diameter		Tubing Diameter		Well Screen Interval			Static depth to water	Purge pump type
(inches)	2	(inches)	3/8	Depth:	15.4	to 25.67	(feet) 17.72	17.20 PP

Well Volume Purge:	total well depth		static depth to water		well capacity (gal/ft)		
One well volume =	25.67	-	17.72	x	0.16	= 1.272 gal	1.272 gal

Equipment Volume Purge:	pump vol (gal)		flow cell volume (gal)		tubing length (ft)		Tubing capacity		
1 equipment volume =	0.006	+	0.101	gal +	23.67	X	0.006	= 0.31502	gal

Initial pump or tubing Depth in well (feet):	Final pump or tubing Depth in well (feet):	Purging initiated at:	Purging Ended at:	Total Volume Purged (gallons):
20.2	20.00 20.20	1332	1420	2.99

Time (Military)	Vol. Purged (gal)	Cumul. Vol. Purged (gals)	Purge Rate (gpm) T	Depth to Water (ft)	Temp °C	Cond. (uS/cm)	pH (SU)	Color by observation	DO (mg/L or %)	Turbidity (NTUs)	Sheen by observation
1355	1.43	1.43	0.0625 0.625	17.50	24.5	175.9	3.96	Clear	0.77	6.02	None
1400	0.312	1.742	0.0625	17.50	25.6	178.2	3.92	Clear	0.85	4.88	None
1405	0.312	2.054	0.0625				Missed				
1410	0.312	2.366	0.0625	17.55	25.3	181.7	3.92	Clear	0.80	3.45	None
1415	0.312	2.678	0.0625	17.55	25.4	184.2	3.92	Clear	0.81	2.84	None
1420	0.312	2.99	0.0625	17.58	25.5	190.5	3.92	Clear	0.81	2.32	None

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing Inside Dia. Capacity (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer; BP=Bladder Pump; ESP=Electric Submersible Pump; PP=peristaltic Pump; O=other(specify)

SAMPLING DATA

Sampled By (Print) Affiliation:	Sample(s) Signature(s):	Sampling initiated at:	Sampling Ended at:
Thomas Johnston		1420	1427

Pump or Tubing Depth in well (feet):	Tubing Material Code	Field-Filtered: Y (N) Filtration Equipment Type	Filter Size: um
20.0	PE		

Field Decontamination: Y (N) | Tubing: (Y) N (replaced) | Duplicate: Y (N)

Sample Container Specification				Sample Preservation			Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm x 3785
Sample I.D. Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)	Final pH			
CCR-15A	1	PP	250 mL	1:1 HNO_3	None	None	NA	Metals	ESP	
CCR-15B	1	PP	250 mL	Ice	None	None	NA	Cl, F-, SO4, TDS	ESP	

Remarks:

pump @ 31 setting to get .0625 by Volume

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Peristaltic Pump; SM=Straw Method(testing Gravity Drain); O=Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Ranges of Variation of Last Three Consecutive Readings (See FS 2212, section 3):

pH = +/- 0.2; Temperature = +/- 0.2°; Specific Conductance = +/- 5%; Dissolved Oxygen = ≤20% saturation(see Table FS 2200-2): optionally, +/-0.2 mg/L or 10% (whichever is greater); Turbidity: all readings ≤20 NTU, optionally +/- 5 NTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name:	McIntosh Power Plant				Site Location:		Lakeland, FL			
Well No:	CCR-16		Sample ID:				Date:	3/29/22		

PURGING DATA

Well Diameter (inches)	2	Tubing Diameter (inches)	3/8	Well Screen Interval Depth:	15.1	to	24.9	Static depth to water (feet):	16.65	Purge pump type	PP
Well Volume Purge: One well volume =	total well depth 24.9	–	static depth to water 16.65	x	well capacity (gal/ft) 0.16		= 0	gal	1.32		
Equipment Volume Purge: 1 equipment volume =	pump vol (gal) 0.06	+	flow cell volume (gal) 0.101	gal +	tubing length (ft) 25.64	x	Tubing capacity 0.006	= 0.31484	gal		
Initial pump or tubing Depth in well (feet):	18.00	Final pump or tubing Depth in well (feet):	18.00	Purging initiated at:	0931	Purging Ended at:	1005	Total Volume Purged (gallons):	2.38		

Time (Military)	Vol. Purged (gal)	Cumul. Vol. Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp °C	Cond (µS/cm)	pH (SU)	Color by observation	DO (mg/L) or %	Turbidity (NTUs)	Sheen by observation
0950	1.33	1.33	.070	16.65	24.2	11171	3.77	Clear	1.09	1.21	None
0955	.35	1.68	.070	16.65	24.1	10926	3.75	Clear	0.91	0.67	None
1000	.35	2.03	.070	16.66	24.2	10528	3.74	Clear	0.96	0.65	None
1005	.35	2.38	.070	16.66	24.1	10610	3.74	Clear	0.93	0.73	None

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing Inside Dia. Capacity (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer, BP=Bladder Pump ESP=Electric Submersible Pump, PP=peristaltic Pump O=other(specify)

SAMPLING DATA

Sampled By (Print) Affiliation: Thomas Johnston	Sampler(s) Signature(s): [signature]	Sampling Initiated at:	1005	Sampling Ended at:	1015
Pump or Tubing Depth in well (feet): 18.00	Tubing Material Code: PE	Field-Filtered: Y (N) Filtration Equipment Type:		Filter Size: ____ um	
Field Decontamination: Y (N)	Tubing: (Y) N (replaced)			Duplicate: Y (N)	

Sample Container Specification: Sample I.D. Code	# Containers	Material Code	Volume	Sample Preservation: Preserv. Used	Total Volume Added in Field (mL)		Final pH	Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm x 3785
CCR-16A	1	PP	250 mL	1:1 HNO_3	None	None	NA	Metals	ESP	
CCR-16B	1	PP	250 mL	Ice	None	None	NA	Cl, F-, SO4, TDS	ESP	

Remarks:

well volume purge

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APP= After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Peristaltic Pump; SM=Straw Method(Tubing Gravity Drain); O=Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Range of Variation of Last Three Consecutive Readings (See FS 2212, section 3):

pH = +/- 0.2; Temperature = +/- 0.2°; Specific Conductance = +/- 5%; Dissolved Oxygen = ≤ 20% saturation(see Table FS 2200-2); optionally, +/-0.2 mg/L or 10% (whichever is greater) Turbidity: all readings ≤20 NTU; optionally +/- 5 NTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

Site Name:	McIntosh Power Plant		Site Location:	Lakeland, FL	
Well No:	CCR-17	Sample ID:		Date:	3/22, 3/23 TJT

PURGING DATA

Well Diameter		Tubing Diameter		Well Screen Interval				Static depth to water		Purge pump type
(inches)	2	(inches)	3/8	Depth:	15	to	25	(feet)	16.15	PP

Well Volume Purge:		total well depth		static depth to water			well capacity (gal/ft)			1.5232
One well volume =		25.67	−	16.15		X	0.16	=	0	gal
Equipment Volume Purge:		pump vol (gal)		flow cell volume (gal)		tubing length (ft)		Tubing capacity		
1 equipment volume =		0.06	+	0.101	gal +	25.67	X	0.005	=	0.31507 gal

Initial pump or tubing Depth in well (feet):	Final pump or tubing Depth in well (feet):	Purging Initiated at:	Purging Ended at:	Total Volume Purged (gal):
20.2		1155	1227	2.656 ~~2.566~~ TJT

Time (Military)	Vol Purged (gal)	Cumm. Vol Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp °C	Cond. (µS/cm)	pH (SU)	Color by observation	DO mg/L or %	Turbidity (NTUs)	Sheen by observation
1207	0.996	0.996	.083	16.15	25.3	1203	6.32	Clear	0.21	16.5	None
1211	0.332	1.328	.083	16.16	25.3	1392	6.28	Clear	0.47	16.0	None
1215	0.332	1.660	0.083	16.16	25.4	1217	6.27	Clear	0.42		None
1219	0.332	1.992	0.083	16.16	25.4	1297	6.27	Clear	0.42	6.39	None
1223	0.332	2.324	0.083	16.16	25.3	1285	6.23	Clear	0.39	5.99	None
1227	0.332	2.656	0.083	16.16	25.4	1296	6.23	Clear	0.38	7.01	None

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing Inside Dia. Capacity (Gal./ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGED EQUIPMENT CODES: B=Bailer, BP=Bladder Pump ESP=Electric Submersible Pump, PP=peristaltic Pump O=other(specify)

SAMPLING DATA

Sampled By (Print) Affiliation:	Sampler(s) Signature(s):	Sampling Initiated at:	Sampling Ended at:
		1227	1231

Pump or Tubing Depth in well (feet):	Tubing Material Code	Field Filtered: Y (N) Filtration Equipment Type:	Filter Size: ____ µm
20	PE		

Field Decontamination: Y (N) Tubing (Y) N (replaced) Duplicate: Y (N)

Sample Container Specification				Sample Preservation						
Sample I.D. Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)	Final pH	Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm x 3785
CCR-17A	1	PP	250 mL	1:1 HNO_3	None	None	NA	Metals	ESP	
CCR-17B	1	PP	250 mL	Ice	None	None	NA	Cl, F, SO4, TDS	ESP	

Remarks:

Discovered after 1211 that we needed to use well volume purge, not Eq. volume

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; FPP = Peristaltic Pump; Bld = Straw Method (using Gravity Drain); O=Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Range of Variation of Last Three Consecutive Readings (See FS 2212, section 3):

pH = +/- 0.2; Temperature = +/- 0.2°; Specific Conductance = +/- 5%; Dissolved Oxygen = ≤ 20% saturation (see Table FS 2200-2) optionally, +/- 0.2 mg/L or 10% (whichever is greater). Turbidity: all readings ≤ 29 NTU: optionally +/- 5 NTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name:	McIntosh Power Plant			Site Location:	Lakeland, FL	
Well No.	CCR-1B	Sample ID:		Date:	3/22, 3/23/22	

PURGING DATA

Well Diameter		Tubing Diameter		Well Screen Interval				Static depth to water		Purge pump type
(inches):	2	(inches):	3/8	Depth:	15.8	to	25.2	(feet):	13.77	PP

Well Volume Purge:	total well depth		static depth to water		well capacity (gal/ft)			
One well volume =		-		X		=	0	gal

Equipment Volume Purge:	pump vol (gal)		flow cell volume (gal)		tubing length (ft)		Tubing capacity		
1 equipment volume =	0.96	+	0.101	gal +	25.81	X	0.006	=	0.31646 gal

Initial pump or tubing Depth in well (feet):	Final pump or tubing Depth in well (feet):	Purging Initiated at:	Purging Ended at:	Total Volume Purged (gal-one)
20.4	20.4	1332	1352	1.66

Time (Military)	Vol. Purged (gal)	Cumul. Vol Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp °C	Cond. (µS/cm)	pH (SU)	Color by observation	DO mg/L or %	Turbidity (NTUs)	Sheen by observation
1344	0.996	0.996	0.083	10.60	24.1	373.8	6.58	Clear	0.66	1.77	None
1348	0.332	1.328	0.083	10.60	24.1	371.7	6.57	Clear	0.61	1.88	None
1352	0.332	1.660	0.083	10.60	24.2	368.1	6.56	Clear	0.48	1.85	None

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing Inside Dia. Capacity (Gal/Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer, BP=Bladder Pump, ESP=Electric Submersible Pump, PP=Peristaltic Pump, Other(specify)

SAMPLING DATA

Sampled By (Print) Affiliation:	Sampler(s) Signature(s):	Sampling Initiated at:	Sampling Ended at:
Thomas Johnston		1352	1409

Pump or Tubing Depth in well (feet):	Tubing Material Code:	Field-Filtered: Y (N)	Filter Size: ____ um
20.40	PE	Filtration Equipment Type:	

Field Decontamination: Y (N)	Tubing (Y) N (replaced)	Duplicate: Y (N)

Sample Container Specification				Sample Preservation						
Sample ID Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)		Final pH	Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm x 3785
CCR-1BA	1	PP	250 mL	1:1 HNO_3	None	None	NA	Metals	ESP	
CCR-1BB	1	PP	250 mL	Ice	None	None	NA	[illegible]	ESP	

Remarks:

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Peristaltic Pump; SM=Straw Method(Tubing Gravity Drain); O=Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Range of Variation of Last Three Consecutive Readings (See FS 2212, section 3):

pH = +/- 0.2; Temperature = +/- 0.2° ; Specific Conductance = +/- 5%, Dissolved Oxygen = 5-20% saturation(see Table FS 2200-3); optionally, +/-0.2 mg/L or 10% (whichever is greater). Turbidity: all readings ≤20 NTU: optionally +/- 5 NTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

Site Name:	McIntosh Power Plant	Site Location:	Lakeland, FL
Well No:	CCR-19	Sample ID:	
Date:	~~3/2~~ 3/3/22 (3/2/22 TJ)		

PURGING DATA

Well Diameter (inches)		Tubing Diameter (inches)		Well Screen Interval Depth:		to		Static depth to water (feet):		Purge pump type
	1		3/8		15.5	to	25.4		6.75	PP

Well Volume Purge: One well volume = (total well depth ____ − static depth to water ____) X well capacity (gal/ft) ____ = 0 gal

Equipment Volume Purge: 1 equipment volume = pump vol (gal) 0.08 + flow cell volume (gal) 0.101 gal + tubing length (ft) 25.82 X Tubing capacity 0.006 = 0.31592 gal

Initial pump or tubing Depth in well (feet):	20.3	Final pump or tubing Depth in well (feet):	20.3	Purging Initiated at:	1425	Purging Ended at:	1501	Total Volume Purged (gallons):	2.988

Time (Military)	Vol. Purged (gal)	Cumul. Vol. Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp °C	Cond. (µS/cm)	pH (SU)	Color by observation	DO mg/L or %	Turbidity (NTUs)	Sheen by observation
1437	0.996	0.996	0.083	6.79	23.2	3857	4.47	Clear	0.54	24.9	None
1441	0.332	1.328	.083	6.79	23.7	3845	4.45	Clear	0.31	33.0	None
1445	0.332	1.660	.083	6.79	23.6	3703	4.42	Clear	0.32	26.0	None
1449	0.332	1.992	.083	6.79	23.6	3648	4.40	Clear	0.30	33.1	None
1453	0.332	2.324	.083	6.79	23.7	3761	4.39	Clear	0.24	27.8	None
1457	0.332	2.656	.083	6.79	23.7	3706	4.40	Clear	0.25	23.5	None
1501	0.332	2.988	0.083	6.79	23.7	3716	4.41	Clear	0.25	24.3	None

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing Inside Dia. Capacity (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer, BP=Bladder Pump ESP=Electric Submersible Pump, PP=peristaltic Pump O=Other(specify)

SAMPLING DATA

Sampled By (Print) Affiliation: Thomas Johnston	Sampler(s) Signature(s): [signature]	Sampling Initiated at: 1501	Sampling Ended at: 1507
Pump or Tubing Depth in well (feet): 203	Tubing Material Code: PE	Field-Filtered: Y (N) Filtration Equipment Type: ______	Filter Size: ____ µm
Field Decontamination: Y (N)	Tubing (Y) N (replaced)		Duplicate: Y (N)

Sample Container Specification				Sample Preservation				Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm x 3785
Sample ID Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)		Final pH			
CCR-19A	1	PP	250 mL	1:1 HNO_3	None	None	NA	Metals	ESP	
CCR-19B	1	PP	250 mL	Ice	None	None	NA	[illegible]	ESP	

Remarks:

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APP= After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM=Straw Method(tubing Gravity Drain); O=Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Range of Variation of Last Three Consecutive Readings (See FS 2212, section 3):

pH = +/- 0.2; Temperature = +/- 0.2°; Specific Conductance = +/- 5%; Dissolved Oxygen = ≤20% saturation(see Table FS 2200-2), optionally, +/-0.2 mg/L or 10% (whichever is greater). Turbidity: all readings ≤20 NTU; optionally +/- 5 NTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name:	McIntosh Power Plant	Site Location:	Lakeland, FL
Well No:	CCR-20	Sample ID:	Date: 3/17/22

PURGING DATA

Well Diameter		Tubing Diameter		Well Screen Interval			Static depth to water	Purge pump type
(inches)	2	(inches)	3/8	Depth:	14.9	to 24.5	(feet): 7.18	PP

Well Volume Purge:	total well depth		static depth to water		well capacity (gal/ft)		
One well volume =		-		X		= 0	gal

Equipment Volume Purge:	pump vol (gal)		flow cell volume (gal)		tubing length (ft)		Tubing capacity		
1 equipment volume =	0.06	+	0.101	gal +	25.21	X	0.006	= 0.31226	gal

Initial pump or tubing Depth in well (feet):	19.2	Final pump or tubing Depth in well (feet)	19.71	Purging Initiated at:	0906	Purging Ended at:	0926	Total Volume Purged (gal/one)	1.660

Time (Military)	Vol Purged (gal)	Cumul. Vol. Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp °C	Cond. (uS/cm)	pH (SU)	Color by observation	DO (mg/L or %)	Turbidity (NTUs)	Sheen by observation
0918	0.996	0.996	0.083	7.20	22.6	4494	4.82	Clear	0.56	14.1	None
0922	0.332	1.328	0.083	7.20	22.8	4492	4.83	Clear	0.54	10.6	None
0926	0.332	1.660	0.083	7.20	22.7	4486	4.83	Clear	0.47	8.53	None
0											

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing inside Dia. Capacity (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer, BP=Bladder Pump ESP=Electric Submersible Pump, PPeristaltic Pump Grecher(specify)

SAMPLING DATA

Sampled By (Print) Affiliation:	Thomas Johnston	Sampler(s) Signature(s):		Sampling Initiated at:	0926	Sampling Ended at:	0931
Pump or Tubing Depth in well (feet):	19.71	Tubing Material Code:	PE	Field-Filtered: Y (N) Filtration Equipment Type:		Filter Size:	um
Field Decontamination:	Y (N)	Tubing:	(Y) N (replaced)	Duplicate:	Y (N)		

Sample Container Specification				Sample Preparation				Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm x 3785
Sample I.D. Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume added in Field (mL)		Final pH			
CCR-20A	1	PP	250 mL	1:1 HNO_3	None	None	NA	Metals	ESP	
CCR-20B	1	PP	250 mL	Ice	None	None	NA	[illegible]	ESP	

Remarks:

9.85

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APP = After (through) Peristaltic Pump; B = Bailer, BP = Bladder Pump, ESP = Electric Submersible Pump, 4FPP = Peristaltic Pump; SM=Straw Method(tubing Gravity Drain); O=Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Range of Variation of Last Three Consecutive Readings (See FS 2212, section 3):

pH = +/- 0.2; Temperature = +/- 0.2°, Specific Conductance = +/- 3%, Dissolved Oxygen = 5-20% saturation(see Table FS 2200-2); optionally, +/- 0.2 mg/L or 10% (whichever is greater). Turbidity: all readings ≤ 20 NTU; optionally +/- 5 NTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name:	McIntosh Power Plant		Site Location:	Lakeland, FL	
Well ID:	CCR-21	Sample ID:		Date:	5/2/2022

PURGING DATA

Well Diameter		Tubing Diameter		Well Screen Interval				Static depth to water	Purge pump type
(inches)	2	(inches)	3/8	Depth:	15.6	to	25.2	(feet):	8.68 PP

Well Volume Purge:	total well depth		static depth to water		well capacity (gal/ft)		
One well volume =		-		X		= 0	gal

Equipment Volume Purge:	pump vol (gal)		flow cell volume (gal)		tubing length (ft)		Tubing capacity		Total Volume Purged (gallons):
1 equipment volume =	0.05	+	0.101	gal +	25.87	X	0.006	= 0.31622	gal 4.067

Initial pump or tubing Depth in well (feet):	Final pump or tubing Depth in well (feet):	Purging Initiated at:	Purging Ended at:	Total Volume Purged (gallons):
20.4	20.40	1617	1706	4.067

Time (Military)	Vol. Purged (gal)	Cumul. Vol. Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp °C	Cond. (µS/cm)	pH (SU)	Color by observation	DO (mg/L or %)	Turbidity (NTUs)	Sheen by observation
1634		FILL									
~~1629~~	0.996	0.996	0.083	8.68	23.3	1933	6.30	Clear	0.83	8.88	None
1638	0.332	~~1.328~~	0.083	8.69	23.3	1928	6.31	Clear	0.73	5.61	None
~~1642~~	0.332	~~1.660~~	0.083	8.69	23.3	1926	6.31	Clear	0.56	7.51	None
1646	0.332	2.407	0.083	8.69	23.2	1905	6.32	Clear	0.46	9.98	None
1650	0.332	2.739	0.083	8.69	23.2	1894	6.32	Clear	0.45	6.43	None
1654	0.332	3.071	0.083	8.69	23.2	1892	6.32	Clear	0.44	5.18	None
1658	0.332	3.403	0.083	8.69	23.2	1867	6.32	Clear	0.44	4.51	None
1702	0.332	3.735	0.083	8.70	23.2	1850	6.31	Clear	0.42	4.49	None
1706	0.332	4.067	0.083	8.70	23.2	1846	6.31	Clear	0.41	4.74	None

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing inside Dia. Capacity (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer, BP=Bladder Pump, ESP=Electric Submersible Pump, PP=peristaltic Pump, O=other(specify)

SAMPLING DATA

Sampled By (Print) & Affiliation:	Sampler(s) Signature(s):	Sampling Initiated at:	Sampling Ended at:
Thomas Johnston		1706	1713

Pump or Tubing Depth in well (feet):	Tubing Material Code:	Field-Filtered: Y (N) Filtration Equipment Type:	Filter Size: ____ µm
20.40	PE		

Field Decontamination: Y (N) Tubing: (Y) N (replaced) Duplicate: Y (N)

Sample Container Specification				Sample Preservation				Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm x 378
Sample I.D. Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)		Final pH			
CCR-21A	1	PP	250 mL	1:1 HNO_3	None	None	NA	Metals	ESP	RFPP
CCR-21B	1	PP	250 mL	Ice	None	None	NA	[illegible]	ESP	RFPP

Remarks:

mtj

Material Codes: AG = Amber Glass, CG = Clear Glass, PE = Polyethylene, PP = Polypropylene, S = Silicone, T = Teflon, O = Other (Specify)

Sampling EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Peristaltic Pump; SM=Straw Method (Lowering Gravity Drain); O=Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria (or Range of Variation of Last Three Consecutive Readings (See FS 2212, section 3)).

pH = +/- 0.2; Temperature = +/- 0.2°; Specific Conductance = +/- 5%, Dissolved Oxygen = ≤ 20% saturation(see Table FS 2200-2), optionally, +/-0.2 mg/L or 10% (whichever is greater). Turbidity: at readings ≤20 NTU optionally +/- 5 NTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name:	McIntosh Power Plant	Site Location:	Lakeland, FL
Well No:	CCR-22	Sample ID:	Date: 3/16/22

PURGING DATA

Well Diameter (inches)	Tubing Diameter (inches)	Well Screen Interval Depth.		to		Static depth to water (feet).	Purge pump type
2	3/8	14.6		24.6		8.92	PP

Well Volume Purge:	total well depth		static depth to water		well capacity (gal/ft)		
One well volume =		-		X		= 0	gal

Equipment Volume Purge:	pump vol (gal)		flow cell volume (gal)		tubing length (ft)		Tubing capacity		
1 equipment volume =	0.05	+	0.101	gal +	25.13	X	0.008	= 0.31478	gal

Initial pump or tubing Depth in well (feet):	Final pump or tubing Depth in well (feet):	Purging Initiated at:	Purging Ended at:	Total Volume Purged (gallons):
19.6	19.60	1257	1329	2.656

Time (Military)	Vol Purged (gal)	Cumul. Vol. Purged (gals)	Purge Rate (lpm)	Depth to Water (ft)	Temp °C	Cond. (µS/cm)	pH (SU)	Color by observation	DO (mg/L or %)	Turbidity (NTUs)	Odors by observation
1309	0.996	0.996	0.083	8.93	23.7	1649	4.23	Clear	.70	0.91	None
1313	0.332	1.328	0.083	8.95	23.7	1789	4.31	Clear	.58	0.86	None
1317	0.332	1.660	0.083	8.95	24.0	1899	4.36	Clear	.53	1.01	None
1,321	0,332	1.992	0.083	8.95	24.0	1956	4.38	Clear	.50	0.67	None
* 1325	0,332	2.324	0.083	8.95	24.0	1988	4.39	Clear	0.49	0.89	None
1329	0.332	2.656	0.083	8.95	24.0	1967	4.39	Clear	0.49	0.60	None

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing Inside Dia. Capacity (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer, BP=Bladder Pump ESP=Electric Submersible Pump, P=Peristaltic Pump O=Other(specify)

SAMPLING DATA

Sampled By (Print) Affiliation:	Sample(s) Signature(s):	Sampling Initiated at:	Sampling Ended at:
Thomas Johnston		1329	1334

Pump or Tubing Depth in well (feet):	Tubing Material Code:	Field Filtered: Y (N) Filtration Equipment Type:	Filter Size: ____ µm
19.60	PE		

Field Decontamination: Y (N) Tubing (Y) N (replaced) Duplicate: Y (N)

Sample Container Specification				Sample Preservation						
Sample I.D. Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)	Final pH	Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm x 3785
CCR-22A	1	PP	250 mL	1:1 HNO_3	None	None	NA	Metals	ESP	
CCR-22B	1	PP	250 mL	Ice	None	None	NA	[illegible]	ESP	

Remarks:

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone, T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APP= After (Through) Peristaltic Pump, B = Bailer, BP = Bladder Pump; ESP = Electric Submersible Pump; FPP = Peristaltic Pump; SM=Straw Method(tubing Gravity Drain); O=Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Range of Variation of Last Three Consecutive Readings (See FS 2212, section 3):

pH = +/- 0.2, Temperature = +/- 0.2°; Specific Conductance = +/- 5%, Dissolved Oxygen = ≤ 20% saturation (see Table FS 2200-2); optionally, +/-0.2 mg/L or 10% (whichever is greater). Turbidity: readings ≤20 NTU: optionally +/- 5 NTU or +/- 20 % (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name:	McIntosh Power Plant	Site Location:	Lakeland, FL		
Well No:	CCR-23	Sample ID:		Date:	3/17/22

PURGING DATA

Well Diameter		Tubing Diameter		Well Screen Interval			Static depth to water	Purge pump type
(inches):	2	(inches):	3/8	Depth:	15.1	to 24.7	(feet): 7.62	PP

Well Volume Purge:	total well depth		static depth to water		well capacity (gal/ft)		
One well volume =		=		X		= 0	gal

Equipment Volume Purge:	pump vol (gal)		flow cell volume (gal)		tubing length (ft)		Tubing capacity		
1 equipment volume =	0.66	+	0.101	gal +	25.44	X	0.006	= 0.31364	gal

Initial pump or tubing Depth in well (feet):	Final pump or tubing Depth in well (feet):	Purging Initiated at:	Purging Ended at:	Total Volume Purged (gallons)
19.9	20.10	0959 1000	1020	1.660

Time (Military)	Vol. Purged (gal)	Cumul. Vol. Purged (gals)	Purge Rate (l/min)	Depth to Water (ft)	Temp. °C	Cond. (µS/cm)	pH (SU)	Color by observation	DO mg/l or %	Turbidity (NTUs)	Steen by observation
1012	0.996	0.996	0.083	7.80	23.2	1710	5.14	Clear	0.27	6.11	None
1016	0.332	1.328	0.083	7.80	23.2	1707	5.14	Clear	0.26	4.37	None
1020	0.332	1.660	0.083	7.80	23.3	1699	5.14	Clear	0.25	3.56	None

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing Inside Dia. Capacity (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer, BP=Bladder Pump ESP=Electric Submersible Pump, PP=peristaltic Pump O=other(specify)

SAMPLING DATA

Sampled By (Print) Affiliation:	Sampler(s) Signature(s):	Sampling Initiated at:	Sampling Ended at:
Thomas Ethington		1020	1025

Pump or Tubing Depth in well (feet):	Tubing Material Code	Filtered: Y (N) Filtration Equipment Type	Filter Size: ____um
20.1	PE		

Field Decontamination: Y (N) Tubing: (Y) N (replaced) Duplicate: Y (N)

Sample Container Specification				Sample Preservation						
Sample I.D. Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)	Final pH	Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm x 3785	
CCR-23A	1	PP	250 mL	1:1 HNO_3	None	None	NA	Metals	ESP	
CCR-23B	1	PP	250 mL	Ice	None	None	NA	[illegible]	ESP	

Remarks:

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APPF= After [Through] Peristaltic Pump; B = Bailer; BP = Bladder Pump ESP = Electric Submersible Pump; RFPP = Peristaltic Pump; SM=Sample Method(Tubing Gravity Drain); O=Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Range of Variation of Last Three Consecutive Readings (See FS 2212, section 3):

pH = +/- 0.2; Temperature = +/- 0.2°; Specific Conductance = +/- 5%, Dissolved Oxygen = ±20% saturation(see Table FS 2200-2); optionally, +/-0.2 mg/L or 10% (whichever is greater). Turbidity, all readings ≤20 NTU: optionally +/- 5 NTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name:	McIntosh Power Plant	Site Location:	Lakeland, FL		
Well No:	SW-106	Sample ID:		Date:	9/13/22

PURGING DATA

Well Diameter (inches)	2	Tubing Diameter (inches)	3/8	Well Screen Interval Depth:		to	26.1 ~~[illegible]~~	Static depth to water (feet):	16.50	Purge pump type	PP	
Well Volume Purge: One well volume =	total well depth ~~[illegible]~~ 26.1	38.4	static depth to water 16.50		x	well capacity (gal/ft) 0.16		= 0	gal	~~36.9~~ 5.994 1.536		
Equipment Volume Purge: 1 equipment volume =	pump vol (gal)	+	flow cell volume (gal)	gal +	tubing length (ft)	x	Tubing capacity		= 0	gal		
Initial pump or tubing Depth in well (feet):	21.00	Final pump or tubing Depth in well (feet):	21.30	Purging initiated at:	0828	Purging Ended at:		Total Volume Purged (gallons)				

Time (military)	Vol. Purged (gal)	Cumul. Vol. Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp °C	Cond. (µS/cm)	pH (SU)	Color by observation	DO (mg/L) or %	Turbidity (NTUs)	Sheen by observation
0906	1.54	1.54	.055	16.60	22.1	102.	5.83	Cloudy	2.21	48.2	None
0913	.385	1.925	.055	16.61	22.1	101	5.63	Cloudy	1.92	43.4	None
0920	.385	2.310	.055	16.61	22.2	102	5.61	Cloudy	1.70	35.6	None
0927	.385	2.695	.055	16.61	22.2	103	5.60	Cloudy	1.59	31.5	None
0934	.385	308	0.055	16.61	22.3	~~103~~	5.60	Cloudy	1.44	28.6	None
0941	.385	3465	0.055	16.61	22.3	104	5.57	Cloudy	1.36	25.8	None
0948	.385	3.850	0.055	16.61	22.4	105	5.57	Cloudy	1.25	23.0	None
0955	.385	4.235	0.055	16.61	22.5	106	5.56	Cloudy	1.15	19.7	None
1002	.385	4.620	0.055	~~16.67~~	22.6	107	5.56	Cloudy	1.16	19.3	None
~~1009~~	~~.385~~	~~5.005~~	~~0.055~~	(16.61							

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88 1.536

Tubing Inside Dia. Capacity (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer, BP=Bladder Pump ESP=Electric Submersible Pump, PP=peristaltic Pump O=Other(specify)

SAMPLING DATA

Sampled By (Print) Affiliation: Thomas Johnston	Sampler(s) Signature(s): [signature]	Sampling Initiated at:	1002	Sampling Ended at:	1009
Pump or Tubing Depth in well (feet): 21.30	Tubing Material Code: PE	Field-Filtered: Y (N) Filtration Equipment Type:		Filter Size: ____ um	
Field Decontamination: Y (N)	Tubing (Y) N (replaced)			Duplicate: Y (N)	

Sample Container Specification				Sample Preservation			Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm x 3785
Sample I.D. Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)	Final pH			
SW-106A	1	PP	250 mL	1:1 HNO_3	None	None	NA	Metals	RFPP
SW-106B	1	PP	250 mL	Ice	None	None	NA	[illegible]	RFPP

Remarks:

Well volume purge because unknown screen interval

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APP= After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Peristaltic Pump; SM=Straw Method(tubing Gravity Drain); O=Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Range of Variation of Last Three Consecutive Readings (See FS 2212, section 3):
pH = +/- 0.2; Temperature = +/- 0.2°; Specific Conductance = +/- 5%; Dissolved Oxygen = ≤20% saturation(see Table FS 2200-2); optionally, +/-0.2 mg/L or 10% (whichever is greater); Turbidity: all readings ≤20 NTU; optionally +/- 5 NTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name:	McIntosh Power Plant			Site Location:		Lakeland, FL	
Well No:	Equipment Blank		Sample ID:			Date:	4/5/2022

PURGING DATA

Well Diameter		Tubing Diameter		Well Screen Interval				Static depth to water		Purge pump type
(inches):	NA	(inches):	NA	Depth:	NA	to	NA	(feet):		NA

Well Volume Purge:	total well depth		static depth to water		well capacity (gal/ft)			
One well volume =	NA	=		X	0.65	=	NA	gal

Equipment Volume Purge:	pump vol (gal)		flow cell volume (gal)		tubing length (ft)		Tubing capacity			
1 equipment volume =	NA	+	NA	gal +		X		=	NA	gal

Initial pump or tubing Depth in well (feet):	Final pump or tubing Depth in well (feet):	Purging Initiated at:	Purging Ended at:	Total Volume Purged (gallons):

Time (Military)	Vol. Purged (gal)	Cumul. Vol. Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp °C	Cond (uS/cm)	pH (SU)	Color by observation	DO mg/L or %	Turbidity (NTUs)	Stream by observation
					22.6	1.1	6.15	Clear	.40	.45	None

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing Inside Dia. Capacity (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.0040; 3/8" = 0.0006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer; BP=Bladder Pump; ESP=Electric Submersible Pump; PP=peristaltic Pump; O=Other (specify)

SAMPLING DATA

Sampled By (Print) Affiliation:	Sampler(s) Signature(s):	Sampling Initiated at:	Sampling Ended at:
Thomas Johnston		1430	1430

Pump or Tubing Depth in well (feet):	Tubing Material Code	Field-Filtered: Y (N) Filtration Equipment Type	Filter Size: ____um
N/A	PE		

Field Decontamination: Y (N) Tubing (Y) N (replaced) Duplicate: Y (N)

Sample Container Specification				Sample Preservation						
Sample I.D. Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)	Final pH	Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) (gpm x 378)
Equipment Blank A	1	PP	1 L	1:1 HNO3	None	None	Metals	RFPP	NA
Equipment Blank B	1	PP	250mL	1:1 HNO3	None	None	TDS & Anions	RFPP	

Remarks:

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APPP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Peristaltic Pump; SM=Straw Method (tubing Gravity Drain); O=Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Range or Variation of Last Three Consecutive Readings (See FS 2212, section 3):
pH = +/- 0.2; Temperature = +/- 0.2° ; Specific Conductance = +/- 5%. Dissolved Oxygen = 5-20% saturation (see Table FS 2200-2); optionally, +/-0.2 mg/L or 10% (whichever is greater). Turbidity: all readings ≤20 NTU optionally +/- 5 NTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name:	McIntosh Power Plant	Site Location:	Lakeland, FL
Well No:	SW-106	Sample ID:	8/0225W106
Date:	05/10/22		

PURGING DATA

Well Diameter (inches)	2	Tubing Diameter (inches)	3/8	Well Screen Interval Depth:		to	38.4	Static depth to water (feet):	14.71	Purge pump type	PP

Well Volume Purge: One well volume = (total well depth 38.4) − (static depth to water 14.71) × (well capacity (gal/ft) 0.16) = 0 gal

Equipment Volume Purge: 1 equipment volume = (pump vol (gal) 0.06) + (flow cell volume (gal) .101) gal + (tubing length (ft) 38.4) × (Tubing capacity .006) = .394 = 0 gal

Initial pump or tubing Depth in well (feet):		Final pump or tubing Depth in well (feet):	38.4	Purging Initiated at:	0823	Purging Ended at:	0857	Total Volume Purged (gallons):	3.412

Time (military)	Vol. Purged (gal)	Cumul. Vol. Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp °C	Cond. (uS/cm)	pH (SU)	Color by observation	DO mg/L or %	Turbidity (NTUs)	Sheen by observation
0845	2.200	2.20	.100	14.98	23.6	113.9	5.50	Cloudy	0.36	25.0	None
0849	.404	2.604	.101	14.98	23.6	114.6	5.52	Clear	0.36	19.8	None
0853	.404	3.008	.101	14.98	23.6	115.1	5.53	Clear	0.32	15.2	None
0857	.404	3.412	.101	14.98	23.6	115.2	5.52	Clear	0.30	13.0	None

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing Inside Dia. Capacity (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer, BP=Bladder Pump, ESP=Electric Submersible Pump, PP=Peristaltic Pump, O=Other (specify)

SAMPLING DATA

Sampled By (Print) & Affiliation:	Sample(s) Signature(s):	Sampling Initiated at:	0857	Sampling Ended at:	0901
Cross, Jason / Brinkley	BT				

Pump or Tubing Depth in well (feet):	38.4	Tubing Material Code:	PE	Field Filtered: Y (N) Filtration Equipment Type:		Filter Size: ____ µm
Field Decontamination: Y (N)		Tubing: (Y) N (replaced)			Duplicate: Y (N)	

Sample Container Specification				Sample Preservation				Intended Analytical Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm x 3785
Sample I.D. Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)		Final pH			
SW-106A	1	PP	250 mL	1:1 HNO_3	None	None	NA	Metals	RFPP	
SW-106B	1	PP	250 mL	Ice	None	None	NA	[illegible]	RFPP	

Remarks:
.2000 (master field) (.101)

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Peristaltic Pump; FM=Straw Method(Tubing Gravity Drain); O=Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Range of Variation of Last Three Consecutive Readings (See FS 2212, section 3):
pH = +/- 0.2; Temperature = +/- 0.2°; Specific Conductance = +/- 5%; Dissolved Oxygen = ≤ 20% saturation(see Table FS 2200-2); optionally, +/-0.3 mg/L or 10% (whichever is greater); Turbidity: all readings ≤ 20 NTU: optionally +/- 5 NTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

Site Name	McIntosh Power Plant			Site Location:	Lakeland, FL		
Well No:	CCR-1	Sample ID	83022 CCR 1	Date:	08/10/22		

PURGING DATA

Well Diameter (inches)	2	Tubing Diameter (inches)	3/8	Well Screen Interval Depth:	15.2	to	25.2	Static depth to water (feet):	12.04	Purge pump type	PP

Well Volume Purge:	total well depth		static depth to water			well capacity (gal/ft)				
One well volume =		–	12.04		x			=	0	gal
Equipment Volume Purge:	pump vol (gal)		flow cell volume (gal)		tubing length (ft)		Tubing capacity			
1 equipment volume =	0.06	+	0.101	gal +	26.71	x	0.006	=	0.31526	gal

Initial pump or tubing Depth in well (feet):	25.71	Final pump or tubing Depth in well (feet):	25.71	Purging Initiated at:	0945	Purging Ended at:	1006
Total Volume Purged (gals):	4.4						

Time (Military)	Vol Purged (gal)	Cumul. Vol Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp °C	Cond (uS/cm)	pH (SU)	Color by observation	DO mg/L or %	Turbidity (NTUs)	Sheen by observation
0955	.20	.20	0.20	12.32	25.9	308.2	5.86	Clear	1.69	3.33	None
0958 ~~1005~~	~~.20~~ .6	~~.2~~ 2.6	0.20	12.32	25.9	302.5	5.88	Clear	2.41	3.43	None
1001 ~~1045~~	0.6	3.2	0.20	12.32	25.9	304.5	5.87	Clear	2.04	3.50	None
1003	0.6	3.8	0.20	12.32	25.9	299.2	5.85	Clear	1.73	3.80	None
1006	0.6	4.4	0.20	12.32	25.9	301.4	5.87	Clear	1.56	3.91	None

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing Inside Dia. Capacity (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer; BP=Bladder Pump; ESP=Electric Submersible Pump; PP=Peristaltic Pump; O=Other(Specify)

SAMPLING DATA

Sampled By (Print) Affiliation: Cross, Jason	Sampler(s) Signature(s): [signature]	Sampling Initiated at:	1006	Sampling Ended at:	1011
Pump or Tubing Depth in well (feet):	25.71	Tubing Material Code:	PE	Field-Filtered: Y (N) Filtration Equipment Type: ______	Filter Size: ____ um
Field Decontamination: Y (N)		Tubing Y N (replaced)		Duplicate: Y (N)	

Sample Container Specification				Sample Preservation				Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) (gpm x 3785)
Sample I.D. Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)		Final pH			
CCR-1A	1	PP		1:1 HNO_3	None	None	NA		ESP	
CCR-1B	1	PP		Ice	None	None	NA		ESP	
Elevation Water										

Remarks:

Turbidity meter was giving abnormal measurements / (out of range) ~~[illegible]~~ & was able to re measure with above readings

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Range of Variation of Last Three Consecutive Readings (See FS 2212, section 3):

pH = +/- 0.2; Temperature = +/- 0.2°C; Specific Conductance = +/- 5%; Dissolved Oxygen = ≤ 20% saturation (see Table FS 2200-2); optionally, +/-0.2 mg/L or 10% (whichever is greater); Turbidity: all readings ≤20 NTU; optionally +/- 5 NTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name:	McDonough Power Plant		Site Location:	Smyrna, GA
Well No.	CCR-2	Sample ID:	081022CCR2	Date: 08/10/22

PURGING DATA

Well Diameter (inches)	Tubing Diameter (inches)	Well Screen Interval Depth:		to		Static depth to water (feet):	Purge pump type
2	3/8		15.7	to	25.7	11.34	PP

Well Volume Purge:	total well depth		static depth to water		well capacity (gal/ft)		
One well volume =		-	11.34	X		= 0	gal

Equipment Volume Purge:	pump vol (gal)		flow cell volume (gal)		tubing length (ft)		Tubing capacity		
1 equipment volume =	0.06	+	0.101	gal →	25.71	X	0.006	= 0.31526	gal

Initial pump or tubing Depth in well (feet):	Final pump or tubing Depth in well (feet):	Purging Initiated at:	Purging Ended at:	Total Volume Purged (gallons):
25.71	25.71	1234	1252	1.99

Time (Military)	Vol. Purged (gal)	Cumul. Vol. Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp °C	Cond. (µS/cm)	pH (SU)	Color by observation	DO mg/L or %	Turbidity (NTUs)	Sheen by observation
1244	1.11	1.11	.11	11.52	27.1	296.5	5.89	Clear	0.57	3.72	None
1248	.44	1.55	.11	11.52	27.1	293.4	5.89	Clear	0.58	4.19	None
1252	.44	1.99	.11	11.52	27.1	291.9	5.88	Clear	0.57	3.51	None

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing Inside Dia. Capacity (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer; BP=Bladder Pump; ESP=Electric Submersible Pump; PP=Peristaltic Pump; O=Other(specify)

SAMPLING DATA

Sampled By (Print) Affiliation:	Sample(s) Signature(s):	Sampling Initiated at:	Sampling Ended at:
Cross, Jason/BJ	/BJ	1252	1256

Pump or Tubing Depth in well (feet):	Tubing Material Code:	Field-Filtered: Y (N) Filtration Equipment Type:	Filter Size: ____ µm
25.71	PE		

Field Decontamination: Y (N) Tubing: (Y) N (replaced) Duplicate: Y (N)

Sample Containe Specification				Sample Preservation				Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm x 3785
Sample I.D. Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)		Final pH			
CCR-2A	1	PP		1:1 HNO_3	None	None	NA		RFPP	
CCR-2B	1	PP		1:1 HNO_3	None	None	NA		RFPP	

Remarks:

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Peristaltic Pump; SM = Straw Method (tubing Gravity Drain); O=Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Range of Variation of Last Three Consecutive Readings (Rule 62-160.220, section 3)

pH = +/- 0.2; Temperature = +/- 0.2° ; Specific Conductance = +/- 5%; Dissolved Oxygen = 5-20% saturation (see Table FS 2200-2) optionally, +/- 0.2 mg/L or 10% (whichever is greater); Turbidity: all readings ≤20 NTU, optionally +/- 5 NTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name:	McIntosh Power Plant		Site Location:	Lakeland, FL	
Well No:	CCR-4	Sample ID	[illegible] SD22CCR4	Date:	08/10/22

PURGING DATA

Well Diameter		Tubing Diameter		Well Screen Interval			Static depth to water		Purge pump type
(inches)	2	(inches)	3/8	Depth:	15.6	to 25.1	(feet):	15.20	PP

Well Volume Purge:	total well depth		static depth to water		well capacity (gal/ft)		
One well volume =		-	15.20	X		= 0	gal

Equipment Volume Purge:	pump vol (gal)		flow cell volume (gal)		tubing length (ft)		Tubing capacity		
1 equipment volume =	0.08	+	0.191	gal +	25.88	X	0.006	= 0.31334	gal

Initial pump or tubing Depth in well (feet):	Final pump or tubing Depth in well (feet):	Purging initiated at:	Purging Ended at:	Total Volume Purged (gallons):
2035 25.69	25.69	1337	1359	2.20

Time (Military)	Vol. Purged (gal)	Cumul. Vol Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp °C	Cond. (µS/cm)	pH (SU)	Color by observation	DO mg/L or %	Turbidity (NTUs)	Odors by observation
1347	1.0	1.00	.100	15.34	26.3	14494	4.20	Clear	0.52	13.60	None
1351	.40	1.40	.100	15.34	26.4	14449	4.17	Clear	0.43	6.21	None
1355	.40	1.80	.100	15.34	26.4	14448	4.19	Clear	0.37	6.45	None
1359	.40	2.20	.100	15.34	26.5	14499	4.17	Clear	0.36	4.02	None

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 8" = 2.68

Tubing Inside Dia. Capacity (Gal./FT.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer, BP=Bladder Pump, ESP=Electric Submersible Pump, PP=peristaltic Pump, O=other(specify)

SAMPLING DATA

Sampled By (Print) Affiliation:	Sample(s) Signature(s):	Sampling Initiated at:	Sampling Ended at:
Cross Jason/BJ	[signature] Cross/BJ	1359	1402

Pump or Tubing Depth in well (feet):	Tubing Material Code	Field-Filtered: Y (N)	Filter Size: ___ µm
25.69	PE	Filtration Equipment Type:	

Field Decontamination: Y (N) | Tubing (Y) N (replaced) | Duplicate: Y (N)

Sample Container Specification				Sample Preservation			Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm x 3785
Sample I.D. Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)	Final pH			
CCR-4A	1	PP		1:1 HNO_3	None	None	NA		ESP	
CCR-4B	1	PP		1:1 HNO_3	None	None	NA		ESP	

Remarks:

2021 Purge rate 0.033

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; FPP = Peristaltic Pump; SM = Straw Method (tubing Gravity Drain); OT=Other (Specify)

NOTES: 1 The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2 Stabilization Criteria for Ranges of Variation of Last Three Consecutive Readings (See FS 2212, section 3):

pH = +/- 0.2; Temperature = +/- 0.2°; Specific Conductance = +/- 5%; Dissolved Oxygen = ≤20% saturation (see Table FS 2200-2) optionally, +/-0.2 mg/L or 10% (whichever is greater); Turbidity: all readings ≤20 NTU; optionally +/- 5 NTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name	McIntosh Power Plant		Site Location:	Lakeland, FL	
Well No	CCR-S	Sample ID.	82222CCRS	Date:	8-22-22

PURGING DATA

Well Diameter		Tubing Diameter		Well Screen Interval			Static depth to water	Purge pump type
(inches)	2	(inches)	3/8	Depth	15.2	to 25.7	(feet): 11.7	PP

Well Volume Purge:	total well depth		static depth to water		well capacity (gal/ft)		
One well volume =	26.2	-	11.7	X		= 0	gal

Equipment Volume Purge:	pump vol (gal)		flow cell volume (gal)		tubing length (ft)		Tubing capacity		
1 equipment volume =	0.05	+	0.101	gal +	28.21	X	0.006	= 0.31876	gal

Initial pump or tubing Depth in well (feet):	Final pump or tubing Depth in well (feet):	Purging Initiated at:	Purging Ended at:	Total Volume Purged (optional)
26.95	20.95	0812	0832	1.660

Time (Military)	Vol. Purged (gal)	Cumul. Vol Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp. °C	Cond. (uS/cm)	pH (SU)	Color by observation	mg/L or %	Turbidity (NTUs)	Sheen by observation
0824	0.996	0.996	.083	11.69	25.3	16629	5.42	CLEAR	0.74	4.48	NONE
0828	0.332	1.328	.083	11.71	25.3	16633	5.43	CLEAR	0.60	5.24	NONE
0832	0.332	1.660	.083	11.72	25.3	16625	5.43	CLEAR	0.61	3.74	NONE

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing Inside Dia. Capacity (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer, BP=Bladder Pump; ESP=Electric Submersible Pump, PP=peristaltic Pump O=other(specify)

SAMPLING DATA

Sampled By (Print) Affiliation	Sampler(s) Signature(s)	Sampling Initiated at:	Sampling Ended at:
BRIAN JUNENO		0832	0836

Pump or Tubing Depth in well (feet):	Tubing Material Code	Field-Filtered: Y (N) Filtration Equipment Type:	Filter Size: ____ um
20.95	PE		

Field Decontamination: Y (N)	Tubing (Y) N (replaced)	Duplicate: Y (N)

Sample Container Specification				Sample Preservation						
Sample I.D. Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)		Final pH	Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm x 3785
CCR-SA	1	PP	250 mL	1:1 HNO_3	None	None	NA	Metals	RFPP	
CCR-SB	1	PP	250 mL	Ice	None	None	NA	[illegible]	RFPP	

Remarks:

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer, BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Peristaltic Pump; SM=Straw Method(Gravity Drain); O=Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Range of Variation of Last Three Consecutive Readings (See FS 2212, section 3k)

pH = +/- 0.2, Temperature = +/- 0.2°C; Specific Conductance = +/- 5%, Dissolved Oxygen = ≤ 20% saturation(see Table FS 2200-2) optionally, +/-0.2 mg/L or 10% (whichever is greater). Turbidity: all readings ≤20 NTU: optionally +/- 5 NTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name:	McIntosh Power Plant		Site Location	Lakeland, FL	
Well No:	CCR-6	Sample ID:	82222 CCR 6B	Date:	8.22.22

PURGING DATA

Well Diameter		Tubing Diameter		Well Screen Interval				Static depth to water		Purge pump type
(inches)	2	(inches)	3/8	Depth:	15.7	to	25.2	(feet)	10.9	PP

Well Volume Purge:	(total well depth)		static depth to water		well capacity (gal/ft)			
One well volume =		x	10.9	X		=	0	gal

Equipment Volume Purge:	pump vol (gal)		flow cell volume (gal)		tubing length (ft)		Tubing capacity		
1 equipment volume =	0.06	+	0.101	gal +	25.72	X	0.006	=	0.31532 gal

Initial pump or tubing Depth in well (feet):	Final pump or tubing Depth in well (feet):	Purging Initiated at:	Purging Ended at:	Total Volume Purged (gallons)
20.45	20.45	0850	0930	3.320

Time (Military)	Vol Purged (gal)	Cumul Vol Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp °C	Cond. (µS/cm)	pH (SU)	Color by observation	DO (mg/L or %)	Turbidity (NTUs)	Sheen by observation
			0.083								
0902	0.996	0.996	0.083	10.96	25.8	1739	6.42	CLEAR	0.60	0.73	NONE
0906	0.332	1.328	.083	10.96	25.7	2170	6.39	CLEAR	0.46	1.0	NONE
0910	0.332	1.660	.083	10.96	25.7	3062	6.34	CLEAR	0.40	0.68	NONE
0914	0.332	1.992	.083	10.97	25.7	3486	6.33	CLEAR	0.38	1.02	NONE
0918	0.332	2.324	.083	10.97	25.7	3898	6.31	CLEAR	0.35	1.14	NONE
0922	0.332	2.656	.083	10.97	25.7	4122	6.28	CLEAR	0.33	1.56	NONE
0926	0.332	2.988	.083	10.97	25.7	4248	6.29	CLEAR	0.32	1.47	NONE
0930	0.332	3.320	.083	10.97	25.7	4297	6.30	CLEAR	0.32	1.55	NONE

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing Inside Dia. Capacity (Gal/FL): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer, BP=Bladder Pump, ESP=Electric Submersible Pump, PP=peristaltic Pump, O=Other(specify)

SAMPLING DATA

Sampled By (Print) Affiliation:	Sampler(s) Signature(s):	Sampling Initiated at:	Sampling Ended at:
BRIAN JUDEAN		0930	0935

Pump or Tubing Depth in well (feet):	Tubing Material Code	Field Filtered: Y (N)	Filter Size: ____ um
20.45	PE	Filtration Equipment Type	

Field Decontamination: Y (N) Tubing (Y) N (replaced) Duplicate: Y (N)

Sample Container Specification				Sample Preservation				Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm x 3785
Sample ID Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)		Final pH			
CCR-6A	1	PP	250 mL	1:1 HNO_3	None	None	NA	Metals	RFPP	
CCR-6B	1	PP	250 mL	Ice	None	None	NA	[illegible]	RFPP	

Remarks:

Material Codes: AG = Amber Glass, CG = Clear Glass, PE = Polyethylene, PP = Polypropylene, S = Silicone, T = Teflon, O = Other (Specify)

Sampling EQUIPMENT CODES: APP= After (Through) Peristaltic Pump; B = Bailer, BP = Bladder Pump, ESP = Electric Submersible Pump, RFPP = Peristaltic Pump, SM=Straw Method(Tubing Gravity Drain); O=Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Range of Variation of Last Three Consecutive Readings (See FS 2212, section 3):
pH = +/- 0.2, Temperature = +/- 0.2°, Specific Conductance = +/- 5%, Dissolved Oxygen = ≤ 20% saturation(see Table FS 2200-3); optionally, +/-0.2 mg/L or 10% (whichever is greater). Turbidity all readings ≤ 20 NTU; optionally +/- 5 NTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

Site Name:	McIntosh Power Plant			Site Location:	Lakeland, FL		
Well No.:	CCR-7	Sample ID:	82222 CCR 7	Date:	8-22-22		

PURGING DATA

Well Diameter		Tubing Diameter		Well Screen Interval				Static depth to water	Purge pump type
(inches):	2	(inches):	3/8	Depth:	15.7	to	25.2	(feet):	10.23 PP

Well Volume Purge:	total well depth		static depth to water		well capacity (gal/ft)		
One well volume =		-	10.23	X		= 0	gal

Equipment Volume Purge:	pump vol (gal)		flow cell volume (gal)		tubing length (ft)		Tubing capacity		
1 equipment volume =	0.06	+	0.101	gal +	25.79	X	0.004	= 0.31574	gal

Initial pump or tubing Depth in well (feet):	Final pump or tubing Depth in well (feet):	Purging Initiated at:	Purging Ended at:	Total Volume Purged (gallons)
20.45	20.45	0950	1034	3.652

Time (Military)	Vol. Purged (gal)	Cumul. Vol. Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp. °C	Cond. (µS/cm)	pH (SU)	Color by observation	DO (mg/L or %)	Turbidity (NTUs)	Sheen by observation
1002	0.996	0.996	.083	11.29	26.0	567	5.10	CLEAR	0.57	3.51	NONE
1006	0.332	1.328	.083	11.30	26.0	702	5.09	CLEAR	0.51	4.15	NONE
1010	0.332	1.660	.083	11.30	26.0	753	5.12	CLEAR	0.48	4.26	NONE
1014	0.332	1.992	.083	11.30	26.0	778	5.08	CLEAR	0.41	4.57	NONE
1018	0.332	2.324	.083	11.30	26.0	813	5.08	CLEAR	0.46	5.20	NONE
1022	0.332	2.656	.083	11.30	26.0	843	5.08	CLEAR	0.37	4.93	NONE
1026	0.332	2.988	.083	11.30	26.0	894	5.11	CLEAR	0.52	4.84	NONE
1030	0.332	3.320	.083	11.30	26.0	921	5.06	CLEAR	0.48	5.22	NONE
1034	0.332	3.652	.083	11.30	26.0	927	5.07	CLEAR	0.40	5.94	NONE

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing Inside Dia. Capacity (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0016; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer, BP=Bladder Pump, ESP=Electric Submersible Pump, PP=Peristaltic Pump, O=Other(specify)

SAMPLING DATA

Sampled By (Print) / Affiliation	Sampler(s) Signature(s):	Sampling Initiated at:	Sampling Ended at:
BRIAN TUDINO	BT	1034	1038

Pump or Tubing Depth in well (feet):	Tubing Material Code:	Field-Filtered: Y (N)	Filter Size: ____ µm
20.45	PE	Filtration Equipment Type:	

Field Decontamination: Y (N)	Tubing: (Y) N (Replaced)	Duplicate: Y (N)

Sample Container Specification				Sample Preservation				Analytical method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm x 3785
Sample I.D. Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)		Final pH			
CCR-7A	1	PP	250 mL	1:1 HNO_3	None	None	NA	Metals	RFPP	
CCR-7B	1	PP	250 mL	Ice	None	None	NA	[illegible]	RFPP	

Remarks:

Material Codes: AG = Amber Glass, CG = Clear Glass, PE = Polyethylene, PP = Polypropylene, S = Silicone, T = Teflon, O = Other (Specify)

Sampling EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer, BP = Bladder Pump, ESP = Electric Submersible Pump; FPP = Peristaltic Pump; SM=Straw Method(tubing Gravity Drain); O=Other (Specify)

NOTES: 1. The above do not comprise all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Series of Variance of Last Three Consecutive Readings (See FS 2212, section 3):
pH = +/- 0.2; Temperature = +/- 0.2°; Specific Conductance = +/- 5%, Dissolved Oxygen = ≤20% saturation(see Table FS 2200-2) optionally, +/-0.2 mg/L or 10% (whichever is greater); Turbidity: all readings ≤20 NTU; optionally +/- 5 NTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name:	McIntosh Power Plant		Site Location:	Lakeland, FL	
Well No:	CCR-8	Sample ID:	82222CCR8	Date:	8-22-22

PURGING DATA

Well Diameter		Tubing Diameter		Well Screen Interval				Static depth to water	Purge pump type
(inches)	2	(inches)	3/8	Depth:	15.9	to	25.4	(feet):	11.1 PP

Well Volume Purge:	total well depth		static depth to water		well capacity (gal/ft)		
One well volume =	25.9	−	11.1	X		=	0 gal

Equipment Volume Purge:	pump vol (gal)		flow cell volume (gal)		tubing length (ft)		Tubing capacity		
1 equipment volume =	0.06	+	0.101	gal +	25.90	X	0.006	=	0.31676 gal

Initial pump or tubing Depth in well (feet):	Final pump or tubing Depth in well (feet):	Purging Initiated at:	Purging Ended at:	Total Volume Purged (gallons)
20.65	20.65	1051	1111	1.660

Time (Military)	Vol Purged (gal)	Cumul Vol Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp °C	Cond (µS/cm)	pH (SU)	Color by observation	DO mg/L or %	Turbidity (NTUs)	Sheen by observation
1103	0.996	0.996	.083	11.21	25.6	454.1	6.59	CLEAR	0.47	2.73	NONE
1107	0.332	1.328	.083	11.21	25.6	454.0	6.71	CLEAR	0.42	2.46	NONE
1111	0.332	1.660	.083	11.21	25.6	455.8	6.74	CLEAR	0.40	2.42	NONE

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing Inside Dia. Capacity (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer, BP=Bladder Pump ESP=Electric Submersible Pump, PP=peristaltic Pump Other(specify)

SAMPLING DATA

Sampled By (Print) Affiliation:	Sample(s) Signature(s):	Sampling Initiated at:	Sampling Ended at:
BRIAN JUDINO		1111	1116

Pump or Tubing Depth in well (feet):	Tubing Material Code	Field-Filtered: Y (N)	Filter Size: ____ µm
20.65	PE	Filtration Equipment Type	

Field Decontamination: Y (N)	Tubing (T) N (replaced)	Duplicate: Y (N)

Sample Container Specification				Sample Preservation						
Sample I.D. Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)	Final pH	Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm x 3785
CCR-8A	1	PP	250 mL	1:1 HNO_3	None	None	NA	Metals	RFPP	
CCR-8B	1	PP	250 mL	Ice	None	None	NA	[illegible]	RFPP	

Remarks:

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon O = Other (Specify)

Sampling EQUIPMENT CODES: APP= After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PFPP = Peristaltic Pump; SM=Straw Method(tubing Gravity Drain); O=Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Ranges of Variation of Last Three Consecutive Readings (See FS 2250, section 3):

pH = +/- 0.2; Temperature = +/- 0.2°; Specific Conductance = +/- 5%, Dissolved Oxygen = ≤ 20% saturation(see Table FS 2200-3); oprionally, +/-0.2 mg/L or 10% (whichever is greater). Turbidity, six readings ≤20 NTU: optionally +/- 5 NTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name:	McIntosh Power Plant		Site Location:	Lakeland, FL		
Well No:	CCR-9	Sample ID	82222 CCR9	Date:	8-22-22	

PURGING DATA

Well Diameter		Tubing Diameter		Well Screen Interval				Static depth to water		Purge pump type		
(inches)	2	(inches)	3/8	Depth:	15.5	to	25	(feet):	11.41	PP		
Well Volume Purge:		total well depth		static depth to water			well capacity (gal/ft)					
One well volume =		25.5	-	11.41		X			=	0	gal	
Equipment Volume Purge:		pump vol (gal)		flow cell volume (gal)		tubing length (ft)		Tubing capacity				
1 equipment volume =			+		gal +	25.61	X			=	0	gal
Initial pump or tubing Depth in well (feet):		20.25	Final pump or tubing Depth in well (feet):		20.25	Purging Initiated at:	1310	Purging Ended at:	1330	Total Volume Purged (gallons)	1.660	

Time (Military)	Vol. Purged (gal)	Cumul. Vol. Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp °C	Cond. (µS/cm)	pH (SU)	Color by observation	DO (mg/L or %)	Turbidity (NTUs)	Sheen by observation
1322	~~0.996~~	0.996	.083	11.81	27.0	3767	5.37	CLEAR	0.37	8.79	NONE
1326	~~0.332~~	1.328	.083	11.82	27.1	3762	5.37	CLEAR	0.36	8.23	NONE
1330	~~0.332~~	1.660	.083	11.82	27.0	3763	5.37	CLEAR	0.37	9.57	NONE
	~~0.332~~										

Well Capacity (Gallons per Foot): 0.75" = 0.02, 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65, 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing Inside Dia. Capacity (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer, BP=Bladder Pump ESP=Electric Submersible Pump, PP=peristaltic Pump O=other(specify)

SAMPLING DATA

Sampled By (Print) Affiliation: BRIAN JUDINO		Sampler(s) Signature(s):	Sampling Initiated at: 1330		Sampling Ended at: 1334
Pump or Tubing Depth in well (feet): 20.25		Tubing Material Code: PE	Field-Filtered: Y (N) Filtration Equipment Type:		Filter Size: ____ µm
Field Decontamination: Y (N)		Tubing (Y) N (replaced)			Duplicate: Y (N)

Sample Container Specification				Sample Preservation				Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm x 3785
Sample I.D. Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)		Final pH			
CCR-9A	1	PP	250 mL	1:1 HNO$_3$	None	None	NA	Metals	RFPP	
CCR-9B	1	PP	250 mL	Ice	None	None	NA	[illegible]	RFPP	

Remarks:

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Range of Variation of Last Three Consecutive Readings (See FS 2212, section 3):

pH = +/- 0.2; Temperature = +/- 0.2°; Specific Conductance = +/- 5%; Dissolved Oxygen = ≤20% saturation (see Table FS 2200-2); optionally, +/-0.2 mg/L or 10% (whichever is greater); Turbidity: all readings ≤20 NTU; optionally +/- 5 NTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name:	McIntosh Power Plant		Site Location:	Lakeland FL	
Well No:	CCR-11	Sample ID:	32422CCK11	Date:	8.24.22

PURGING DATA

Well Diameter		Tubing Diameter		Well Screen Interval				Static depth to water	Purge pump type
(inches)	2	(inches)	3/8	Depth:	15.6	to	25.6	(feet):	5.3	PP

Well Volume Purge:	total well depth		static depth to water		well capacity (gal/ft)		
One well volume =		-	8.13	X		=	0 gal

Equipment Volume Purge:	pump vol (gal)		flow cell volume (gal)		tubing length (ft)		Tubing capacity		
1 equipment volume =	0.06	+	0.101	gal +	25.64	X	0.006	=	0.21184 gal

Initial pump or tubing Depth in well (feet):	20.35	Final pump or tubing Depth in well (feet):	20.35	Purging Initiated at:	0925	Purging Ended at:	1001 / 0925	Total Volume Purged (gallons):	2.998 / 1061 gal

Time (Military)	Vol Purged (gal)	Cumul. Vol. Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp °C	Cond (µS/cm)	pH (SU)	Color (by observation)	DO (mg/L or %)	Turbidity (NTUs)	Sheen (by observation)
0937	0.996	0.996	.083	8.49	25.7	4765	4.16	CLEAR	0.64	64.6	NONE
0941	0.332	1.328	.083	8.49	25.7	4751	4.25	CLEAR	0.61	41.3	NONE
0945	0.332	1.660	.083	8.49	25.7	4734	4.32	CLEAR	0.60	32.7	NONE
0949	0.332	1.992	.083	8.50	25.7	4719	4.44	CLEAR	0.60	35.6	NONE
0953	0.332	2.324	.083	8.5	25.6	4716	4.50	CLEAR	0.58	27.0	NONE
0957	0.332	2.656	.083	8.51	25.6	4713	4.52	CLEAR	0.56	26.7	NONE
1001	0.332	2.998	.083	8.51	25.6	4720	4.51	CLEAR	0.56	25.8	NONE

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing Inside Dia. Capacity (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer, BP=Bladder Pump ESP=Electric Submersible Pump, PP=peristaltic Pump O=other(specify)

SAMPLING DATA

Sampled By (Print) Affiliation:	BRIAN JUDINO	Sampler(s) Signature(s):		Sampling Initiated at:	1001	Sampling Ended at:	1005
Pump or Tubing Depth in well (feet):	20.35	Tubing Material Code:	PE	Field-Filtered: Y (N) Filtration Equipment Type:		Filter Size: ____ um	
Field Decontamination:	Y (N)	Tubing: (Y) N (replaced)				Duplicate:	Y (N)

Sample Container Specification				Sample Preservation				Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm x 3785
Sample I.D. Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)		Final pH			
CCR-11A	1	PP	250 mL	1:1 HNO_3	None	None	NA	Metals	RFPP	
CCR-11B	1	PP	250 mL	Ice	None	None	NA	[illegible]	RFPP	

Remarks:

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer, BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Peristaltic Pump; Straw (straw method/tubing Gravity Drain); O=Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Review of Variation of Less Than Consecutive Readings (See FS 2212, section 3):

pH = +/- 0.2; Temperature = +/- 0.2° ; Specific Conductance = +/- 5%, Dissolved Oxygen = ≤ 20% saturation (see Table FS 2200-2), optionally, +/-0.2 mg/L or 10% (whichever is greater) Turbidity: all readings ≤ 20 NTU, optionally +/- 5 NTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site name:	McIntosh Power Plant		Site Location:	Lakeland, FL	
Well No:	CCR-12	Sample ID:	82422CCR12	Date:	4-24-22

PURGING DATA

Well Diameter		Tubing Diameter		Well Screen Interval				Static depth to water	Purge pump type
(inches):	2	(inches):	3/8	Depth:	15.7	to	25.2	(feet):	8.35 PP

Well Volume Purge:	total well depth		static depth to water		well capacity (gal/ft)		
One well volume =		-	8.35	X		= 0	gal

Equipment Volume Purge:	pump vol (gal)		flow cell volume (gal)		tubing length (ft)		Tubing capacity		
1 equipment volume =	0.05	+	0.101	gal +	25.75	X	0.006	= 0.1556	gal

Initial pump or tubing Depth in well (feet):	Final pump or tubing Depth in well (feet):	Purging initiated at:	Purging Ended at:	Total Volume Purged (gallons)
20.45	20.45	1018	1038	1.660

Time (Military)	Vol Purged (gal)	Cumul Vol Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp °C	Cond (µS/cm)	pH (SU)	Color by observation	mg/L or %	Turbidity (NTUs)	Sheen by observation
1030	0.996	0.996	.083	9.00	26.9	2352	6.67	DARK CLEAR	0.2	2.39	NONE
1034	0.332	1.328	.083	9.00	26.9	2365	6.76	DARK	0.2	2.23	NONE
1038	0.332	1.660	.083	9.0	26.8	2399	6.79	DARK	0.2	1.68	NONE

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing Inside Dia. Capacity (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer, BP=Bladder Pump ESP=Electric Submersible Pump, PP=peristaltic Pump Other(specify)

SAMPLING DATA

Sampled By (Print) Affiliation:	Sampler(s) Signature(s):	Sampling Initiated at:	Sampling Finished at:
BRIAN TUOZNO		1038	1043

Pump or Tubing Depth in well (feet):	Tubing Material Code:	Field-Filtered: Y (N)	Filter Size: ____µm
20.45	PE	Filtration Equipment Type:	

Field Decontamination: Y (N)	Tubing: (Y) N (replaced)	Duplicate: Y (N)

Sample Container Specification				Sample Preservation						
Sample I.D. Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)		Final pH	Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) (pump = 1785
CCR-12A	1	PP	250 mL	1:1 HNO_3	None	None	NA	Metals	RFPP	
CCR-12B	1	PP	250 mL	Ice	None	None	NA	[illegible]	RFPP	

Remarks:

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APPP = After (Through) Peristaltic Pump, B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump, RFPP = Peristaltic Pump; SM=Straw Method(tubing Gravity Drain); O=Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Ranges of Variation of Last Three Consecutive Readings (See FS 2212, section 3):

pH = +/- 0.2; Temperature = +/- 0.2°; Specific Conductance = +/- 5%, Dissolved Oxygen = ± 20% saturation(see Table FS 2200-3); optionally, +/-0.3 mg/L or 10% (whichever is greater); Turbidity: all readings ≤20 NTU: optionally +/- 5 NTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name:	Mclntosh Power Plant			Site Location:	Lakeland, FL
Well No:	CCR-13	Sample ID:	8-1722 CCR 13	Date:	8-17-22

PURGING DATA

Well Diameter		Tubing Diameter		Well Screen Interval				Static depth to water		Purge pump type
(inches)	2	(inches)	3/8	Depth:	15.6	to	25.1	(feet):	9.23	PP

Well Volume Purge:	total well depth		static depth to water		well capacity (gal/ft)				
One well volume =		-	9.23	X		=	0	gal	

Equipment Volume Purge:	pump vol (gal)		flow cell volume (gal)		tubing length (ft)		Tubing capacity			
1 equipment volume =	0.06	4	0.101	gal +	25.68	X	0.006	=	0.31496	gal

Initial pump or tubing Depth in well (feet):	Final pump or tubing Depth in well (feet):	Purging Initiated at:	Purging Ended at:	Total Volume Purged (gals):
20.26	20.25	0943	1007	1.992

Time (Military)	Vol Purged (gal)	Cumul Vol Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp °C	Cond. (uS/cm)	pH (SU)	Color by observation	DO (mg/L or %)	Turbidity (NTUs)	Sheen by observation
0955	0.996	0.996	.083	9.42	25.3	3265	4.50	Clear	0.43	19.0	None
0959	0.332	1.328	.083	9.44	25.3	3216	4.51	Clear	0.39	14.2	None
1003	0.332	1.660	.083	9.46	25.3	3199	4.52	Clear	0.35	11.1	None
1007	0.332	1.992	.083	9.47	25.3	3182	4.30	Clear	0.35	20.2	None

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing Inside Dia. Capacity (Gal/Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer; BP=Bladder Pump; ESP=Electric Submersible Pump; PP=peristaltic Pump; O=Other(specify)

SAMPLING DATA

Sampled By (Print) Affiliation:	Sample(s) Signature(s):	Sampling Initiated at:	Sampling Ended at:
BRIAN JUDKINS		1007	1011

Pump or Tubing Depth in well (feet):	Tubing Material Code:	Field Filtered: Y (N) Filtration Equipment Type:	Filter Size: ____ um
20.25	PE		

Field Decontamination: Y (N)	Tubing (Y) (N) (replaced)	Duplicate: Y (N)

Sample Container Specification				Sample Preservation						
Sample I.D. Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)	Final pH	Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) DO NOT USE
CCR-13A	1	PP	250 mL	1:1 HNO_3	None	None	N/A	Metals	RFPP	
CCR-13B	1	PP	250 mL	Ice	None	None	N/A	[illegible]	RFPP	

Remarks:

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APP = After Flow-through Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Peristaltic Pump; SM=Straw Method(Tubing Gravity Drain); O=Other (Specify)

NOTES: 1. The above do not consitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Range of Variation of Last Three Consecutive Readings (See FS 2212, section 3):

pH = +/- 0.2; Temperature = +/- 0.2° C; Specific Conductance = +/- 5%; Dissolved Oxygen = ≤ 20% saturation (see Table FS 2200-2); optionally, +/-0.2 mg/L or 10% (whichever is greater); Turbidity: all readings ≤ 20 NTU; optionally +/- 5 NTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name:	McIntosh Power Plant		Site Location	Lakeland, FL	
Well No:	CCR-15	Sample ID:	81822 CCR 15	Date:	8-18-22

PURGING DATA

Well Diameter	Tubing Diameter		Well Screen Interval			Static depth to water	Purge pump type
(inches)	: (inches)	3/8	Depth:	15.4	to 25	(feet):	17.19 PP

	total well depth		static depth to water		well capacity (gal/ft)		
Well Volume Purge:							
One well volume =		-	17.19	X		= 0	gal

	pump vol (gal)		flow cell volume (gal)		tubing length (ft)		Tubing capacity		
Equipment Volume Purge:									
1 equipment volume =	0.06	+	0.101	gal +	25.67	X	0.006	= 0.31509	gal

Initial pump or tubing Depth in well (feet):	Final pump or tubing Depth in well (feet):	Purging initiated at:	Purging Ended at:	Total Volume Purged (gal/liter)
20.2	20.2	0953	1025	2.178

Time (Military)	Vol Purged (gal)	Cumul. Vol. Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp °C	Cond. (µS/cm)	pH (SU)	Color by observation	DO (mg/L or %)	Turbidity (NTUs)	Sheen by observation
1013	1.43	1.43	.0625	17.22	26.7	535	4.15	CLEAR	0.55	5.50	NONE
1016	0.187	1.617	.0625	17.22	26.7	543	4.12	CLEAR	0.54	4.50	NONE
1019	0.187	1.804	.0625	17.23	26.7	564	4.13	CLEAR	0.52	4.43	NONE
1022	0.187	1.991	.0625	17.23	26.7	577	4.12	CLEAR	0.51	4.26	NONE
1025	0.187	2.178	.0625	17.23	26.7	590	4.11	CLEAR	0.49	3.81	NONE

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing inside Dia. Capacity (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer, BP=Bladder Pump ESP=Electric Submersible Pump, PP=peristaltic Pump O=other(specify)

SAMPLING DATA

Sampled By (Print) Affiliation:	Sampler(s) Signature(s):	Sampling Initiated at:	Sampling Ended at:
BRIAN JURZAGO		1025	1029

Pump or Tubing Depth in well (feet)	Tubing Material Code	Field Filtered: Y (N) Filtration Equipment Type	Filter Size: ____ µm
20.2	PE		

Field Decontamination: Y (N)	Tubing (Y) or (Implaced)	Duplicate: Y (N)

Sample Container Specification				Sample Preservation				Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm x 3785
Sample I.D. Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)		Final pH			
CCR-15A	1	PP	250 mL	1:1 HNO_3	None	None	NA	Metals	ESP	
CCR-15B	1	PP	250 mL	Ice	None	None	NA	Cl, F, SO4, TDS	ESP	

Remarks:

0.150

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APP= After [Through] Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Peristaltic Pump; SM=Straw Method(tubing Gravity Drain); O=Other (Specify)

NOTES: 1 The above do not constitute all of the information required by Chapter 62-550, F.A.C.

2 Stabilization Criteria for Range of Variation of Last Three Consecutive Readings (See FS 2213, section 3)

pH = +/- 0.2; Temperature = +/- 0.2° ; Specific Conductance = +/- 5%, Dissolved Oxygen = ≤ 20% saturation(see Table FS 2200-2): optionally, +/-0.3 mg/L or +/-5% (whichever is greater). Turbidity all readings ≤ 20 NTU: optionally +/- 5 NTU or +/- 10% (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name:	McIntosh Power Plant						Site Location:		Lakeland, FL			
Well No:	CCR-16			Sample ID:	81822 CCR16				Date:	8-18-22		

PURGING DATA

Well Diameter (inches)	2	Tubing Diameter (inches)	3/8	Well Screen Interval Depth:	15.3	to	24.9		Static depth to water (feet):	16.2	Purge pump type	PP

Well Volume Purge:	total well depth		static depth to water			well capacity (gal/ft)					
One well volume =		−	16.2		x			=	0	gal	
Equipment Volume Purge:	pump vol (gal)		flow cell volume (gal)		tubing length (ft)		Tubing capacity				
1 equipment volume =	0.06	+	0.101	gal +	25.64	x	0.006	=	0.31484	gal	

Initial pump or tubing Depth in well (feet):	20.1	Final pump or tubing Depth in well (feet):	20.1	Purging Initiated at:	1045	Purging Ended at:	1109	Total Volume Purged (gallons):	2.40

Time (Military)	Vol. Purged (gal)	Cumul. Vol. Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp °C	Cond. (µS/cm)	pH (SU)	Color by observation	DO (mg/L or %)	Turbidity (NTUs)	Sheen by observation
1101	1.60	1.60	.1	16.07	26.6	10429	4.00	CLEAR	0.40	4.05	NONE
1105	0.4	2.00	.1	16.08	26.6	10255	4.01	CLEAR	0.39	3.67	NONE
1109	0.4	2.40	.1	16.09	26.6	10281	4.00	CLEAR	0.39	3.68	NONE

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing Inside Dia. Capacity (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer, BP=Bladder Pump ESP=Electric Submersible Pump, PP=peristaltic Pump O=other(specify)

SAMPLING DATA

Sampled By (Print) Affiliation: BRIAN JURENO		Sampler(s) Signature(s): [signature]		Sampling Initiated at: 1109		Sampling Ended at: 1114
Pump or Tubing Depth in well (feet):	20.1	Tubing Material Code:	PE	Field-Filtered: Y (N) Filtration Equipment Type:		Filter Size: ____ um
Field Decontamination: Y (N)		Tubing:	(replaced)		Duplicate: Y (N)	

Sample Container Specification				Sample Preservation				Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm x 3785
Sample I.D. Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)		Final pH			
CCR-16A	1	PP	250 mL	1:1 HNO_3	None	None	NA	Metals	ESP	
CCR-16B	1	PP	250 mL	Ice	None	None	NA	Cl, F, SO4, TDS	ESP	

Remarks:

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APP= After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM=Straw Method(tubing Gravity Drain); O=Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Range of Variation of Last Three Consecutive Readings (See FS 2212, section 3).

pH = +/- 0.2; Temperature = +/- 0.2°; Specific Conductance = +/- 5%; Dissolved Oxygen = ≤ 20% saturation (see Table FS 2200-2); optionally +/-0.2 mg/L or 10% (whichever is greater); Turbidity: all readings ≤20 NTU; optionally +/- 5 NTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name:	McIntosh Power Plant		Site Location:	Lakeland, FL	
Well No:	CCR-17	Sample ID:	8\822CCR17	Date:	8-18-22

PURGING DATA

Well Diameter		Tubing Diameter		Well Screen Interval				Static depth to water		Purge pump type
(inches)	2	(inches)	3/8	Depth:	10.4	to	25	(feet):	15.66	PP

Well Volume Purge:	total well depth		static depth to water		well capacity (gal/ft)			
One well volume =		-	15.66	X		=	0	gal

Equipment Volume Purge:	pump vol (gal)		flow cell volume (gal)		tubing length (ft)		Tubing capacity			
1 equipment volume =	0.05	+	0.101	gal +	25.87	X	0.006	=	0.31502	gal

Initial pump or tubing Depth in well (feet):	Final pump or tubing Depth in well (feet):	Purging Initiated at:	Purging Ended at:	Total Volume Purged (gallons)
20.2	20.2	1132	1152	1.660

Time (Military)	Vol. Purged (gal)	Cumul. Vol. Purged (gals)	Purge Rate (lpm)	Depth to Water (ft)	Temp °C	Cond. (uS/cm)	pH (SU)	Color by observation	DO (mg/L or %)	Turbidity (NTUs)	Stream by observation
1144 ~~1146~~	0.996	0.996	.083	15.71	27.3	1186	6.68	CLEAR	0.49	9.42	NONE
1148 ~~1150~~	0.332	1.328	.083	15.64	27.3	1152	6.77	CLEAR	0.44	5.41	NONE
1152 ~~1154~~	0.332	1.660	.083	15.70	27.3	1139	6.69	CLEAR	0.40	4.94	NONE

Well Capacity (Gallons per Foot): 0.16" = 0.02; 4" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88;

Tubing Inside Dia. Capacity (Gal/ft): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

Purging Equipment Codes: B=Bailer, BP=Bladder Pump, ESP=Electric Submersible Pump, PP=peristaltic Pump, O=Other(specify)

SAMPLING DATA

Sampled By (Print) & Affiliation:	Sample(s) Signature(s):	Sampling Initiated at:	Sampling Ended at:
BRIAN JUNEAU		1152	1154 ~~1156~~

Pump or Tubing Depth in well (feet):	Tubing Material Code:	Field-Filtered: Y (N) Filtration Equipment Type:	Filter Size: ____ µm
20.2	PE		

Field Decontamination: Y (N)	Tubing (Y) N (replaced)	Duplicate: Y (N)

Sample Container Specification				Sample Preservation				Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) open a 3785
Sample ID Code	# Containers	Material Code	Volume	Preservative	Total Volume Added in Field (mL)		Final pH			
CCR-17A	1	PP	250 mL	1:1 HNO_3	None	None	NA	Metals	ESP	
CCR-17B	1	PP	250 mL	Ice	None	None	NA	Cl, F, SO4, TDS	ESP	

Remarks:

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; FPP = Peristaltic Pump; SM = Straw Method (tubing Gravity Drain); O=Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Range of Variation of Last Three Consecutive Readings (See FS 2212, section 3):

pH = +/- 0.2; Temperature = +/- 0.2°. Specific Conductance = +/- 5%, Dissolved Oxygen = < 20% saturation (use Table FS 2200-2); optionally, +/-0.2 mg/L or 10% (whichever is greater). Turbidity for readings ≤ 20 NTU: optionally +/- 5 NTU or +/- 10 % (whichever is greater).

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name:	McIntosh Power Plant		Site Location:	Lakeland, FL	
Well No:	CCR-18	Sample ID:	824122 CCR18	Date:	8-24-22

PURGING DATA

Well Diameter		Tubing Diameter		Well Screen Interval				Static depth to water		Purge pump type
(inches)	2	(inches)	3/8	Depth	15.5	to	25.2	(feet):	9.58	PP

	total well depth		static depth to water		well capacity (gal/ft)			
Well Volume Purge:								
One well volume =		-	9.58	X		=	0	gal

	pump vol (gal)		flow cell volume (gal)		tubing length (ft)		Tubing capacity		
Equipment Volume Purge:									
1 equipment volume =	0.06	+	0.101	gal +	23.91	X	0.006	= 0.31646	gal

Initial pump or tubing Depth in well (feet):	Final pump or tubing Depth in well (feet):	Purging Initiated at:	Purging Ended at:	Total Volume Purged (gallons):
20.4	20.4	1250	1310	1,660

Time (Military)	Vol Purged (gal)	Cumul. Vol. Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp °C	Cond (µS/cm)	pH (SU)	Color by observation	DO mg/L or %	Turbidity (NTUs)	Sheen by observation
1302	0.996	0.996	.083	9.65	26.2	422.7	6.68	CLEAR	0.25	2.02	NONE
1306	0.332	1.328	.083	9.65	26.3	421.3	6.70	CLEAR	0.21	2.52	NONE
1310	0.332	1.660	.083	9.65	26.2	419.1	6.70	CLEAR	0.19	3.21	NONE

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing Inside Dia. Capacity (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0016; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer, BP=Bladder Pump, ESP=Electric Submersible Pump, PP=Peristaltic Pump, O=Other(specify)

SAMPLING DATA

Sampled By (Print) Affiliation:	Sample(s) Signature(s):	Sampling Initiated at:	Sampling Ended at:
BRIAN JOHNSTON		1310	1315

Pump or Tubing Depth in well (feet):	Tubing Material Code	Field-Filtered: Y (N) Filtration Equipment Type	Filter Size: ____ um
20.4	PE		

Field Decontamination: Y (N)	Tubing (Y) N (replaced)	Duplicate: Y (N)

Sample Container Specification				Sample Preservation				Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm x 3785
Sample I.D. Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)		Final pH			
CCR-18A	1	PP	250 mL	1:1 HNO_3	None	None	NA	Metals	ESP	
CCR-18B	1	PP	250 mL	Ice	None	None	NA	[illegible]	ESP	

Remarks: Re-Sampled Because T Johnston misplaced original sample Log

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; FPP = Peristaltic Pump; SM=Straw Method(tubing Gravity Drain); O=Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Range of Variation of Last Three Consecutive Readings (See FS 3213, section 3).

pH = +/- 0.2; Temperature = +/- 0.2°; Specific Conductance = +/- 5%, Dissolved Oxygen = ≤ 20% saturation(see Table FS 2200-3), optionally, +/-0.2 mg/L or 10% (whichever is greater). Turbidity: all readings ≤ 20 NTU; optionally +/- 5 NTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name:	McIntosh Power Plant		Site Location:	Lakeland, FL	
Well No.:	CCR-19	Sample ID:	8 18 22 CCR-19	Date:	8-18-22

PURGING DATA

Well Diameter		Tubing Diameter		Well Screen Interval			Static depth to water	Purge pump type
(inches):	4	(inches):	3/8	Depth:	15.5	to 26.1	(feet): 6.65	PP

Well Volume Purge:	total well depth		static depth to water		well capacity (gal/ft)		
One well volume =		-	6.65	X		= 0	gal

Equipment Volume Purge:	pump vol (gal)		flow cell volume (gal)		tubing length (ft)		Tubing capacity		
1 equipment volume =	0.06	+	0.101	gal +	25.82	X	0.006	= 0.31592	gal

Initial pump or tubing Depth in well (feet):	20.3	Final pump or tubing Depth in well (feet):	20.3	Purging Initiated at:	1349	Purging Ended at:	1413	Total Volume Purged (gallons)	1.992

Time (Military)	Vol. Purged (gal)	Cumul. Vol. Purged (gal)	Purge Rate (gpm)	Depth to Water (ft)	Temp °C	Cond. (µS/cm)	pH (SU)	Color by observation	DO mg/L or %	Turbidity (NTUs)	Odors by observation
1401	0.996	0.996	.083	6.67	26.2	3104	4.92	CLEAR	0.25	3.17	NONE
1405	0.332	1.328	.083	6.68	26.2	3249	4.85	CLEAR	0.26	4.24	NONE
1409	0.332	1.660	.083	6.69	26.2	3278	4.85	CLEAR	0.26	5.56	NONE
1413	0.332	1.992	.083	6.70	26.1	3301	4.88	CLEAR	0.27	4.89	NONE

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing Inside Dia. Capacity (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer, BP=Bladder Pump, ESP=Electric Submersible Pump, PP=peristaltic Pump, O=other(specify)

SAMPLING DATA

Sampled By (Print) Affiliation:	Sampler(s) Signature(s):	Sampling Initiated at:	Sampling Ended at:
BRIAN JUDING		1413	1417

Pump or Tubing Depth in well (feet):	Tubing Material Code	Field Filtered: Y (N)	Filter Size: ____ µm
20.3	PE	Filtration Equipment Type:	

Field Decontamination: Y (N)	Tubing: (Y) N (replaced)	Duplicate: Y (N)

Sample Container Specification				Sample Preservation						
Sample ID Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)		Final pH	Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm x 3785
CCR-19A	1	PP	250 mL	1:1 HNO_3	None	None	NA	Metals	ESP	
CCR-19B	1	PP	250 mL	Ice	None	None	NA		ESP	

Remarks:

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APP= After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Peristaltic Pump; SM=Straw Method(tubing Gravity Drain); Oe/Device (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Range of Variation of Last Three Consecutive Readings (See FS 2200, section 3):

± +/- 0.2; Temperature = +/- 0.2° ; Specific Conductance = +/- 5%, Dissolved Oxygen = ≤ 20% saturation(see Table FS 2200-2), otherwise, +/-0.2 mg/L or 10% (whichever is greater). Turbidity ratings ≤20 NTU, optimally +/- 5 NTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name	McIntosh Power Plant			Site Location:	Lakeland, FL
Well No:	CCR-20	Sample ID:	81722CCR20	Date:	8-17-22

PURGING DATA

Well Diameter (inches)	2	Tubing Diameter (inches)	3/8	Well Screen Interval Depth:	14.9	to	24.5	Static depth to water (feet):	7.54	Purge pump type	PP

Well Volume Purge:	total well depth		static depth to water		well capacity (gal/ft)			
One well volume =		-	7.54	X		=	0	gal

Equipment Volume Purge:	pump vol (gal)		flow cell volume (gal)		tubing length (ft)		Tubing capacity			
1 equipment volume =	0.06	+	0.101	gal +	25.21	X	0.008	=	0.31226	gal

Initial pump or tubing Depth in well (feet):	19.7	Final pump or tubing Depth in well (feet):	19.7	Purging Initiated at:	1332	Purging Ended at:	1352	Total Volume Purged (gallons)	1.660

Time (Military)	Vol. Purged (gal)	Cumul. Vol. Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp °C	Cond. (uS/cm)	pH (SU)	Color by observation	DO (mg/L or %)	Turbidity (NTUs)	Sheen by observation
1344	0.996	0.996	.093	7.62	25.6	4551	6.02	CLEAR	0.58	17.4	NONE
1348	0.332	1.328	.083	7.64	25.6	4556	6.02	CLEAR	0.59	13.6	NONE
1352	0.332	1.660	.083	7.65	25.6	4554	6.03	CLEAR	0.55	7.62	NONE

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.84

Tubing Inside Dia. Capacity (Gal/Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer, BP=Bladder Pump ESP=Electric Submersible Pump, PP=peristaltic Pump O=other(specify)

SAMPLING DATA

Sampled By (Print) Affiliation:	BRIAN JIMENO	Sampler(s) Signature(s):		Sampling Initiated at:	1352	Sampling Ended at:	

Pump or Tubing Depth in well (feet):	19.7	Tubing Material Code	PE	Field-Filtered: Y (N) Filtration Equipment Type		Filter Size: ____ um

Field Decontamination: Y (N)	Tubing (Y) N (replaced)	Duplicate: Y (N)

Sample Container Specification				Sample Preservation				Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm x 3785
Sample I.D. Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)		Final pH			
CCR-20A	1	PP	250 mL	1:1 HNO_3	None	None	NA	Metals	ESP	
CCR-20B	1	PP	250 mL	Ice	None	None	NA	[illegible]	ESP	

Remarks:

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump, ESP = Electric Submersible Pump; RFPP = Peristaltic Pump; SM=Straw Method(Tubing Gravity Drain); O=Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Range of Variation of Last Three Consecutive Readings (See FS 2212, section 3):

pH = +/- 0.2; Temperature = +/- 0.2°; Specific Conductance = +/- 5%, Dissolved Oxygen = ≤20% saturation(use Table FS 2200-2); optionally, +/-0.2 mg/L or 10% (whichever is greater). Turbidity: all readings ≤20 NTU: optionally +/- 5 NTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name:	McIntosh Power Plant	Site Location:	Lakeland, FL
Well No:	CCR-21	Sample ID:	81722 CCR21
Date:	8-17-22		

PURGING DATA

Well Diameter		Tubing Diameter		Well Screen Interval				Static depth to water		Purge pump type
(inches)	2	(inches)	3/8	Depth:	15.6	to	25.2	(feet):	8.88	PP

Well Volume Purge:	total well depth		static depth to water		well capacity (gal/ft)		
One well volume =		-	8.88	X		= 0	gal

Equipment Volume Purge:	pump vol (gal)		flow cell volume (gal)		tubing length (ft)		Tubing capacity		
1 equipment volume =	0.05	+	0.101	gal +	25.87	X	0.006	= 0.31622	gal

Initial pump or tubing Depth in well (feet):	Final pump or tubing Depth in well (feet):	Purging Initiated at:	Purging Ended at:	Total Volume Purged (gallons):
20 ±	20.4	1254	1314	1.660

Time (military)	Vol Purged (gal)	Cumul. Vol. Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp °C	Cond. (µS/cm)	pH (SU)	Color by observation	DO (mg/L or %)	Turbidity (NTUs)	Sheen by observation
1306	0.996	0.996	0.83	8.96	26.3	1906	7.49	CLEAR	0.43	1.19	NONE
1310	0.332	1.328	0.83	8.96	26.3	1916	7.48	CLEAR	0.42	3.88	NONE
1314	0.332	1.660	0.83	8.97	26.3	1914	7.48	CLEAR	0.41	2.37	NONE

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing Inside Dia. Capacity (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0016; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer, BP=Bladder Pump, ESP=Electric Submersible Pump, PP=peristaltic Pump, O=Other(specify)

SAMPLING DATA

Sampled By (Print) Affiliation:	Sampler(s) Signature(s):	Sampling Initiated at:	Sampling Ended at:
BRIAN JUSTICE		1314	1318

Pump or Tubing Depth in well (feet):	Tubing Material Code	Field-Filtered: Y (N) Filtration Equipment Type	Filter Size ____ µm
20.4	PE		

Field Decontamination: Y (N)	Tubing (Y) (N) replaced	Duplicate: Y (N)

Sample Container Specification				Sample Preservation						
Sample I.D. Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)	Final pH	Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm x 3785
CCR-21A	1	PP	250 mL	1:1 HNO_3	None	None	NA	Metals	ESP	
CCR-21B	1	PP	250 mL	Ice	None	None	NA	[illegible]	ESP	

Remarks:

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APP = After [Through] Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Peristaltic Pump; SM=Straw Method (tubing Gravity Drain); O=Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Range of Variation of Last Three Consecutive Readings (See FS 2212, section 4):

pH = +/- 0.2; Temperature = +/- 0.2° ; Specific Conductance = +/- 5%, Dissolved Oxygen = ≤ 20% saturation(see Table FS 2200-2) optionally, +/-0.2 mg/L or 10% (whichever is greater) Turbidity, all readings ≤ 20 NTU: optionally +/- 5 nTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name	McIntosh Power Plant	Site Location:	Lakeland, FL
Well No:	CCR-22	Sample ID: 81722CCR22	Date: 08/17/22

PURGING DATA

Well Diameter (inches)	Tubing Diameter (inches)	Well Screen Interval Depth:	to	Static depth to water (feet):	Purge pump type
2	3/8	14.8	24.4	9.15	PP

Well Volume Purge: One well volume = (total well depth ___ − static depth to water 9.15) × well capacity (gal/ft) ___ = 0 gal

Equipment Volume Purge: 1 equipment volume = pump vol (gal) 0.06 + flow cell volume (gal) 0.104 gal + tubing length (ft) 25.13 × Tubing capacity 0.006 = 0.31178 gal

Initial pump or tubing Depth in well (feet):	Final pump or tubing Depth in well (feet):	Purging Initiated at:	Purging Ended at:	Total Volume Purged (gallons):
19.6	~~1030~~	1030	1058	2.324

Time (military)	Vol. Purged (gal)	Cumul. Vol. Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp °C	Cond (µS/cm)	pH (SU)	Color by observation	DO (mg/l) or %	Turbidity (NTUs)	Sheen by observation
1042	0.996	0.996	.083	9.22	25.4	2110	5.05	Clear	0.49	1.82	None
1046	0.332	1.328	.083	9.22	25.3	2270	5.03	Clear	0.41	2.02	None
1050	0.332	1.660	.083	9.23	25.3	2350	5.03	Clear	0.36	0.84	None
1054	0.332	1.992	.083	9.24	25.2	2400	5.01	Clear	0.35	0.68	None
1058	0.332	2.324	.083	9.24	25.2	2431	4.98	Clear	0.34	0.84	None

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing Inside Dia. Capacity (Gal/Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer, BP=Bladder Pump ESP=Electric Submersible Pump, PP=peristaltic Pump O=other(specify)

SAMPLING DATA

Sampled By (Print) Affiliation: Cross, Jason

Sampler(s) Signature(s): [signature]

Sampling Initiated at: 1058 | Sampling Ended at: 1102

Pump or Tubing Depth in well (feet): 19.6 | Tubing Material Code: PE | Field-Filtered: Y (N) Filtration Equipment Type: ___ | Filter Size ___ µm

Field Decontamination Y (N) | Tubing (Y) N (replaced) | Duplicate: Y (N)

Sample Container Specification				Sample Preservation			Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm x 3785
Sample I.D. Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)	Final pH			
CCR-22A	1	PP	250 mL	1:1 HNO_3	None	None	NA	Metals	ESP
CCR-22B	1	PP	250 mL	Ice	None	None	NA	[illegible]	ESP

Remarks:

0.1730 (Pump)

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APP= After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM=Straw Method(tubing Gravity Drain); O=Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Range of Variation of Last Three Consecutive Readings (See FS 2212, section 3):

pH = +/- 0.2; Temperature = +/- 0.2°; Specific Conductance = +/- 5%; Dissolved Oxygen = ≤ 20% saturation (see Table FS 2200-2); optionally, +/- 0.2 mg/L or 10% (whichever is greater); Turbidity: all readings ≤20 NTU; optionally +/- 5 NTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name	McIntosh Power Plant		Site Location	Lakeland, FL	
Well No:	CCR-23	Sample ID:	8-1722CCR23	Date:	8-17-22

PURGING DATA

Well Diameter (inches)	Tubing Diameter (inches)	Well Screen Interval Depth:	to	Static depth to water (feet):	Purge pump type
2	3/8	15.1	24.7	6.85	PP

Well Volume Purge: One well volume = (total well depth ___ − static depth to water 6.85) X well capacity (gal/ft) ___ = 0 gal

Equipment Volume Purge: 1 equipment volume = pump vol (gal) 0.06 + flow cell volume (gal) 0.101 gal + tubing length (ft) 25.44 X Tubing capacity 0.006 = 0.31364 gal

Initial pump or tubing Depth in well (feet):	~~19.9~~ 20	Final pump or tubing Depth in well (feet):	20	Purging Initiated at:	0830	Purging Ended at:	0854	Total Volume Purged (gallons):	1.992

Time (Military)	Vol. Purged (gal)	Cumul. Vol Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp - C	Cond. (µS/cm)	pH (SU)	Color by observation	DO (mg/L or %)	Turbidity (NTUs)	Sheen by observation
0842	0.996	0.996	~~0.83~~ .083	7.22	26.5	1720	5.51	CLEAR	0.51	18.1	NONE
0846	0.332	1.328	.083	7.22	26.5	1711	5.52	CLEAR	0.48	11.2	NONE
0850	0.332	1.660	.083	7.22	26.5	1699	5.54	CLEAR	0.47	4.74	NONE
0854	0.332	1.992	0.83	7.22	26.5	1691	5.56	CLEAR	0.45	2.37	NONE

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing Inside Dia. Capacity (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer, BP=Bladder Pump ESP=Electric Submersible Pump, PP=peristaltic Pump O=other(specify)

SAMPLING DATA

Sampled By (Print) Affiliation: BATAN JULIANO	Sampler(s) Signature(s): [signature]		Sampling Initiated at: 0854	Sampling Ended at: 0858
Pump or Tubing Depth in well (feet): 20	Tubing Material Code: PE		Field-Filtered: Y (N) Filtration Equipment Type: ____	Filter Size: ____ um
Field Decontamination: Y (N)	Tubing (Y) N (replaced)			Duplicate: Y (N)

Sample ID Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)		Final pH	Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm x 3785
CCR-23A	1	PP	250 mL	1:1 HNO_3	None	None	NA	Metals	ESP	
CCR-23B	1	PP	250 mL	Ice	None	None	NA	[illegible]	ESP	

Remarks:

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APP= after (Through) Peristaltic Pump, B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM=Straw Method(tubing Gravity Drain); O=Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Range of Variation of Last Three Consecutive Readings (See FS 2212, section 3):
pH = +/- 0.2; Temperature = +/- 0.2°; Specific Conductance = +/- 5%; Dissolved Oxygen = ≤ 20% saturation (see Table FS 2200-2) optionally, +/-0.2 mg/L or 10% (whichever is greater); Turbidity: all readings ≤20 NTU; optionally +/- 5 NTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name:	McIntosh Power Plant			Site Location:	Lakeland, FL	
Well No.	CCR-EQ BLK	Sample ID:	82422 CCR-EQ BLK	Date:	8.24.22	

PURGING DATA

Well Diameter (inches)		Tubing Diameter (inches)	3/8	Well Screen Interval Depth:		to		Static depth to water (feet):		Purge pump type	PP

Well Volume Purge: One well volume =	total well depth	−	static depth to water	X	well capacity (gal/ft)	= 0 gal

Equipment Volume Purge: 1 equipment volume =	pump vol (gal)	+	flow cell volume (gal)	gal +	tubing length (ft)	X	Tubing capacity 0.00$	= 0 gal

Initial pump or tubing Depth in well (feet):		Final pump or tubing Depth in well (feet):		Purging Initiated at:		Purging Ended at:		Total Volume Purged (gallons):	

Time (military)	Vol. Purged (gal)	Cumul. Vol. Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp °C	Cond. (µS/cm)	pH (SU)	Color by observation	DO (mg/L or %)	Turbidity (NTUs)	Sheen by observation
			.100		22.0	6.5	6.76	Clear	2.62	0.43	None

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing Inside Dia. Capacity (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer, BP=Bladder Pump, ESP=Electric Submersible Pump, PP=Peristaltic Pump, O=Other (specify)

SAMPLING DATA

Sampled By (Print) Affiliation: Brian Sullivan	Sample(s) Signature(s):	Sampling Initiated at: 1400	Sampling Ended at: 1401

Pump or Tubing Depth in well (feet):		Tubing Material Code: PE	Field-Filtered: Y (N); Filtration Equipment Type:	Filter Size: ____µm
Field Decontamination: Y (N)		Tubing: (Y) N (replaced)		Duplicate: Y (N)

Sample Container Specification				Sample Preservation				Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm x 3785
Sample I.D. Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)		Final pH			
82422CCR-EQ BLK	1	PP	250 mL	1:1 HNO_3	None	None	NA	Metals	RFPP	
82422CCR-EQ BLK	1	PP	250 mL	Ice	None	None	NA	[illegible]	RFPP	

Remarks:

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); OTH = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Range of Variation of Last Three Consecutive Readings (See FS 2212, section 3):
pH = +/- 0.2; Temperature = +/- 0.2° Specific Conductance = +/- 5% Dissolved Oxygen = 5.20% saturation (see Table FS 2200.2) optionally, +/- 0.2 mg/L or 10% (whichever is greater). Turbidity: all readings ≤20 NTU: optionally +/- 5 NTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name:	Mcintosh Power Plant	Site Location:	Lakeland, FL		
Well No:	CCR-4	Sample ID:	CCR-4A	Date:	12/19/2022

PURGING DATA

Well Diameter		Tubing Diameter		Well Screen Interval				Static depth to water	Purge pump type
(inches):	2	(inches):	3/8	Depth:	15.6	to	25.1	(feet):	14.82	PP

Well Volume Purge:	total well depth		static depth to water		well capacity (gal/ft)		
One well volume =		-		X		=	0 gal

Equipment Volume Purge:	pump vol (gal)		flow cell volume (gal)		25.61 tubing length (ft)		Tubing capacity		
1 equipment volume =	0.06	+	0.101	gal +	25.60 - 20.35	X	0.005	=	0.31514 gal

Initial pump or tubing Depth in well (feet):	Final pump or tubing Depth in well (feet):	Purging Initiated at:	Purging Ended at:	Total Volume Purged (gallons):
~~20.35~~ 25.60	26.00	1201	1217	2.816

Time (military)	Vol. Purged (gal)	Cumul. Vol. Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp °C	Cond (uS/cm)	pH (SU)	Color by observation	DO mg/L or %	Turbidity (NTUs)	Sheen by observation
1217	1.02	~~1.024~~ 1.020	0.064	14.83	24.1	12088	4.22	Clear	1.23	8.85	None
1224	0.448	~~1.472~~ 1.468	0.064	14.84	24.2	11988	4.17	Clear	1.07	10.90	None
1231	0.448	1.920	0.064	14.84	24.2	11868	4.19	Clear	1.02	9.05	None
1238	0.448	2.368	0.064	14.84	24.3	11792	4.16	Clear	1.00	8.59	None
1245	0.448	2.816	0.064	14.84	24.5	11724	4.16	Clear	0.98	6.92	None

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing Inside Dia. Capacity (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer, BP=Bladder Pump, ESP=Electric Submersible Pump, PP=peristaltic Pump, O=Other(specify)

SAMPLING DATA

Sampled by (Print) Affiliation:	Sampler(s) Signature(s):	Sampling Initiated at:	Sampling Ended at:
Thomas Johnston		1245	1251

Pump or Tubing Depth in well (feet):	Tubing Material Code:	Field-Filtered: Y (N) Filtration Equipment Type:	Filter Size: ___ um
26.00	PE		

Field Decontamination: Y (N) Tubing: (Y) N (replaced) Duplicate: Y (N)

Sample Container Specification				Sample Preservation				Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm x 3785
Sample I.D. Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)		Final pH			
CCR-4A	1	PP	250 mL	1:1 HNO_3	None	None	NA	Lithium	RFPP	

Remarks:

Note #1: Tubing was believed to be at 20.35' depth, but tape measuring indicated actual depth was 26.00'

Note #2: Tubing stuck well bottom during placement in the well

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Peristaltic Pump; SM = Straw Method (tubing Gravity Drain); O = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Range of Variation of Last Three Consecutive Readings (See FS 2212, section 3)

pH = +/- 0.2; Temperature = +/- 0.2° ; Specific Conductance = +/- 5%, Dissolved Oxygen = 5 20% saturation see Table FS 2200-2) optionally, +/-0.2 mg/L or 10% (whichever is greater) Turbidity: all readings ≤ 25 NTU optionally +/- 5 NTU) or +/- 10 % (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

Site Name:	McIntosh Power Plant	Site Location:	Lakeland, FL
Well No:	CCR-7	Sample ID: CCR-7A	Date: 12/14/2022

PURGING DATA

Well Diameter (inches)	Tubing Diameter (inches)	Well Screen Interval Depth		Static depth to water (feet)	Purge pump type
2	3/8	~~18.7~~ 18.7	to ~~28.2~~ 28.2	9.94	PP

Well Volume Purge: One well volume = (total well depth – static depth to water) X well capacity (gal/ft) = 0 gal

Equipment Volume Purge: 1 equipment volume = pump vol (gal) 0.06 + flow cell volume (gal) 0.101 gal + tubing length (ft) ~~23.00~~ ~~23.00~~ 24.00 X tubing capacity 0.006 = ~~0.301~~ 0.305 gal

Initial pump or tubing Depth in well (feet):	Final pump or tubing Depth in well (feet):	Purging Initiated at:	Purging Ended at:	Total Volume Purged (gallons)
~~20.45~~ 23.00	23.00	1331	1412	2.563

Time (Military)	Vol. Purged (gal)	Cumul. Vol. Purged (gal)	Purge Rate (gpm)	Depth to Water (ft)	Temp °C	Cond (uS/cm)	pH (SU)	Color by observation	DO (mg/L) or %	Turbidity (NTUs)	Sheen by observation
~~1348~~ ~~1351~~	1.063	1.063	0.0625	9.95	25.3	273.0	5.18	Yellowish	1.05	10.9	None
1352	0.25	1.313	0.0625	9.95	25.3	212.0	5.24	Slightly Yellowish	0.82	13.7	None
1356	0.25	1.563	0.0625	9.95	25.2	169.2	5.20	Slightly Yellowish	0.76	9.92	None
1400	0.25	1.813	0.0625	9.95	25.1	151.3	5.18	Slightly Yellowish	0.74	11.8	None
1404	0.25	2.063	0.0625	9.95	25.2	148.1	5.19	Slightly Yellowish	0.71	9.72	None
1408	0.25	2.313	0.0625	9.95	25.1	146.0	5.19	Slightly Yellowish	0.71	10.3	None
1412	0.25	2.563	0.0625	9.95	25.1	146.1	5.19	Slightly Yellowish	0.70	11.2	None

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing Inside Dia. Capacity (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer, BP=Bladder Pump ESP=Electric Submersible Pump, PP=peristaltic Pump O=other (specify)

SAMPLING DATA

Sampled By (Print) Affiliation: Thomas Johnston

Sampler(s) Signature(s): [signature]

Sampling Initiated at: 1412 — Sampling Ended at: 1417

Pump or Tubing Depth in well (feet): 23.00 — Tubing Material Code: PE

Field-Filtered: Y (N) — Filtration Equipment Type: ______ — Filter Size: ____ um

Field Decontamination: Y (N) — Tubing (Y) N (replaced) — Duplicate: Y (N)

Sample Container Specification				Sample Preservation				Intended Analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute) gpm x 3785
Sample I.D. Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)		Final pH			
CCR-7A	1	PP	250 mL	1:1 HNO_3	None	None	NA	LI	RFPP	

Remarks:

well is 28.8 ft TOC

Material Codes: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APP= After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Peristaltic Pump; SM=Straw Method(tubing Gravity Drain); O=Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Range of Variation of Last Three Consecutive Readings (See FS 2212, section 3)

pH = +/- 0.2; Temperature = +/- 0.2°; Specific Conductance = +/- 5%; Dissolved Oxygen = ≤ 20% saturation (see Table FS 2200-2) optionally, +/- 0.2 mg/L or 10% (whichever is greater); Turbidity: all readings ≤ 20 NTU optionally +/- 5 NTU or +/- 10 % (whichever is greater)

DEP Form FD 9000-24; GROUNDWATER SAMPLING LOG

Site Name:	Mcintosh Power Plant	Site Location:	Lakeland, FL
Well No:	CCR-EQ BLK	Sample ID:	EqBlnk	Date:	12/19/2022

PURGING DATA

Well Diameter (inches)		Tubing Diameter (inches)	3/8	Well Screen Interval Depth:		to		Static depth to water (feet):		Purge pump type	

Well Volume Purge:	total well depth		static depth to water		well capacity (gal/ft)			
One well volume =		-		X		=	0	gal

Equipment Volume Purge:	pump vol (gal)		flow cell volume (gal)		tubing length (ft)		Tubing capacity			
1 equipment volume =		+		gal +	NA	X	0.006	=	0	gal

Initial pump or tubing Depth in well (feet):		Final pump or tubing Depth in well (feet):	NA	Purging initiated at:	1421	Purging Ended at:	1423	Total Volume Purged (gallons):	

Time (Military)	Vol Purged (gal)	Cumul. Vol Purged (gals)	Purge Rate (gpm)	Depth to Water (ft)	Temp °C	Cond. (µS/cm)	pH (SU)	Color by observation	DO mg/L or %	Turbidity (NTUs)	Sheen by observation
1423	—	—	0.0625	NA	26.3	3.0	5.63	Clear	5.65	1.48	None

Well Capacity (Gallons per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

Tubing Inside Dia. Capacity (Gal/Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B=Bailer, BP=Bladder Pump ESP=Electric Submersible Pump, PP=peristaltic Pump O=Other(specify)

SAMPLING DATA

Sampled By (Print) Affiliation:	Thomas Johnston	Sampler(s) Signature(s)		Sampling initiated at:	1423	Sampling Ended at:	1423

Pump or Tubing Depth in well (feet):	NA	Tubing Material Code:	PE	Field-Filtered: Y (N) Filtration Equipment Type:		Filter Size: ____ µm

Field Decontamination: Y (N)	Tubing: (Y) N (replaced)	Duplicate: Y (N)

Sample Container Specification				Sample Preservation				Intended analysis and/or Method	Sampling Equipment Code	Sample pump flow rate (mL per minute gpm x 3785)
Sample I.D. Code	# Containers	Material Code	Volume	Preserv. Used	Total Volume Added in Field (mL)		Final pH			
Eq Blk	1	PP	250 mL	1:1 HNO_3	None	None	NA	Lithium	RFPP	

Remarks:

Material Codes: AG = Amber Glass, CG = Clear Glass, PE = Polyethylene; PP = Polypropylene; S = Silicone, T = Teflon; O = Other (Specify)

Sampling EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Peristaltic Pump; SM = Straw Method (tubing Gravity Drain); OtherOther (Specify)

NOTES: 1 The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. Stabilization Criteria for Range of Variation of Last Three Consecutive Readings (See FS 2212, section 3):

pH = +/- 0.2; Temperature = +/- 0.2°; Specific Conductance = +/- 5%, Dissolved Oxygen = ≤ 20% saturation (see Table FS 2200-2) optionally, +/-0.2 mg/L or 10% (whichever is greater). Turbidity: all readings ≤ 20 NTU: optionally +/- 5 NTU or +/- 10 % (whichever is greater)

Geosyntec consultants

180A Market Place Blvd.
Knoxville, TN 37922
PH 865.330.0037
www.geosyntec.com

Memorandum

Date:	28 June 2022
To:	Todd Kafka
From:	Ashley Wilson
CC:	J. Caprio
Subject:	**Stage 2A Data Validation - Level II Data Deliverables – Florida Spectrum Environmental Services Lab Work Orders 22C0066, 22C0212 Rev 1, 22C0664, 22C0792, 22C0807, 22C1155 and 22D0170**

SITE: McIntosh Power Plant

INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of forty-two water samples and two equipment blanks, collected 28 February, 2-3, 15-17 and 29 March, and 5 April 2022, as part of the McIntosh Power Plant project. The samples were analyzed at Florida Spectrum Environmental Services, Inc., Fort Lauderdale, Florida, for the following tests:

- Metals by United States (US) Environmental Protection Agency (EPA) Methods 3010A/200.7
- Mercury by US EPA Method 245.1
- Anions (Chloride, Fluoride and Sulfate as SO_4) by US EPA Method 300.0
- Bicarbonate and Total Alkalinity by US EPA Method 310.2
- Total Dissolved Solids (TDS) by US EPA Method 160.1 and Standard Methods (SM) 18 2540C

EXECUTIVE SUMMARY

Overall, based on this Stage 2A data validation covering the quality control (QC) parameters listed below and based on the information provided, the data as qualified are usable for supporting project objectives. The qualified data should be used within the limitations of the qualifications.

The data were reviewed based on professional and technical judgment and the following documents:

- US EPA Contract Laboratory Program National Functional Guidelines for Superfund Inorganic Superfund Data Review, November 2020 (EPA 540-R-20-006);

- Florida Department of Environmental Protection (DEP) Standard Operating Procedures (SOPs), January 2017 (DEP QA Rule, Chapter-62-160, F.A.C.); and
- The pertinent methods referenced by the laboratory reports.

The following samples were analyzed and validated at a Stage 2A level:

Laboratory ID	Client ID
22C0066-01	CCR-1A
22C0066-02	CCR-1B
22C0066-03	CCR-2A
22C0066-04	CCR-2B
22C0066-05	CCR-15A
22C0066-06	CCR-15B
22C0212-01	CCR-19A
22C0212-02	CCR-19B
22C0212-03	CCR-21A
22C0212-04	CCR-21B
22C0212-05	CCR-17A
22C0212-06	CCR-17B
22C0212-07	CCR-18A
22C0212-08	CCR-18B
22C0664-01	CCR-4A
22C0664-02	CCR-4B
22C0664-03	CCR-5A
22C0664-04	CCR-5B
22C0664-05	CCR-6A
22C0664-06	CCR-6B
22C0792-01	CCR-13A
22C0792-02	CCR-13B

Laboratory ID	Client ID
22C0792-03	CCR-22A
22C0792-04	CCR-22B
22C0807-01	CCR-7A
22C0807-02	CCR-7B
22C0807-03	CCR-9A
22C0807-04	CCR-9B
22C0807-05	CCR-20A
22C0807-06	CCR-20B
22C0807-07	CCR-23A
22C0807-08	CCR-23B
22C1155-01	CCR-8A
22C1155-02	CCR-8B
22C1155-03	CCR-16A
22C1155-04	CCR-16B
t22D0170-01	SW-106A
22D0170-02	SW-106B
22D0170-03	CCR-11A
22D0170-04	CCR-11B
22D0170-05	CCR-12A
22D0170-06	CCR-12B
22D0170-07	400522 EqBlnk A
22D0170-08	400522 EqBlnk B

The samples reported in work order 22C1155 were received at the laboratory on 30 March 2022 at 8.4 degrees Celsius (ºC) outside the criteria of 0-6°C. Information sent from the laboratory indicated that the samples were received on the same day as collection, and the cooling process had begun. The rest of the samples were received at the laboratory at 4.8°C, 3.2°C, 5.1°C, 3.7°C, 2.0°C, 5.2°C, 3.8 °C, 5.3°C, 5.4°C and 3.5 °C, within the criteria of 0-6°C. No sample preservation issues were noted by the laboratory.

The following issues were noted on the chain of custody (COC) forms reported in the laboratory reports:

- The relinquishing time was not documented for the first sample transfer of the 22C1155 COC.

- The sample preservation was not documented for the equipment blanks 400522EqBlkA and 400522EqBlkB on the 22D0170 COC. According to the Groundwater Sampling Log provided by the client, the equipment blanks were properly preserved.
- Incorrect error corrections were observed on the 22C0664 and 22C0212 COCs, instead of the proper procedure of a single strike through, correction, and initials and date of person making the corrections.

Laboratory report 22C0212 was revised on June 27, 2022, to include the method blank QC data for fluoride, chloride and sulfate in batch 22C0299. The revised report was identified as 22C0212 Rev 1.

The "ND" results were changed to the method detection limits (MDLs) in the Validation Result column of the EDD.

The results that were flagged I to indicate the concentration was estimated greater than the MDL and less than the RL were J qualified as estimated in the Validation Qualifier column of the EDD.

1.0 METALS

The samples were analyzed for metals by US EPA methods 3010A/200.7 (Mercury evaluated separately in Section 2.0, below).

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised over the course of the validation review and should be considered to determine any impact on data quality and usability.

✓ Overall Assessment
✓ Holding Time
✓ Method Blank
✓ Matrix Spike/Matrix Spike Duplicate
✓ Laboratory Control Sample
✓ Equipment Blank
✓ Field Duplicate
✓ Sensitivity
⊗ Electronic Data Deliverable Review

1.1 Overall Assessment

The metals data reported in the laboratory report are considered usable for supporting project objectives. The results are considered valid; the analytical completeness, defined as the ratio of the

number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this sample set is 100%.

1.2 Holding Time

The holding time for the metals analysis of a preserved water sample is 180 days from sample collection to analysis. The holding times were met for the sample analyses.

It was noted that the dates of digestion and analysis did not include the year in the level II laboratory report; the dates were complete in the EDD.

1.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Eleven method blanks were reported (batches 22C0006, 22C0012, 22C0066, 22C0071, 22C0083, 22C0125, 22D0024, 22D0022, 22C0074, 22C0020 and 22C0021). Metals were not detected in the method blanks above the MDLs.

1.4 Matrix Spike/Matrix Spike Duplicate (MS/MSD)

MS/MSD pairs were analyzed at the proper frequency for the number and types of samples analyzed (one pair per batch of 20 samples). Six sample set specific MS/MSD pairs were reported, using samples CCR-15A, CCR-8A, CCR-16A, CCR-22A, CCR-19A and CCR-18A. The recovery and relative percent difference (RPD) results were within the laboratory specified acceptance criteria, with the following exceptions.

The recoveries of calcium, magnesium, potassium and sodium in the MS/MSD pair using sample CCR-19A were high and outside the laboratory specified acceptance criteria. In addition, the MS/MSD results for calcium, magnesium, potassium and sodium were L-flagged by the laboratory to indicate the results exceeded the calibration ranges. Since the calcium, magnesium, potassium and sodium concentrations in sample CCR-19A were greater than four times the spike amounts, no qualifications were applied to the data.

Eight batch MS/MSD pairs were also reported. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

1.5 Laboratory Control Sample (LCS)

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Eleven LCSs were reported. The recovery results were within the laboratory specified acceptance criteria.

1.6 Equipment Blank

One equipment blank was collected with the sample set and reported for metals, 400522 EqBlnk A. Metals were not detected in the equipment blank above the MDLs.

1.7 Field Duplicate

Field duplicate samples were not collected with the sample set.

1.8 Sensitivity

The samples were reported to the MDLs. Elevated non-detect results were not reported.

1.9 Electronic Data Deliverable Review

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. The following issues were noted in the EDD review:

- The L flags that were used in the level II reports were not used in the EDDs.
- There were I flags used in the level II reports that were missing in the EDDs. The level II report noted an "I" qualifier (the reported value is between the laboratory method detection limit and the laboratory practical quantitation limit). The validation qualifiers for these results were changed to J as estimated.
- The method blank data were reported to the reporting limits (RLs) in the level II reports and the MDLs were listed in the EDDs. Upon review of the EDDs, it was verified that the method blanks were assessed to the MDLs.

No other discrepancies were identified between the level II reports and the EDDs.

2.0 MERCURY

The samples were analyzed for mercury by US EPA Method 245.1.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised over the course of the validation review and should be considered to determine any impact on data quality and usability.

✓ Overall Assessment
✓ Holding Times
✓ Method Blank
✓ Matrix Spike/Matrix Spike Duplicate
✓ Laboratory Control Sample

✓ Equipment Blank
✓ Field Duplicate
✓ Sensitivity
⊗ Electronic Data Deliverable Review

2.1 Overall Assessment

The mercury data reported in the laboratory report are considered usable for supporting project objectives. The results are considered valid; the analytical completeness, defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this sample set is 100%.

2.2 Holding Times

The holding time for the mercury analysis of a preserved water sample is 28 days from sample collection to analysis. The holding times were met for the sample analyses.

2.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Six method blanks were reported (batches 22C0023, 22C0072, 22C0085, 22D0011, 22D0021 and 22C0079). Mercury was not detected in the method blanks above the MDL.

2.4 Matrix Spike/Matrix Spike Duplicate

MS/MSD pairs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Six batch MS/MSD pairs were reported. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

2.5 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Six LCSs were reported. The recovery results were within the laboratory specified acceptance criteria.

2.6 Equipment Blank

One equipment blank was collected with the sample set and reported for mercury, 400522 EqBlnk A. Mercury was not detected in the equipment blank above the MDL.

2.7 Field Duplicate

A field duplicate sample was not collected with the sample set.

2.8 Sensitivity

The samples were reported to the MDL. Elevated non-detect results were not reported.

2.9 Electronic Data Deliverable Review

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. The method blank data were reported to the RL in the level II reports. Upon review of the EDDs, it was verified that the method blanks were assessed to the MDL. No other discrepancies were identified between the level II reports and the EDDs.

3.0 WET CHEMISTRY

The samples were analyzed for anions (chloride, fluoride and sulfate as SO_4) by US EPA method 300.0, bicarbonate and total alkalinity by US EPA method 310.2, TDS by US EPA method 160.1 and SM 18 2540C.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

✓ Overall Assessment
✓ Holding Time
✓ Method Blank
⊗ Matrix Spike/Matrix Spike Duplicate
✓ Laboratory Control Sample
✓ Equipment Blank
✓ Laboratory Duplicate
✓ Field Duplicate
✓ Sensitivity
⊗ Electronic Data Deliverable Review

3.1 Overall Assessment

3.1.1 Completeness

The wet chemistry data reported in this data set are considered usable for supporting project objectives. The results are considered valid; the analytical completeness, defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this sample set is 100%.

3.1.2 Analysis Anomaly

22C1155: Samples CCR-8B and CCR-16B were received by the laboratory at 8.4°C, outside the criteria of 0-6°C. Information sent from the laboratory indicated that the samples were received on the same day as collection, and the cooling process had begun. Based on professional and technical judgment, no qualifications were applied to the data.

3.2 Holding Time

The holding times for the wet chemistry parameters are listed in the table below. The holding times were met for the sample analyses.

Analysis	Holding Time
Anions (Chloride, Fluoride and Sulfate as SO_4) by US EPA Method 300.0	28 days from collection to analysis
Total Dissolved Solids by US EPA Method 160.1 and SM 2540C	7 days from collection to analysis
Alkalinity by US EPA Method 310.2	14 days from collection to analysis

3.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Method blanks were reported for each analysis batch (anions batches 22C0642, 22C0185, 22C0664, 22C0933, 22D0296, 22D0299, 22C0663, 22C0299 and 22C0334; TDS batches 22C0241, 22C0290, 22C0669, 22D0171, 22D0314 and 22C0304; and total alkalinity batches 22C0296, 22C0631, 22C0825, 22D0165, 22D0351 and 22D0352). The wet chemistry parameters were not detected in the method blanks above the MDLs.

3.4 Matrix Spike/Matrix Spike Duplicate

Four sample set specific MSs were reported for fluoride, chloride and sulfate, using samples CCR-15B, SW-106B, CCR-18B and CCR-21B. The recovery results were within the laboratory specified acceptance criteria, with the following exceptions.

22C0066: The recovery of fluoride in the MS using sample CCR-15B was high and outside the laboratory specified acceptance criteria. Therefore, the concentration of fluoride in sample CCR-15B was J+ qualified as estimated with a high bias.

22C0066: The recovery of sulfate in the MS using sample CCR-15B was low and outside the laboratory specified acceptance criteria. Therefore, the concentration of sulfate in sample CCR-15B was J- qualified as estimated with a low bias.

Five sample set specific MSs were reported for total alkalinity, using samples CCR-15B, CCR-6B, CCR-8B, SW-106B and CCR-18B. The recovery results were within the laboratory specified acceptance criteria, with the following exceptions.

22C0664 22C0631, 22D0165 and 22C0296: The recoveries of alkalinity in the MSs using samples CCR-6B, CCR-8B and CCR-18B were low and outside the laboratory specified acceptance criteria. Therefore, the alkalinity concentrations in samples CCR-6B, CCR-8B and CCR-18B were J- qualified as estimated with a low bias.

Batch MSs were reported for fluoride, chloride, sulfate and total alkalinity. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

Sample ID	Compound	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier	Reason Code
CCR-15B	Fluoride	0.136	J3	0.136	J+	4
CCR-15B	Sulfate	66.9	J3	66.9	J-	4
CCR-6B	Bicarbonate	156	J3	156	J-	4
CCR-8B	Bicarbonate	146	J3	146	J-	4
CCR-18B	Bicarbonate	177	J3	177	J-	4
CCR-6B	Alkalinity	156	J3	156	J-	4
CCR-8B	Alkalinity	146	J3	146	J-	4
CCR-18B	Alkalinity	177	J3	177	J-	4

mg/L-milligram per liter
J3-the matrix spike recovery outside method acceptance limits indicating matrix interference

3.5 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). LCSs were reported for each analytical batch per analysis. The recovery and RPD results were within the laboratory specified acceptance criteria.

3.6 Equipment Blank

One equipment blank was collected with the sample set and were reported for the wet chemistry parameters, 400522 EqBlnk B. The wet chemistry parameters were not detected in the equipment blank above the MDLs.

3.7 Laboratory Duplicate

One sample set specific laboratory duplicate was reported for total alkalinity, using sample CCR-15B. Three sample set specific laboratory duplicates were reported for fluoride, chloride and sulfate, using samples CCR-15B, CCR-18B and CCR-21B. Four sample set specific laboratory duplicates were reported for TDS, using samples CCR-23B, CCR-16B, CCR-22B and CCR-17B. One sample set specific laboratory duplicate was reported for alkalinity, using sample CCR-15B. The RPD results were within the laboratory specified acceptance criteria, with the following exception.

22C0212: The chloride RPD for the laboratory duplicate using sample CCR-18B was greater than 20% and outside the method specified acceptance criteria. Since the chloride concentration in sample CCR-18B was less than five times the RL, no qualifications were applied to the data.

Batch laboratory duplicates were reported for fluoride, chloride, sulfate, TDS and total alkalinity. Since these were batch QC, the result does not affect the samples in this data set and qualifications were not applied to the data.

3.8 Field Duplicate

A field duplicate sample was not collected with the sample set.

3.9 Sensitivity

The samples were reported to the MDL. Elevated non-detect results were not reported.

3.10 Electronic Data Deliverable Review

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports for fluoride and total alkalinity at a minimum of 20% as part of the data validation process. The following issues were noted in the EDD review:

- The I flag that was used in the level II reports for alkalinity were not used in the EDDs. The report noted an “I” qualifier (the reported value is between the laboratory method detection limit and the laboratory practical quantitation limit). The validation qualifiers for these results were changed to J as estimated.

- The method blank data were reported to the RLs in the level II report. Upon review of the EDDs, it was verified that the method blanks were assessed to the MDLs.

No other discrepancies were identified between the level II reports and the EDDs.

---

* * * * *

ATTACHMENT 1
DATA VALIDATION QUALIFIER DEFINITIONS AND INTERPRETATION KEY
Assigned by Geosyntec's Data Validation Team

DATA QUALIFIER DEFINITIONS

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit. Upon application of the U qualifier to a reported result, the definition changes to "not detected at or above the reported result".

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

J+ The analyte was positively identified; however, the associated numerical value is likely to be higher that the concentration of the analyte in the sample due to positive bias of associated QC or calibration data or attributable to matrix interference.

J- The analyte was positively identified; however, the associated numerical value is likely to be lower that the concentration of the analyte in the sample due to negative bias of associated QC or calibration data or attributable to matrix interference.

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

ATTACHMENT 2
DATA VALIDATION REASON CODES
Assigned by Geosyntec's Data Validation Team

Valid Value	Description
1	Preservation requirement not met
2	Analysis holding time exceeded
3	Blank contamination (i.e., method, trip, equipment, etc.)
4	Matrix spike/matrix spike duplicate recovery or RPD outside limits
5	LCS recovery outside limits
6	Surrogate recovery outside limits
7	Field Duplicate RPD exceeded
8	Serial dilution percent difference exceeded
9	Calibration criteria not met
10	Linear range exceeded
11	Internal standard criteria not met
12	Lab duplicates RPD exceeded
13	Other
14	Laboratory flag was removed or modified: no validation qualification required
NV	Data were not validated

Geosyntec consultants

180A Market Place Blvd.
Knoxville, TN 37922
PH 865.330.0037
www.geosyntec.com

Memorandum

Date: 17 November 2022

To: Todd Kafka

From: Colleen Small

CC: J. Caprio

Subject: Stage 2A Data Validation - Level II Data Deliverables – Florida Spectrum Environmental Services Lab Work Orders 22H0497, 22H0848, 22H0860, 22H0950, 22H1106 and 22H1107

SITE: McIntosh Power Plant

INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of forty-two water samples and two equipment blanks, collected 10, 17-18, 22 and 24 August 2022, as part of the McIntosh Power Plant project. The samples were analyzed at Florida Spectrum Environmental Services, Inc., Fort Lauderdale, Florida, for the following tests:

- Metals by United States (US) Environmental Protection Agency (EPA) Methods 3010A/200.7
- Mercury by US EPA Method 245.1
- Anions (Chloride, Fluoride and Sulfate as SO_4) by US EPA Method 300.0
- Bicarbonate and Total Alkalinity by US EPA Method 310.2
- Total Dissolved Solids (TDS) by Standard Methods (SM) 2540C

EXECUTIVE SUMMARY

Overall, based on this Stage 2A data validation covering the quality control (QC) parameters listed below and based on the information provided, the data as qualified are usable for supporting project objectives. The qualified data should be used within the limitations of the qualifications.

The data were reviewed based on professional and technical judgment and the following documents:

- US EPA Contract Laboratory Program National Functional Guidelines for Superfund Inorganic Superfund Data Review, November 2020 (EPA 540-R-20-006);
- Florida Department of Environmental Protection (DEP) Standard Operating Procedures (SOPs), January 2017 (DEP QA Rule, Chapter-62-160, F.A.C.); and

- The pertinent methods referenced by the laboratory reports.

The following samples were analyzed and validated at a Stage 2A level:

Laboratory ID	Client ID
22H0497-01	CCR-1A
22H0497-02	CCR-1B
22H0497-03	CCR-2A
22H0497-04	CCR-2B
22H0497-05	CCR-4A
22H0497-06	CCR-4B
22H0497-07	SW-106A
22H0497-08	SW-106B
22H0848-01	CCR-13A
22H0848-02	CCR-13B
22H0848-03	CCR-22A
22H0848-04	CCR-22B
22H0848-05	CCR-20A
22H0848-06	CCR-20B
22H0848-07	CCR-21A
22H0848-08	CCR-21B
22H0848-09	CCR-23A
22H0848-10	CCR-23B
22H0860-01	CCR-15A
22H0860-02	CCR-15B
22H0860-03	CCR-16A
22H0860-04	CCR-16B

Laboratory ID	Client ID
22H0860-05	CCR-17A
22H0860-06	CCR-17B
22H0860-07	CCR-19A
22H0860-08	CCR-19B
22H0950-01	CCR-5A
22H0950-02	CCR-5B
22H0950-03	CCR-6A
22H0950-04	CCR-6B
22H0950-05	CCR-7A
22H0950-06	CCR-7B
22H0950-07	CCR-8A
22H0950-08	CCR-8B
22H0950-09	CCR-9A
22H0950-10	CCR-9B
22H1106-01	CCR-18A
22H1106-02	CCR-18B
22H1106-03	82422 EQBLKA
22H1106-04	82422 EQBLKB
22H1107-01	CCR-11A
22H1107-02	CCR-11B
22H1107-03	CCR-12A
22H1107-04	CCR-12B

The samples were received at the laboratory at temperatures between 1.2-5.8 degrees Celsius (°C), within the criteria of 0-6°C. No sample preservation issues were noted by the laboratory.

The following issues were noted on the chain of custody (COC) forms reported in the laboratory reports:

- Incorrect error corrections were observed on the 22H0860 COC, instead of the proper procedure of a single strike through, correction, and initials and date of person making the corrections.
- The sampler's name, signature or both were missing from the 22H0848, 22H0860, 22H0950, 22H1106 and 22H1107 COCs.

The "ND" results were changed to the method detection limits (MDLs) in the Validation Result column of the electronic data deliverable (EDD).

The results that were flagged I to indicate the concentration was estimated greater than the MDL and less than the reporting limit (RL) were J qualified as estimated in the Validation Qualifier column of the EDD.

1.0 METALS

The samples were analyzed for metals by US EPA methods 3010A/200.7 (Mercury evaluated separately in Section 2.0, below).

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised over the course of the validation review and should be considered to determine any impact on data quality and usability.

✓ Overall Assessment
✓ Holding Time
✓ Method Blank
⊗ Matrix Spike/Matrix Spike Duplicate
✓ Laboratory Control Sample
✓ Equipment Blank
✓ Field Duplicate
✓ Sensitivity
⊗ Electronic Data Deliverable Review

1.1 Overall Assessment

The metals data reported in the laboratory report are considered usable for supporting project objectives. The results are considered valid; the analytical completeness, defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this sample set is 100%.

1.2 Holding Time

The holding time for the metals analysis of a preserved water sample is 180 days from sample collection to analysis. The holding times were met for the sample analyses.

It was noted that the dates of digestion and analysis did not include the year in the level II laboratory report; the dates were complete in the EDD.

1.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Eight method blanks were reported (batches 22H0059, 22H0076, 22H0102, 22H0104, 22H0106, 22H0107, 22H0117 and 22I0001). Metals were not detected in the method blanks at or above the MDLs.

1.4 Matrix Spike/Matrix Spike Duplicate (MS/MSD)

MS/MSD pairs were analyzed at the proper frequency for the number and types of samples analyzed (one pair per batch of 20 samples). Four sample set specific MS/MSD pairs were reported, using samples SW-106A, CCR-5A, CCR-9A and CCR-12A. The recovery and relative percent difference (RPD) results were within the laboratory specified acceptance criteria, with the following exceptions.

22H0950: The recoveries of lithium in the MS/MSD pair using sample CCR-5A were low and outside the laboratory specified acceptance criteria. Therefore, the lithium concentration in sample CCR-5A was J- qualified as estimated with a low bias.

Five batch MS/MSD pairs were also reported. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

Sample	Analyte	Laboratory Result (µg/L)	Laboratory Flag	Validation Result (µg/L)	Validation Qualifier*	Reason Code**
CCR-5A	Lithium	3130	J3	3130	J-	4

µg/L-milligram per liter
J3-Laboratory flag indicating the matrix spike recovery outside method acceptance limits indicating matrix interference
* Validation qualifiers are defined in Attachment 1 at the end of this report
**Reason codes are defined in Attachment 2 at the end of this report

1.5 Laboratory Control Sample (LCS)

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Eight LCSs were reported. The recovery results were within the laboratory specified acceptance criteria.

1.6 Equipment Blank

One equipment blank was collected with the sample set and reported for metals, 82422 EQBLKA. Metals were not detected in the equipment blank at or above the MDLs.

1.7 Field Duplicate

Field duplicate samples were not collected with the sample set.

1.8 Sensitivity

The samples were reported to the MDLs. Elevated non-detect results were not reported.

1.9 Electronic Data Deliverable Review

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. The method blank data were reported to the RLs in the level II reports. Upon review of the EDDs, it was verified that the method blanks were assessed to the MDLs. No other discrepancies were identified between the level II reports and the EDDs.

2.0 MERCURY

The samples were analyzed for mercury by US EPA Method 245.1.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised over the course of the validation review and should be considered to determine any impact on data quality and usability.

✓ Overall Assessment
✓ Holding Times
✓ Method Blank
✓ Matrix Spike/Matrix Spike Duplicate
✓ Laboratory Control Sample
✓ Equipment Blank
✓ Field Duplicate
✓ Sensitivity
⊗ Electronic Data Deliverable Review

2.1 Overall Assessment

The mercury data reported in the laboratory report are considered usable for supporting project objectives. The results are considered valid; the analytical completeness, defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this sample set is 100%.

2.2 Holding Times

The holding time for the mercury analysis of a preserved water sample is 28 days from sample collection to analysis. The holding times were met for the sample analyses.

2.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Four method blanks were reported (batches 22H0069, 22H0101, 22H0113 and 22H0122). Mercury was not detected in the method blanks at or above the MDL.

2.4 Matrix Spike/Matrix Spike Duplicate

MS/MSD pairs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two sample set specific MS/MSD pairs was reported, using samples CCR-13A and 82422 EQBLKA. The recovery and RPD results were within the laboratory specified acceptance criteria.

Two batch MS/MSD pairs were reported. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

2.5 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Four LCSs were reported. The recovery results were within the laboratory specified acceptance criteria.

2.6 Equipment Blank

One equipment blank was collected with the sample set and reported for mercury, 82422 EQBLKA. Mercury was not detected in the equipment blank at or above the MDL.

2.7 Field Duplicate

A field duplicate sample was not collected with the sample set.

2.8 Sensitivity

The samples were reported to the MDL. Elevated non-detect results were not reported.

2.9 Electronic Data Deliverable Review

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. The method blank data were reported to the RL in the level II reports. Upon review of the EDDs, it was verified that the method blanks were assessed to the MDL. No other discrepancies were identified between the level II reports and the EDDs.

3.0 WET CHEMISTRY

The samples were analyzed for anions (chloride, fluoride and sulfate as SO_4) by US EPA method 300.0, bicarbonate and total alkalinity by US EPA method 310.2, TDS by US EPA method SM 2540C.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

✓ Overall Assessment
✓ Holding Time
✓ Method Blank
⊗ Matrix Spike/Matrix Spike Duplicate
✓ Laboratory Control Sample
✓ Equipment Blank
✓ Laboratory Duplicate
✓ Field Duplicate
✓ Sensitivity
⊗ Electronic Data Deliverable Review

3.1 Overall Assessment

The wet chemistry data reported in this data set are considered usable for supporting project objectives. The results are considered valid; the analytical completeness, defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this sample set is 100%.

3.2 Holding Time

The holding times for the wet chemistry parameters are listed in the table below. The holding times were met for the sample analyses.

Analysis	Holding Time
Anions (Chloride, Fluoride and Sulfate as SO_4) by US EPA Method 300.0	28 days from collection to analysis
Total Dissolved Solids by US EPA Method 160.1 and SM 2540C	7 days from collection to analysis
Alkalinity by US EPA Method 310.2	14 days from collection to analysis

3.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Method blanks were reported for each analysis batch (anions batches 22H0446, 22H0524, 22H0735, 22H0736, 22H0774, 22H0775, 22H0802, 22H0856 and 22H0891; TDS batches 22H0598, 22H0786, 22H0814, 22H0851 and 22H0935; and total alkalinity batches 22H0625, 22H0833, 22H0834, 22H0972 and 22H0973). The wet chemistry parameters were not detected in the method blanks at or above the MDLs.

3.4 Matrix Spike/Matrix Spike Duplicate

Two sample set specific MSs were reported for fluoride, chloride and sulfate, using samples SW-106B and CCR-18B. The recovery results were within the laboratory specified acceptance criteria, with the following exceptions.

22H0497: The recovery of fluoride in the MS using sample SW-106B was high and outside the laboratory specified acceptance criteria. Since fluoride was not detected in sample SW-106B, no qualifications were applied to the data.

Four sample set specific MSs were reported for total alkalinity, using samples SW-106B, CCR-13B, CCR-20B and CCR-16B. The recovery results were within the laboratory specified acceptance criteria, with the following exceptions.

22H0848 and 22H0860: The recoveries of alkalinity in the MSs using samples CCR-13B and CCR-16B were low and outside the laboratory specified acceptance criteria. Therefore, the estimated concentrations of alkalinity in samples CCR-16B were J qualified as estimated and the concentrations of alkalinity in sample CCR-13B were J- qualified estimated with low biases.

Batch MSs were reported for fluoride, chloride, sulfate and total alkalinity. Since these were batch QC, the results do not affect the samples in this data set and qualifications were not applied to the data.

Sample ID	Compound	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier	Reason Code
CCR-13B	Bicarbonate	8.41	NA	8.41	J-	4
CCR-13B	Total Alkalinity	8.41	J3	8.41	J-	4
CCR-16B	Bicarbonate	2.97	I	2.97	J	4

Sample ID	Compound	Laboratory Result (mg/L)	Laboratory Flag	Validation Result (mg/L)	Validation Qualifier	Reason Code
CCR-16B	Total Alkalinity	2.97	J3, I	2.97	J	4

mg/L-milligram per liter
I-Laboratory flag indicating the result is between the MDL and the RL
J3-Laboratory flag indicating the matrix spike recovery outside method acceptance limits indicating matrix interference
NA-not applicable

3.5 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). LCSs were reported for each analytical batch per analysis. The recovery and RPD results were within the laboratory specified acceptance criteria.

3.6 Equipment Blank

One equipment blank was collected with the sample set and were reported for the wet chemistry parameters, 82422 EQBLKB. The wet chemistry parameters were not detected in the equipment blank at or above the MDLs.

3.7 Laboratory Duplicate

One sample set specific laboratory duplicate was reported for fluoride, chloride and sulfate, using sample CCR-18B. Four sample set specific laboratory duplicates were reported for TDS, using samples CCR-4B, CCR-23B, CCR-15B and CCR-6B. One sample set specific laboratory duplicate was reported for total alkalinity using sample CCR-13B. The RPD results were within the laboratory specified acceptance criteria.

Batch laboratory duplicates were reported for fluoride, chloride, sulfate, TDS and total alkalinity. Since these were batch QC, the result does not affect the samples in this data set and qualifications were not applied to the data.

3.8 Field Duplicate

A field duplicate sample was not collected with the sample set.

3.9 Sensitivity

The samples were reported to the MDL. Elevated non-detect results were not reported.

3.10 Electronic Data Deliverable Review

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level II reports at a minimum of 20% as part of the data validation process. The method blank data were reported to the RLs in the level II reports. Upon review of the EDDs, it was verified that the method blanks were assessed to the MDLs. No other discrepancies were identified between the level II reports and the EDDs.

* * * * *

ATTACHMENT 1
DATA VALIDATION QUALIFIER DEFINITIONS AND INTERPRETATION KEY
Assigned by Geosyntec's Data Validation Team

DATA QUALIFIER DEFINITIONS

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit. Upon application of the U qualifier to a reported result, the definition changes to "not detected at or above the reported result".

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

J+ The analyte was positively identified; however, the associated numerical value is likely to be higher that the concentration of the analyte in the sample due to positive bias of associated QC or calibration data or attributable to matrix interference.

J- The analyte was positively identified; however, the associated numerical value is likely to be lower that the concentration of the analyte in the sample due to negative bias of associated QC or calibration data or attributable to matrix interference.

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

ATTACHMENT 2
DATA VALIDATION REASON CODES
Assigned by Geosyntec's Data Validation Team

Valid Value	Description
1	Preservation requirement not met
2	Analysis holding time exceeded
3	Blank contamination (i.e., method, trip, equipment, etc.)
4	Matrix spike/matrix spike duplicate recovery or RPD outside limits
5	LCS recovery outside limits
6	Surrogate recovery outside limits
7	Field Duplicate RPD exceeded
8	Serial dilution percent difference exceeded
9	Calibration criteria not met
10	Linear range exceeded
11	Internal standard criteria not met
12	Lab duplicates RPD exceeded
13	Other
14	Laboratory flag was removed or modified: no validation qualification required
NV	Data were not validated

Geosyntec consultants

180A Market Place Blvd.
Knoxville, TN 37922
PH 865.330.0037
www.geosyntec.com

Memorandum

Date: 27 January 2023

To: Todd Kafka

From: Ashley Wilson

CC: J. Caprio

Subject: Stage 2A Data Validation - Level II Data Deliverable – Florida Spectrum Environmental Services Lab Work Order 22L0839

SITE: McIntosh Power Plant - Resample

INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of two water samples and one equipment blank collected 19 December 2022, as part of the McIntosh Power Plant project. The samples were analyzed at Florida Spectrum Environmental Services, Inc., Fort Lauderdale, Florida, for the following test:

- Lithium by United States (US) Environmental Protection Agency (EPA) Methods 3010A/200.7

EXECUTIVE SUMMARY

Overall, based on this Stage 2A data validation covering the quality control (QC) parameters listed below and based on the information provided, the data are usable for supporting project objectives.

The data were reviewed based on professional and technical judgment and the following documents:

- US EPA Contract Laboratory Program National Functional Guidelines for Superfund Inorganic Superfund Data Review, November 2020 (EPA 540-R-20-006);
- Florida Department of Environmental Protection (DEP) Standard Operating Procedures (SOPs), January 2017 (DEP QA Rule, Chapter-62-160, F.A.C.); and
- The pertinent methods referenced by the laboratory reports.

The following samples were analyzed and validated at a Stage 2A level:

Laboratory ID	Client ID
22L0839-01	CCR-4A
22L0839-02	CCR-7A

Laboratory ID	Client ID
22L0839-03	EqBlnk

The samples were received at the laboratory at a temperature of 2.1 degrees Celsius (°C), within the criteria of 0-6°C. No sample preservation issues were noted by the laboratory.

The "ND" results were changed to the method detection limits (MDLs) in the Validation Result column of the electronic data deliverable (EDD).

1.0 LITHIUM

The samples were analyzed for lithium by US EPA methods 3010A/200.7.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised over the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Time
- ✓ Method Blank
- ✓ Matrix Spike/Matrix Spike Duplicate
- ✓ Laboratory Control Sample
- ✓ Equipment Blank
- ✓ Field Duplicate
- ✓ Sensitivity
- ✓ Electronic Data Deliverable Review

1.1 Overall Assessment

The lithium data reported in the laboratory report are considered usable for supporting project objectives. The results are considered valid; the analytical completeness, defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this sample set is 100%.

1.2 Holding Time

The holding time for the metals analysis of a preserved water sample is 180 days from sample collection to analysis. The holding times were met for the sample analysis.

It was noted that the dates of digestion and analysis did not include the year in the level II laboratory report; the dates were complete in the EDD.

1.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One method blank was reported (batch 22L0092). Metals were not detected in the method blank at or above the MDLs.

1.4 Matrix Spike/Matrix Spike Duplicate (MS/MSD)

MS/MSD pairs were analyzed at the proper frequency for the number and types of samples analyzed (one pair per batch of 20 samples). One sample set specific MS/MSD pair was reported, using sample EqBlnk. The recovery and relative percent difference (RPD) results were within the laboratory specified acceptance criteria.

1.5 Laboratory Control Sample (LCS)

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). One LCS was reported. The recovery result was within the laboratory specified acceptance criteria.

1.6 Equipment Blank

One equipment blank was collected with the sample set, EQBLK. Metals were not detected in the equipment blank at or above the MDLs.

1.7 Field Duplicate

Field duplicate samples were not collected with the sample set.

1.8 Sensitivity

The samples were reported to the MDLs. Elevated non-detect results were not reported.

1.9 Electronic Data Deliverable Review

The results and sample IDs in the EDD were reviewed against the information provided by the associated level II report at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II report and the EDD.

* * * * *

ATTACHMENT 1
DATA VALIDATION QUALIFIER DEFINITIONS AND INTERPRETATION KEY
Assigned by Geosyntec's Data Validation Team

DATA QUALIFIER DEFINITIONS

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit. Upon application of the U qualifier to a reported result, the definition changes to "not detected at or above the reported result".

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

J+ The analyte was positively identified; however, the associated numerical value is likely to be higher that the concentration of the analyte in the sample due to positive bias of associated QC or calibration data or attributable to matrix interference.

J- The analyte was positively identified; however, the associated numerical value is likely to be lower that the concentration of the analyte in the sample due to negative bias of associated QC or calibration data or attributable to matrix interference.

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

ATTACHMENT 2
DATA VALIDATION REASON CODES
Assigned by Geosyntec's Data Validation Team

Valid Value	Description
1	Preservation requirement not met
2	Analysis holding time exceeded
3	Blank contamination (i.e., method, trip, equipment, etc.)
4	Matrix spike/matrix spike duplicate recovery or RPD outside limits
5	LCS recovery outside limits
6	Surrogate recovery outside limits
7	Field Duplicate RPD exceeded
8	Serial dilution percent difference exceeded
9	Calibration criteria not met
10	Linear range exceeded
11	Internal standard criteria not met
12	Lab duplicates RPD exceeded
13	Other
14	Laboratory flag was removed or modified: no validation qualification required
NV	Data were not validated

APPENDIX B

Statistical Results – First Semi-Annual 2022 Monitoring

TABLE 3: BSA LANDFILL APPENDIX IV STATISTICS - DOWNGRADIENT WELLS
Lakeland Electric - C.D. McIntosh Power Plant, Polk County, Florida
2022 Semi-annual Event 1

Monitoring Location	Analyte	Units	Number of Samples	Number of NDs	Percent NDs	Minimum Detected Result	Maximum Detected Result	Minimum Detection Limit	Maximum Detetion Limit	Mean[1]	CV	Concentration Trend[3]	LCL Distribution[2]	95% LCL
CCR-4	Antimony	mg/L	20	17	85	0.001	0.0015	0.001	0.0123	NA	NA	NA	DL	0.0010
CCR-4	Arsenic	mg/L	23	9	39	0.001	0.0136	0.00221	0.013	0.0019	1.34	Decreasing	Nonparametric	0.0016
CCR-4	Barium	mg/L	23	0	0	0.149	0.36	--	--	0.28	0.21	No Trend	Normal	0.26
CCR-4	Beryllium	mg/L	19	6	32	0.00036	0.00084	0.000101	0.00283	0.0005	0.40	Stable	Normal	0.00040
CCR-4	Cadmium	mg/L	21	7	33	0.00046	0.0233	0.000181	0.0039	0.0042	1.49	No Trend	Gamma	0.0024
CCR-4	Chromium	mg/L	21	5	24	0.0015	0.0063	0.001	0.00513	0.0022	0.46	Decreasing	Nonparametric	0.0020
CCR-4	Cobalt	mg/L	21	6	29	0.0027	0.0052	0.000293	0.002	0.0028	0.60	Decreasing	Normal	0.0017
CCR-4	Fluoride	mg/L	25	6	24	0.04	1.92	0.032	0.05	0.28	1.40	Increasing	Trend (Theil-Sen Slope)	0.32
CCR-4	Lead	mg/L	21	16	76	0.00051	0.0032	0.00035	0.0139	NA	NA	NA	DL	0.00035
CCR-4	Lithium	mg/L	23	4	17	0.0079	0.34	0.00333	0.022	0.083	1.23	Increasing	Trend (Theil-Sen Slope)	0.025
CCR-4	Mercury	mg/L	20	20	100	--	--	0.00003	0.000152	NA	NA	NA	DL	0.00007
CCR-4	Molybdenum	mg/L	23	21	91	0.0161	0.0184	0.00085	0.00631	NA	NA	NA	DL	0.00085
CCR-4	Selenium	mg/L	23	11	48	0.00029	0.0031	0.00024	0.028	0.0009	0.74	Decreasing	Lognormal	0.00068
CCR-4	Thallium	mg/L	21	7	33	0.00026	0.0051	0.000925	0.0017	0.0006	1.74	No Trend	Nonparametric	0.00047
CCR-5	Antimony	mg/L	20	20	100	--	--	0.001	0.0123	NA	NA	NA	DL	0.0010
CCR-5	Arsenic	mg/L	23	8	35	0.00078	0.019	0.00046	0.013	0.0025	1.71	No Trend	Nonparametric	0.0018
CCR-5	Barium	mg/L	23	0	0	0.064	0.0847	--	--	0.072	0.08	Probably Increasing	Normal	0.070
CCR-5	Beryllium	mg/L	19	19	100	--	--	0.000101	0.00283	NA	NA	NA	DL	0.00034
CCR-5	Cadmium	mg/L	21	21	100	--	--	0.000181	0.0039	NA	NA	NA	DL	0.00034
CCR-5	Chromium	mg/L	21	6	29	0.0008	0.0018	0.000736	0.00513	0.0014	0.25	Decreasing	Trend (Theil-Sen Slope)	0.00038
CCR-5	Cobalt	mg/L	21	20	95	0.0032	0.0032	0.000293	0.002	NA	NA	NA	DL	0.00040
CCR-5	Fluoride	mg/L	24	5	21	0.04	0.835	0.032	0.084	0.098	1.63	Increasing	Trend (Theil-Sen Slope)	0.077
CCR-5	Lead	mg/L	21	15	71	0.00046	0.0021	0.00035	0.0139	NA	NA	NA	DL	0.00035
CCR-5	Lithium	mg/L	23	0	0	2.3	5.35	--	--	3.2	0.31	Increasing	Trend (Theil-Sen Slope)	3.79
CCR-5	Mercury	mg/L	20	19	95	0.000233	0.000233	0.00003	0.000152	NA	NA	NA	DL	0.00007
CCR-5	Molybdenum	mg/L	23	20	87	0.0026	0.025	0.00085	0.00631	NA	NA	NA	DL	0.00085
CCR-5	Selenium	mg/L	23	12	52	0.00028	0.0312	0.00024	0.028	NA	NA	NA	DL	0.0035
CCR-5	Thallium	mg/L	21	19	90	0.0036	0.0056	0.000085	0.0017	NA	NA	NA	DL	0.00009

TABLE 3: BSA LANDFILL APPENDIX IV STATISTICS - DOWNGRADIENT WELLS
Lakeland Electric - C.D. McIntosh Power Plant, Polk County, Florida
2022 Semi-annual Event 1

Monitoring Location	Analyte	Units	Number of Samples	Number of NDs	Percent NDs	Minimum Detected Result	Maximum Detected Result	Minimum Detection Limit	Maximum Detetion Limit	Mean[1]	CV	Concentration Trend[3]	LCL Distribution[2]	95% LCL
CCR-6	Antimony	mg/L	20	20	100	--	--	0.001	0.0123	NA	NA	NA	DL	0.0010
CCR-6	Arsenic	mg/L	23	9	39	0.00047	0.0073	0.00046	0.00586	0.0013	1.41	Probably Decreasing	Nonparametric	0.00099
CCR-6	Barium	mg/L	23	1	4	0.0145	0.051	0.017	0.017	0.030	0.36	Stable	Normal	0.026
CCR-6	Beryllium	mg/L	19	19	100	--	--	0.000101	0.00283	NA	NA	NA	DL	0.00034
CCR-6	Cadmium	mg/L	21	21	100	--	--	0.000181	0.0039	NA	NA	NA	DL	0.00034
CCR-6	Chromium	mg/L	21	13	62	0.0009	0.021	0.000736	0.00513	NA	NA	NA	DL	0.0011
CCR-6	Cobalt	mg/L	21	21	100	--	--	0.000293	0.002	NA	NA	NA	DL	0.00040
CCR-6	Fluoride	mg/L	25	0	0	0.09	0.535	--	--	0.20	0.47	Increasing	Trend (Regression)	0.33
CCR-6	Lead	mg/L	21	19	90	0.00037	0.00041	0.00035	0.0139	NA	NA	NA	DL	0.00035
CCR-6	Lithium	mg/L	23	0	0	0.045	1.47	--	--	0.37	1.04	Increasing	Trend (Regression)	0.82
CCR-6	Mercury	mg/L	20	20	100	--	--	0.00003	0.000152	NA	NA	NA	DL	0.00007
CCR-6	Molybdenum	mg/L	23	11	48	0.0011	0.0362	0.00085	0.00631	0.0052	1.65	Increasing	Trend (Theil-Sen Slope)	0.0062
CCR-6	Selenium	mg/L	23	16	70	0.00033	0.00073	0.00024	0.027	NA	NA	NA	DL	0.00024
CCR-6	Thallium	mg/L	21	21	100	--	--	0.000085	0.0034	NA	NA	NA	DL	0.00009
CCR-7	Antimony	mg/L	20	19	95	0.0178	0.0178	0.001	0.0123	NA	NA	NA	DL	0.0010
CCR-7	Arsenic	mg/L	23	14	61	0.00051	0.0169	0.00046	0.00586	NA	NA	NA	DL	0.00046
CCR-7	Barium	mg/L	23	1	4	0.016	0.1	0.017	0.017	0.042	0.53	Decreasing	Normal	0.033
CCR-7	Beryllium	mg/L	19	19	100	--	--	0.000101	0.00283	NA	NA	NA	DL	0.00034
CCR-7	Cadmium	mg/L	21	21	100	--	--	0.000181	0.0039	NA	NA	NA	DL	0.00034
CCR-7	Chromium	mg/L	21	10	48	0.0012	0.0028	0.000736	0.00513	0.0015	0.48	Decreasing	Normal[4]	0.00093
CCR-7	Cobalt	mg/L	21	16	76	0.00041	0.001	0.000293	0.002	NA	NA	NA	DL	0.00040
CCR-7	Fluoride	mg/L	24	0	0	0.08	0.54	--	--	0.26	0.49	Increasing	Trend (Regression)	0.30
CCR-7	Lead	mg/L	21	17	81	0.00039	0.0013	0.00035	0.0139	NA	NA	NA	DL	0.00035
CCR-7	Lithium	mg/L	23	3	13	0.0032	0.34	0.0032	0.0032	0.060	1.32	Increasing	Gamma[6]	0.040
CCR-7	Mercury	mg/L	20	19	95	0.00007	0.00007	0.00003	0.000152	NA	NA	NA	DL	0.00007
CCR-7	Molybdenum	mg/L	23	21	91	0.00858	0.0115	0.00085	0.00631	NA	NA	NA	DL	0.00085
CCR-7	Selenium	mg/L	23	16	70	0.00024	0.00043	0.00024	0.027	NA	NA	NA	DL	0.00024
CCR-7	Thallium	mg/L	21	21	100	--	--	0.000085	0.0034	NA	NA	NA	DL	0.00009

TABLE 3: BSA LANDFILL APPENDIX IV STATISTICS - DOWNGRADIENT WELLS
Lakeland Electric - C.D. McIntosh Power Plant, Polk County, Florida
2022 Semi-annual Event 1

Monitoring Location	Analyte	Units	Number of Samples	Number of NDs	Percent NDs	Minimum Detected Result	Maximum Detected Result	Minimum Detection Limit	Maximum Detetion Limit	Mean[1]	CV	Concentration Trend[3]	LCL Distribution[2]	95% LCL
CCR-8	Antimony	mg/L	20	18	90	0.0017	0.0058	0.001	0.0123	NA	NA	NA	DL	0.0010
CCR-8	Arsenic	mg/L	23	7	30	0.0015	0.0135	0.00221	0.00586	0.0031	0.86	No Trend	Nonparametric	0.0025
CCR-8	Barium	mg/L	23	0	0	0.0244	0.064	--	--	0.038	0.31	Stable	Gamma	0.034
CCR-8	Beryllium	mg/L	19	19	100	--	--	0.000101	0.00283	NA	NA	NA	DL	0.00034
CCR-8	Cadmium	mg/L	21	21	100	--	--	0.000181	0.0039	NA	NA	NA	DL	0.00034
CCR-8	Chromium	mg/L	21	19	90	0.0007	0.0008	0.000736	0.00513	NA	NA	NA	DL	0.0011
CCR-8	Cobalt	mg/L	21	20	95	0.0012	0.0012	0.000293	0.002	NA	NA	NA	DL	0.00040
CCR-8	Fluoride	mg/L	25	0	0	0.23	0.4	--	--	0.31	0.14	Increasing	Trend (Regression)	0.32
CCR-8	Lead	mg/L	21	20	95	0.00045	0.00045	0.00035	0.0139	NA	NA	NA	DL	0.00035
CCR-8	Lithium	mg/L	23	9	39	0.0043	0.0491	0.00272	0.011	0.012	0.99	Decreasing	Normal	0.0008
CCR-8	Mercury	mg/L	20	20	100	--	--	0.00003	0.000152	NA	NA	NA	DL	0.00007
CCR-8	Molybdenum	mg/L	23	0	0	0.012	0.0238	--	--	0.017	0.17	No Trend	Normal	0.016
CCR-8	Selenium	mg/L	23	18	78	0.0003	0.0246	0.00024	0.027	NA	NA	NA	DL	0.00024
CCR-8	Thallium	mg/L	21	20	95	0.00015	0.00015	0.000085	0.0034	NA	NA	NA	DL	0.00009
CCR-9	Antimony	mg/L	20	19	95	0.0017	0.0017	0.001	0.0123	NA	NA	NA	DL	0.0010
CCR-9	Arsenic	mg/L	23	2	9	0.003	0.0173	0.00221	0.0075	0.0058	0.58	No Trend	Lognormal	0.0048
CCR-9	Barium	mg/L	23	0	0	0.0542	0.13	--	--	0.089	0.24	Decreasing	Trend (Regression)	0.037
CCR-9	Beryllium	mg/L	19	19	100	--	--	0.000101	0.00283	NA	NA	NA	DL	0.00034
CCR-9	Cadmium	mg/L	21	20	95	0.00058	0.00058	0.000181	0.0039	NA	NA	NA	DL	0.00034
CCR-9	Chromium	mg/L	21	15	71	0.0011	0.0023	0.000736	0.00513	NA	NA	NA	DL	0.0011
CCR-9	Cobalt	mg/L	21	21	100	--	--	0.000293	0.002	NA	NA	NA	DL	0.00040
CCR-9	Fluoride	mg/L	25	0	0	0.095	0.58	--	--	0.23	0.53	Increasing	Trend (Theil-Sen Slope)	0.27
CCR-9	Lead	mg/L	21	18	86	0.00054	0.0028	0.00035	0.0139	NA	NA	NA	DL	0.00035
CCR-9	Lithium	mg/L	23	1	4	0.056	0.19	0.00272	0.00272	0.11	0.40	Stable	Normal	0.091
CCR-9	Mercury	mg/L	20	20	100	--	--	0.00003	0.000152	NA	NA	NA	DL	0.00007
CCR-9	Molybdenum	mg/L	23	19	83	0.0014	0.0166	0.00085	0.00631	NA	NA	NA	DL	0.00085
CCR-9	Selenium	mg/L	23	10	43	0.00047	0.0015	0.00309	0.027	0.0010	0.31	Increasing	Normal[4]	0.00081
CCR-9	Thallium	mg/L	21	20	95	0.0048	0.0048	0.000085	0.0017	NA	NA	NA	DL	0.00009

TABLE 3: BSA LANDFILL APPENDIX IV STATISTICS - DOWNGRADIENT WELLS
Lakeland Electric - C.D. McIntosh Power Plant, Polk County, Florida
2022 Semi-annual Event 1

Monitoring Location	Analyte	Units	Number of Samples	Number of NDs	Percent NDs	Minimum Detected Result	Maximum Detected Result	Minimum Detection Limit	Maximum Detetion Limit	Mean[1]	CV	Concentration Trend[3]	LCL Distribution[2]	95% LCL
CCR-11	Antimony	mg/L	20	19	95	0.0015	0.0015	0.001	0.0123	NA	NA	NA	DL	0.0010
CCR-11	Arsenic	mg/L	23	0	0	0.0544	0.14	--	--	0.094	0.32	Decreasing	Trend (Regression)	0.035
CCR-11	Barium	mg/L	23	0	0	0.025	0.071	--	--	0.053	0.19	Decreasing	Trend (Regression)	0.038
CCR-11	Beryllium	mg/L	19	19	100	--	--	0.000101	0.00283	NA	NA	NA	DL	0.00034
CCR-11	Cadmium	mg/L	21	21	100	--	--	0.000181	0.0039	NA	NA	NA	DL	0.00034
CCR-11	Chromium	mg/L	21	6	29	0.0012	0.0023	0.000736	0.00513	0.0015	0.26	Decreasing	Normal[4]	0.0013
CCR-11	Cobalt	mg/L	21	21	100	--	--	0.000293	0.002	NA	NA	NA	DL	0.00040
CCR-11	Fluoride	mg/L	26	0	0	0.35	1.46	--	--	0.58	0.47	Increasing	Trend (Theil-Sen Slope)	0.92
CCR-11	Lead	mg/L	21	14	67	0.00039	0.0014	0.00035	0.0139	NA	NA	NA	DL	0.00035
CCR-11	Lithium	mg/L	23	13	57	0.004	0.0338	0.00272	0.011	NA	NA	NA	DL	0.0032
CCR-11	Mercury	mg/L	20	20	100	--	--	0.00003	0.000152	NA	NA	NA	DL	0.00007
CCR-11	Molybdenum	mg/L	23	16	70	0.00089	0.0149	0.00085	0.00631	NA	NA	NA	DL	0.00085
CCR-11	Selenium	mg/L	23	7	30	0.0013	0.0085	0.00309	0.027	0.0025	0.90	No Trend	Nonparametric	0.0022
CCR-11	Thallium	mg/L	21	21	100	--	--	0.000085	0.0034	NA	NA	NA	DL	0.00009
CCR-12	Antimony	mg/L	20	20	100	--	--	0.001	0.0123	NA	NA	NA	DL	0.0010
CCR-12	Arsenic	mg/L	23	0	0	0.00089	0.199	--	--	0.058	0.84	Increasing	Trend (Theil-Sen Slope)	0.065
CCR-12	Barium	mg/L	23	0	0	0.0117	0.048	--	--	0.017	0.44	Increasing	Trend (Theil-Sen Slope)	0.015
CCR-12	Beryllium	mg/L	19	19	100	--	--	0.000101	0.00283	NA	NA	NA	DL	0.00034
CCR-12	Cadmium	mg/L	21	21	100	--	--	0.000181	0.0039	NA	NA	NA	DL	0.00034
CCR-12	Chromium	mg/L	21	18	86	0.0008	0.0024	0.000736	0.00513	NA	NA	NA	DL	0.0011
CCR-12	Cobalt	mg/L	21	19	90	0.0013	0.0015	0.000293	0.002	NA	NA	NA	DL	0.00040
CCR-12	Fluoride	mg/L	25	0	0	0.45	1.44	--	--	0.62	0.32	Increasing	Trend (Theil-Sen Slope)	0.71
CCR-12	Lead	mg/L	21	20	95	0.001	0.001	0.00035	0.0139	NA	NA	NA	DL	0.00035
CCR-12	Lithium	mg/L	23	19	83	0.0139	0.26	0.00272	0.011	NA	NA	NA	DL	0.0032
CCR-12	Mercury	mg/L	20	20	100	--	--	0.00003	0.000152	NA	NA	NA	DL	0.00007
CCR-12	Molybdenum	mg/L	23	2	9	0.0056	0.0368	0.00085	0.00392	0.011	0.74	Increasing	Trend (Regression)	0.023
CCR-12	Selenium	mg/L	23	12	52	0.00032	0.0151	0.00024	0.028	NA	NA	NA	Nonparametric[4]	0.0035
CCR-12	Thallium	mg/L	21	19	90	0.00035	0.0041	0.000085	0.0017	NA	NA	NA	DL	0.00009

TABLE 3: BSA LANDFILL APPENDIX IV STATISTICS - DOWNGRADIENT WELLS
Lakeland Electric - C.D. McIntosh Power Plant, Polk County, Florida
2022 Semi-annual Event 1

Monitoring Location	Analyte	Units	Number of Samples	Number of NDs	Percent NDs	Minimum Detected Result	Maximum Detected Result	Minimum Detection Limit	Maximum Detetion Limit	Mean[1]	CV	Concentration Trend[3]	LCL Distribution[2]	95% LCL
CCR-13	Antimony	mg/L	20	19	95	0.0014	0.0014	0.001	0.0123	NA	NA	NA	DL	0.0010
CCR-13	Arsenic	mg/L	23	11	48	0.00052	0.043	0.00046	0.00314	0.0041	2.28	No Trend	Lognormal	0.0017
CCR-13	Barium	mg/L	23	0	0	0.01	0.053	--	--	0.038	0.32	Stable	Nonparametric	0.038
CCR-13	Beryllium	mg/L	19	18	95	0.0003	0.0003	0.000101	0.00283	NA	NA	NA	DL	0.00034
CCR-13	Cadmium	mg/L	21	21	100	--	--	0.000181	0.0039	NA	NA	NA	DL	0.00034
CCR-13	Chromium	mg/L	21	7	33	0.001	0.0023	0.0011	0.00513	0.0017	0.29	Probably Decreasing	Normal[4]	0.0014
CCR-13	Cobalt	mg/L	21	7	33	0.00094	0.0046	0.000361	0.002	0.0015	0.74	No Trend	Normal	0.00056
CCR-13	Fluoride	mg/L	25	0	0	0.103	2.64	--	--	0.82	0.71	Increasing	Trend (Regression)	1.67
CCR-13	Lead	mg/L	21	21	100	--	--	0.00035	0.0139	NA	NA	NA	DL	0.00035
CCR-13	Lithium	mg/L	23	1	4	0.011	0.32	0.0032	0.0032	0.21	0.46	Stable	Normal	0.17
CCR-13	Mercury	mg/L	20	19	95	0.000195	0.000195	0.00003	0.000152	NA	NA	NA	DL	0.00007
CCR-13	Molybdenum	mg/L	23	16	70	0.001	0.0121	0.00085	0.00631	NA	NA	NA	DL	0.00085
CCR-13	Selenium	mg/L	23	15	65	0.00032	0.0135	0.00024	0.027	NA	NA	NA	DL	0.00024
CCR-13	Thallium	mg/L	21	16	76	0.00009	0.00011	0.000085	0.0034	NA	NA	NA	DL	0.00009

Notes:

1. For data sets with any ND data and less than 50% nondetects, the Kaplan-Meier mean and CV are provided
2. For distribution = "Normal" and "Lognormal", the 95% LCL was calculated on the mean concentration.
   For distribution = "Trend (Regression)" or "Trend (Theil-Sen Slope)", the 95% LCL was calculated from the regression/Sen's slope line due to an increasing/decreasing trend.
   For distribution = "Nonparametric", the 95% LCL was calculated on the median concentration.
   For distribution = "DL", the 95% LCL was equivalent to the MDL.
3. The Mann-Kendall test was used to identify increasing or decreasing trends in the data with trends identified with a confidence level of 95% or more marked increasing or decreasing and those with a confidence level between 90% and 95% marked probably increasing or probably decreasing .
4. Trend is an artifact of varyng detection limits, therefore, the LCL was derived using a nonparametric method.
5. Data used in the statistical analysis are provided in Table 2.
6. There were two anamolously high concentrations in April 2018 and April 2019, but concentrations have been decreasing since April 2019. As such, a Gamma LCL was calculated instead of an LCL from the trend line.

-- - not provided because all data had either detected concentrations or was nondetect.
CV - coefficient of variation calculated as the ratio of the standard deviation to the mean
LCL - lower confidence limit
mg/L - milligrams per liter
NA - not applicable, statistic could not be calculated due to high percent of non-detects (>50% NDs)
ND - non-detect

APPENDIX C

Statistical Results – Second Semi-Annual 2022 Monitoring

TABLE 3: BSA LANDFILL APPENDIX IV STATISTICS - DOWNGRADIENT WELLS
Lakeland Electric - C.D. McIntosh Power Plant, Polk County, Florida
2022 Semi-annual Event 2

Monitoring Location	Analyte	Units	Number of Samples	Number of NDs	Percent NDs	Minimum Detected Result	Maximum Detected Result	Minimum Detection Limit	Maximum Detection Limit	Mean[1]	CV	Concentration Trend[3]	LCL Distribution[2]	95% LCL
CCR-4	Antimony	mg/L	21	18	86	0.001	0.0015	0.001	0.0123	NA	NA	NA	DL	0.0010
CCR-4	Arsenic	mg/L	24	10	42	0.001	0.0136	0.00221	0.013	0.0018	1.33	Decreasing	Nonparametric[4]	0.0016
CCR-4	Barium	mg/L	24	0	0	0.149	0.36	0.000101	0.00283	0.28	0.20	No Trend	Normal	0.26
CCR-4	Beryllium	mg/L	20	7	35	0.00036	0.00084	0.000181	0.0039	0.0005	0.46	Stable	Normal	0.00035
CCR-4	Cadmium	mg/L	22	8	36	0.00046	0.0233	0.001	0.00513	0.0040	1.54	No Trend	Gamma	0.0022
CCR-4	Chromium	mg/L	22	5	23	0.0015	0.0063	0.000293	0.002	0.0022	0.46	Decreasing	Nonparametric[4]	0.0020
CCR-4	Cobalt	mg/L	22	7	32	0.0027	0.0052	0.032	0.05	0.0027	0.64	Decreasing	Normal	0.0014
CCR-4	Fluoride	mg/L	26	6	23	0.04	1.92	0.00035	0.0139	0.29	1.35	Increasing	Trend (Theil-Sen Slope)	0.37
CCR-4	Lead	mg/L	22	17	77	0.00051	0.0032	0.00333	0.022	NA	NA	NA	DL	0.00035
CCR-4	Lithium	mg/L	24	4	17	0.0079	0.34	0.00003	0.000152	0.090	1.17	Increasing	Trend (Theil-Sen Slope)	0.056
CCR-4	Mercury	mg/L	21	21	100	0.0161	0.0184	0.00085	0.00631	NA	NA	NA	DL	0.00007
CCR-4	Molybdenum	mg/L	24	22	92	0.00029	0.0031	0.00024	0.028	NA	NA	NA	DL	0.00085
CCR-4	Selenium	mg/L	24	12	50	0.00026	0.0051	0.000925	0.0017	0.0009	0.74	Decreasing	Lognormal[4]	0.00068
CCR-4	Thallium	mg/L	22	8	36	0.00078	0.019	0.001	0.0123	0.0006	1.73	No Trend	Nonparametric	0.00047
CCR-5	Antimony	mg/L	21	21	100	0.064	0.0847	0.00046	0.013	NA	NA	NA	DL	0.0010
CCR-5	Arsenic	mg/L	24	9	38	0.0008	0.0018	0.000101	0.00283	0.0025	1.73	Probably Decreasing	Nonparametric	0.0018
CCR-5	Barium	mg/L	24	0	0	0.0032	0.0032	0.000181	0.0039	0.072	0.08	Increasing	Trend (Regression)	0.074
CCR-5	Beryllium	mg/L	20	20	100	0.04	0.835	0.000736	0.00513	NA	NA	NA	DL	0.00034
CCR-5	Cadmium	mg/L	22	22	100	0.00046	0.0021	0.000293	0.002	NA	NA	NA	DL	0.00034
CCR-5	Chromium	mg/L	22	6	27	2.3	5.35	0.032	0.084	0.0013	0.26	Decreasing	Trend (Theil-Sen Slope)	0.00044
CCR-5	Cobalt	mg/L	22	21	95	0.000233	0.000233	0.00035	0.0139	NA	NA	NA	DL	0.00040
CCR-5	Fluoride	mg/L	25	5	20	0.0026	0.025	0.00003	0.000152	0.116	1.55	Increasing	Trend (Theil-Sen Slope)	0.106
CCR-5	Lead	mg/L	22	16	73	0.00028	0.0312	0.00085	0.00631	NA	NA	NA	DL	0.00035
CCR-5	Lithium	mg/L	24	0	0	0.0036	0.0056	0.00024	0.028	3.2	0.30	Increasing	Trend (Theil-Sen Slope)	3.69
CCR-5	Mercury	mg/L	21	20	95	0.00047	0.0073	0.000085	0.0017	NA	NA	NA	DL	0.00007
CCR-5	Molybdenum	mg/L	24	21	88	0.0145	0.051	0.001	0.0123	NA	NA	NA	DL	0.00085
CCR-5	Selenium	mg/L	24	13	54	0.0009	0.021	0.00046	0.00586	NA	NA	NA	DL	0.0035
CCR-5	Thallium	mg/L	22	20	91	0.09	0.738	0.017	0.017	NA	NA	NA	DL	0.00009
CCR-6	Antimony	mg/L	21	21	100	0.00037	0.00041	0.000101	0.00283	NA	NA	NA	DL	0.0010
CCR-6	Arsenic	mg/L	24	10	42	0.045	1.47	0.000181	0.0039	0.0013	1.41	Decreasing	Nonparametric	0.0010
CCR-6	Barium	mg/L	24	1	4	0.0011	0.0362	0.000736	0.00513	0.030	0.36	Stable	Normal	0.026
CCR-6	Beryllium	mg/L	20	20	100	0.00033	0.00073	0.000293	0.002	NA	NA	NA	DL	0.00034
CCR-6	Cadmium	mg/L	22	22	100	0.0178	0.0178	0.00035	0.0139	NA	NA	NA	DL	0.00034
CCR-6	Chromium	mg/L	22	13	59	0.00051	0.0169	0.00003	0.000152	NA	NA	NA	DL	0.0011
CCR-6	Cobalt	mg/L	22	22	100	0.01	0.1	0.00085	0.00631	NA	NA	NA	DL	0.00040
CCR-6	Fluoride	mg/L	26	0	0	0.0012	0.0028	0.00024	0.027	0.22	0.63	Increasing	Trend (Regression)	0.42
CCR-6	Lead	mg/L	22	20	91	0.00041	0.001	0.000085	0.0034	NA	NA	NA	DL	0.00035
CCR-6	Lithium	mg/L	24	0	0	0.08	0.54	0.001	0.0123	0.39	1.00	Increasing	Trend (Regression)	0.82
CCR-6	Mercury	mg/L	21	21	100	0.00039	0.0013	0.00046	0.00586	NA	NA	NA	DL	0.00007
CCR-6	Molybdenum	mg/L	24	11	46	0.0032	0.34	0.017	0.017	0.0052	1.61	Increasing	Trend (Theil-Sen Slope)	0.0050
CCR-6	Selenium	mg/L	24	17	71	0.00007	0.00007	0.000101	0.00283	NA	NA	NA	DL	0.00024
CCR-6	Thallium	mg/L	22	22	100	0.00858	0.0115	0.000181	0.0039	NA	NA	NA	DL	0.00009

TABLE 3: BSA LANDFILL APPENDIX IV STATISTICS - DOWNGRADIENT WELLS
Lakeland Electric - C.D. McIntosh Power Plant, Polk County, Florida
2022 Semi-annual Event 2

Monitoring Location	Analyte	Units	Number of Samples	Number of NDs	Percent NDs	Minimum Detected Result	Maximum Detected Result	Minimum Detection Limit	Maximum Detection Limit	Mean[1]	CV	Concentration Trend[3]	LCL Distribution[2]	95% LCL
CCR-7	Antimony	mg/L	21	20	95	0.00024	0.00043	0.000736	0.00513	NA	NA	NA	DL	0.0010
CCR-7	Arsenic	mg/L	24	15	63	0.0017	0.0058	0.000293	0.002	NA	NA	NA	DL	0.00046
CCR-7	Barium	mg/L	24	1	4	0.0015	0.0135	0.00035	0.0139	0.040	0.56	Decreasing	Normal	0.032
CCR-7	Beryllium	mg/L	20	20	100	0.0244	0.064	0.0032	0.0032	NA	NA	NA	DL	0.00034
CCR-7	Cadmium	mg/L	22	22	100	0.0007	0.0008	0.00003	0.000152	NA	NA	NA	DL	0.00034
CCR-7	Chromium	mg/L	22	10	45	0.0012	0.0012	0.00085	0.00631	0.0015	0.46	Probably Decreasing	Normal[4]	0.00102
CCR-7	Cobalt	mg/L	22	17	77	0.23	0.4	0.00024	0.027	NA	NA	NA	DL	0.00040
CCR-7	Fluoride	mg/L	25	0	0	0.00045	0.00045	0.000085	0.0034	0.25	0.48	Increasing	Trend (Regression)	0.27
CCR-7	Lead	mg/L	22	18	82	0.0043	0.0491	0.001	0.0123	NA	NA	NA	DL	0.00035
CCR-7	Lithium	mg/L	25	4	16	0.0032	0.34	0.0032	0.00474	0.058	1.33	Increasing	Gamma[6]	0.039
CCR-7	Mercury	mg/L	21	20	95	0.0003	0.0246	0.000101	0.00283	NA	NA	NA	DL	0.00007
CCR-7	Molybdenum	mg/L	24	22	92	0.00015	0.00015	0.000181	0.0039	NA	NA	NA	DL	0.00085
CCR-7	Selenium	mg/L	24	17	71	0.0017	0.0017	0.000513	0.00513	NA	NA	NA	DL	0.00024
CCR-7	Thallium	mg/L	22	22	100	0.003	0.0173	0.000293	0.002	NA	NA	NA	DL	0.00009
CCR-8	Antimony	mg/L	21	19	90	0.0479	0.13	0.00035	0.0139	NA	NA	NA	DL	0.0010
CCR-8	Arsenic	mg/L	24	8	33	0.00058	0.00058	0.00272	0.011	0.0031	0.85	Probably Decreasing	Nonparametric	0.0025
CCR-8	Barium	mg/L	24	0	0	0.001	0.0023	0.00003	0.000152	0.037	0.31	Stable	Gamma	0.034
CCR-8	Beryllium	mg/L	20	20	100	0.095	0.69	0.00024	0.027	NA	NA	NA	DL	0.00034
CCR-8	Cadmium	mg/L	22	22	100	0.00054	0.0028	0.000085	0.0034	NA	NA	NA	DL	0.00034
CCR-8	Chromium	mg/L	22	20	91	0.056	0.19	0.001	0.0123	NA	NA	NA	DL	0.0011
CCR-8	Cobalt	mg/L	22	21	95	0.0014	0.0166	0.00221	0.0075	NA	NA	NA	DL	0.00040
CCR-8	Fluoride	mg/L	26	0	0	0.00047	0.0015	0.000101	0.00283	0.31	0.14	Increasing	Trend (Regression)	0.33
CCR-8	Lead	mg/L	22	21	95	0.0048	0.0048	0.000181	0.0039	NA	NA	NA	DL	0.00035
CCR-8	Lithium	mg/L	24	10	42	0.0015	0.0015	0.000736	0.00513	0.011	1.02	Decreasing	Nonparametric	0.0087
CCR-8	Mercury	mg/L	21	21	100	0.0544	0.14	0.000293	0.002	NA	NA	NA	DL	0.00007
CCR-8	Molybdenum	mg/L	24	0	0	0.025	0.071	0.00035	0.0139	0.017	0.19	No Trend	Normal	0.016
CCR-8	Selenium	mg/L	24	19	79	0.0012	0.0023	0.00272	0.00272	NA	NA	NA	DL	0.00024
CCR-8	Thallium	mg/L	22	21	95	0.35	1.46	0.00003	0.000152	NA	NA	NA	DL	0.00009
CCR-9	Antimony	mg/L	21	20	95	0.00039	0.0014	0.00085	0.00631	NA	NA	NA	DL	0.0010
CCR-9	Arsenic	mg/L	24	3	13	0.004	0.0338	0.00309	0.027	0.0057	0.59	Stable	Lognormal	0.0047
CCR-9	Barium	mg/L	24	0	0	0.00089	0.0149	0.000085	0.0017	0.088	0.26	Decreasing	Trend (Regression)	0.035
CCR-9	Beryllium	mg/L	20	20	100	0.0013	0.0085	0.001	0.0123	NA	NA	NA	DL	0.00034
CCR-9	Cadmium	mg/L	22	21	95	0.00089	0.199	0.000101	0.00283	NA	NA	NA	DL	0.00034
CCR-9	Chromium	mg/L	22	15	68	0.0117	0.048	0.000181	0.0039	NA	NA	NA	DL	0.0011
CCR-9	Cobalt	mg/L	22	22	100	0.0008	0.0024	0.000736	0.00513	NA	NA	NA	DL	0.00040
CCR-9	Fluoride	mg/L	26	0	0	0.0013	0.0015	0.000293	0.002	0.24	0.61	Increasing	Trend (Theil-Sen Slope)	0.28
CCR-9	Lead	mg/L	22	19	86	0.45	1.44	0.00035	0.0139	NA	NA	NA	DL	0.00035
CCR-9	Lithium	mg/L	24	1	4	0.001	0.001	0.00272	0.011	0.11	0.41	Stable	Normal	0.089
CCR-9	Mercury	mg/L	21	21	100	0.0139	0.26	0.00003	0.000152	NA	NA	NA	DL	0.00007
CCR-9	Molybdenum	mg/L	24	20	83	0.0056	0.0368	0.00085	0.00631	NA	NA	NA	DL	0.00085
CCR-9	Selenium	mg/L	24	11	46	0.00032	0.0151	0.00309	0.027	0.0010	0.31	Increasing	Normal[4]	0.00081
CCR-9	Thallium	mg/L	22	21	95	0.00035	0.0041	0.000085	0.0034	NA	NA	NA	DL	0.00009

TABLE 3: BSA LANDFILL APPENDIX IV STATISTICS - DOWNGRADIENT WELLS
Lakeland Electric - C.D. McIntosh Power Plant, Polk County, Florida
2022 Semi-annual Event 2

Monitoring Location	Analyte	Units	Number of Samples	Number of NDs	Percent NDs	Minimum Detected Result	Maximum Detected Result	Minimum Detection Limit	Maximum Detection Limit	Mean[1]	CV	Concentration Trend[3]	LCL Distribution[2]	95% LCL
CCR-11	Antimony	mg/L	21	20	95	0.0014	0.0014	0.001	0.0123	NA	NA	NA	DL	0.0010
CCR-11	Arsenic	mg/L	24	0	0	0.00052	0.043	0.000101	0.00283	0.093	0.32	Decreasing	Trend (Regression)	0.036
CCR-11	Barium	mg/L	24	0	0	0.01	0.053	0.000181	0.0039	0.053	0.19	Decreasing	Trend (Regression)	0.039
CCR-11	Beryllium	mg/L	20	20	100	0.0003	0.0003	0.000736	0.00513	NA	NA	NA	DL	0.00034
CCR-11	Cadmium	mg/L	22	22	100	0.0351	0.0351	0.000293	0.002	NA	NA	NA	DL	0.00034
CCR-11	Chromium	mg/L	22	6	27	0.001	0.0023	0.00035	0.0139	0.0015	0.26	Decreasing	Normal[4]	0.0014
CCR-11	Cobalt	mg/L	22	22	100	0.00094	0.0046	0.00272	0.011	NA	NA	NA	DL	0.00040
CCR-11	Fluoride	mg/L	27	0	0	0.103	2.64	0.00003	0.000152	0.61	0.52	Increasing	Trend (Theil-Sen Slope)	0.98
CCR-11	Lead	mg/L	22	15	68	0.011	0.32	0.00085	0.00392	NA	NA	NA	DL	0.00035
CCR-11	Lithium	mg/L	24	14	58	0.000195	0.000195	0.00024	0.028	NA	NA	NA	DL	0.0032
CCR-11	Mercury	mg/L	21	21	100	0.001	0.0121	0.000085	0.0017	NA	NA	NA	DL	0.00007
CCR-11	Molybdenum	mg/L	24	17	71	0.00032	0.0135	0.001	0.0123	NA	NA	NA	DL	0.00085
CCR-11	Selenium	mg/L	24	8	33	0.00009	0.00011	0.00046	0.00396	0.0025	0.90	No Trend	Nonparametric	0.0022
CCR-11	Thallium	mg/L	22	22	100	--	--	0.000101	0.00283	NA	NA	NA	DL	0.00009
CCR-12	Antimony	mg/L	21	21	100	--	--	0.000181	0.0039	NA	NA	NA	DL	0.0010
CCR-12	Arsenic	mg/L	24	0	0	0.00089	0.199	0.0011	0.00513	0.058	0.82	Increasing	Trend (Theil-Sen Slope)	0.069
CCR-12	Barium	mg/L	24	0	0	0.0117	0.048	0.000354	0.002	0.017	0.43	Increasing	Trend (Theil-Sen Slope)	0.015
CCR-12	Beryllium	mg/L	20	20	100	--	--	0.00035	0.0139	NA	NA	NA	DL	0.00034
CCR-12	Cadmium	mg/L	22	22	100	--	--	0.0032	0.0032	NA	NA	NA	DL	0.00034
CCR-12	Chromium	mg/L	22	18	82	0.0008	0.0024	0.00003	0.000152	NA	NA	NA	DL	0.0011
CCR-12	Cobalt	mg/L	22	20	91	0.0013	0.0015	0.00085	0.00631	NA	NA	NA	DL	0.00040
CCR-12	Fluoride	mg/L	26	0	0	0.45	1.44	0.00024	0.027	0.64	0.33	Increasing	Trend (Theil-Sen Slope)	0.75
CCR-12	Lead	mg/L	22	21	95	0.001	0.001	0.000085	0.0034	NA	NA	NA	DL	0.00035
CCR-12	Lithium	mg/L	24	20	83	0.0139	0.26	0.00272	0.011	NA	NA	NA	DL	0.0032
CCR-12	Mercury	mg/L	21	21	100	--	--	0.00003	0.000152	NA	NA	NA	DL	0.00007
CCR-12	Molybdenum	mg/L	24	2	8	0.0056	0.0368	0.00085	0.00392	0.012	0.73	Increasing	Trend (Regression)	0.024
CCR-12	Selenium	mg/L	24	13	54	0.00032	0.0151	0.00024	0.028	NA	NA	NA	DL	0.0035
CCR-12	Thallium	mg/L	22	20	91	0.00035	0.0041	0.000085	0.0017	NA	NA	NA	DL	0.00009

TABLE 3: BSA LANDFILL APPENDIX IV STATISTICS - DOWNGRADIENT WELLS
Lakeland Electric - C.D. McIntosh Power Plant, Polk County, Florida
2022 Semi-annual Event 2

Monitoring Location	Analyte	Units	Number of Samples	Number of NDs	Percent NDs	Minimum Detected Result	Maximum Detected Result	Minimum Detection Limit	Maximum Detection Limit	Mean[1]	CV	Concentration Trend[3]	LCL Distribution[2]	95% LCL
CCR-13	Antimony	mg/L	21	20	95	0.0014	0.0014	0.001	0.0123	NA	NA	NA	DL	0.0010
CCR-13	Arsenic	mg/L	24	12	50	0.00052	0.043	0.00046	0.00314	0.0040	2.32	No Trend	Lognormal	0.0016
CCR-13	Barium	mg/L	24	0	0	0.01	0.053	--	--	0.038	0.32	Stable	Nonparametric	0.037
CCR-13	Beryllium	mg/L	20	19	95	0.0003	0.0003	0.000101	0.00283	NA	NA	NA	DL	0.00034
CCR-13	Cadmium	mg/L	22	21	95	--	--	0.000181	0.0039	NA	NA	NA	DL	0.00034
CCR-13	Chromium	mg/L	22	7	32	0.001	0.0023	0.0011	0.00513	0.0017	0.28	Stable	Normal	0.0015
CCR-13	Cobalt	mg/L	22	8	36	0.00094	0.0046	0.000361	0.002	0.0015	0.77	Stable	Normal	0.00041
CCR-13	Fluoride	mg/L	26	0	0	0.103	2.64	--	--	0.87	0.71	Increasing	Trend (Regression)	1.82
CCR-13	Lead	mg/L	22	22	100	--	--	0.00035	0.0139	NA	NA	NA	DL	0.00035
CCR-13	Lithium	mg/L	24	1	4	0.011	0.32	0.0032	0.0032	0.21	0.46	Stable	Normal	0.17
CCR-13	Mercury	mg/L	21	20	95	0.000195	0.000195	0.00003	0.000152	NA	NA	NA	DL	0.00007
CCR-13	Molybdenum	mg/L	24	17	71	0.001	0.0121	0.00085	0.00631	NA	NA	NA	DL	0.00085
CCR-13	Selenium	mg/L	24	16	67	0.00032	0.0135	0.00024	0.027	NA	NA	NA	DL	0.00024
CCR-13	Thallium	mg/L	22	17	77	0.00009	0.00011	0.000085	0.0034	NA	NA	NA	DL	0.00009

Notes:

1 - For data sets with any ND data and 50% or less NDs, the Kaplan-Meier mean and standard deviation are provided. For data sets without ND data, the arithmetic mean is provided. For data sets with greater than 50% NDs, no mean is provided.

2. For distribution = "Normal" and "Lognormal", the 95% LCL was calculated on the mean concentration.
For distribution = "Trend (Regression)" or "Trend (Theil-Sen Slope)", the 95% LCL was calculated from the regression/Sen's slope line due to an increasing/decreasing trend.
For distribution = "Nonparametric", the 95% LCL was calculated on the median concentration.
For distribution = "DL", the 95% LCL was equivalent to the MDL.

3. The Mann-Kendall test was used to identify increasing or decreasing trends in the data with trends identified with a confidence level of 95% or more marked increasing or decreasing and those with a confidence level between 90% and 95% marked probably increasing or probably decreasing.

4. Trend is an artifact of varyng detection limits, therefore, the LCL was derived using a nonparametric method.

5. Data used in the statistical analysis are provided in Table 2.

6. There were two anamolously high concentrations in April 2018 and April 2019, but concentrations have been decreasing since April 2019. As such, a Gamma LCL was calculated instead of an LCL from the trend line.

-- - not provided because all data had either detected concentrations or was nondetect.
CV - coefficient of variation calculated as the ratio of the standard deviation to the mean
LCL - lower confidence limit
mg/L - milligrams per liter
NA - not applicable, statistic could not be calculated due to high percent of non-detects (>50% NDs)
ND - non-detect

APPENDIX D

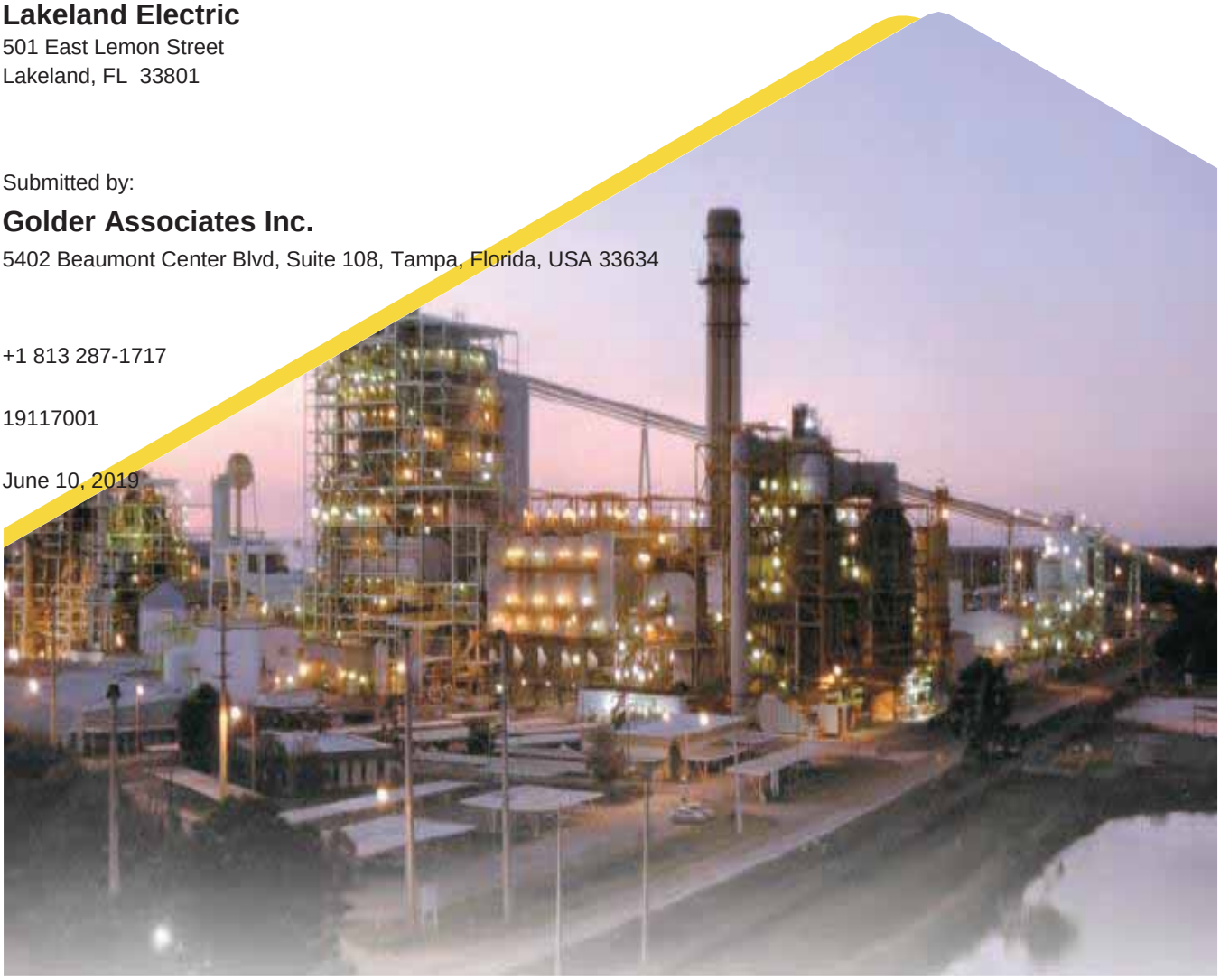
Alternate Source Demonstration
for Radium 226 & 228 in
Groundwater

ALTERNATE SOURCE DEMONSTRATION FOR RADIUM 226 & 228 IN GROUNDWATER BYPRODUCT STORAGE AREA C.D. MCINTOSH POWER PLANT

LAKELAND, POLK COUNTY, FLORIDA

Submitted to:

Lakeland Electric
501 East Lemon Street
Lakeland, FL 33801



Submitted by:

Golder Associates Inc.
5402 Beaumont Center Blvd, Suite 108, Tampa, Florida, USA 33634

+1 813 287-1717

19117001

June 10, 2019

Distribution List

Sean P. McGinnis, CHMM, Lakeland Electric

Table of Contents

1.0 INTRODUCTION 1

2.0 PURPOSE AND BACKGROUND 2

2.1 Purpose 2

2.2 Background 2

3.0 REGIONAL AND SITE SETTING 4

3.1 Regional Geology 4

3.2 Regional Hydrogeology 4

3.3 Site Hydrogeology and BSA Monitoring Well Network 5

4.0 REGIONAL PHOSPHATE MINING 7

4.1 Historic Mining Related Stratigraphy 7

4.2 Uranium Associated with the Calcium Phosphate and Aluminum Phosphate Zones 7

4.3 History of Mining in the Vicinity of the BSA 8

4.3.1 Lake Parker Tract 9

4.3.2 Orange Park Mine 11

4.3.3 Teneroc Mine 13

5.0 NATURALLY-OCCURING RADIONUCLIDE DISCUSSION 16

6.0 AERIAL PHOTOGRAPHS AND TOPOGRAPHIC MAP SUMMARY 19

7.0 SITE CHARACTERIZATION FOR RADIUM-226+228 21

7.1 Field Investigation 21

7.2 Summary of Results for Radium-226+228 23

8.0 SUMMARY AND CONCLUSIONS 25

9.0 PROFESSIONAL CERTIFICATION 26

10.0 SIGNATURE PAGE 27

11.0 REFERENCES 28

TABLES

Table 1 Summary of CCR Monitoring Well and Nature and Extent Monitoring Well Construction Details
Table 2 Summary of Soil / Sediment Analytical Results
Table 3 Summary of Radium 226 & 228 in Nature and Extent Groundwater and Surface Water Summary
Table 4 of Radium 228 & 228 Concentrations in Groundwater (CCR Monitoring Wells)

FIGURES

Figure 1 Site Location Map
Figure 2 CCR Groundwater Monitoring Well Network
Figure 3 Surface Water Bodies Surrounding Byproduct Storage Area
Figure 4 Soil Boring and Monitoring Well Locations
Figure 5 Groundwater Contour Map of the Surficial Aquifer (July 16, 2018)
Figure 6 Groundwater Contour Map of the Surficial Aquifer (March 12, 2019)
Figure 7 Radium 226 & 228 in the Surficial Aquifer and Surface Water (August 2016 through March 2019)

APPENDICES

Appendix A Soil Boring Logs and Location Map
Appendix B Historical Aerial Photographs and Maps
Appendix C Record of Borehole Logs for CCR-2A, CCR-4A, CCR-5A, CCR-7A, CCR-13A, and CCR-14A
Appendix D Geochemical Evaluation of Radium-226+228 in Soils
Appendix E Mineralogical Assessment prepared by Petrologic Solutions, Inc.

1.0 INTRODUCTION

Golder Associates Inc. (Golder), on behalf of Lakeland Electric, prepared this alternative source demonstration (ASD) report for combined radium-226 and radium-228 (referred to as radium-226+228) detected in groundwater samples collected from the monitoring well network installed pursuant to the Coal Combustion Residual (CCR) Rule[1] for the Byproduct Storage Area (BSA) at the C.D. McIntosh Power Plant (MPP or site). Figure 1 presents a site location map and Figure 2 presents a map of the BSA and associated CCR monitoring well network. A statistical analysis of assessment monitoring results identified certain Appendix IV constituents in the uppermost aquifer at statistically significant levels (SSLs) above the groundwater protection standards (GWPS) established for the constituents for the site. The rule allows the owner or operator of a CCR unit to demonstrate that the SSL(s) are due to a source other than the CCR unit—an alternate source.[2] The statistical analysis of assessment monitoring of the CCR monitoring well network identified radium-226+228, arsenic, and lithium to be present at SSLs above the respective GWPS in groundwater samples from CCR monitoring wells listed below (Golder 2018b):

Appendix IV Parameter	GWPS	CCR Monitoring Well at SSL
Arsenic	0.010 mg/L	CCR-11 and CCR-12
Lithium	0.040 mg/L	CCR-5, CCR-6, CCR-9, and CCR-13
Radium-226+228	7.94 pCi/L	CCR-4, CCR-5, CCR-7, CCR-13 and CCR-14

pCi/L - Picocuries per liter

mg/L - milligrams per liter

The BSA is a unit that historically has received CCR generated by Unit 3 at the MPP, including fly ash, bottom ash, synthetic gypsum and stabilized flue gas desulfurization (FGD) material. The BSA encompasses approximately 44 acres and is located east of Unit 3 and adjacent to Fish Lake, Lakes B, C, and D, the south sedimentation pond, and the Stackout pad (Figures 2 and 3). The BSA, constructed in the 1980s, is an above-grade earthen containment unit surrounded by a perimeter ditch system.

[1] Chapter 40 Code of Federal Regulations (CFR), Part 257, Subpart D.

[2] Chapter 40 CFR Section 257.95(g)(3)(ii).

2.0 PURPOSE AND BACKGROUND

2.1 Purpose

The purpose of this report is to provide information about a potential alternate source(s) for radium-226+228 that has been detected in groundwater from CCR monitoring wells at SSLs. The report presents a literature review of naturally occurring radioactive soils at the site and surrounding area (study area) and results of groundwater and soil assessments conducted at the site in February and March 2019.

This ASD report presents a description of the BSA and associated CCR monitoring well network, regional geologic and hydrogeologic conditions, site-specific hydrogeologic settings, a discussion on naturally-occurring radionuclides present in soil, sediment, and groundwater in central Florida; historical mining operations in the study area and at the BSA; and a review of historic aerial photographs and topographic maps of the BSA. Site characterization involved the installation of several soil borings / soil sampling adjacent to the monitoring wells where radium-226+228 was at SSLs in groundwater, as well as, the installation of additional soil borings, soil and sediment sampling, installation of "nature and extent" monitoring wells located hydraulically downgradient of the BSA, and groundwater and surface water sampling to evaluate the nature and extent of radium-226+228, arsenic and lithium for the SSLs in groundwater. Figure 4 presents the CCR monitoring well network (CCR-1 through CCR-14) and recently installed monitoring wells (CCR-15 through CCR-23) and existing MMP compliance monitoring wells[3] MW-24S, MW-25S, and MW-26S, which were used to evaluate the nature and extent of groundwater impacts at the BSA. Figure 4 also shows the location of soil borings drilled as part of site characterization. Site characterization included a geochemical assessment of select soil, sediment, and groundwater samples. This ASD also includes a mineralogical assessment for natural occurring radioactive minerals on select soil samples collected from the boreholes drilled adjacent to the CCR monitoring wells with radium-226+228 at SSLs above the GWPS (CCR-4, CCR-5, CCR-7, CCR-13, and CCR-14) and background well CCR-2.

2.2 Background

Radioactive decay products from naturally occurring radionuclides (e.g. uranium and thorium) are potential sources of radium-226+228 present in groundwater of the uppermost aquifer around and beneath the BSA. Past regional mineral resource evaluations reveal significant uranium-238 and other accessory constituents are associated with the phosphate ore that was mined at and near the BSA. Radium-226 and radium-228 are formed from the radioactive decay of uranium-238 and thorium-232, respectively. Radium-226 has a half-life of 1600 years and decays to form radon-222; radium-228 has a half-life of 5.8 years and decays to form actinium-228 (IAEA 2014).

Mining techniques used at the site prior to the construction of the BSA, typically resulted in fine-grained phosphatic materials (unrecoverable product) being left behind as mine tailings. Based on historic aerial photographs and topographic maps, a significant portion of the BSA footprint was constructed on previously mined land that was reclaimed (backfilled) with these fine-grained phosphatic mine tailings. Naturally occurring radionuclides are associated with phosphatic minerals, therefore, the mine tailings and unmined earth likely contain naturally occurring radionuclides. Also, a smaller portion of the land below ground surface (bgs) at the

[3] MPP compliance monitoring is performed in accordance with the Conditions of Certification for the site.

BSA was likely unmined, due to mining limitations such as pit side-slope stability and setback considerations in proximity of surface water, roads, etc. Therefore, unmined phosphate minerals may exist in these areas.

Several soil borings drilled within the footprint of the BSA before its construction indicate the presence of phosphate materials, including the following:

- TH-10 (phosphate matrix material)
- TH-11 (clayey sand with phosphate)
- BH-11, TH-12 (sandy clay with phosphate)
- BH-13 (cemented silt with phosphate)

The locations of these, and other soil borings, and the associated cross-sections are shown in Appendix A.

3.0 REGIONAL AND SITE SETTING

3.1 Regional Geology

The MPP is located within the Central Florida Phosphate District, an area of economically important, high-grade phosphate deposits in the Lakeland Ridge and Polk Upland geomorphic provinces (Hurst and others 2016). Stratigraphic nomenclature in this District has evolved over the past 100 years, resulting in confusion when comparing literature discussing geology of the mining district. Lithologic/stratigraphic descriptions for older mines use stratigraphic nomenclature developed by Cathcart (1964). The updated stratigraphic nomenclature presented by Scott (1986 and 2016) is commonly used in more recent publications and is referenced in this summary report.

Stratigraphic units present in the region consist of (in descending order; youngest to oldest):

- Up to 25 feet (ft) of Holocene to Pliocene-age sands and clays occur in the Lakeland area (FGS 1991). The Holocene-age sands consist of laterally restricted deposits such as stream flood plains, beaches, swamps, marshes, and lakes. The Pleistocene to upper Pliocene-age sands and clays are locally phosphatic and generally occur as laterally consistent terrace deposits.
- The Miocene to Oligocene-age Hawthorn Group has an approximate thickness between 50 and 100 ft in the Lakeland area and is comprised of the Peace River and Arcadia Formations. In Polk County, the upper portion of the Peace River Formation includes the Bone Valley Member, which is characterized by phosphate-rich, pebbly- and clayey-sand soils overlain by weathered residuum (Scott 1988). Economic quantities of minable, phosphate-bearing minerals occur within the Bone Valley Member. The remainder of the Peace River Formation is undifferentiated, largely being comprised of sandy, phosphatic dolostone interbedded with laterally discontinuous layers of sand, clay, and limestone. The Arcadia Formation underlies the Peace River Formation and is comprised of clayey dolostone and limestone of the Tampa and Nocatee Members (Scott 1988). The top of the Hawthorn Group experienced significant karstic solutioning when sea levels declined, resulting in an irregular erosional surface with abundant depressions and hills. A layer of phosphatic conglomerate is located on this surface, providing further support that the contact between the surficial sands and clays and underlying Hawthorn Group is unconformable (Cathcart 1964). The estimated thickness of the Hawthorn Group in the vicinity of the MPP is approximately 40 to 60 ft (Cathcart 1964).
- Older units underlying the Hawthorn group in the region include the Suwannee Limestone, Ocala Limestone, Avon Park Formation and Oldsmar Formation. These units are Oligocene to Eocene age and are primarily comprised of limestone and/or dolostone, and generally do not contain economic quantities of phosphate-bearing minerals.

3.2 Regional Hydrogeology

The regional hydrogeology is comprised of three major hydrostratigraphic units: the unconfined surficial aquifer, the intermediate aquifer/confining unit, and the Floridan aquifer. The following discusses each system in its regional context:

- The unconfined surficial aquifer underlies all of Polk County and varies from less than 25 to 50 ft thick in northern Polk County (FGS, 1991). This water-table aquifer consists primarily of Holocene- to Pliocene-age sand, clay, shell, and phosphate deposits that are contiguous with the ground surface.

The base of the surficial aquifer system is formed by the clayey, less permeable beds of the Peace River Formation – Bone Valley Member (Scott 1988). The surficial aquifer system is used primarily for residential low-volume irrigation applications (e.g. lawn watering) where high discharge rates are not required (Scott 1988). Transmissivity within the surficial aquifer ranges from 2 to about 20 square ft per day (ft^2/day), where fine clayey sand predominates, to greater than 5,000 ft^2/day in shell beds (Golder 2005). Regional groundwater flow in the surficial aquifer typically mimics ground surface topography. The surficial aquifer is discharged by natural gravity flow, evapotranspiration, discharge to lakes, downward loss into underlying aquifers, and pumping from wells. The surficial aquifer is recharged by rainfall, infiltration and discharge from lakes, and stormwater.

- The hydrostratigraphic unit that underlies the surficial aquifer is referred to as the intermediate aquifer/intermediate confining unit. The intermediate confining unit is largely comprised of clayey sand, sandy clay and clays and underlying clayey dolomite and limestone of the Hawthorn Group.
- The confined, artesian Floridan aquifer is the principal aquifer in Polk County and is the source of major municipal, industrial, and irrigation water supplies. This aquifer occurs primarily within the Ocala Limestone and is locally hydraulically connected with the overlying intermediate aquifer/confining unit, where present, in areas where the confining unit is absent or breached. There is limited recharge to the Floridan aquifer near the MPP due to the presence of the confining unit. Transmissivity of the upper Floridan aquifer is highly variable, and ranges from less than 50,000 ft^2/day to greater than 9,000,000 ft^2/day. The potentiometric surface of the aquifer occurs at an elevation of approximately 75 ft above National Geodetic Vertical Datum or approximately 70 ft bgs in the area of the MPP with regional groundwater flow generally to the south-southwest (FGS 1991). Due to the relatively thick and continuous intermediate confining unit separating the Floridan aquifer from the surficial aquifer, exchange of groundwater between the two aquifers is limited beneath the MPP (Golder 2005).

3.3 Site Hydrogeology and BSA Monitoring Well Network

The BSA is underlain by two regional aquifers, the surficial aquifer and Floridan aquifer which are separated by an intermediate confining unit. The surficial aquifer represents the uppermost aquifer and is approximately 25 ft to 30 ft thick beneath the BSA (Golder 2005). The surficial aquifer consists primarily of Holocene- to Pliocene-age sand, clay, shell, and phosphate deposits. Groundwater in the surficial aquifer generally flows from topographic highs to topographic lows. Underlying the surficial aquifer below the BSA is the intermediate confining unit, which ranges in thickness from approximately 40 to 50 ft and consists of interbedded clay with silty to sandy clay, silt to clayey sand, sand to clayey silt, and limestone (Golder 2005). There is a small component of groundwater flow in the surficial aquifer that is vertically downward toward the intermediate confining unit, and Floridan aquifer. However, this vertical flow component is retarded by the clayey materials of the underlying intermediate confining unit (Golder 2005).

The CCR monitoring network at the BSA includes two background monitoring wells, CCR-1 and CCR-2, and twelve downgradient monitoring wells, CCR-3 through CCR-14[4], installed at waste boundary and screened in the uppermost aquifer. Screened intervals in each of the monitoring wells, range from 15 to 25 ft bgs.

[4] Monitoring well CCR-10 was abandoned and replaced with CCR-10R on March 13, 2018 (Golder 2018a)

Groundwater in the surficial aquifer beneath the BSA has been documented to flow radially away from the BSA, with flow to the north toward Lake B, to the west toward Fish Lake, and to the east toward Lakes C and D (Figures 5 and 6). An area to the southwest of the BSA is hydraulically upgradient or side-gradient to the BSA, depending on site conditions that affect groundwater flow (e.g., surface water elevations, amount of precipitation, etc.), while the areas to the west, north and east are hydraulically downgradient of the BSA.

4.0 REGIONAL PHOSPHATE MINING

Land-pebble phosphate, hard-rock phosphate, and river-pebble phosphate are the three types of phosphatic ore found in Florida. The BSA is in one of the most productive areas of the land-pebble phosphate mining district. The land-pebble phosphate district was of economic interest not only to the minerals and fertilizer industry, but also to the United States Atomic Energy Commission (USAEC) during the twentieth century because land-pebble deposits contain a type of phosphate with elevated concentrations of uranium (Cathcart 1949). This section summarizes historic stratigraphy of mined land[5] near the BSA, uranium associated in the economic mining of calcium phosphate and aluminum phosphate zones, and the history of mining in the study area.

4.1 Historic Mining Related Stratigraphy

The stratigraphy near the BSA that was likely disturbed by historic mine activities, is presented below:

- Surface deposits consisted of windblown sand and swamp muck that range in thickness of up to 5 ft (Cathcart 1964).
- The Bone Valley Member[6] is divided into two distinct stratigraphic units, an upper unit of clayey sand and a lower phosphatic unit. The upper unit ranged in thickness from 0 to 25 ft and averaged about 8 ft (Cathcart 1964). It included light-colored clayey sand containing traces of phosphate nodules at the unit's base characterized by kaolinite and aluminum phosphate minerals.
- The contact between the upper and lower units of the Bone Valley Member is gradational over a few inches throughout most of the United States Geological Survey (USGS) Lakeland, Florida 7.5-minute quadrangle (Cathcart 1964). The lower unit ranges in thickness from minimal thickness to 35 ft, averages about 10 ft and contains most of the economic phosphate (Cathcart 1964). This unit is predominantly a clayey sand or a sandy clay, but beds of loose phosphate sand or fine-grained conglomerate are common. Beds of the lower unit locally contain phosphate nodules that range in size from fine sand to gravel (coarse pebble). The phosphate nodules are predominantly light colored—white, light brown and tan, gray; however, a few are amber or black.
- Due to mining, most of the Bone Valley sediments have been removed and reworked to recover phosphate. Mining in the vicinity of the BSA likely extended and stopped before, at, or slightly into the upper part of the Arcadia Formation**,** which underlies the Peace River Formation (Bone Valley Member). The upper portions of the Arcadia Formation consist of clayey sand and the lower portion of the formation is calcareous, and correlates to the upper portion of the intermediate confining unit at the site.

4.2 Uranium Associated with the Calcium Phosphate and Aluminum Phosphate Zones

The aluminum phosphate zone is formed by downward-percolating acidic water. The aluminum phosphate zone is not a stratigraphic unit but may include the various named and/or renamed beds/members of the Bone Valley strata. The physical and chemical characteristics of the zone vary.

[5] Historic stratigraphic nomenclature differs from the regional/site geology included in Section 3 of this report.

[6] Later in the twentieth century the stratigraphic nomenclature was refined such that Bone Valley Formation isn't currently used, rather, the recent nomenclature includes Peace River Formation and its upper unit is the Bone Valley Member, both of which belong to the Hawthorn Group.

Typically, it is a white, light gray, tan, or gray-green clayey sand containing no visible phosphate except near the base, and in some areas the base of the zone is characterized by lumps, fragments, or beds of sandrock. According to Altschuler, Clarke, and Young (1958), the most completely leached part of the zone is characterized by the aluminum phosphate mineral wavellite, the less weathered parts by calcium aluminum phosphate minerals, and the unweathered part by the calcium phosphate mineral carbonate-rich fluorapatite. The principal clay mineral in the weathered (leached) parts is kaolinite, whereas montmorillonite is characteristic of the unweathered parts. The aluminum phosphate zone is high in uranium, which typically is concentrated in the finest (slime) fraction (Cathcart 1964).

The calcium phosphate zone within the Bone Valley Member underlies the aluminum phosphate zone. Both the aluminum phosphate and calcium phosphate zones are present at the borehole drilled in 1953 by the USAEC, at the 40-acre tract where the southern region of the BSA and the other 26 holes drilled in 1953 at the Lake Parker Tract (Cathcart 1964) (see Section 4.3 of this report). The calcium phosphate zone consists of unconsolidated sand, clayey sand, and sandy clay containing abundant nodules of calcium phosphate. The ore zone, referred to by miners as the matrix section, is contained with the calcium phosphate zone (Cathcart 1964). In general, the coarse phosphate fraction (+20 or +24 mesh) of the calcium phosphate zone contains less phosphorus pentoxide (P_2O_5) and generally more uranium than the fine phosphate fraction (-20 to +150 mesh), which is characteristic of the land-pebble phosphate district (Cathcart 1964). At the Lake Parker Tract (nearest the BSA), however, the coarse phosphate fraction contains more P_2O_5 than the fine fraction (Cathcart 1964). The following is based on the analyses the borehole drilled in 1953 by the USACE at the 40-acre tract where the southern portion of the BSA exists, in accordance with Cathcart (1964):

- Uranium is removed (leached) from the coarser (pebble and sand) fractions of the sample collected from approximately 17 to 26 ft below the 1953 ground surface,
- Uranium is concentrated to some degree in the fine slime fraction[7] of the same 17 to 26 ft bgs sample, and
- Uranium is highly concentrated in the pebble and slime fractions of the 26 to 30 ft bgs sample.

4.3 History of Mining in the Vicinity of the BSA

Mining for phosphate was active at several locations in the Lakeland Quadrangle from about 1914 through the 1980s. Some areas that were completely mined in the early twentieth century exist today as lakes, indicating that mining was likely hydraulic[8] instead of dragline (Cathcart 1964). Early mining, approximately three miles south of Lake Parker in the Pauway area, was by hydraulic methods for the pebble fraction only; later mining was by dragline for the overburden, but hydraulic monitors (water cannons) were used to move ore (Cathcart 1964). Some washer debris from early mine operations was in part re-mined (Cathcart 1964), but the technology at that time was insufficient at recovering the finer grain-size phosphate, thus finer materials were not recovered or were returned to the mine cut (Moudgil, 1992).

[7] Slimes refers to fines, like silts/clays, passing a 150 mesh screen – less than approximately 0.1 millimeter in diameter. The fraction likely left behind and/or unmined at the BSA.

[8] Hydraulic mining is performed using high-pressure jets of water to dislodge rock material.

The American Cyanamid Co. operated its Saddle Creek Mine (T28S/R24E) from 1942 to 1957, and subsequently moved to the Orange Park Mine (Cathcart 1964). The Saddle Creek area was mined with draglines; both pebble and flotation concentrates[9] were recovered. The Orange Park Mine (T27S/R24E) started operating in April 1957 and was active in the 1960s (Cathcart 1964). Mining was by large draglines, flotation cells were used, and hydrocyclones[10] were used for primary desliming. Coronet Phosphate Co. began operation of its Tenoroc Mine (T27S/R24E) in 1951, and the mine continued to operate into the 1970s while the MPP was being developed. Mining at Tenoroc was for flotation concentrate and pebble; draglines were used to mine the overburden and phosphate (Cathcart 1964).

4.3.1 Lake Parker Tract

The Lake Parker tract included nearly 1,300 acres in portions of Sections 28 and 33: T27S/R24E, and Sections 3 and 4: T28S/R24E. The BSA, Fish Lake, and Lakes B, C, and D exist in portions of the same Sections. In 1953, the mining company, Coronet Phosphate Company, drilled 27 holes, under contract to the USAEC, at a spacing of 1 hole per 40-acre block (Cathcart 1964)[11]. The calcium phosphate zone, which includes the economic phosphate deposit, and the aluminum phosphate zone, which includes some possibly economic phosphate and concentrated uranium, are both present in all 27 holes in the Lake Parker tract. Relations of the two zones are graphically shown below.

[9] Concentrate refers to the fine phosphate product, 1.17 mm to 0.104 mm in grain size. Material of this grain size is treated in flotation cells to separate the phosphate from the quartz sand. The phosphate product is the concentrate (Cathcart 1963, page 11).

[10] Hydrocyclones are typically funnel-shaped equipment used to separate materials by particle size.

[11] The Lake Parker tract had not been mined as of the 1964 reference publication date. The area that has recently become the Florida Fish and Wildlife Conservation Commission Teneroc Public Use Area (PUA) was extensively surface mined for phosphate through 1978. The western portion of the PUA was part of a wetland system associated with Lake Parker. The area that became Tenoroc was extensively surface-mined between 1950 and 1978 by the Coronet Phosphate Company, the Smith-Douglass Company, and Borden, Inc.

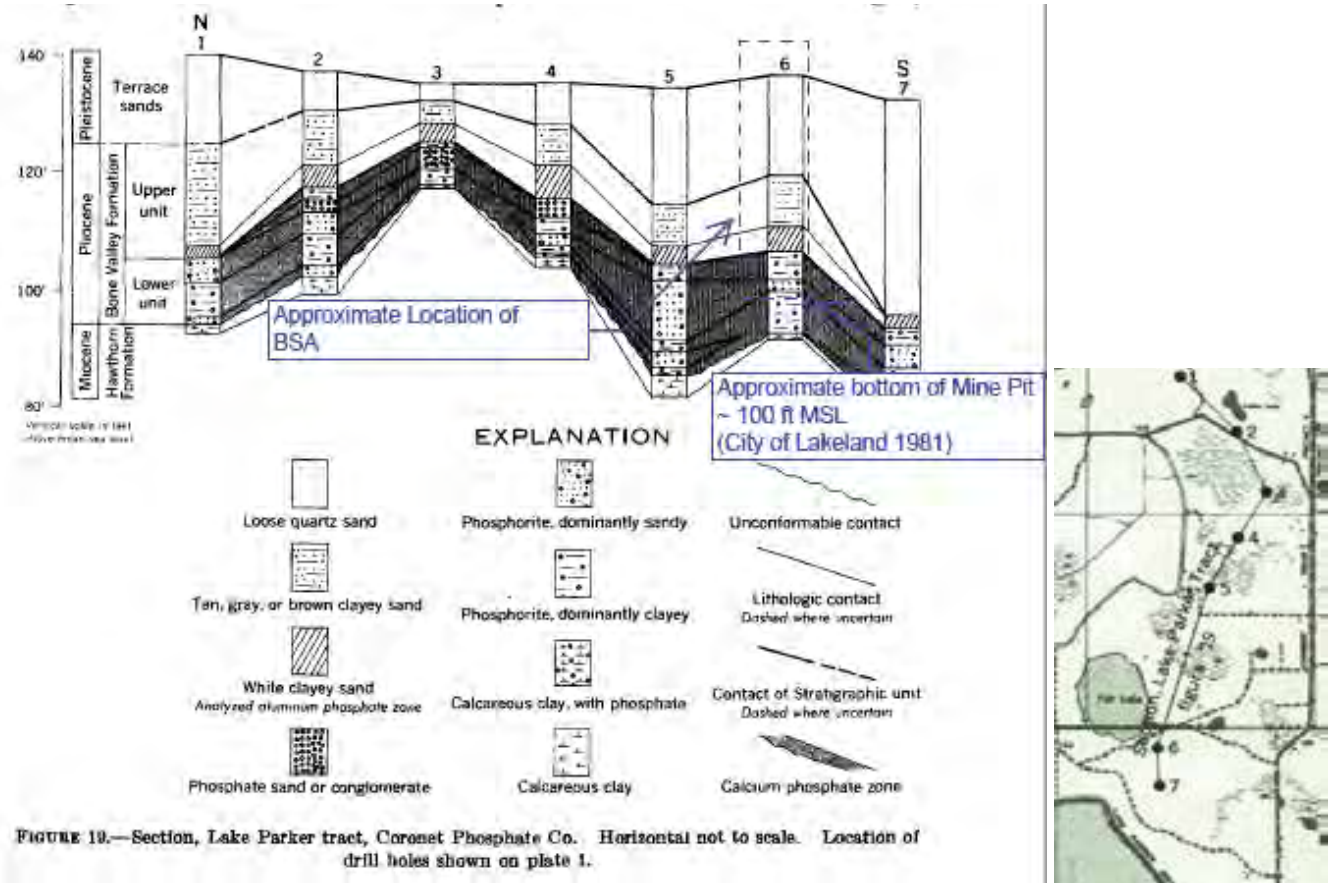


FIGURE 19.—Section, Lake Parker tract, Coronet Phosphate Co. Horizontal not to scale. Location of drill holes shown on plate 1.

Source for above base imagery: Cathcart 1964 – Image to the right of the section depicts approximate section/drill hole locations from Plate 1. Drill hole locations #6 and #7 are nearest the BSA location. Appendix B to this report includes a copy of the City of Lakeland 1981 Landfill Design Survey Drawing No. 229101.

Results of the analyses performed for the USAEC on samples collected in 1953 from the same 40-acre tract where the south region of the BSA exists are summarized below:

TABLE 18.—*Analytical data, aluminum phosphate zone, NE¼NW¼ sec. 4 T. 28 S., R. 24 E.*

[Leaders (....) = below limit of detection, taken as 0.0 percent. Analyses by Coronet Phosphate Co. chemists, under contract to the U.S. Atomic Energy Comm. Pebble = +20 mesh; sand = −20+150 mesh; slime = −150 mesh; head = computed from pebble, sand, and slime fractions. From 0 to 17 ft below surface is loose quartz sand, not sampled; from 30 to 44 ft is calcium phosphate zone]

Fraction	Weight percent	Chemical analyses, in percent					
		P_2O_5	CaO	Insoluble	Al_2O_3	Fe_2O_3	U
Top sample; 17–26 ft below surface							
Pebble	0.3	2.55	1.01	92.42	2.18	0.42	0.0001
Sand	70.4	.33	....	98.13	.28	.18	....
Slime	29.3	6.79	3.36	64.74	14.62	.40	.010
Head	100.0	2.23	.90	88.24	4.48	.25	.002
Bottom sample; 26–30 ft below surface							
Pebble	0.5	14.18	8.52	56.57	11.96	0.68	0.047
Sand	62.4	.80	2.77	96.63	.85	.17	.001
Slime	37.1	5.08	1.50	72.81	12.50	.28	.022
Head	100.0	2.45	2.33	87.61	5.22	.21	.010

Source for above: Cathcart 1964.

The Top sample (17 to 26 ft bgs) tabulated above is described as more thoroughly leached, has less calcium oxide (CaO) and uranium, and slightly less P_2O_5 than the Bottom sample (26 to 30 ft bgs); both have similar aluminum oxide (Al_2O_3) concentrations. The P_2O_5 content, originally as apatite (calcium phosphate), is dissolved and combines with alumina to form the relatively insoluble aluminum or calcium aluminum phosphate minerals. Uranium is not taken up by the aluminum phosphate minerals but combines with the calcium phosphate minerals. Uranium is removed from the coarser fractions of the top sample, is concentrated to some degree in the slime fraction[12] of the top sample and is highly concentrated in the pebble and slime fractions of the lower sample (Cathcart 1964).

4.3.2 Orange Park Mine

The Orange Park Mine consisted of two tracts of land: The Orange tract and the Park tract.

- The Orange tract included land in Section 28: T27S/R24E which includes the north portion of Lake B, which is adjacent to the BSA. Lake B extends into Section 28.
- The Park tract included land in Section 33: T27S/R24E, which includes portions of the BSA, Fish Lake, Lake B, and Lake C; and in Section 5: T28S/R24E, which includes portions of the MPP, Lake Parker, and Horseshoe Lake.

[12] Slimes refers to fines, like silts/clays, passing 150 mesh screen – less than approximately 0.1 millimeter in diameter, which represent the fraction likely left behind and/or unmined at the BSA.

The American Cyanamid Company started mining in the Orange tract in 1957. In 1954, the company drilled 57 holes at the Orange tract and 33 holes at the Park tract, under contract to the USAEC, spaced one in each 40-acre tract in effort to cover most of the property.

In the southern part of the area (in the Park tract), the calcium phosphate zone averaged 9 ft in thickness and included rocks[13] of the Hawthorn Group, Bone Valley Member and/or Peace River Formation at almost every drill hole. The relations are depicted below: the calcium phosphate zone is entirely within the Hawthorn Group Peace River Formation at hole A (shown as Hawthorn Formation on log); at hole B, the calcium phosphate zone is divided about equally between the Hawthorn Group, Peace River Formation and Bone Valley Group (shown as Bone Valley Formation on log); and, at hole C, the calcium phosphate zone is entirely within the Bone Valley Group (Cathcart 1964).

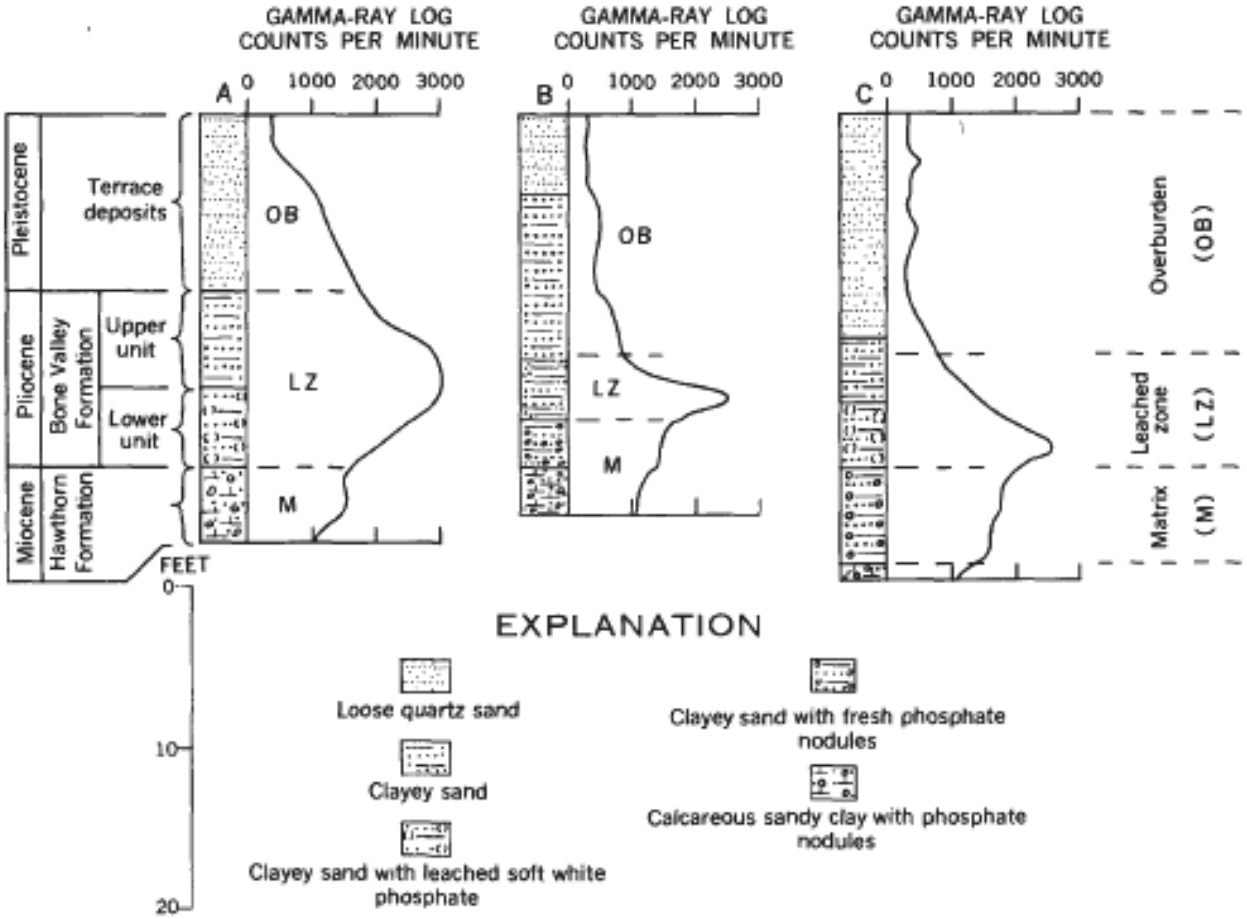


FIGURE 17.—Typical drill hole and gamma logs, Orange Park tract. Location of drill holes shown on plate 1.

Source for above: Page G86 Cathcart US Geologic Survey (USGS) 1964.

[13] In more recent stratigraphic nomenclature, this rock mentioned by Cathcart (1964) likely limestone or dolomite, is likely phosphatic, would today likely be assigned to the Arcadia Formation of the Hawthorn Group.

4.3.3 Teneroc Mine

The Tenoroc Mine is located just east of the BSA with the nearest operations approximately one mile from the BSA in Section 34: T27S/R24E and Section 2 and/or 3: T28S/R24E. Mining by Coronet Phosphate Company started in 1951. In 1953, the company drilled 39 holes under contract to the USAEC. In an area of about 2,000 acres, the holes were drilled at a spacing of one in each 40 acres. One sample each of the aluminum phosphate zone and the calcium phosphate zone were collected at each drill hole and were analyzed. Select laboratory and drilling results for samples, including samples from the Teneroc Mine are listed in Tables 8 and 13 and Figure 18 from Cathcart 1964. The analytical data, screen data, and stratigraphic and economic geologic cross-section shown below further demonstrate the abundance of phosphate present in the study area.

TABLE 8.—*Analytical data, calcium phosphate zone, Lakeland quadrangle*

[NA, no analysis reported. Analytical data by American Cyanamid Co. and Coronet Phosphate Co., under contract to the U.S. Atomic Energy Comm.]

Number of drill holes	Location	Fraction (mesh size)	Chemical analyses, average, (in percent)				Ratio U:P_2O_5 (average)
			P_2O_5	I and A[1]	Acid insoluble	U	
90	Park and Orange tracts, T. 27 S., R. 24 E.	+20	33.9	2.39	7.20	0.012	1:2820
		−20+150[2]	35.0	2.28	4.24	.010	1:3500
		−150	19.8	12.85	32.57	.011	1:1800
		Head[3]	23.1			.008	
39	Tenoroc mine, T. 27 S., Rs. 24 and 25 E.	+24	31.8	2.33	8.14	.015	1:2120
		−24+150[2]	35.2	1.83	1.88	.010	1:3520
		−150	14.7	NA	42.69	.011	1:1340
		Head[3]	12.1			.006	
27	Lake Parker tract, T. 28 S., R. 24 E.	+24	32.2	3.31	9.67	.015	1:2150
		−24+150[2]	31.4	2.01	2.30	.012	1:2620
		−150	16.8	NA	39.55	.010	1:1680
		Head[3]	12.6			.006	

[1] Percent $Fe_2O_3+Al_2O_3$.
[2] Concentrate fraction—quartz sand removed by flotation.
[3] Calculated, assuming that the sand tailing contained 2 percent P_2O_5 and 0.002 percent U.

TABLE 13.—*Summary of screen data and chemical analyses, aluminum phosphate zone, Lakeland quadrangle*

[Analyses by American Cyanamid Co. and Coronet Phosphate Co., published with permission]

Number of samples	Screen data		Chemical analyses, in percent					Ratios	
	Size	Weight percent	P_2O_5	CaO	U	Al_2O_3	Fe_2O_3	CaO:P_2O_5	U:P_2O_5
Lake Parker tract, T. 27 S., R. 24 E.; T. 28 S., R. 24 E.									
27	+24	1.1	13.09	3.97	0.009	11.50	0.56	0.303	1:1450
	+150	68.4	.72	.08	.0001	.56	.26	.111	----------
	−150	30.5	6.10	3.64	.012	8.28	.71	.597	1:510
	Head	100.0	2.52	1.24	.004	3.05	.40	.492	1:630
Tenoroc mine, T. 27 S., R. 24 E.; T. 27 S., R. 25 E.; T. 28 S., R. 24 E.									
39	+24	0.7	11.99	5.88	0.005	8.42	0.80	0.490	1:2390
	+150	72.1	.52	.37	.0001	.41	.31	.712	----------
	−150	27.2	5.42	3.65	.009	6.94	.86	.673	1:600
	Head	100.0	1.93	1.30	.0025	2.28	.46	.674	1:770
Orange tract, T. 27 S., R. 24 E.									
57	+20	1.5	26.02	28.03	0.015	8.29	0.69	1.077	1:1630
	+150	56.7	2.25	2.08	.002	.78	.36	.924	1:1130
	−150	41.8	8.66	6.26	.017	11.10	1.22	.723	1:510
	Head	100.0	5.29	4.23	.008	5.17	.72	.800	1:660
Park tract, T. 27 S., R. 24 E.									
33	+20	3.2	31.84	34.09	0.016	8.11	0.91	1.071	1:1990
	+150	52.0	3.85	3.94	.003	.94	.41	1.023	1:1280
	−150	44.8	14.63	14.05	.018	11.64	1.89	.960	1:810
	Head	100.0	9.58	9.44	.010	5.97	1.09	.985	1:960

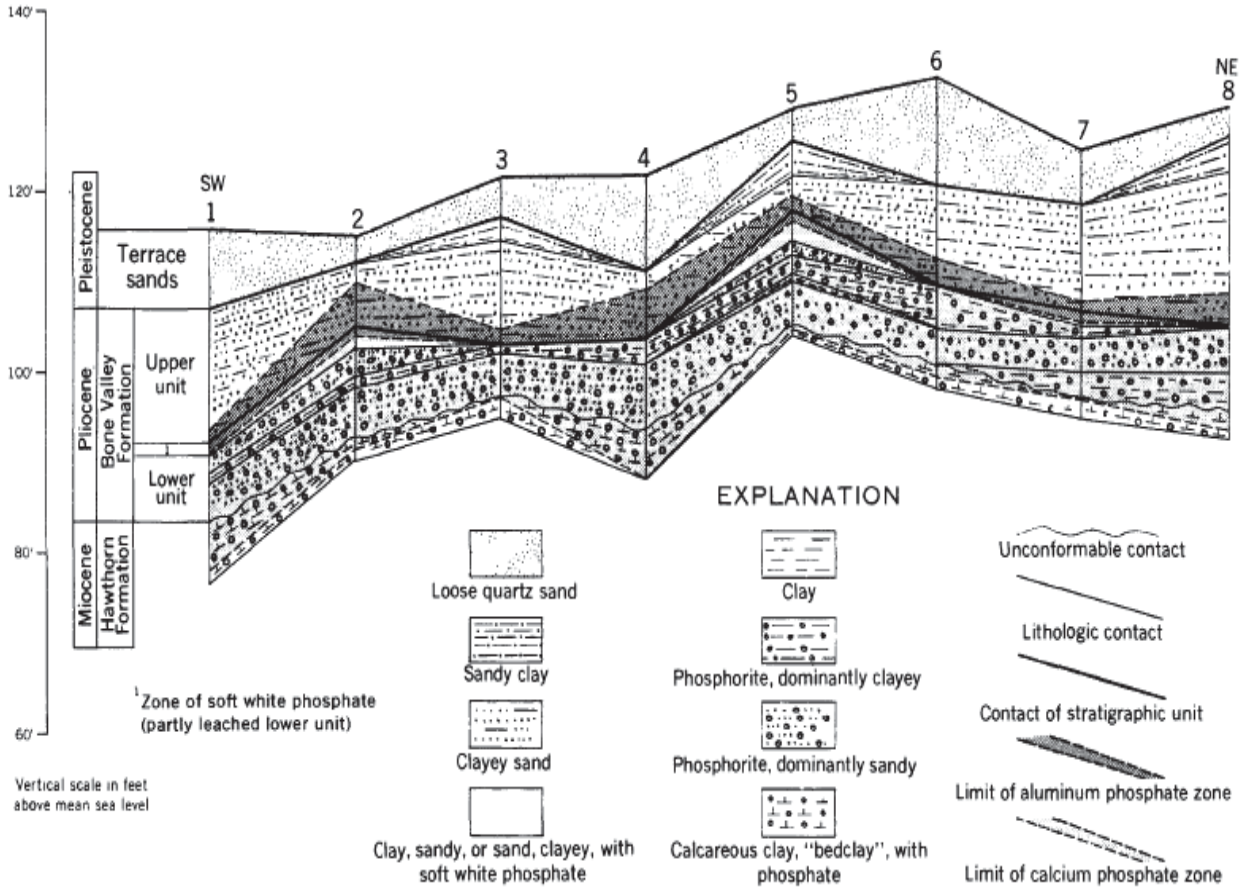


FIGURE 18.—Section, Tenoroc mine, showing relations of stratigraphy and economic geology. Horizontal not to scale. Location of drill holes shown on plate 1.

5.0 NATURALLY-OCCURING RADIONUCLIDE DISCUSSION

The following discussion provides information on the naturally-occurring radionuclides in the regional vicinity of the BSA:

- The Bone Valley Member contains high-grade phosphate rock in land-pebble form and is present and/or was mined just before construction of the BSA. In a report prepared for the USAEC, the USGS indicates the uranium occurrences in the Bone Valley Member were up to 0.1 percent (100 milligrams per kilogram or parts per million (ppm)) and are associated with the land pebble phosphate (Cathcart 1949).
- The BSA is located on former phosphate mined land which also included a mining pit/lake. The BSA and surrounding properties were mined in the early 1970s, at which time only coarser-grained pebble phosphate was recovered and the finer-grained (sand, silt, and clay) phosphate and associated minerals were left behind. An estimate of 20 to 30 percent of the phosphate (contained in the ore) is left behind with these finer-grained materials and/or returned to the mine cut or clay settling pond (Moudgil 1992). The mined land and lake were likely left behind with and/or infilled with these finer-grained material leftovers from mining and surrounding overburden.
- The southeastern coastal marine sediments of the Bone Valley Member contain naturally occurring phosphate minerals. Uranium and its decay products occur in significant quantities within these phosphate minerals and during the mid-1990s, 20 percent of the uranium produced in the United States was extracted from phosphate deposits in central Florida as a byproduct of fertilizer production (World Nuclear Association 2015).
- A typical Central Florida Phosphate district profile with average uranium concentrations listed per stratum is depicted below:

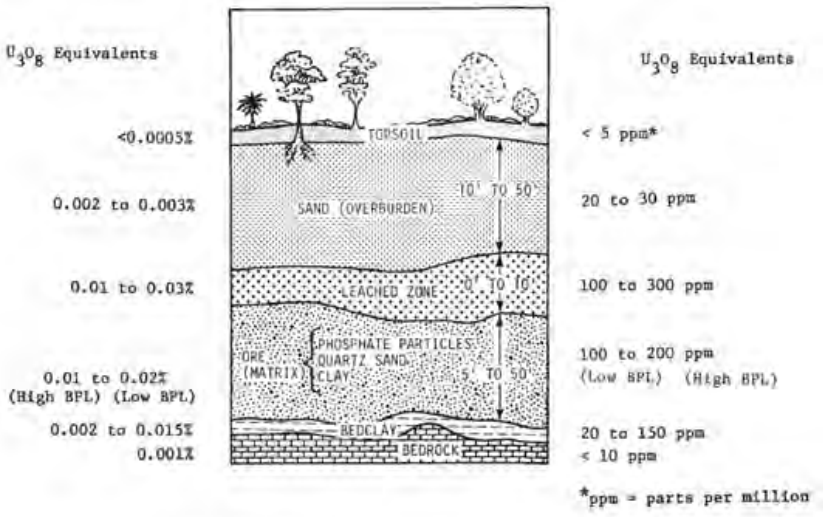


Figure 1.15. Average Uranium Concentrations as U_3O_8 (Altschuler et al 1956, Cathcart 1965, McKelvey 1956) in Typical Central Florida Phosphate District Profile (Fountain and Zellars 1972)

Source for above: Environmental Impact Statement: Central Florida Phosphate Industry: Volume II Background and Alternatives Assessment. EPA Nov 1978.

- Uranium in leached- and matrix-zones exhibits typical concentrations between 100 and 300 parts per million (ppm), which is approximately 1 to 2 orders of magnitude higher than U.S. coals and fly ash, respectively, as depicted below (USGS 1997, Figure 2):

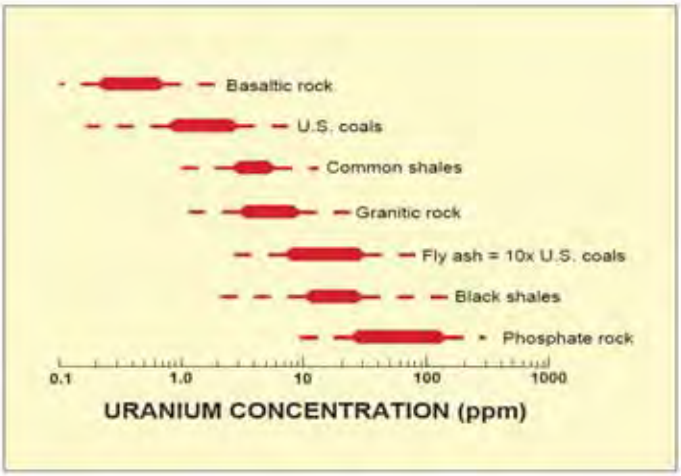
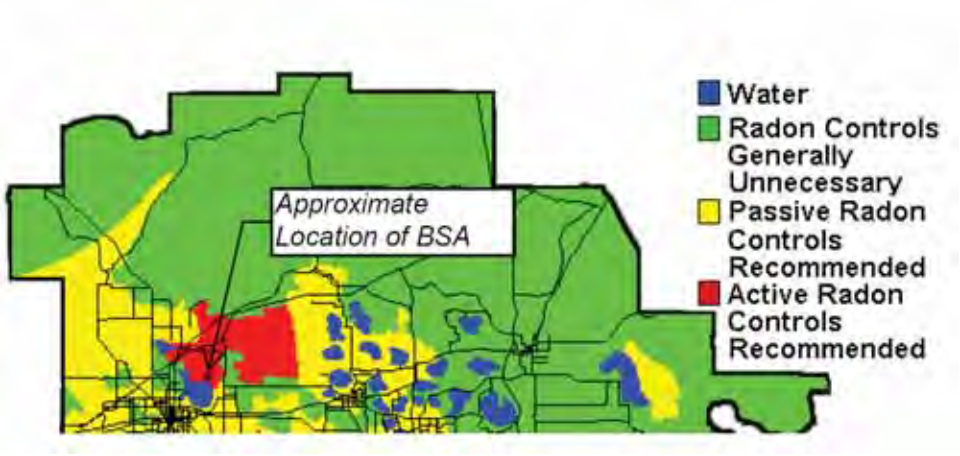


Figure 2. Typical range of uranium concentration in coal, fly ash, and a variety of common rocks.

Source of Figure 2 above: USGS 1997 Fact Sheet FS-163-97

- According to the Florida Department of Health (FDOH), the MPP is located in an area that is known to contain so much naturally-occurring radon, which is a daughter product of radium-226 decay, that the FDOH suggests buildings designed for construction on reclaimed mined land include active engineering controls in the effort to mitigate potential adverse health effects associated with human exposure to the natural radon gas. The following image is an excerpt from the Radon Protection Map for Polk County and depicts the approximate location of the BSA.



Source of above image of northern Polk County: http://www.floridahealth.gov/environmental-health/radon/maps/_images/POLK_LB.GIF (accessed November 16, 2018).

- Elevated levels of radon in structures built on reclaimed land suggest uranium and radium concentrations at shallow depths may be elevated relative to pre-mining levels. This is considered to occur when discarded fine-grained ore and leach zone materials are mixed with overburden materials as part of overall reclamation (Kaufman and Bliss 1977).
- Radon is a noble gas that sorbs little and does not participate in ion exchange; thus, its concentration can increase to high levels. Due to the short half-life (3.8 days) of radon-222, an abundance of radium-226 in subsurface materials is required to sustain high radon-222 levels (Miller 1985).
- Analysis by Miller (1985) suggests that a major fraction of radium-226 is released by alpha-particle recoil of thorium-230 or its precursors (uranium-234, protactinium-234, thorium-234, and uranium-238) to groundwater. Mineralized water competes with radium-226 for ion exchange and sorption sites and consequently results in elevated concentrations of dissolved radium-226. Miller contends that this process may explain the radium-226 concentrations present in groundwater in phosphate mining areas of Polk County.

6.0 AERIAL PHOTOGRAPHS AND TOPOGRAPHIC MAP SUMMARY

Based on Golder's review of documents including historic aerial photographs and topographic maps:

- The ground beneath BSA includes an area in the northeast region of the BSA identified as an abandoned phosphate pit (apparently the former southern finger of what is now identified as Lake B).
- Mining of the BSA and vicinity was active from 1971 through 1975.
- The western portion of the BSA likely was not mined as deep as other portions or at all due to mining limitations like pit side-slope stability setback considerations in proximity of surface water, roads, structures, etc., and therefore, phosphate matrix likely exists in these areas.

A summary of select historic aerial photographs and topographic maps reviewed is provided below. Appendix B provides copies of the photographs and maps:

Before the BSA:

- 1964 Plate 1 USGS Bulletin 1162-G (Cathcart 1964): includes approximate drill hole locations #6 and #7 along the Lake Parker Tract section line depicted in Section 4.3. of this report, drill hole locations #6 and #7 are nearest the BSA.
- 1968 Aerial Photograph: the east bank Horseshoe Lake is visible on the left side of the photograph. BSA vicinity prior to mining or site development activities.
- 1971 FDOT Aerial Photograph: An apparent dragline and perhaps pipelines are visible near the active mining just off the northeast corner of the BSA area.
- November 30, 1971 Aerial Photograph: Mining appears to be starting in the BSA area based on the ground surface appears to be stripped, and some tanks, pipelines, and/or a dragline is visible in the upper west area of the BSA near fish Lake.
- December 2, 1972 aerial photograph (on 1975 USGS Topographic Map): There is a region that appears to have been unmined and seems to have cast overburden at the western portion of the BSA south of Fish Lake between the visibly mined area and where the MPP generating area is now located and shore of Lake Parker, but some mining overburden may have been placed in this area. The mine pits appear to be holding water in the area where Lakes B, C, and D are currently located.
- 1973 Aerial Photograph (provided by Lakeland Electric with labels): Lake D appears to be undergoing mining. Some mine processing equipment appears to exist due south and near the bank of Fish Lake (near the approximate locations of monitoring wells CCR-13 and CCR-14).
- 1975 Aerial Photograph taken February 1, 1975 included on Map 2.1.1 Aerial Topographical Map dated 3/27/1978 for City of Lakeland MPP: mining appears to be recently active in the east and north areas of the BSA. South of the BSA and in the western/southernmost vicinity of the BSA the area is identified as, "Proposed Plant Boundary", and there is a region that appears to have been unmined and seems to have cast overburden at the western region of the BSA south of Fish Lake at the western region of the area between the visibly mined area and the MPP generating area and shore of Lake Parker.

- November 26, 1977 Aerial Photograph: Lakes B, C, and D created and left behind by the phosphate mining are visible. Mining does not appear to be actively ongoing in the photograph.

Post-Commencement of development of the Unit 3 at MPP:

- 1980 Aerial Photograph: Plant construction laydown roads (also drawn on the June 12, 1981 Existing Site Plan map) in the west area of the BSA are visible and some equipment/materials can be seen staged in this area. Lakes, including Lake B in the north BSA, created and left behind by the phosphate mining are visible.
- June 12, 1981 Existing Site Plan and April 7, 1981 Phase I Site Preparation Grading Plan for the City of Lakeland MPP landfill design: Topographic contours surveyed and depicted in the Lake B finger are labeled as abandoned phosphate mining pit in the BSA area. The pit appears to be approximately 20 ft deep with a base elevation of approximately 100 ft (USC&G Survey Datum).
- March 2, 1984 Aerial Photograph: A finger of Lake B, which is a manmade lake formed by mining, is visible in the BSA area. Lakes C and D, which were manmade by mining appear possibly interconnected.

7.0 SITE CHARACTERIZATION FOR RADIUM-226+228

The literature review for an ASD for radium-226+228 in groundwater is supported by data obtained from the February / March 2019 site characterization of and around the BSA, which was completed as part of the nature and extent investigation for radium-226+228, arsenic, and lithium SSLs in groundwater under the auspices of the assessment of corrective measures for the site. An assessment of corrective measures report will be included in the facility's operating records in accordance with §257.105(h)(10).

7.1 Field Investigation

Site characterization field investigation activities included an underground utility survey, collection of soil samples for a mineralogical assessment and chemical analysis, monitoring well installation and development, staff gauge installations, water-level data collection, and surface and groundwater sampling and analysis. Figure 4 presents locations of soil borings and monitoring wells installed and sampled as part of the site characterization.

Six boreholes were drilled using direct push technology (DPT) at locations adjacent to the CCR monitoring wells with radium-226+228 SSLs (CCR monitoring wells CCR-4, CCR-5, CCR-7, CCR-13, and CCR-14) and background CCR monitoring well CCR-2. These soil borings, designated CCR-2A, CCR-4A, CCR-5A, CCR-7A, CCR-13A, and CCR14A, were drilled to 30 ft bgs, and the soil boring logs are presented in Appendix C. Sixteen soil samples were collected from these six soil borings, ranging from 7 ft bgs to up to 29 ft bgs, for analysis. The soil samples are representative of the saturated uppermost aquifer downgradient of the BSA. A detailed mineralogical assessment of these 16 soil samples was conducted by Petrologic Solutions, Inc. under subcontract to Golder (see Section 7.2).

Nine soil borings were also advanced using DPT at proposed nature and extent monitoring well locations CCR-15 through CCR-23 to a depth of approximately 25 ft bgs. Soil samples were collected from these borings, as well as from soil boring CCR-4A, from approximately 24 ft bgs to 25 ft bgs and submitted, under chain-of-custody, for laboratory analysis of total uranium, iron, aluminum, arsenic, lithium, and phosphorus via EPA[14] Method 6020B, and for radium-226 and radium-228 via EPA Method 9315 and 9320, respectively, for samples from soil borings CCR-4A, CCR-15, CCR-16, CCR-18, CCR-22, and CCR-23. Soil samples were also collected from soil boring CCR-4A and from the soil borings advanced for the installation of nature and extent monitoring wells CCR-16 and CCR-20, from approximately 24 ft bgs to 25 ft bgs, and submitted, under chain-of-custody, for laboratory analysis of aluminum, arsenic, iron, and lithium via sequential extraction (EPA Method SW846 6010B SEP).

One shallow soil sample and one shallow sediment sample were also obtained from ground surface to 0.5 ft bgs. The soil sample, designated GSB-1, was collected east of the BSA and the sediment sample, designed Fish Lake-Sed, was collected from the bank of Fish Lake. Both samples were submitted under chain-of-custody for laboratory analysis. Soil sample GSB-1 was analyzed for total uranium, iron, aluminum, arsenic, lithium, and phosphorus via EPA Method 6020B and sediment sample Fish Lake-Sed was analyzed for total organic carbon via EPA Method Walkley-Black (USEA 2004a).

[14] EPA: United States Environmental Protection Agency.

A larger-diameter borehole was drilled, using hollow-stem auger drilling techniques, at locations where soil borings where previously drilled using DPT, to facilitate the installation of nature and extent monitoring wells CCR-15 through CCR-23. The monitoring wells were constructed of 2-inch diameter, flush threaded schedule 40 polyvinyl chloride (PVC), bottom cap, 0.006-inch slotted, 10-foot screen, and riser section.

The borehole annulus was filled with 30-45 graded silica sand to approximately 2 feet above the top of the screen interval, with approximately 2 feet of 3/8-inch bentonite chips placed atop. The remaining annulus was filled from bottom to top via tremie method with a neat Portland cement grout to just below ground surface. Monitoring wells CCR-15 through CCR-22 were completed above-grade with locking well caps and aluminum protective casings set into 2-foot by 2-foot by 4-inch concrete pads. Bollards were installed around each monitoring well for visibility and damage protection. Monitoring well CCR-23 was installed below grade, in a flush-mounted well casing set into a rebar reinforced 2-foot by 2-foot by 4-inch concrete pad without bollards (the well is installed in an access road). The newly-installed nature and extent monitoring wells were surveyed for elevation (top of well casing) and location and staff gauges were installed in Fish Lake and Lakes B, C, and D for surface water level elevation. Table 1 presents a summary of monitoring well construction details.

After development of the newly-installed wells, groundwater was collected from nature and extent monitoring wells CCR-15 through CCR-23, MW-24S, MW-25S, and MW-26S. Surface water samples were also obtained from Fish Lake, and Lakes B, C, and D. Chemical/geochemical analysis of groundwater and surface water samples included field parameters and radionuclides, nutrients, and major cations and anions. The rationale and methods used are as follows:

Field Parameters: Parameters measured in the field included pH, dissolved oxygen, oxidation reduction potential (ORP), conductivity, and temperature. These parameters were used to evaluate general geochemical conditions in the groundwater and support geochemical modeling.

Metals: Analysis of Appendix III and IV metals and uranium to better understand the geochemical composition of groundwater and surface water. Metals analysis allows for the delineation of a potential plume, evaluation of mineral saturation indices, and evaluation of background contributions from natural sources or anthropogenic sources (USEPA 1998).

Radionuclides: Analysis of radium-226 and radium-228 to better understand the nature and extent of radium in groundwater and surface water and evaluation of background contributions from natural or anthropogenic sources (USEPA 2014).

Major Cations, Anions, and Nutrients: Geochemical modeling of mineral solubility, metals attenuation and background contributions requires analysis of major cations and anions because they affect and participate in sorption and mineral dissolution or precipitation reactions.

The groundwater samples were analyzed using the following methods:

- pH following SW846 9040C “pH Electrometric Measurement” (USEPA 2004b)
- Total dissolved solids standard method (SM) 2540C “Total Dissolved Solids Dried at 180°C” (USEPA 1993a)
- Total hardness following SM 2340B (USEPA 1997)
- Chloride, fluoride, and sulfide following USEPA SW846 9056A “Determination of Inorganic Anions by Ion Chromatography”, Revision 1 (USEPA 2007c)

- Nitrate and nitrite following EPA 353.2 “Determination of Nitrate-Nitrite Nitrogen by Automated Colorimetry, Revision 2.0” (USEPA 1993b)
- Alkalinity following SM 2320B “Alkalinity by Titration” (USEPA 2005a)
- Phosphorus following SM 4500-P E “Phosphorus by Ascorbic Acid Method” (USEPA 2005b)

7.2 Summary of Results for Radium-226+228

Table 2 presents a summary of soil and analytical results. Radium-226+228 detected in soil samples from soil borings advanced in the surficial aquifer around the BSA was measured in six samples (soil sample CCR-4A, CCR-15, CCR-16, CCR-18, CCR-22, and CCR-23) as were total uranium and total phosphorus. Radium-226+228 ranged from approximately 0.6 pCi/g (CCR-18) to 76.6 pCi/g (CCR-4A). The presence of radium-226+228 correlates to the presence of uranium in soil samples of the surficial aquifer with a coefficient of determination (R^2) of 0.99, while total uranium also correlates to total phosphorus in soil samples of the surficial aquifer with a coefficient of determination of 0.80 (Appendix D). Based on these correlations and the known consistency of typical CCR (USGS 1997), it is considered highly likely that the presence of radium is due to the decay of naturally-occurring uranium in soils.

Results from a March 2019 groundwater sampling event for radium-226+228 in groundwater collected from nature and extent monitoring wells CCR-15, CCR-16, CCR-18, CCR-22, CCR-23, MW-25S, and MW-26S and for radium-226+228 in surface water samples collected from Fish Lake and Lakes B, C, and D are presented on Figure 7 and the results are summarized in Table 3. Historical groundwater sampling results for radium-226+228, from CCR monitoring wells, from August 2016 through January 2019, are also included on Figure 7 and in Table 4.

Radium-226+228 concentrations in groundwater sampled in March 2019 ranged from 1.1 pCi/L to 42.7 pCi/L. The concentration of radium-226+228 was above the site-specific GWPS of 7.94 pCi/L (Golder 2018b) in groundwater samples collected from nature and extent monitoring wells CCR-15, CCR-16, and CCR-22. The concentration of radium-226+228 detected in the groundwater sample collected from nature and extent well CCR-16 was higher compared to the corresponding hydraulically upgradient CCR monitoring well CCR-5 (Figure 7). Radium-226+228 concentration in groundwater varies in the vicinity of the BSA, likely due to natural variability of radium-226+228 in soils as well as in the phosphatic mine tailings used to backfill the mined area where the BSA was constructed. Radium-226+228 in lake samples (Fish Lake and Lakes B, C, and D) ranged from 1.4 pCi/L in Fish Lake to 5.3 pCi/L[15] in Lake D. Given the radial pattern of groundwater flow away from the BSA (Figure 5 and 6), Fish Lake, and Lakes B, C, and D are downgradient receptors of groundwater flowing from the BSA, and the concentration of radium-226+228 detected in these water bodies is below the Florida surface water quality criteria of 5 pCi/L (Chapter 62-302.530, F.A.C.). Furthermore, based on historical groundwater data (August 2016 to January 2019) of samples collected from the CCR monitoring well network, radium-226+228 shows a stable or decreasing trend at each CCR monitoring well (Table 4).

[15] Reported value meets State of Florida surface water quality criteria (Chapter 62-302.530, F.A.C.) for radium-226+228, in accordance with the rounding procedures described in the FDEP memorandum "Rounding Analytical Data for Site Rehabilitation Completion", dated November 17, 2011.

These soil and groundwater findings support the literature review indicating that the BSA and surrounding area are underlain by fine-grained phosphatic mine tailings and/or unmined phosphate deposits. Based on those findings, there is the high likelihood that radium-226+228 detected in groundwater is present as a product of the decay of a naturally-occurring uranium and thorium in soil and/or the mine tailings/phosphate deposits.

Further evidence for a naturally-occurring source for radium-226+228 in groundwater below and near the BSA is presented in a detailed mineralogical assessment of the underlying soils conducted by Petrologic Solutions, Inc. (Appendix E). The mineralogical assessment of soil samples included petrographic analysis, quantitative X-Ray Diffraction (XRD), Scanning Electron Microscopy (SEM), and additional bulk geochemistry. Results of the chemical and mineralogical assessment, coupled with Site and regional mineral resource evaluations, reveal the presence of naturally-occurring radioactive minerals associated with the phosphate ore mined at and near the BSA. These minerals include: eylettersite (thorium-bearing aluminum phosphate); wavellite (uranium-bearing aluminum phosphate); collophane, apatite, hydroxyapatite, and fluorapatite (uranium-bearing calcium phosphates) and zircon, rutile, and ilmenite (uranium-bearing oxides). As such, radium-226+228 present in groundwater below and in the vicinity of the BSA is considered to be naturally occurring and not due to a release from the BSA.

8.0 SUMMARY AND CONCLUSIONS

Radionuclides including radium-226 and radium-228 are naturally occurring in the study area and are associated with minerals in the phosphate matrix that was mined by the phosphate mining industry during the 1970s at the BSA prior to its construction. Radionuclides, including uranium, were detected in samples collected from approximately 26 to 30 ft bgs at the BSA during the 1950s. The upper portion of the phosphate matrix was mined in the north and west region of the BSA and phosphate matrix, tailings, and/or remnants, including the associated radionuclides, were left behind as backfill beneath the current BSA. Furthermore, a portion of the land beneath the BSA was likely not mined or partially mined, due to the proximity of the existing lakes, roads, and the MPP and therefore, phosphate ore likely exists in these areas. Based on the analysis presented in this report, uranium is most concentrated in the deeper phosphate bearing portions at the BSA site (e.g., approximately 26 to 30 ft bgs).

As previously presented, uranium concentrations in phosphate-bearing rocks exhibit typical uranium concentrations of up to 300 ppm, which is approximately 1 to 2 orders of magnitude higher than U.S. coals and fly ash, respectively (USGS 1997). The naturally occurring radionuclides in phosphate ore and mine tailings left behind underneath the BSA are conceivably at higher concentrations than CCR.

Findings of the geochemical assessments conducted for soil and groundwater at the site indicate that the BSA and surrounding area are underlain by fine-grained phosphatic mine tailings and/or unmined phosphate deposits. The concentration of radium-226+228 in groundwater in the vicinity of the BSA is shown to be variable, likely due to natural variations in soils as well as due to variations of radium-226+228 present in the phosphatic mine tailings used to backfill the mined area where the BSA was constructed. Furthermore, the detailed mineralogical assessment of the underlying soils conducted by Petrologic Solutions, Inc. reveal significant uranium and other accessory constituents associated with the phosphate ore mined at and near the BSA.

Therefore, based on the evidence presented herein, it is the opinion of Golder that radium-226+228 present in groundwater below and in the vicinity of the BSA is naturally occurring and not due to a release from the BSA.

9.0 PROFESSIONAL CERTIFICATION

This Alternative Source Demonstration for radium-226 and radium-228 in groundwater has been prepared for the Byproducts Storage Area at the C.D. McIntosh Power Plant, Lakeland, Florida. I hereby certify that the information contained in this report is accurate to the best of my knowledge as required by 40 CFR §257.95(g)(3)(ii).

Golder Associates Inc.

Samuel F. Stafford, P.E.

Florida Professional Engineer No. 78648

Certificate of Authorization No. 1670

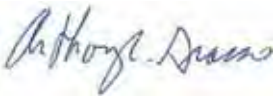
Date 10 JUNE 2019

10.0 SIGNATURE PAGE

Golder Associates Inc.

Samuel F. Stafford, PE
Senior Project Engineer

Gregory A. O'Neal II, PG
Senior Geologist



Anthony L. Grasso, PG
Principal and Practice Leader

GAO/SFS/ALG/sjh

11.0 REFERENCES

Altschuler, Z. S., Clarke, R. S., Jr., and Young, E. J., 1958, Geochemistry of Uranium in Apatite and Phosphorite: USGS Professional Paper 314-D. US Government Printing Office, Washington.

Cathcart, J.B., 1949, Distribution of Uranium in the Florida Phosphate Field. USGS Trace Elements Investigations Report 85. US Government Printing Office, Washington.

Cathcart, J.B., 1963, Economic Geology of the Keysville Quadrangle Florida. USGS Survey Bulletin 1128. US Government Printing Office, Washington.

Cathcart, J.B., 1964, Economic Geology of the Lakeland Quadrangle Florida. USGS Survey Bulletin 1162-G. US Government Printing Office, Washington.

City of Lakeland, 1981. FGD Sludge Landfill Design – MPP. Lakeland, Florida.

Code of Federal Regulations, 2015 April. Chapter 40, Part 257, Subpart D.

Florida Geological Survey, 1991. FGS Special Publication No. 32. Florida's Ground Water Quality Monitoring Program Hydrogeological Framework. Tallahassee, FL.

Golder. 2005. Phase 2 Contamination Assessment Report, C.D. McIntosh, Jr. Power Plant, Lakeland, Florida, Volume I, II, and III, dated January 24.

Golder. 2018a. Abandonment and Replacement of Monitoring Well CCR-10, Lakeland Electric, C.D. McIntosh Power Plant, Lakeland, Florida, dated April 25.

Golder. 2018b. Statistically Significant Level Evaluation, CCR Groundwater Monitoring – Byproduct Storage Area, Lakeland Electric C.D. McIntosh Power Plant, dated October 15.

Hurst, M.V. and others, 2016. Central Florida Phosphate District, Third Edition, Southeast Geological Society, Field Trip Guidebook No. 67, dated July 30.

International Atomic Energy Agency (IAEA). 2014. The Environmental Behaviour of Radium: Revised Edition, Technical Reports Series No. 476, STI/DOC/010/476, dated March 2014.

Kauffman, R.F. and J.D. Bliss, 1977. Effects of Phosphate Mineralization and the Phosphate Industry on Radium-226 in Groundwater in Central Florida. EPA Office of Radiation Programs. Las Vegas, Nevada. https://nepis.epa.gov/Exe/ZyPDF.cgi/9100Q1RV.PDF?Dockey=9100Q1RV.PDF

Miller, R. L, and Sutcliffe, Jr. H. 1985. Occurrence of Natural Radium-226 Radioactivity in Groundwater of Sarasota County, Florida. USGS Survey Water-Resources Investigations Report 84-4237. Tallahassee, Florida. https://pubs.usgs.gov/wri/1984/4237/report.pdf

Moudgil, B. M., 1992: Enhanced Recovery of Coarse Particles during Phosphate Flotation. FIPR # 86-02-067. University of Florida Mineral Resources Research Center, Gainesville, Florida. http://fipr.state.fl.us/wp-content/uploads/2014/12/02-067-099Final.pdf

Skeppstrom, K., and Olofsson, B., Uranium and Radon in Groundwater: An Overview of the Problem, European Water, Issue 17/18, pp. 51-62, 2007. http://www.ewra.net/ew/pdf/EW_2007_17-18_05.pdf

Scott, Thomas M., 1988. FGS Bulletin No. 59, The Lithostratigraphy of the Hawthorn Group of Florida, Florida Geological Survey, Tallahassee, FL.

USEPA, 1978. Environmental Impact Statement: Central Florida Phosphate Industry: Volume II Background and Alternatives Assessment. Atlanta, GA.

USEPA, 1993a. SM 2530C Total Dissolved Solids.

USEPA, 1993b. Method 353.2, Revision 2.0: Determination of Nitrate-Nitrite Nitrogen by Automated Colorimetry.

USEPA, 1997. SM 2340B Total hardness, Sequential.

USEPA, 1998. SW-846: 6010C Inductively Coupled Plasma-Atomic Emission Spectrometry, Revision 3; 6020B Inductively Coupled Plasma-Mass Spectrometry, Revision 2; 6020A Inductively Coupled Plasma-Mass Spectrometry, Revision 1.

USEPA, 2004a. SW846 9060A: Total Organic Carbon by catalytic combustion or wet chemical oxidation.

USEPA, 2004b. SW-846/SM 9040C, pH Electronic Measurement.

USEPA, 2005a. SM2320 Carbonate, Bicarbonate, and Total Alkalinity by Titration.

USEPA, 2005b. SM 4500-P Determination of Phosphorous by Ascorbic Acid.

USEPA, 2014. Radium isotopes following USEPA SW846 9315 and 9320 “Alpha-Emitting Radium Isotopes by Alpha Scintillation” and “Radium 228”.

USGS 1997. Radioactive Elements in Coal and Fly Ash: Abundance, Forms, and Environmental Significance. USGS Fact Sheet FS-163-97 https://pubs.usgs.gov/fs/1997/fs163-97/FS-163-97.pdf

World Nuclear Association, 2015. Uranium from Phosphates http://www.world-nuclear.org/information-library/nuclear-fuel-cycle/uranium-resources/uranium-from-phosphates.aspx

TABLES

Table 1: Summary of CCR Monitoring Well and Nature and Extent Monitoring Well Construction Details
Byproduct Storage Area
Lakeland Electric - C.D. McIntosh Jr. Power Plant

Well ID	Date Installed	Northing (ft NAD83)	Easting (ft NAD83)	Ground Surface Elevation (ft NAVD88)	TOC Elevation (ft NAVD88)	Stick-up Height (ft ags)	Well Depth (ft bgs)	Screen Interval Depth (ft bgs)
CCR-1	6/24/2016	1362405.2	681287.1	138.3	141.30	3.0	25.7	15.7 - 25.2
CCR-2	6/23/2016	1362203.9	681787.6	137.6	140.57	3.0	25.8	15.7 - 25.2
CCR-3	6/23/2016	1362334.6	682451.3	137.5	137.04	-0.5	25.8	15.9 - 25.3
CCR-4	6/24/2016	1362450.0	683042.7	140.3	143.13	2.9	25.7	15.6 - 25.1
CCR-5	6/22/2016	1362716.0	683376.9	138.6	141.07	2.5	26.2	16.2 - 25.7
CCR-6	6/22/2016	1363168.4	683578.6	138.5	141.34	2.9	25.7	15.7 - 25.2
CCR-7	6/22/2016	1363631.9	683772.2	139.1	142.10	3.0	25.8	15.7 - 25.2
CCR-8	6/22/2016	1363917.6	683411.6	139.4	142.12	2.7	26.0	15.9 - 25.4
CCR-9	6/21/2016	1364085.2	683045.3	138.6	141.67	3.1	25.6	15.5 - 25.0
CCR-10 *	6/20/2016	1364309.4	682722.2	135.9	138.54	2.6	24.5	14.4 - 23.9
CCR-10R	3/13/2018	1364262.1	682706.3	133.8	133.56	-0.2	24.7	14.6 - 24.1
CCR-11	6/20/2016	1363835.4	682577.2	134.3	137.12	2.8	25.6	15.6 - 25.1
CCR-12	6/20/2016	1363353.1	682430.5	134.1	136.99	2.9	25.8	15.7 - 25.2
CCR-13	6/21/2016	1362936.6	682164.1	135.0	137.95	3.0	25.7	15.6 - 25.1
CCR-14	6/21/2016	1362771.1	681761.2	135.8	138.70	2.9	25.5	15.4 - 24.9
CCR-15	2/18/2019	1362341.3	683123.5	141.8	144.65	2.9	25.7	15.4 - 25.0
CCR-16	2/18/2019	1362533.2	683385.6	141.2	144.10	2.9	25.6	15.3 - 24.9
CCR-17	2/19/2019	1363019.9	683712.7	142.9	145.80	2.9	25.7	15.4 - 25.0
CCR-18	2/18/2019	1363631.1	683869.7	138.2	140.81	2.6	25.9	15.6 - 25.2
CCR-19	2/15/2019	1364205.4	683064.5	133.8	136.47	2.7	25.8	15.5 - 25.1
CCR-20	2/14/2019	1363855.5	682474.9	133.1	136.05	2.9	25.2	14.9 - 24.5
CCR-21	2/13/2019	1363454.0	682331.4	134.5	137.12	2.6	25.9	15.6 - 25.2
CCR-22	2/13/2019	1363017.4	682078.7	134.0	137.51	3.5	25.1	14.8 - 24.4
CCR-23	2/12/2019	1362812.1	681744.7	136.2	135.78	-0.5	25.4	15.1 - 24.7

Notes:

CCR Monitroing Wells are CCR-1 through CCR-14 and CCR-10R.

Nature and Extent Monitoring Wells are CCR-15 through CCR-23.

ft = feet

NAD83 = North American 1983 Datum

NAVD88 = North American Vertical Datum of 1988

ft bgs = feet below ground surface

ft ags = feet above ground surface

Checked by: MSI 5/8/19

Reviewed by ALG 6/10/19

* Monitoring well CCR-10 was abandonend and replaced with CCR-10R on 3/13/2018.

Table 2: Summary of Soil / Sediment Analytical Results
Byproduct Storage Area
Lakeland Electric - C.D. McIntosh Jr. Power Plant

Sample ID	Depth (ft bgs)	Date Sampled	Analyte									
			Aluminum (mg/Kg)	Arsenic (mg/Kg)	Iron (mg/Kg)	Lithium (mg/Kg)	Uranium (mg/Kg)	Phosphorus (mg/Kg)	Radium-226 (pCi/g)	Radium-228 (pCi/g)	Total Organic Carbon (%)	Fractional Organic Carbon (g/g)
CCR-4A	24-25	2/11/19	28,000 B	ND	2,800	ND	280 F1	130,000	75.9	0.726	NA	NA
CCR-15	24-25	2/18/19	8,000 B	ND	98	0.79 J	4.5	2,800	0.702	0.328	NA	NA
CCR-16	24-25	2/18/19	19,000 B	ND	450	2.9	4.3	3,000	1.14	1.07	NA	NA
CCR-17	24-25	2/19/19	5,900 B	ND	97	ND	0.92	1,000	NA	NA	NA	NA
CCR-18	24-25	2/15/19	2,600 B	ND	79	0.45 J	1.2	800	0.443	0.196 U	NA	NA
CCR-19	24-25	2/15/19	2,000 B	ND	62	ND	0.50	310	NA	NA	NA	NA
CCR-20	24-25	2/14/19	21,000 B	1.4 J	460	ND	40	11,000	NA	NA	NA	NA
CCR-21	24-25	2/13/19	1,800 B	ND	110	ND	0.51	210	NA	NA	NA	NA
CCR-22	24-25	2/12/19	96,000 B	ND	8,400	15	280	90,000	65.2	1.49	NA	NA
CCR-23	24-25	2/12/19	20,000 B	3.9 J	4,400	4.8 J	58	78,000	14.7	0.359	NA	NA
GSB-1	0-0.5	2/21/19	4,000 B	1.4 J	1,200	ND	21	21,000	NA	NA	NA	NA
Fish Lake - Sed	0-0.5	2/20/19	N/A	NA	NA	NA	NA	NA	NA	NA	1.300	0.013

Notes:

ft bgs = feet below ground surface

mg/Kg = milligrams per kilogram

pCi/g = picocuries per gram

g/g = gram per gram

B - Compound was found in the blank and sample.

F1 - Matrix Spike/Matrix Spike duplicate (MS/MSD) Recovery is outside acceptance limits, and the concentration is an approximate value. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample recovery was within acceptable limits.

J - Result is less than the reporting limit (RL) but greater than or equal to the method detection limit (MDL) and the concentration is an approximate value.

U - Result is less than the sample detection limit.

ND - Not detected

NA - Not analyzed

Checked by: SJH 5/23/19
Reviewed by: ALG 6/10/19

Table 3: Summary of Radium 226 & 228 in Nature and Extent Groundwater and Suface Water Byproduct Storage Area
Lakeland Electric - C.D. McIntosh Jr. Power Plant

Monitoring Well / Surface Water	Date Sampled	Radium 226 (pCi/L)	Radium 228 (pCi/L)
CCR-15	3/7/19	19.2	5.9
CCR-16	3/6/19	23.3	19.4
CCR-17	3/6/19	NA	NA
CCR-18	3/6/19	0.5	0.7 U
CCR-19	3/6/19	NA	NA
CCR-20	3/7/19	NA	NA
CCR-21	3/7/19	NA	NA
CCR-22	3/7/19	26.3	1.4
CCR-23	3/7/19	6.5	0.8
MW-24S	3/5/19	NA	NA
MW-25S	3/6/19	0.5	0.7 U
MW-26S	3/5/19	0.5	0.6 U
Fish Lake	3/11/19	0.7	0.7 U
Lake B	3/11/19	1.6	0.8 U
Lake C	3/13/19	1.5	0.7 U
Lake D	3/13/19	4.0	1.3

Notes:
Radium concentrations reported in picocuries per liter (pCi/L)
U - Result is less than the sample detection limit
NA - Not Analyzed

Checked by: SJH 5/10/19
Reviewed by: ALG 6/10/19

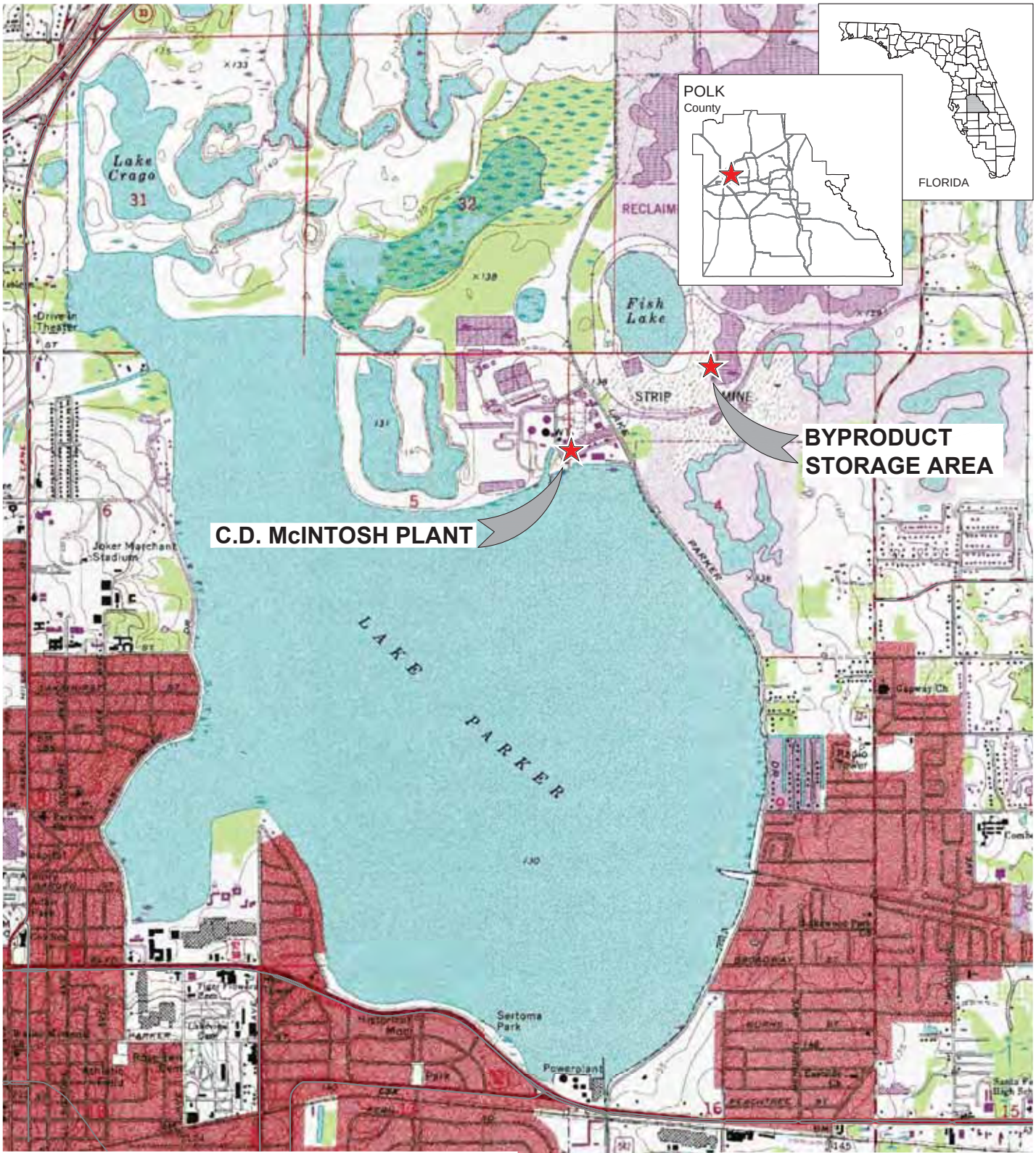
Table 4: Summary of Radium 228 & 228 Concentrations in Groundwater (CCR Monitoring Wells)
Byproduct Storage Area
Lakeland Electric - C.D. McIntosh Jr. Power Plant

Event	Date Sampled	CCR Monitoring Well Designation													
		CCR-1	CCR-2	CCR-3	CCR-4	CCR-5	CCR-6	CCR-7	CCR-8	CCR-9	CCR-10 / CCR-10R*	CCR-11	CCR-12	CCR-13	CCR-14
Background	8/4/2016	3.23	8.84	24.7	39.7	18.7	9.71	7.24	22	3.77	2.79	9.21	3	29.7	25.7
Background	9/14/2016	3.97	4.96	6.91	41	18	7.63	12.8	3.99	20.6	3.02	10.4	2.75	0.629	30.7
Background	10/12/2016	4.07	6.55	6.11	47.8	18.6	4.9	6.83	4.32	20.1	1.93	11.4	2.84	70.2	28.4
Background	11/2/2016	4.71	6.52	6.7	48.2	17	3.7	5.9	3.71	21.4	1.28	8.05	3.06	74.6	27
Background	12/14/2016	5.42	4.56	7.05	77.3	19.3	5.77	14.1	5.84	22.2	1.64	10.6	2.87	85.7	42.1
Background	1/11/2017	5.02	5.83	6.19	82.2	19.5	5.81	17.9	5.56	21.7	2.01	10.6	2.37	81.4	36.4
Background	2/1/2017	4.31	5.73	5.61	71.7	16.2	6.07	16.3	7.37	18.4	1.18	9.13	2.48	70.9	35.8
Background	3/15/2017	4.39	6.07	4.43	59	16.2	6.53	15.1	8.77	14.4	1.58	5.89	2.68	60.9	29.4
Background	4/12/2017	4.62	5.54	4.62	66.8	16	7.3	19.4	9.28	15.3	1.5	7.78	2.11	52.6	32.4
Background	5/17/2017	3.58	5.07	3.81	71.1	13.8	8.53	20.6	7.32	13.5	1.38	8.93	2.01	30.3	24.8
Background	6/13/2017	4.87	5.24	3.87	56.4	16.4	6.58	17.3	4.27	18.2	1.15	10.2	3.19	8.98	42.2
Background	7/11/2017	4.59	4.54	5.02	71.9	15.9	6.86	12.3	4.41	14.4	1.02	7.11	2.46	5.06	35.1
Background	8/15/2017	5.65	2.41	4.17	61.7	17.2	4.05	4.93	5.27	15.5	0.864	7.99	2.55	36.2	28.2
Detection	10/13/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Detection	11/30/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Detection	12/7/2017	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Assessment	4/12/2018	6.6	5.8	3.9	45.8	18.8	4.8	11.7	6.4	0.86	3.6	1.3	3	57.4	23.3
Assessment	7/18/2018	6.8	3.2	4.1	51	21.1	2.9	2.9	5.5	9.1	2.7	6.1	3.6	40.6	17.5
Assessment	1/8/2019	6.8	2.8	4.6	38.2	13.3	2.3	7.2	4.8	11.1	3.4	4.8	4.8	69.3	23.0

Notes:
Dates shown are represntative of sampling events that took place over multiple days
Radium values represent sum of Radium 226 and Radium 228
All concentrations reported in picocuries per liter (pCi/L)
NA - Not analyzed
* Monitoring well CCR-10 was abandonend and replaced with CCR-10R on 3/13/2018

Checked by: SJH 5/10/19
Reviewed by: ALG 5/24/2019

FIGURES



REFERENCE(S)

1.) USGS TOPOGRAPHIC MAP, 7.5 MIN. QUADRANGLE MAP SERIES: LAKELAND QUADRANGLE, POLK COUNTY, FLORIDA.

CLIENT
LAKELAND ELECTRIC

CONSULTANT
GOLDER

YYYY-MM-DD	2019-01-08
DESIGNED	SFS
PREPARED	BCL
REVIEWED	ALG
APPROVED	SFS

PROJECT
BSA CCR GROUNDWATER
C.D. McINTOSH POWER PLANT
LAKELAND, POLK COUNTY, FLORIDA

TITLE
SITE LOCATION MAP

PROJECT NO.	Control No.	REV.	FIGURE
19-117001	1895370-B001		1

LEGEND

CCR MONITORING WELL LOCATION

NOTE(S)

1. MONITORING WELL CCR-10 WAS ABANDONED IN PLACE AND REPLACED WITH CCR-10R ON MARCH 13, 2018.

CLIENT
LAKELAND ELECTRIC

CONSULTANT

GOLDER

YYYY-MM-DD	2019-05-23
DESIGNED	GJM
PREPARED	BCL
REVIEWED	ALG
APPROVED	SFS

PROJECT
BSA CCR GROUNDWATER
C.D. McINTOSH POWER PLANT
LAKELAND, POLK COUNTY, FLORIDA

TITLE
CCR GROUNDWATER MONITORING WELL NETWORK

PROJECT NO.	Control No.	REV.	FIGURE
19-117001	19117001-B002		2

LEGEND

SURFACE WATER SURROUNDING BYPRODUCT STORAGE AREA

APPROXIMATE EXTENT OF BYPRODUCT STORAGE AREA

STAFF GAUGE

NOTE(S)
1. ALL LOCATIONS ARE APPROXIMATE

CLIENT
LAKELAND ELECTRIC

CONSULTANT
GOLDER

YYYY-MM-DD	2019-05-23
DESIGNED	MSI
PREPARED	MSI
REVIEWED	ALG
APPROVED	SFS

PROJECT
BSA CCR GROUNDWATER
C.D. McINTOSH POWER PLANT
LAKELAND, POLK COUNTY, FLORIDA

TITLE
SURFACE WATER BODIES SURROUNDING BYPRODUCT STORAGE AREA

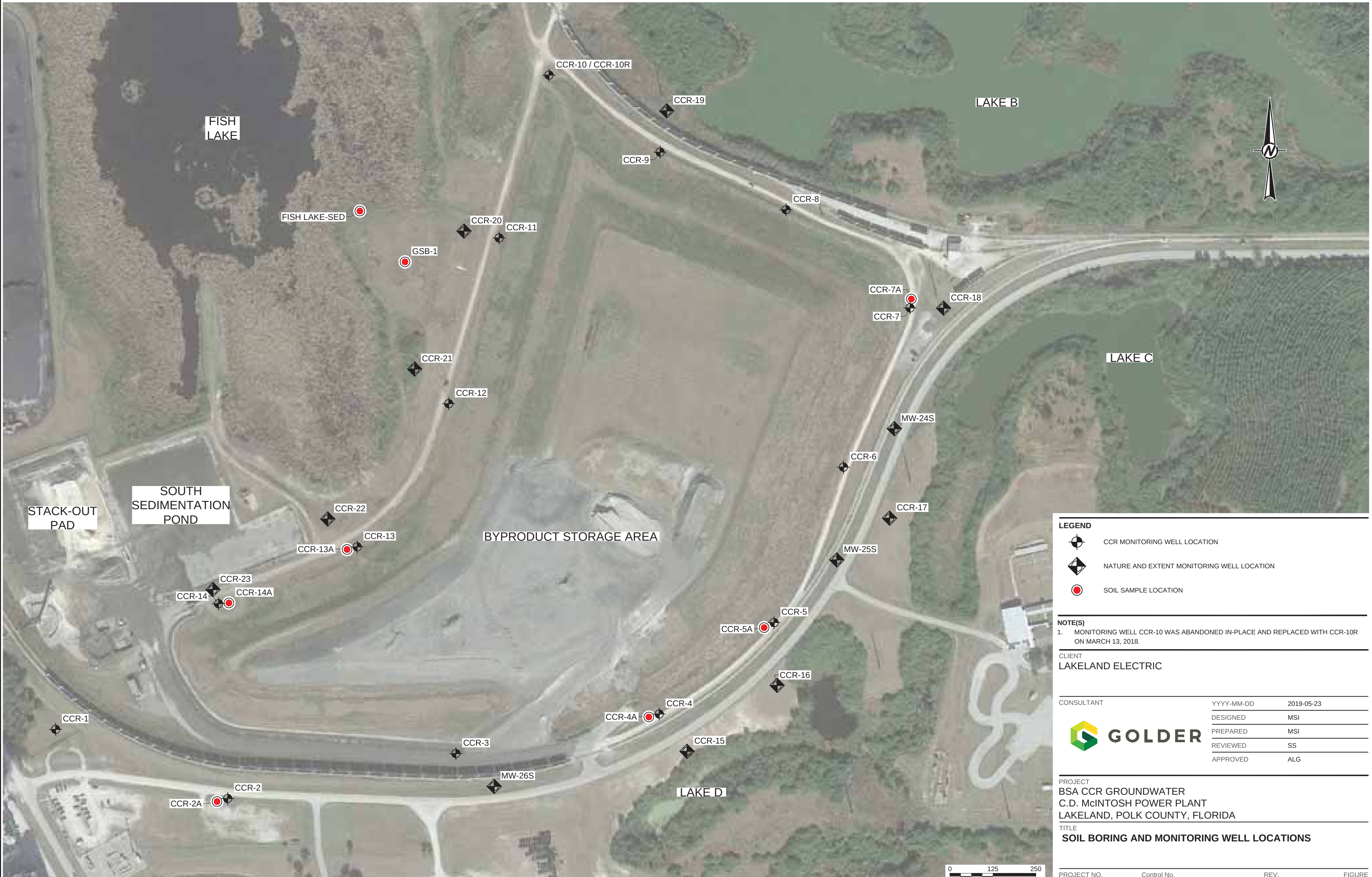
DRAFT

0 350 700
SCALE FEET

PROJECT NO.	Control No.	REV.	FIGURE
19117001	19117001-A001		3

Path: \\tampa\cad\PROJECTS\2019 PROJ\19-117001 Lakeland Elec\A - March2019 Data\Active Drawings\ | File Name: 19117001-A001.dwg

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B
0 1 in



LEGEND

Symbol	Description
⊕	CCR MONITORING WELL LOCATION
◆	NATURE AND EXTENT MONITORING WELL LOCATION
●	SOIL SAMPLE LOCATION

NOTE(S)

1. MONITORING WELL CCR-10 WAS ABANDONED IN-PLACE AND REPLACED WITH CCR-10R ON MARCH 13, 2018.

CLIENT
LAKELAND ELECTRIC

CONSULTANT
GOLDER

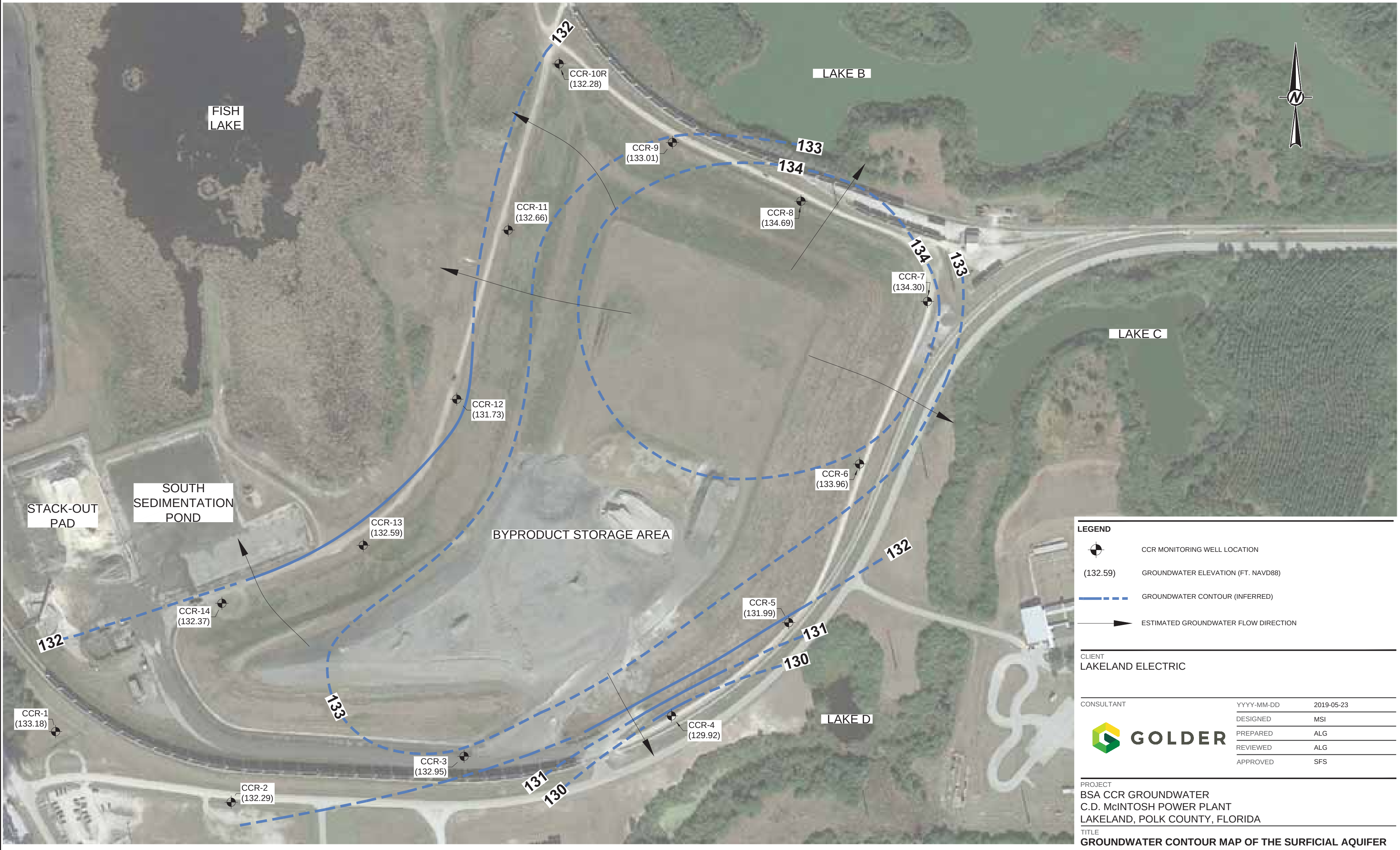
YYYY-MM-DD	2019-05-23
DESIGNED	MSI
PREPARED	MSI
REVIEWED	SS
APPROVED	ALG

PROJECT
BSA CCR GROUNDWATER
C.D. McINTOSH POWER PLANT
LAKELAND, POLK COUNTY, FLORIDA

TITLE
SOIL BORING AND MONITORING WELL LOCATIONS

PROJECT NO.	Control No.	REV.	FIGURE
19-117001	19117001-B003		4

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

⊕	CCR MONITORING WELL LOCATION
(132.59)	GROUNDWATER ELEVATION (FT. NAVD88)
— — —	GROUNDWATER CONTOUR (INFERRED)
⟶	ESTIMATED GROUNDWATER FLOW DIRECTION

CLIENT
LAKELAND ELECTRIC

CONSULTANT
GOLDER

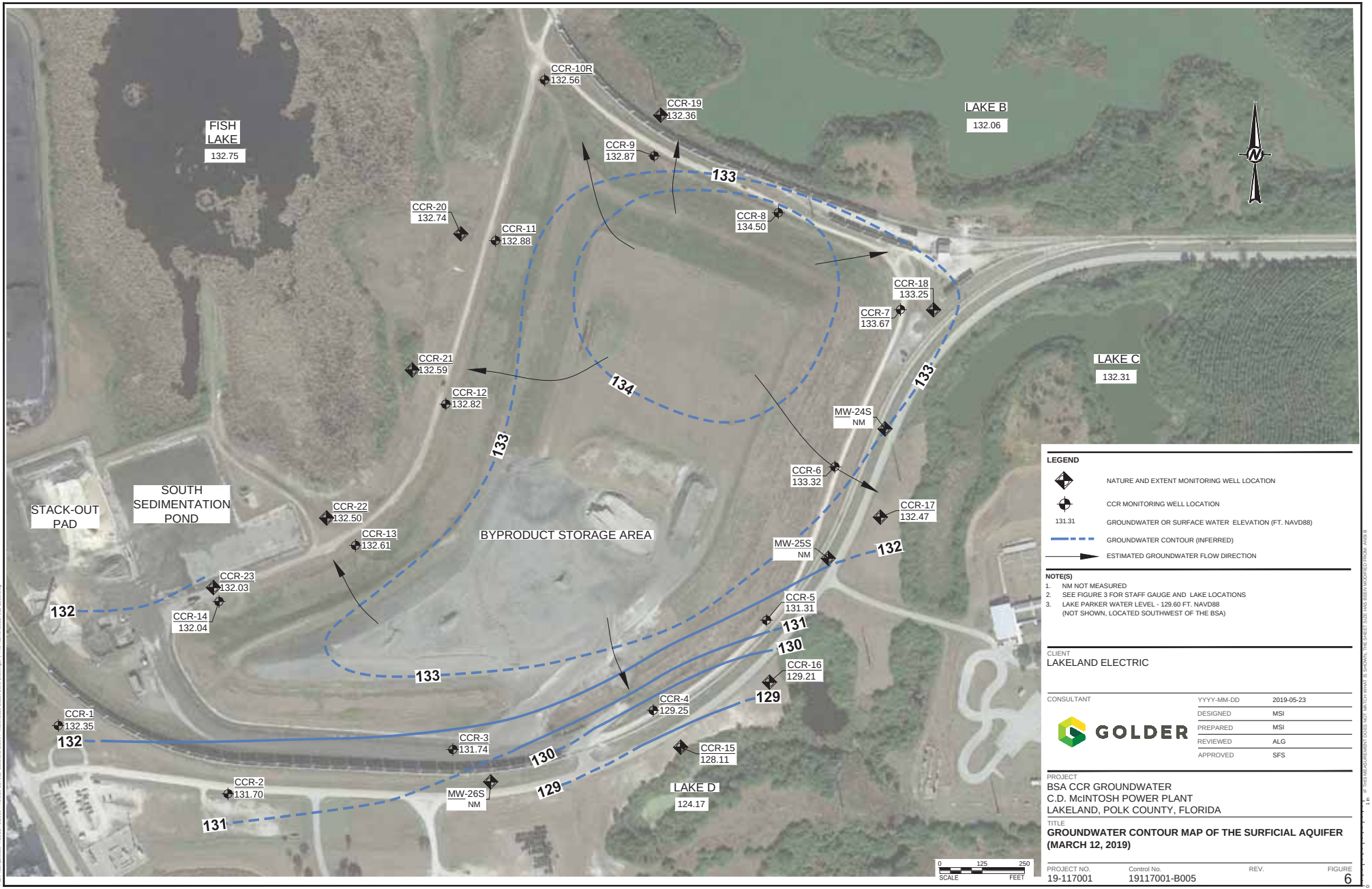
YYYY-MM-DD	2019-05-23
DESIGNED	MSI
PREPARED	ALG
REVIEWED	ALG
APPROVED	SFS

PROJECT
BSA CCR GROUNDWATER
C.D. McINTOSH POWER PLANT
LAKELAND, POLK COUNTY, FLORIDA

TITLE
GROUNDWATER CONTOUR MAP OF THE SURFICIAL AQUIFER (JULY 16, 2018)

PROJECT NO.	Control No.	REV.	FIGURE
19-115694	19117001-B004		5

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B



LEGEND

- NATURE AND EXTENT MONITORING WELL LOCATION
- CCR MONITORING WELL LOCATION
- 131.31 GROUNDWATER OR SURFACE WATER ELEVATION (FT. NAVD88)
- GROUNDWATER CONTOUR (INFERRED)
- ESTIMATED GROUNDWATER FLOW DIRECTION

NOTE(S)

1. NM NOT MEASURED
2. SEE FIGURE 3 FOR STAFF GAUGE AND LAKE LOCATIONS
3. LAKE PARKER WATER LEVEL - 129.60 FT. NAVD88 (NOT SHOWN, LOCATED SOUTHWEST OF THE BSA)

CLIENT
LAKELAND ELECTRIC

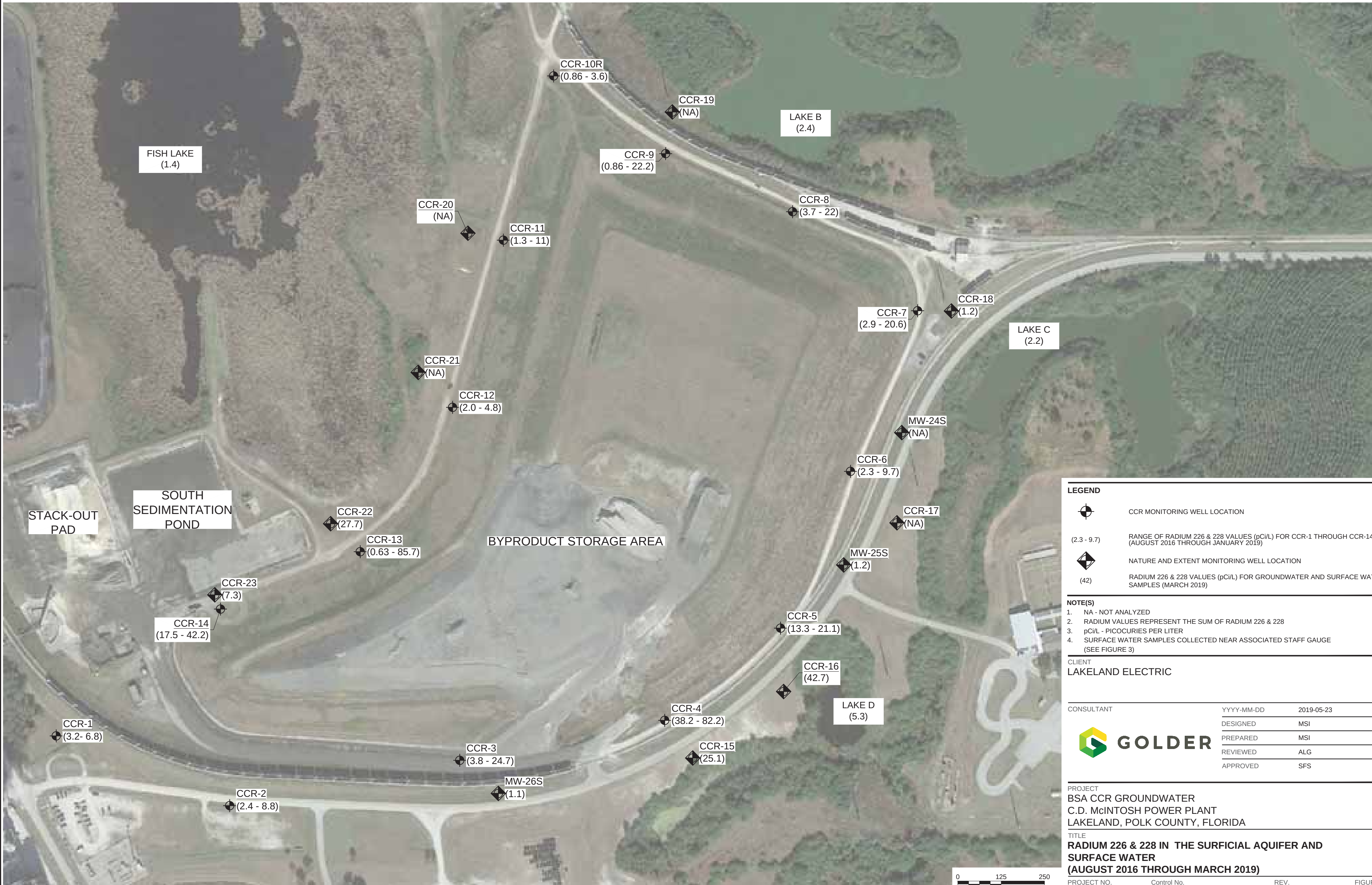
CONSULTANT
GOLDER

YYYY-MM-DD	2019-05-23
DESIGNED	MSI
PREPARED	MSI
REVIEWED	ALG
APPROVED	SFS

PROJECT
BSA CCR GROUNDWATER
C.D. McINTOSH POWER PLANT
LAKELAND, POLK COUNTY, FLORIDA

TITLE
GROUNDWATER CONTOUR MAP OF THE SURFICIAL AQUIFER (MARCH 12, 2019)

PROJECT NO.	Control No.	REV.	FIGURE
19-117001	19117001-B005		6



LEGEND

Symbol	Description
⌖	CCR MONITORING WELL LOCATION
(2.3 - 9.7)	RANGE OF RADIUM 226 & 228 VALUES (pCi/L) FOR CCR-1 THROUGH CCR-14 (AUGUST 2016 THROUGH JANUARY 2019)
◆	NATURE AND EXTENT MONITORING WELL LOCATION
(42)	RADIUM 226 & 228 VALUES (pCi/L) FOR GROUNDWATER AND SURFACE WATER SAMPLES (MARCH 2019)

NOTE(S)

1. NA - NOT ANALYZED
2. RADIUM VALUES REPRESENT THE SUM OF RADIUM 226 & 228
3. pCi/L - PICOCURIES PER LITER
4. SURFACE WATER SAMPLES COLLECTED NEAR ASSOCIATED STAFF GAUGE (SEE FIGURE 3)

CLIENT
LAKELAND ELECTRIC

CONSULTANT
GOLDER

YYYY-MM-DD	2019-05-23
DESIGNED	MSI
PREPARED	MSI
REVIEWED	ALG
APPROVED	SFS

PROJECT
BSA CCR GROUNDWATER
C.D. McINTOSH POWER PLANT
LAKELAND, POLK COUNTY, FLORIDA

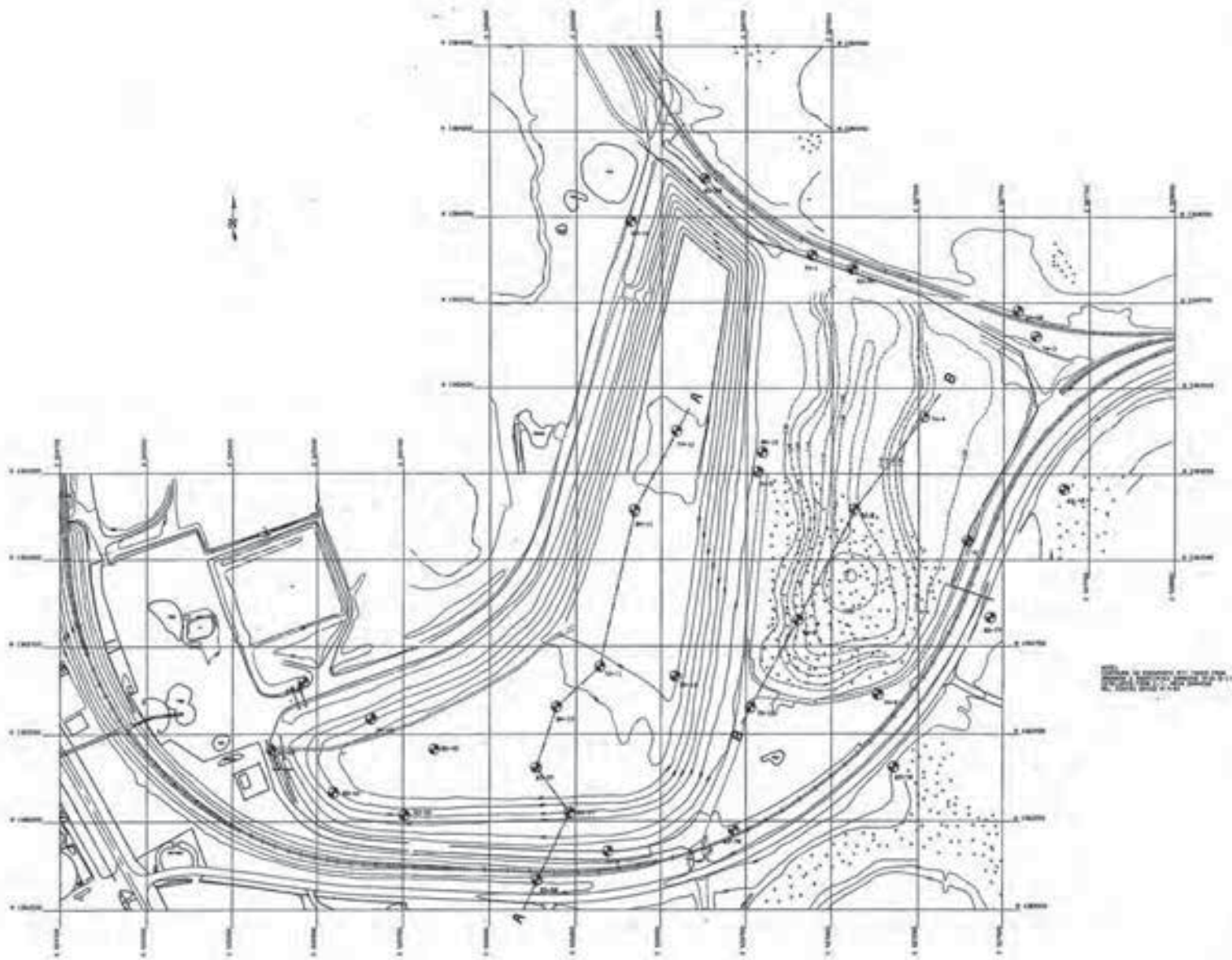
TITLE
RADIUM 226 & 228 IN THE SURFICIAL AQUIFER AND SURFACE WATER (AUGUST 2016 THROUGH MARCH 2019)

PROJECT NO.	Control No.	REV.	FIGURE
19-117001	19117001-B008		7

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

APPENDIX A

Soil Boring Logs and Location Map

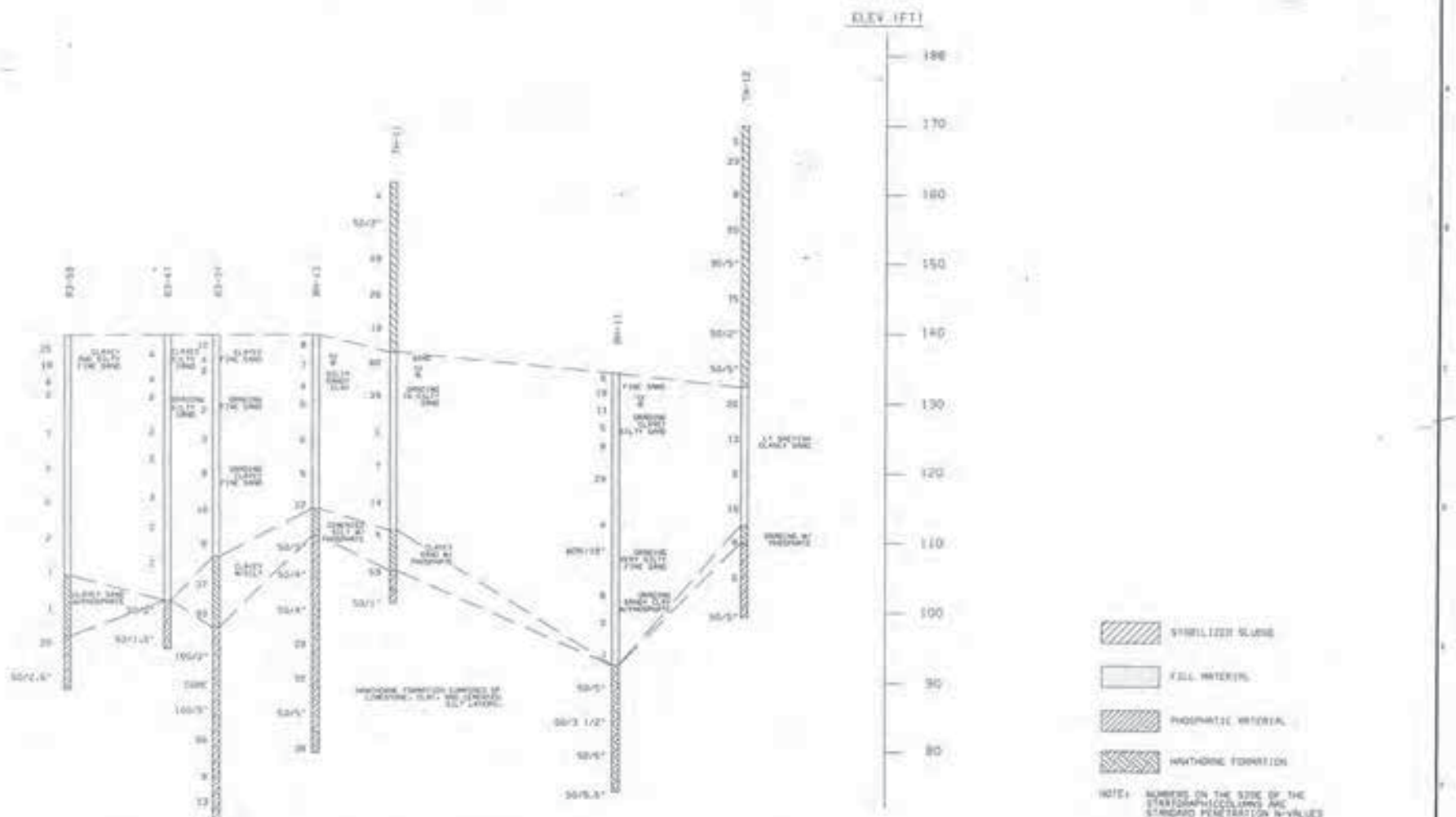


SOIL BORING LOCATION PLAN

LAKELAND ELECTRIC & WATER
C.D. MCINTOSH PLANT COMBUSTION TURBINE

17757

FIGURE 2-1



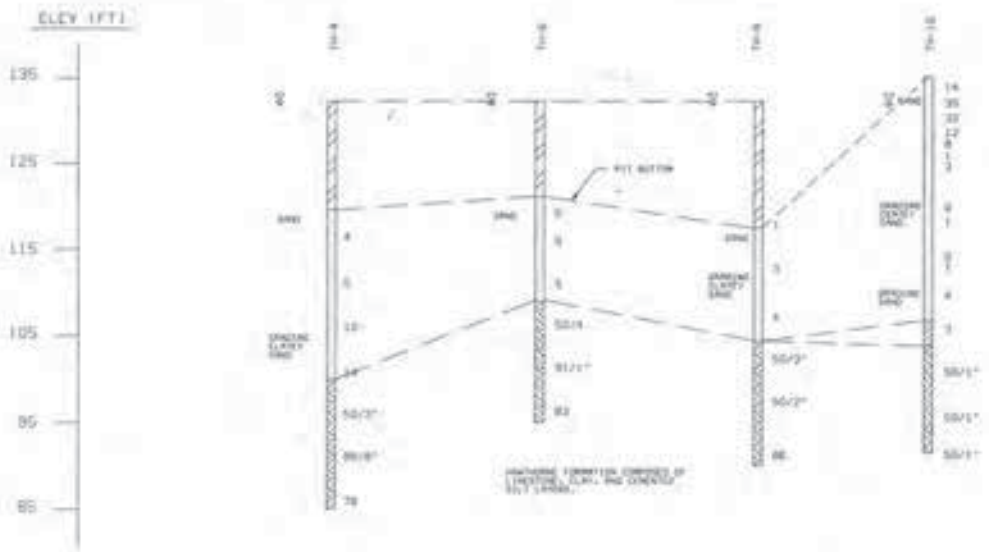
BLACK & VEATCH
ENGINEERS-ARCHITECTS

CITY OF LAKELAND
MCINTOSH LANDFILL

SOIL PROFILE SECTION A-A

17757

FIGURE 2-2



WATER

FILL MATERIAL

PHOSPHATIC MATERIAL

WEATHERED FORMATION

NOTE: NUMBERS ON THE SIDE OF THE STRATIGRAPHIC COLUMNS ARE STANDARD PENETRATIONS N-VALUES.

D.E.P.

BLACK & VEATCH
ENGINEERS-ARCHITECTS

CITY OF LAKELAND
MCINTOSH LANDFILL

SOIL PROFILE SECTION B-B

17757

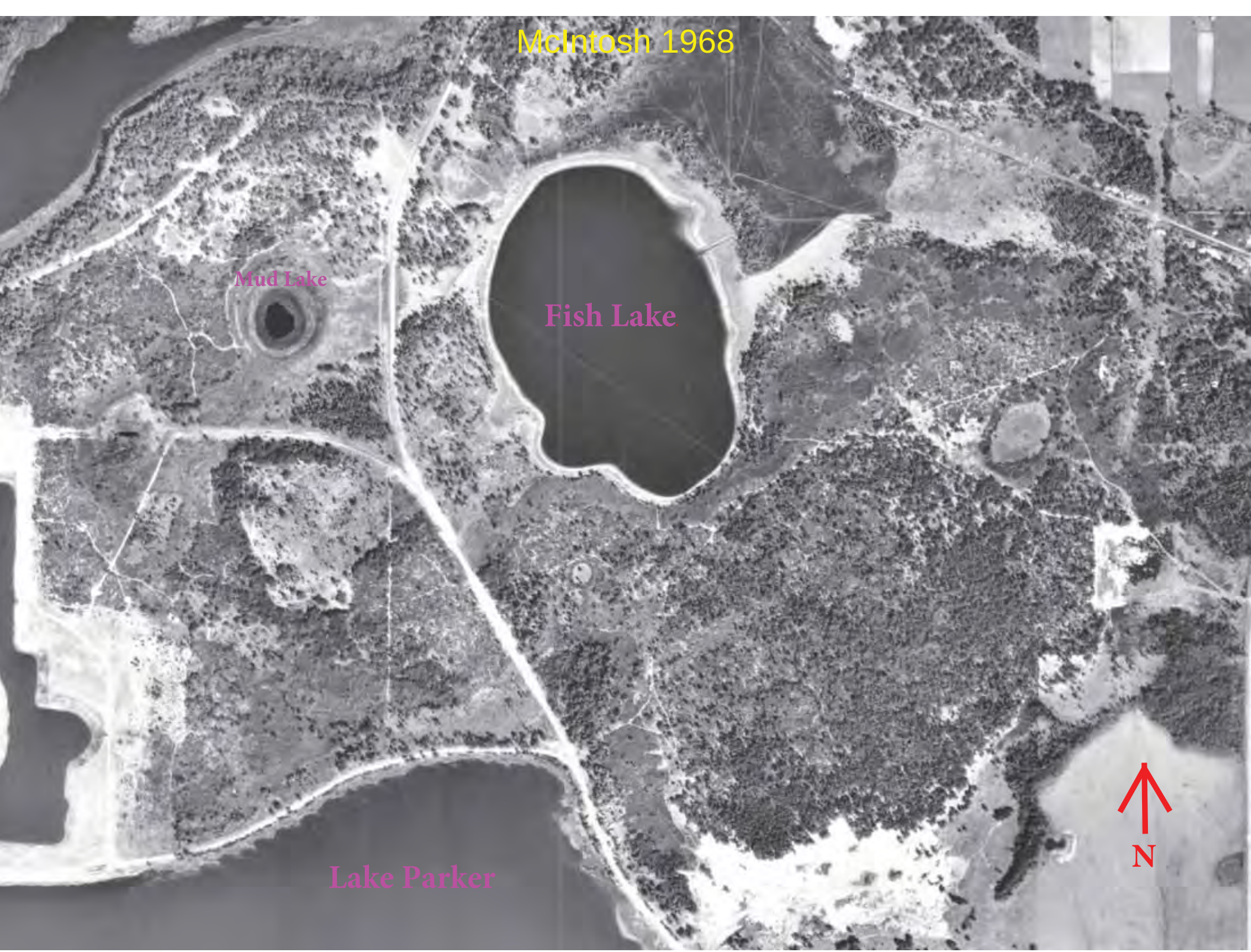
A

FIGURE 2-3

APPENDIX B

Historical Aerial Photographs and Maps


UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
BULLETIN 1162-D
PLATE 1
EXPLANATION
1964 USGS
GEOLOGIC MAP OF THE LAKELAND QUADRANGLE, FLORIDA


McIntosh 1968
Mud Lake
Fish Lake
Lake Parker
N


1971 from FDOT
N
Approximate Footprint of BSA

N
W E
S

BSA at Lakeland Electric USGS
11/30/1971
(Current boundary shown by dashed red line)

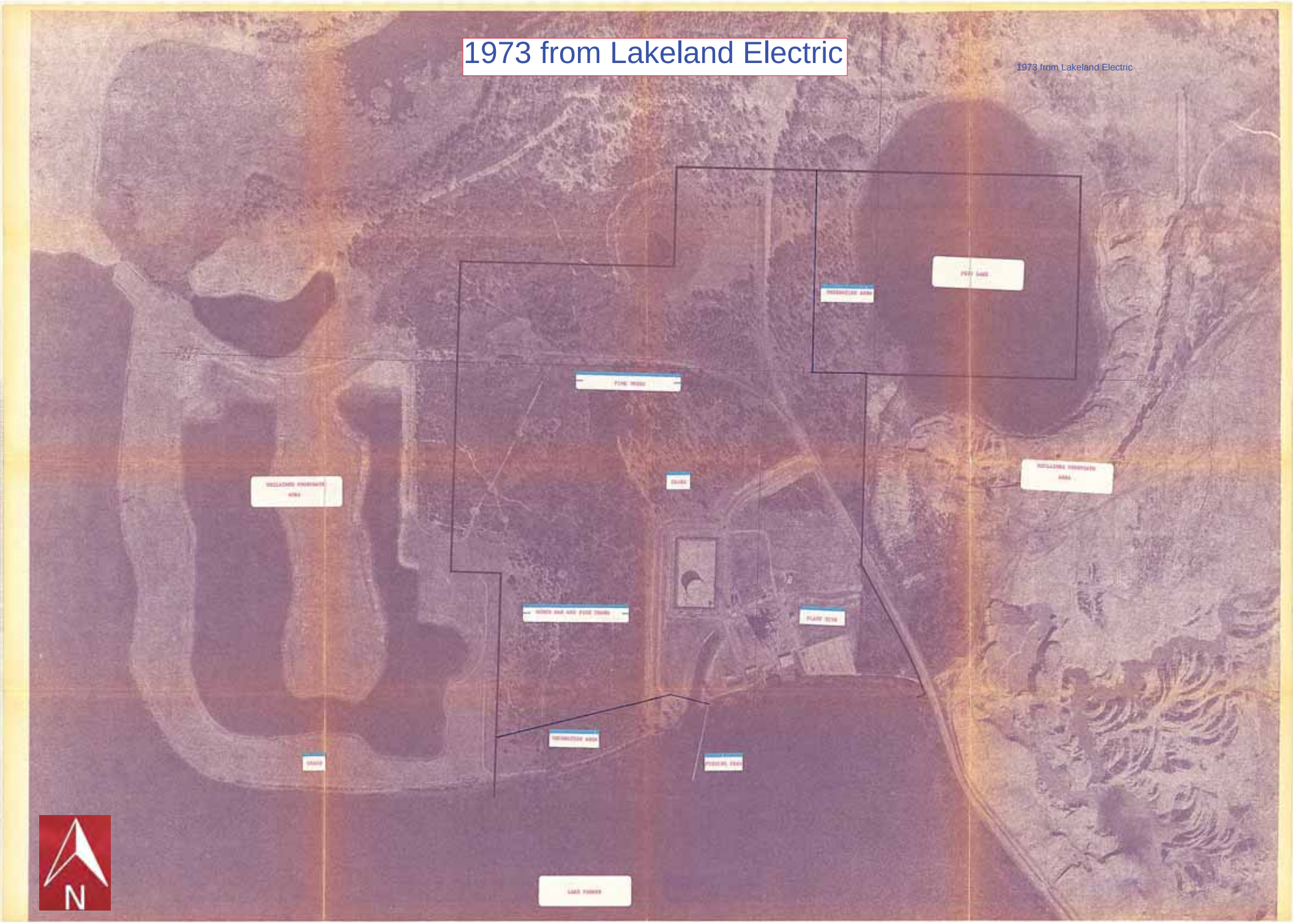
GeoSearch

JOB #: 227772 - 03/09/2018

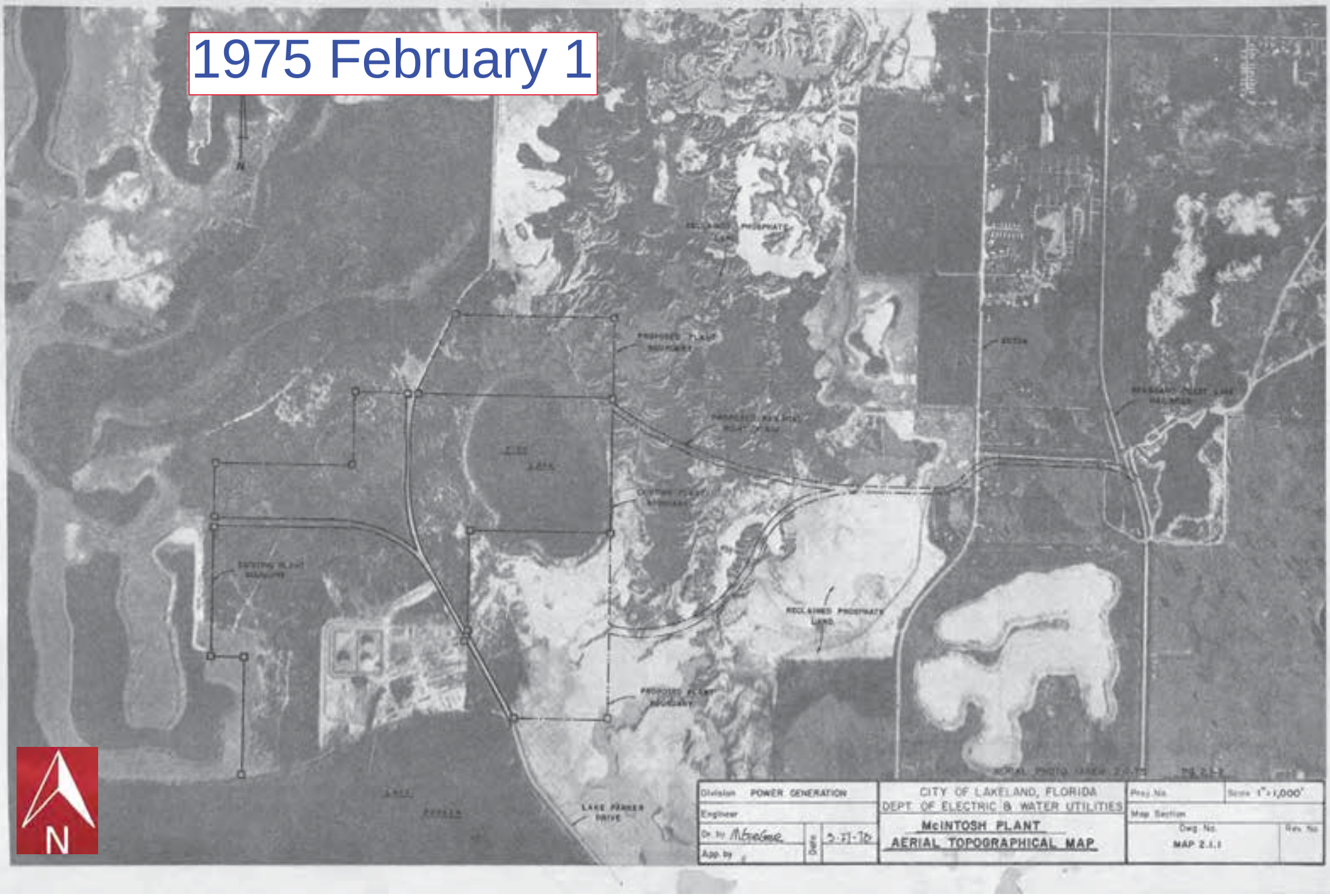
1975 USGS 7.5-minute topographic map including December 2, 1972 Aerial Photograph

1973 from Lakeland Electric

1973 from Lakeland Electric



1975 February 1



N
W E
S

BSA at Lakeland Electric USGS
11/26/1977
(Current boundary shown by dashed red line)

GeoSearch

JOB #: 227772 - 03/09/2018

McIntosh 1980

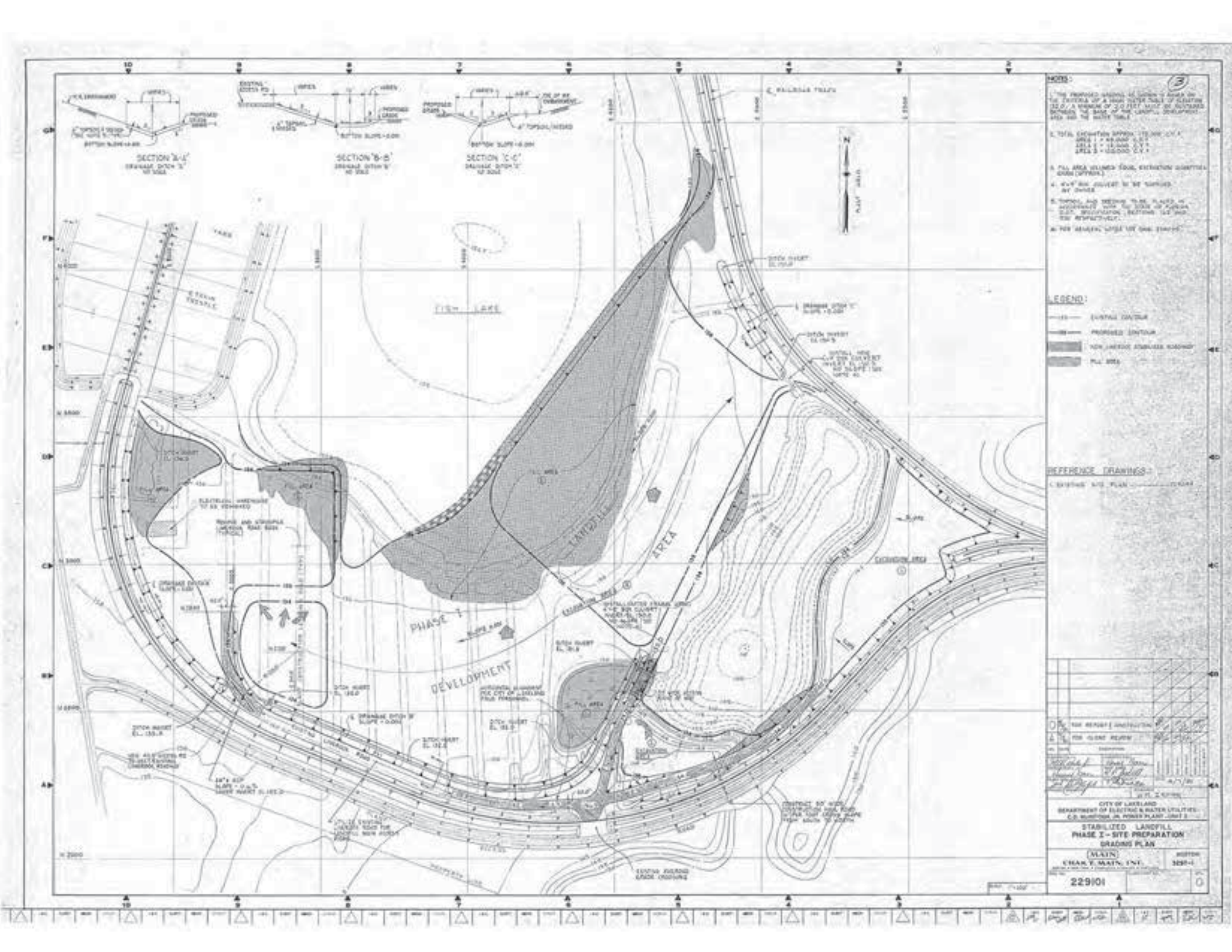
1:14,774

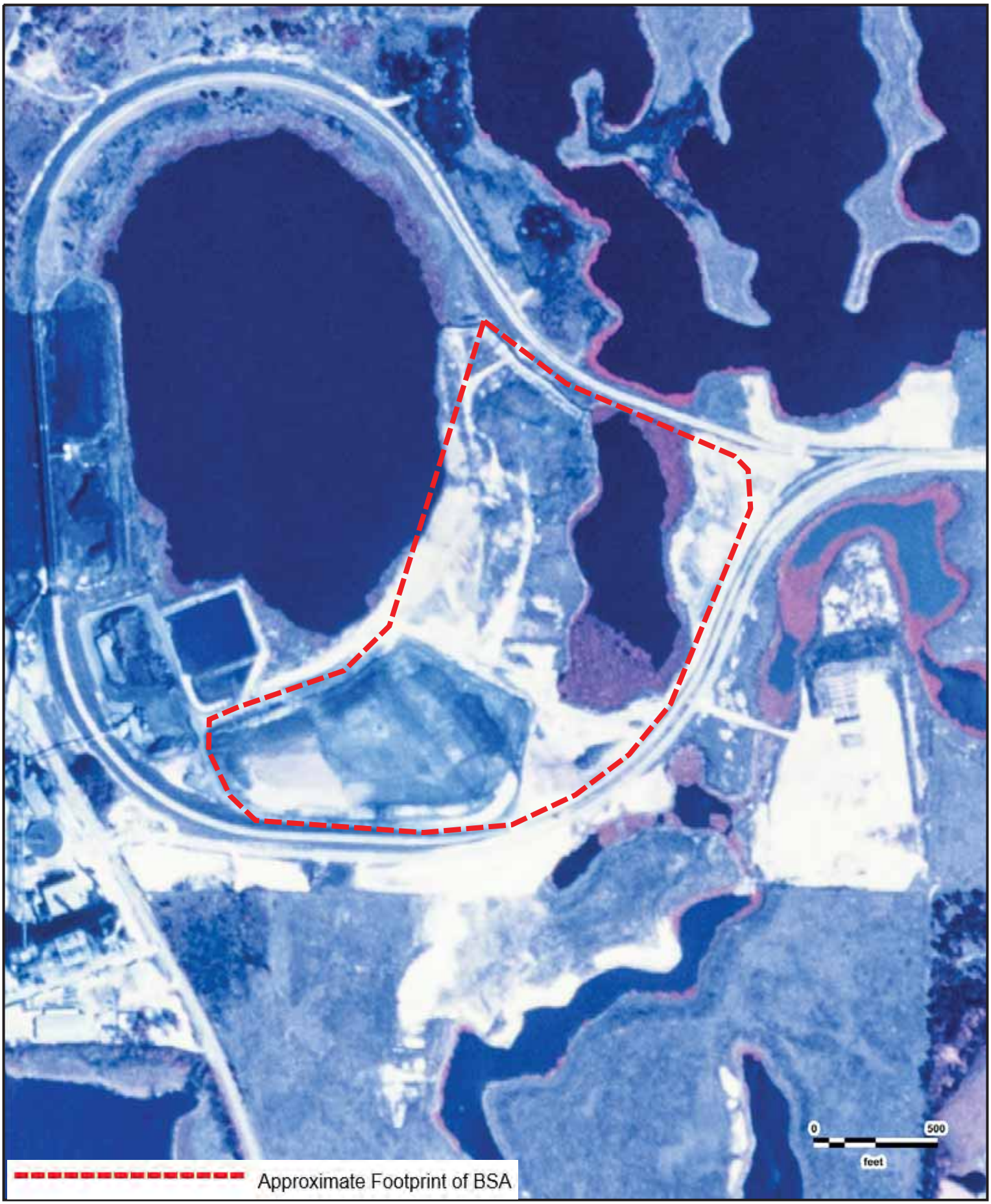
0 0.125 0.25 0.5 mi

0 0.2 0.4 0.8 km

N

Polk County BoCC


SECTION 'A-A'
SECTION 'B-B'
SECTION 'C-C'
NOTES:
LEGEND:
REFERENCE DRAWINGS:
FISH LAKE
PHASE I DEVELOPMENT
LANDFILL AREA
CITY OF LAKELAND
DEPARTMENT OF ELECTRIC & WATER UTILITIES
C.D. McINTOSH JR. POWER PLANT - UNIT 3
STABILIZED LANDFILL
PHASE I - SITE PREPARATION
GRADING PLAN
CHAS. T. MAIN, INC.
229101



N
W E
S

BSA at Lakeland Electric USGS
03/02/1984
(Current boundary shown by dashed red line)

GeoSearch

JOB #: 227772 - 03/09/2018

APPENDIX C

Record of Borehole Logs for CCR-2A, CCR-4A, CCR-5A, CCR-7A, CCR-13A, and CCR-14A

RECORD OF BOREHOLE CCR-2A

SHEET 1 of 1

PROJECT: Lakeland Electric CCR
PROJECT NUMBER: 19117001
DRILLED DEPTH: 30.0 ft
AZIMUTH: N/A
LOCATION: Lakeland, FL

DRILL METHOD: Direct Push
DRILL RIG: Geoprobe 3230 DT
DATE STARTED: 2/11/2019
DATE COMPLETED: 2/11/2019
WEATHER: Partly cloudy

DATUM: NAD83 / NAVD88
COORDS: N: 1,362,203.9 E: 681,787.6
GS ELEVATION: 137.6 ft
TRC ELEVATION: N/A ft
TEMPERATURE: 74° F

INCLINATION: -90
DEPTH W.L.: 5.9 ft
ELEVATION W.L.: 131.70 ft
DATE W.L.: 3/12/2019
TIME W.L.: 10:45

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)
0		0.0 - 1.0 SAND, fine; brown, dry	SP		136.6
		1.0 - 2.0 SAND, fine; grayish brown, dry	SP		1.0 135.6
	135	2.0 - 4.0 SAND, fine; light gray, dry	SP		2.0 133.6
5		4.0 - 7.5 SAND, trace organics, fine to medium, subrounded to subangular, poorly graded; dark brown to black	SP		4.0 130.1
	130	7.5 - 10.8 SAND, fine to medium, subround to subangular, uniform grading; light tan to white, moist	SP		7.5 126.9
10		10.8 - 13.5 SAND, fine, subrounded, uniform; dark brown to black, compact, wet	SP		10.8 124.1
	125	13.5 - 15.8 No Recovery			13.5 121.9
15		15.8 - 18.4 SAND, fine, subrounded; light brown to light grey (white with small round black heavy mineral), wet	SP		15.8 119.2
	120	18.4 - 19.5 SAND, fine; dark brown to black (grains are brown), compact to dense, wet	SP		18.4 118.1
		19.5 - 20.0 No Recovery			117.6
20		20.0 - 23.0 SAND, very fine, subrounded; light brown to tan with a dark brown to black coating with small black opaque grains, compact to very dense, wet	SP		20.0 114.6
	115	23.0 - 23.5 CLAYEY SAND; tan to light brown, wet	SC		114.1
		23.5 - 25.0 SAND, very fine, subrounded; light brown to tan with a dark brown to black coating with small black heavy mineral, compact to very dense, wet	SP		23.5 112.6
25		25.0 - 27.5 SAND, fine subrounded, uniform grading; brown, loose to compact, wet	SP		25.0 110.1
	110	27.5 - 30.0 SAND, fine, subrounded; tan to white with small black heavy minerals, compact to dense, wet	SP		27.5 107.6
30		Boring completed at 30.0 ft			

1.) Borehole location is adjacent to monitoring well CCR-2; survey coordinates shown are from CCR-2.

2.) Ground surface elevation is estimated based on ground surface elevation of monitoring well CCR-2.

3.) Boreholes were backfilled with 20/30 graded silica sand to 5 ft bgs and the remaining borehole was filled with bentonite chips to land surface.

4.) Water-level elevations are estimated based on depth-to-water measurements from adjacent monitoring well CCR-2.

5.) Density descriptions are based on field observations and not form SPT blow counts.

6.) Soil cores were collected and transported to Golder's Tampa office. The soil cores were later logged by M. Boatman for mineralogic description of lithology.

7.) Based on lithologic descriptions, mine tailings and/or fill was encountered from approximately ground surface to 20 ft bgs and in-situ residual soil and/or weathered rock from 20 ft bgs to terminal depth.

LOG SCALE: 1 in = 4 ft
DRILLING COMPANY: Action Environmental
DRILLER: Omar Velazquez

INSPECTOR: M. Boatman
CHECKED BY: G. Morelli
DATE: 5/30/19

GOLDER

GLDR_GEOTECH NO SPT 1545454.2_REV1 (1).GPJ 5/30/19

RECORD OF BOREHOLE CCR-4A

SHEET 1 of 1

PROJECT: Lakeland Electric CCR
PROJECT NUMBER: 19117001
DRILLED DEPTH: 30.0 ft
AZIMUTH: N/A
LOCATION: Lakeland, FL

DRILL METHOD: Direct Push
DRILL RIG: Geoprobe 3230 DT
DATE STARTED: 2/11/2019
DATE COMPLETED: 2/11/2019
WEATHER: Partly cloudy

DATUM: NAD83 / NAVD88
COORDS: N: 1,362,450.0 E: 683,042.7
GS ELEVATION: 140.3 ft
TRC ELEVATION: N/A ft
TEMPERATURE: 86° F

INCLINATION: -90
DEPTH W.L.: 11.05 ft
ELEVATION W.L.: 129.25 ft
DATE W.L.: 3/12/2019
TIME W.L.: 10:57

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)
0	140	0.0 - 1.0 SAND, fine; brown, dry	SP		139.3
		1.0 - 2.0 SAND, fine, some gravel and silt; brown, dry	SP		1.0 138.3
		2.0 - 5.0 SAND, fine, some silt; brown, dry	SP-SM		2.0 135.3
5	135	5.0 - 10.4 SILTY SAND, fine, subrounded to subangular, uniform grading; dark brown to black, dry to moist	SM		5.0 129.9
10	130	10.4 - 13.6 SAND, fine to medium, subrounded, uniform grading; dark brown with small black heavy minerals, loose to very loose, wet 12.0 - 13.6 contact water is black	SP		10.4 ▼ 126.7
		13.6 - 15.0 SAND, very fine, subrounded, uniform grading; dark brown with small black heavy minerals, compact, wet	SP		13.6 125.3
15	125	15.0 - 15.8 SAND, fine to medium, subrounded, uniform grading; dark brown with small black heavy minerals, loose to very loose, wet, water is black	SP		15.0 124.5
		15.8 - 19.5 SAND, fine, subrounded, uniform grading; light to dark brown, compact to dense, wet	SP		15.8 120.8
20	120	19.5 - 21.1 SAND little to some clay; fine, angular to subrounded, uniform grading; white to tan with small black heavy minerals, wet	SP-SC		19.5 119.2
		21.1 - 22.8 SAND some clay, fine, subrounded; white to pale green, moist	SP-SC		21.1 117.5
		22.8 - 23.4 CLAY some sand and trace gravel; soft; fine, limestone gravel, brownish gray; pale green to greenish gray, moist	CL		116.9
25	115	23.4 - 28.2 Sandy CLAY, trace to some silt; pale green to white, loose to compact, wet, fossiliferous (weathered limestone)	CL		23.4 112.1
		28.2 - 30.0 CLAY trace sand and gravel; soft; fine angular sand, fine rounded gravel; green, moist (weathered limestone)	CL		28.2 110.3
30	110	Boring completed at 30.0 ft			

COMMENTS

1.) Borehole location is adjacent to monitoring well CCR-4; survey coordinates shown are from CCR-4.

2.) Ground surface elevation is estimated based on ground surface elevation of monitoring well CCR-4.

3.) Boreholes were backfilled with 20/30 graded silica sand to 5 ft bgs and the remaining borehole was filled with bentonite chips to land surface.

4.) Water-level elevations are estimated based on depth-to-water measurements from adjacent monitoring well CCR-4.

5.) Density descriptions are based on field observations and not form SPT blow counts.

6.) Soil cores were collected and transported to Golder's Tampa office. The soil cores were later logged by M. Boatman for mineralogic description of lithology.

7.) Based on lithologic descriptions, mine tailings and/or fill was encountered from approximately ground surface to 19.5 ft bgs and in-situ residual soil and/or weathered rock from 19.5 ft bgs to terminal depth.

LOG SCALE: 1 in = 4 ft
DRILLING COMPANY: Action Environmental
DRILLER: Omar Velazquez

INSPECTOR: M. Boatman
CHECKED BY: G. Morelli
DATE: 5/30/19

GOLDER

RECORD OF BOREHOLE CCR-5A

SHEET 1 of 1

PROJECT: Lakeland Electric CCR
PROJECT NUMBER: 19117001
DRILLED DEPTH: 30.0 ft
AZIMUTH: N/A
LOCATION: Lakeland, FL

DRILL METHOD: Direct Push
DRILL RIG: Geoprobe 3230 DT
DATE STARTED: 2/11/2019
DATE COMPLETED: 2/11/2019
WEATHER: Partly cloudy

DATUM: NAD83 / NAVD88
COORDS: N: 1,362,716.0 E: 683,376.9
GS ELEVATION: 138.6 ft
TRC ELEVATION: N/A ft
TEMPERATURE: 88° F

INCLINATION: -90
DEPTH W.L.: 7.29 ft
ELEVATION W.L.: 131.31 ft
DATE W.L.: 3/12/2019
TIME W.L.: 11:00

DEPTH (ft)	ELEVATION (ft)	SOIL PROFILE DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)
0		0.0 - 5.0 SAND, fine; brown, dry	SP		133.6
	135				
5		5.0 - 8.4 SAND, fine to medium, subrounded, uniform grading; white with small rounded black heavy minerals	SP		5.0 130.2
	130	8.4 - 8.9 CLAY some sand and gravel; fine white gravel and fine to medium sand; white, moist	CL		129.7
		8.9 - 10.0 SAND, fine to medium, subrounded; white with small black heavy minerals, moist	SP		8.9 128.6
10		10.0 - 12.3 No Recovery			10.0 126.3
		12.3 - 13.0 SAND, fine to medium, subrounded; dark brown, loose, moist	SP		12.3 125.6
	125	13.0 - 15.0 SAND and CLAY; fine, subrounded; soft to firm; white to pale green with orange spots	SC		13.0 123.6
15		15.0 - 16.9 No Recovery			15.0 121.7
		16.9 - 18.2 SAND trace to some silt; fine to medium, subrounded to subangular; dark brown to black, loose to compact, moist to wet	SP-SM		16.9 120.4
	120	18.2 - 19.3 SAND, fine; dark brown with small black heavy minerals, loose to compact, wet	SP		18.2 119.3
		19.3 - 20.0 SAND, very fine to fine; dark brown to black, loose to compact, wet, contact water separates to tan and black	SP		19.3 118.6
20		20.0 - 22.3 No Recovery			20.0 116.3
		22.3 - 23.1 SAND some clay; fine, subrounded; soft; dark brown, wet	SP-SC		22.3 115.5
	115	23.1 - 24.2 SAND, fine to medium, subrounded; dark brown with smal black heavy minerals, loose, wet	SP		23.1 114.4
		24.2 - 25.0 SAND trace gravel; fine, subrounded, sand; fine to coarse, rounded, gravel; tan to white, wet	SP		24.2 113.6
25		25.0 - 27.4 No Recovery			25.0 111.2
		27.4 - 28.5 SAND, fine, rounded, dark brown with black heavy minerals, loose, wet	SP		27.4 110.1
	110	28.5 - 30.0 SAND trace organics; fine to medium; twigs and roots; light brown to light gray with black heavy minerals, loose, wet	SP		28.5 108.6
30		Boring completed at 30.0 ft			

COMMENTS

1.) Borehole location is adjacent to monitoring well CCR-5; survey coordinates shown are from CCR-5.

2.) Ground surface elevation is estimated based on ground surface elevation of monitoring well CCR-5.

3.) Boreholes were backfilled with 20/30 graded silica sand to 5 ft bgs and the remaining borehole was filled with bentonite chips to land surface.

4.) Water-level elevations are estimated based on depth-to-water measurements from adjacent monitoring well CCR-5.

5.) Density descriptions are based on field observations and not form SPT blow counts.

6.) Soil cores were collected and transported to Golder's Tampa office. The soil cores were later logged by M. Boatman for mineralogic description of lithology.

7.) Based on lithologic descriptions, mine tailings and/or fill was encountered from approximately ground surface to terminal depth.

LOG SCALE: 1 in = 4 ft
DRILLING COMPANY: Action Environmental
DRILLER: Omar Velazquez

INSPECTOR: M. Boatman
CHECKED BY: G. Morelli
DATE: 5/30/19

GOLDER

GLDR_GEOTECH NO SPT 1545454.2_REV1 (1).GPJ 5/30/19

RECORD OF BOREHOLE CCR-7A

SHEET 1 of 1

PROJECT: Lakeland Electric CCR
PROJECT NUMBER: 19117001
DRILLED DEPTH: 30.0 ft
AZIMUTH: N/A
LOCATION: Lakeland, FL

DRILL METHOD: Direct Push
DRILL RIG: Geoprobe 3230 DT
DATE STARTED: 2/11/2019
DATE COMPLETED: 2/11/2019
WEATHER: Partly cloudy

DATUM: NAD83 / NAVD88
COORDS: N: 1,363,631.9 E: 683,772.2
GS ELEVATION: 139.1 ft
TRC ELEVATION: N/A ft
TEMPERATURE: 86° F

INCLINATION: -90
DEPTH W.L.: 5.43 ft
ELEVATION W.L.: 133.67 ft
DATE W.L.: 3/12/2019
TIME W.L.: 11:05

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)
0		0.0 - 5.0 SAND, fine; light brownish gray, dry to wet	SP		
	135	4.0: ~ moist at 4 ft bgs			134.1
5		5.0 - 6.0 No Recovery			5.0 133.1
		6.0 - 7.0 SAND with pockets of sand/clay; fine, subrounded, uniform grading; fine sand/clay matrix, firm; tan to dark brown, loose to compact, wet	SP		6.0 132.1
		7.0 - 7.4 SAND, fine, subrounded, uniform grading; black, loose to compact, wet	SP		131.7 7.4
	130	7.4 - 10.0 SAND with pockets of sand/clay; fine, subrounded, uniform grading; fine sand/clay matrix, firm; tan to dark brown, loose to compact, wet	SP		129.1
10		10.0 - 11.0 No Recovery			10.0 128.1
		11.0 - 15.0 SILTY SAND, fine, subrounded, uniform grading, dark brown with black heavy minerals, loose, wet	SM		11.0
	125	13.4: 13.4-13.8 pockets of white sand/clay matrix			124.1
15		15.0 - 17.0 No Recovery			15.0 122.1
		17.0 - 17.8 SAND trace to some silt; fine, uniform grading; dark brown to black, wet	SP-SM		17.0 121.3
		17.8 - 18.5 CLAY; white, soft to firm, moist	CL		17.8 120.6
	120	18.5 - 20.0 SAND trace to some silt and sady clay; fine, uniform grading; dark brown, wet	SP-SM		18.5 119.1
20		20.0 - 25.0 SAND with pockets of sandy clay; fine, uniform grading; white clay; brown with black heavy minerals, wet	SP/CL		20.0
	115				114.1
25		25.0 - 26.1 No Recovery			25.0 113.0
		26.1 - 26.6 SAND, fine, subrounded, uniform grading; dark brown, loose, wet	SP		112.5
		26.6 - 27.2 SAND and CLAY; fine to coarse; soft; white to pale green, wet	SC/CL		111.9
		27.2 - 28.6 SAND, fine, subrounded, uniform grading; light brown, loose, wet	SP		27.2 110.5
	110	28.6 - 29.3 Sandy CLAY; fine to coarse, subrounded; compact, pale green, moist	CL		28.6 109.8
		29.3 - 30.0 Sandy CLAY, fine, subrounded, uniform grading; light to dark brown, loose, wet	CL		29.3 109.1
30		Boring completed at 30.0 ft			

COMMENTS

1.) Borehole location is adjacent to monitoring well CCR-7; survey coordinates shown are from CCR-7.

2.) Ground surface elevation is estimated based on ground surface elevation of monitoring well CCR-7.

3.) Boreholes were backfilled with 20/30 graded silica sand to 5 ft bgs and the remaining borehole was filled with bentonite chips to land surface.

4.) Water-level elevations are estimated based on depth-to-water measurements from adjacent monitoring well CCR-7.

5.) Density descriptions are based on field observations and not form SPT blow counts.

6.) Soil cores were collected and transported to Golder's Tampa office. The soil cores were later logged by M. Boatman for mineralogic description of lithology.

7.) Based on lithologic descriptions, mine tailings and/or fill was encountered from approximately ground surface to 17 ft bgs and in-situ residual soil and/or weathered rock from 17 ft bgs to terminal depth.

LOG SCALE: 1 in = 4 ft
DRILLING COMPANY: Action Environmental
DRILLER: Omar Velazquez

INSPECTOR: M. Boatman
CHECKED BY: G. Morelli
DATE: 5/30/19

GOLDER

GLDR_GEOTECH NO SPT 1545454.2_REV1 (1).GPJ 5/30/19

RECORD OF BOREHOLE CCR-13A

SHEET 1 of 1

PROJECT: Lakeland Electric CCR
PROJECT NUMBER: 19117001
DRILLED DEPTH: 30.0 ft
AZIMUTH: N/A
LOCATION: Lakeland, FL

DRILL METHOD: Direct Push
DRILL RIG: Geoprobe 3230 DT
DATE STARTED: 2/12/2019
DATE COMPLETED: 2/12/2019
WEATHER: Partly cloudy

DATUM: NAD83 / NAVD88
COORDS: N: 1,362,936.6 E: 682,164.1
GS ELEVATION: 135.0 ft
TRC ELEVATION: N/A ft
TEMPERATURE: 72° F

INCLINATION: -90
DEPTH W.L.: 2.39 ft
ELEVATION W.L.: 132.61 ft
DATE W.L.: 3/12/2019
TIME W.L.: 11.58

SOIL PROFILE

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)
0	135	0.0 - 2.0 SAND, fine; light brown, dry	SP		133.0
		2.0 - 4.0 SAND, fine; dark grayish brown, dry	SP		2.0 131.0
		4.0 - 5.0 SAND, fine; brown, dry	SP		4.0 130.0
5	130	5.0 - 7.1 SAND, fine, subrounded, uniform grading; black to dark gray, loose, moist to wet	SP		5.0 127.9
		7.1 - 9.4 SILTY SAND, fine, uniform grading; tan to white, compact to dense, wet	SM		7.1 125.6
10	125	9.4 - 10.0 SAND, fine, uniform grading; black with heavy minerals, loose, wet	SP		125.0
		10.0 - 12.0 No Recovery			10.0 123.0
		12.0 - 15.0 SAND, fine to medium, subrounded; dark brown, loose to compact, wet 14.2: root encountered	SP		12.0 120.0
15	120	15.0 - 17.0 No Recovery			15.0 118.0
		17.0 - 19.0 SAND trace to some clay, fine, uniform grading; grayish brown/tan with black heavy minerals, loose, wet. - two black bands at 17.3 and 17.6 ft bgs	SP-SC		17.0 116.0
		19.0 - 20.0 SAND, fine, uniform grading; grayish brown with black heavy minerals, compact, moist	SP		19.0 115.0
20	115	20.0 - 25.0 SAND, fine to medium, uniform grading; tan to white wih heavy minerals grains, wet	SP		20.0 110.0
25	110	25.0 - 30.0 CLAY trace sand; fine, sand; white to pale green, firm to stiff, slight mottling, moist	CL		25.0 105.0
30	105	Boring completed at 30.0 ft			

COMMENTS

1.) Borehole location is adjacent to monitoring well CCR-13; survey coordinates shown are from CCR-13.

2.) Ground surface elevation is estimated based on ground surface elevation of monitoring well CCR-13.

3.) Boreholes were backfilled with 20/30 graded silica sand to 5 ft bgs and the remaining borehole was filled with bentonite chips to land surface.

4.) Water-level elevations are estimated based on depth-to-water measurements from adjacent monitoring well CCR-13.

5.) Density descriptions are based on field observations and not form SPT blow counts.

6.) Soil cores were collected and transported to Golder's Tampa office. The soil cores were later logged by M. Boatman for mineralogic description of lithology.

7.) Based on lithologic descriptions, mine tailings and/or fill was encountered from approximately ground surface to 25 ft bgs and in-situ residual soil and/or weathered rock from 25 ft bgs to terminal depth.

LOG SCALE: 1 in = 4 ft
DRILLING COMPANY: Action Environmental
DRILLER: Omar Velazquez

INSPECTOR: M. Boatman
CHECKED BY: G. Morelli
DATE: 5/30/19

GOLDER

GLDR_GEOTECH NO SPT 1545454.2_REV1 (1).GPJ 5/30/19

RECORD OF BOREHOLE CCR-14A

SHEET 1 of 1

PROJECT: Lakeland Electric CCR
PROJECT NUMBER: 19117001
DRILLED DEPTH: 30.0 ft
AZIMUTH: N/A
LOCATION: Lakeland, FL

DRILL METHOD: Direct Push
DRILL RIG: Geoprobe 3230 DT
DATE STARTED: 2/12/2019
DATE COMPLETED: 2/12/2019
WEATHER: Partly cloudy

DATUM: NAD83 / NAVD88
COORDS: N: 1,362,771.1 E: 681,761.2
GS ELEVATION: 135.8 ft
TRC ELEVATION: N/A ft
TEMPERATURE: 75° F

INCLINATION: -90
DEPTH W.L.: 3.76 ft
ELEVATION W.L.: 132.04 ft
DATE W.L.: 3/12/2019
TIME W.L.: 12:06

DEPTH (ft)	ELEVATION (ft)	DESCRIPTION	USCS	GRAPHIC LOG	ELEV. / DEPTH (ft)
0	135	0.0 - 5.0 SAND, fine; brown, dry to moist	SP		130.8
5	130	5.0 - 7.4 SAND some silt; fine, subrounded, uniform grading; grayish brown, wet, loose 6.3: 6.3-6.7 ft bgs, CLAY pocket; soft; white, moist	SP-SM		5.0 128.4
		7.4 - 10.0 SAND, fine, subrounded, uniform grading; light to medium grayish brown, moist 8.6: 8.6-8.8 ft bgs, (CL) CLAY; soft; white, moist	SP		7.4 125.8
10	125	10.0 - 11.2 No Recovery			10.0 124.6
		11.2 - 12.3 SILTY SAND, fine, subrounded, uniform graded; white to light gray, wet, loose	SM		11.2 123.5
		12.3 - 15.0 CLAYEY SAND to Sandy CLAY, fine, subrounded; white to tan, moist, compact	SC/CL		12.3 120.8
15	120	15.0 - 16.4 No Recovery			15.0 119.4
		16.4 - 18.3 CLAYEY SAND to Sandy CLAY, fine to coarse, subangular, fossil fragments; white to pale green, wet, loose to compact	SC/CL		16.4 117.5
		18.3 - 20.0 SAND, fine to medium, subrounded to subangular, uniform grading; moist, compact to dense	SP		18.3 115.8
20	115	20.0 - 22.8 Sandy CLAY; fine to coarse, subangular coarse (fossil fragments); pale green to green, compact to dense (weathered limestone)	CL		20.0 113.0
		22.8 - 25.0 Sandy CLAY, fine to medium; white to pale green, moist, loose to compact	CL		22.8 110.8
25	110	25.0 - 27.0 Sandy CLAY; fine to coarse, subangular coarse (fossil fragments); pale green to green, compact to dense (weathered limestone)	CL		25.0 108.8
		27.0 - 30.0 CLAY trace sand; coarse sand; green and olive brown mottled, phosphatic grains, moist, stiff to hard (weathered limestone)	CL		27.0 105.8
30	105	Boring completed at 30.0 ft			

COMMENTS

1.) Borehole location is adjacent to monitoring well CCR-14; survey coordinates shown are from CCR-14.

2.) Ground surface elevation is estimated based on ground surface elevation of monitoring well CCR-14.

3.) Boreholes were backfilled with 20/30 graded silica sand to 5 ft bgs and the remaining borehole was filled with bentonite chips to land surface.

4.) Water-level elevations are estimated based on depth-to-water measurements from adjacent monitoring well CCR-14.

5.) Density descriptions are based on field observations and not form SPT blow counts.

6.) Soil cores were collected and transported to Golder's Tampa office. The soil cores were later logged by M. Boatman for mineralogic description of lithology.

7.) Based on lithologic descriptions, in-situ residual soil and/or weathered rock was encountered from approximately ground surface to terminal depth.

LOG SCALE: 1 in = 4 ft
DRILLING COMPANY: Action Environmental
DRILLER: Omar Velazquez

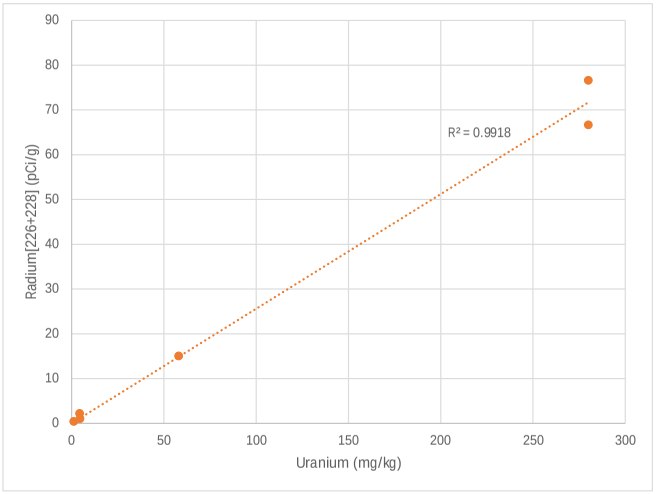
INSPECTOR: M. Boatman
CHECKED BY: G. Morelli
DATE: 5/30/19

GOLDER

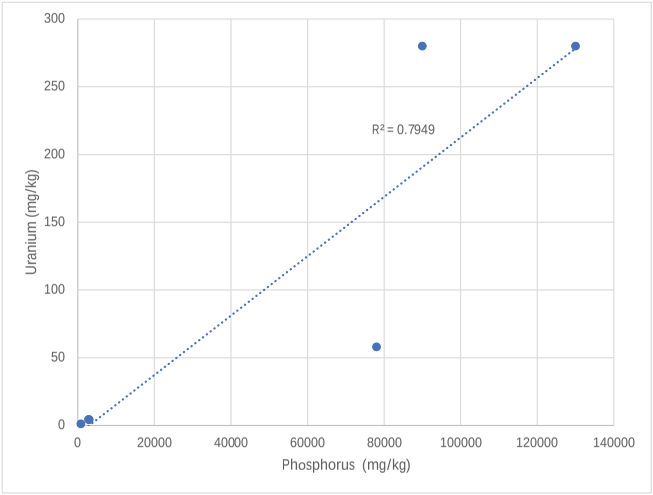
APPENDIX D

Geochemical Evaluation of Radium-226+228 in Soils

(a)



(b)



Results of chemical analysis of soils from boreholes for radionuclides and phosphorus

Soil Boring ID	Depth of samples (ft. bgs.)	Total Uranium (mg/kg)	Phosphorus (mg/kg)	Radium 226 (pCi/g)	Radium 228 (pCi/g)	Total Radium (pCi/g)
CCR-4A	24 - 25	280	130,000	75.9	0.726	76.6
CCR-15	24 - 25	4.5	2,800	0.702	0.328	1.03
CCR-16	24 - 25	4.3	3,000	1.14	1.07	2.21
CCR-18	24 - 25	1.2	800	0.443	ND	0.443
CCR-22	24 - 25	280	90,000	65.2	1.49	66.7
CCR-23	24 - 25	58	78,000	14.7	0.359	15.1

Notes:
mg/kg- milligrams per kilogram
pCi/g- picocuries per gram
ft. bgs.- feet below ground surface

CLIENT
LAKELAND ELECTRIC

CONSULTANT
GOLDER

PROJECT
BSA CCR GROUNDWATER
C.D. McINTOSH POWER PLANT
LAKELAND, POLK COUNTY, FLORIDA

TITLE
GEOCHEMICAL EVALUATION OF RADIUM-226+228 IN SOILS

PROJECT NO.	PHASE	REV.	FIGURE
19-117001	01	A	D

APPENDIX E

Mineralogical Assessment prepared by Petrologic Solutions, Inc.

Petrologic Solutions, Inc.
3997 Oak Hill Road
Douglasville, GA 30135
Tel: (678) 313-4146
rlkath@comcast.net

June 4, 2019 P18-2058

Anthony Grasso, P.G.
Golder Associates Inc.
5402 Beaumont Center Boulevard, Suite 108
Tampa, Florida, USA 33634

RE: TRANSMITTAL OF ANALYTICAL RESULTS IN SUPPORT OF THE EVALUATION OF RADIONUCLIDE SOURCES AT THE C.D. McINTOSH POWER PLANT, POLK COUNTY, LAKELAND, FLORIDA

Dear Mr. Grasso:

Petrologic Solutions, Inc. (Petrologic) was retained by Golder Associates Inc. (Golder) to evaluate soil samples for the presence of naturally-occurring radiogenic minerals and elements in support of Lakeland Electric's evaluation of radionuclide sources beneath the Byproduct Storage Area (BSA) at the C.D. McIntosh Power Plant (MPP) in Lakeland, Florida. For this work effort, Petrologic conducted petrographic analysis, qualitative X-ray diffraction (XRD), Scanning Electron Microscopy (SEM), and bulk geochemical analysis of unconsolidated soil samples collected from borings recently advanced at the site. Analytical procedures and results of these analyses are presented herein.

1.0 SAMPLE COLLECTION, PREPARATION, AND DESCRIPTION

Six soil borings were advanced around the perimeter of the BSA adjacent to monitoring wells CCR2, CCR4, CCR5, CCR7, CCR13, and CCR14 in February 2019, using Direct Push Technology (DPT). These additional borings, designated CCR2A, CCR4A, CCR5A, CCR7A, CCR13A, and CCR14A, were each extended to 30 feet below ground surface (ft. bgs). The locations of the borings were selected to evaluate geologic conditions of downgradient monitoring wells that encountered statistically significant levels of Radium-226 (Ra^{226}) and Radium-228 (Ra^{228}) during recent groundwater sampling events. An additional boring was located adjacent to CCR2, which occurs in an upgradient or side gradient position relative to the BSA. Golder logged the soil samples collected from the borings on March 1, 2019 and shipped 40 representative samples to Petrologic for analysis. Upon receipt, the soil samples were saturated; consequently, the samples were dried at 100 °C for 12-hours and then relogged by Petrologic.

Based on visual observation of the dried samples, generally two different material types were represented in the 40 samples collected. The upper-most unit consists of subangular to subrounded, fine- to medium-grained sand that varies in color, silt content, and abundance of heavy minerals. The sand-sized material is largely comprised of quartz, feldspar and a variety of dark heavy minerals; mineralogy of the very fine-grained matrix of the sand could not be determined through visual observation. This unit, as represented on the soil logs provided by Golder, ranges from approximately 20 feet to greater than 30 feet thick and was encountered in the upper parts of each of the additional DPT borings advanced. Although the samples show lithologic variability, no lateral continuity was apparent, giving the material a disturbed or disrupted appearance.

A second unit, observed to locally underlie the sand unit, consists of white to buff-tan, very fine- to fine-grained clayey sand to sandy clay with variable concentrations of silt and local occurrence of marine fossils (bryozoans and bivalves) and bone fragments. This lower unit is largely comprised of clay and quartz, with accessory minerals including rounded brown collophane (fine-grained apatite) "balls" and dolomite. Where present, this clayey sand to sandy clay unit, as represented on the soil logs provided by Golder, ranges from at least 5 feet to 10 feet thick and was encountered in the lower part of each of the DPT borings advanced except for CCR2A and CCR5A. The lateral continuity of this material along with the occurrence of dolomite, marine fossils, and bone, indicates that this unit may represent in-situ material.

From the 40 samples provided, Petrologic selected a subset of 16 samples for supplemental evaluation using a variety of analytical techniques, discussed in Section 2.0. These 16 samples were screened for the occurrence of radiogenic minerals using petrographic analysis of polished thin sections, XRD analysis, and radiogenic elements using bulk geochemistry. Based on these results, Petrologic selected a subset of 5 samples for SEM analysis to evaluate the presence of radiogenic minerals observed in thin section.

2.0 ANALYTICAL TECHNIQUES

Petrographic Analysis

Splits of the dried samples were prepared for petrographic analysis. The 16 soil samples selected from CCR2A, CCR4A, CCR5A, CCR7A, CCR13A, and CCR14A were re-dried and vacuum impregnated with clear epoxy by National Petrographic. The samples were mounted to a microscope slide; once the epoxy cured and then cut using a water-based cutoff saw. After drying the epoxy at 130 °C for 35 minutes, the billets were cut off from the microscope slides and the epoxied material was ground to approximately 35μm. After reaching 35μm, the samples were then polished using a roto-polishing system to a final thickness of 30μm. During grinding and polishing of the clayey samples, the clays were absorbing the grinding oils; consequently, the oil was cleaned with acetone repetitively during the grinding and polishing process to prevent oil from impregnating the clays.

Photomicrographs of the thin sections were taken using plane-polarized light (PPL), cross-polarized light (XPL), or reflected light (RL) on standard using an Olympus BX-60 petrographic microscope and Pixelink 662 digital camera in the microscopy lab at the University of West Georgia, Department of Geosciences. Unless otherwise indicated, all images were taken at 5x magnification; the long-edge of the field of view in the photographs is approximately 2.5 mm in length. Representative photomicrographs are presented in Attachment 1.

Qualitative X-Ray Diffraction - XRD

Splits of the dried samples were prepared for qualitative XRD analysis. The 16 soil samples selected from CCR2A, CCR4A, CCR5A, CCR7A, CCR13A, and CCR14A were ground using a mortar and pestle to create fine-grained powders (~10-12μm-diameter). The fine powders were then loaded on Whatman GF/C glass fiber filters using the Tubular Aerosol Suspension Chamber (TASC) method. This method is used to reduce preferred orientation and allow for a uniform particle distribution over the load area. The samples were loaded into a Philips PW-3710 X-ray diffractometer using a spinning stage pedestal and Cu-Kα X-ray source. The samples were run at 0.96 (~1) degree two-theta per minute from 4 to 64 degrees two-theta. Sample identification was conducted using a semi-automated search-match computer program (High Score) which utilizes a Joint Committee on Powder Diffraction Standards (JCPDS) and Crystallography Open (COD) databases; and manual identification using published reference patterns. Additionally, some of the

XRD patterns were overlain with unpublished reference patterns obtained at the University of West Georgia. Interpreted XRD patterns are presented in Attachment 2.

Bulk Geochemistry

Sixteen dried soil samples collected from CCR2A, CCR4A, CCR5A, CCR7A, CCR13A, and CCR14A were provided to American Assay Laboratory (AAL) in Sparks, Nevada for bulk geochemical elemental analysis. All 16 samples were placed in a drying oven at 90°C by AAL prior to analysis. After drying, samples were transferred into ring and puck shatterbox where samples were reduced to a fine powder (200 mesh). A 0.5-gram sample was then weighed and placed into Teflon sample tubes for acid digestion with HNO_3+HCl+HF+$HClO_4$ for 1 hour. Major, minor and trace element concentrations of the samples were determined by Inductively Coupled Plasma (ICP)- Mass Spectrometry (MS) using ICP-5AM48 protocol. Geochemical results are included as Attachment 3 and summarized on Table 1, presented in Section 3.0.

Scanning Electron Microscopy - SEM

The University of West Georgia Microscopy Center (WGMC) at the Department of Geosciences completed SEM analysis of five polished thin sections, one sample each from CCR2A, CCR7A, and CCR13A, and two samples from CCR14A. The selected thin sections were carbon-coated to reduce surface charging during SEM analysis. Qualitative backscattered electron imaging (BSE) and identification of potential Uranium (U)/Thorium (Th)-bearing accessory minerals in the coated polished thin-sections were conducted using the FEI Quanta 200 SEM instrument and attached Bruker EDX detector for semi-quantitative analysis. Analyses were completed using a 20 kilovolt (kV) accelerating voltage on the filament and a partial vacuum of 0.45 Torr in the sample chamber. Images, spectra, and elemental maps were collected, processed, and annotated using the Bruker ESPRIT software package. Images resulting from the SEM analyses are presented in Attachment 4.

3.0 RESULTS

Petrographic Analysis

Petrographic analysis was conducted on all 16 polished thin-sections to determine the major and minor mineralogy of each sample. Based on petrographic analysis of the upper sand, this unit is characterized by more than 95 volume percent detrital quartz, which is typically subangular to subrounded. Associated with the quartz are accessory minerals that include microcline, muscovite, staurolite, kyanite, zircon, rutile, and ilmenite. The matrix of the sand is variably comprised of kaolinite and eylettersite, and is locally cemented with wavellite.

Based on petrographic analysis of the lower clayey sand to sandy clay unit, this unit is characterized by subangular sand in a clayey matrix. Large rounded grains of collophane, marine fossils (Bryozoa and Molluska), and bone fragments also occur within this more clay-rich unit. Collophane is a massive cryptocrystalline apatite comprised of apatite, fluorapatite and hydroxyapatite. Typically, apatite-minerals are not optically isotropic; however, the cryptocrystalline nature of the collophane makes it optically isotropic in thin section. In one sample, CCR14A (28.3-28.6), dolomite is present in the clayey matrix. Accessory minerals include microcline, staurolite, ilmenite, and zircon.

Photomicrographs for selected samples are presented in Attachment 1.

Qualitative X-Ray Diffraction - XRD

X-Ray powder diffraction scans were completed on all 16 samples to identify the major minerals present. A limitation of XRD analysis is that the lower detection limit is approximately 4 to 5 weight percent. Therefore, diffraction peaks for accessory minerals that are less than approximately 5 weight percent of the rock are typically lost in the background. As previously discussed, the samples are loaded GF/C filters using an aerosol suspension chamber. This method of sample preparation reduces preferred orientation; however, it is a thin layer diffraction technique. Consequently, each of the XRD scans presented in Attachment 2 shows two aluminum peaks that represent the aluminum sample holder upon which the loaded filters are mounted; therefore, aluminum-metal is not contained in these samples.

Consistent with the petrographic analysis, XRD analysis indicates that mineralogy of the upper sand unit is primarily comprised of quartz with minor zircon. Kaolinite and wavellite were also observed, along with the presence of eylettersite occurring in increased concentration near the base of this unit.

The lower clay-rich unit is characterized by the occurrence of quartz, hydroxyapatite, fluorapatite, palygorskite, and minor wavellite. Additionally, the deepest sample, collected from CCR14A at 28.3-28.6 ft. bgs, contains dolomite. Annotated XRD scans for the selected samples are presented in Attachment 2.

Bulk Geochemistry

A summary of selected major, minor and trace elemental geochemistry of soil samples from CCR2A, CCR4A, CCR5A, CCR7A, CCR13A, and CCR14A is presented on Table 1. A complete listing of all geochemical data is presented in Attachment 3.

As indicated in these summary results, the radiogenic elements uranium and thorium were detected in all of the samples collected from the upper sand unit and lower clayey sand to sandy clay unit. The radiogenic elements rubidium and potassium were also detected in many of the samples.

Scanning Electron Microscopy - SEM

Petrographic and XRD analyses indicated the presence of minerals that are potentially radiogenic, and bulk geochemistry confirms the presence of radiogenic elements. Scanning Electron Microscopy was used to confirm the presence of the radiogenic elements detected in the bulk geochemistry in the radiogenic minerals identified in thin section and XRD patterns.

Radiogenic minerals identified from SEM analyses in representative sediment samples include the following:

Zircon	**Rutile**
Ilmenite	**Wavellite**
Hydroxyapatite	**Fluorapatite**
Collophane	**Eylettersite**

Energy dispersive spectroscopy (EDS), back scatter electron (BSE) images, and element maps of soil samples are presented as Attachment 4. In the BSE images, minerals that contain elements with low atomic numbers are shown in gray tones. Minerals that contain elements with large atomic numbers, generally show up as “bright” spots on the BSE image. Because

uranium and thorium have atomic numbers of 92 and 90, respectively, minerals that contain these elements are “brighter” than the surrounding matrix.

Once a mineral with high atomic number elements was identified in the BSE image, the mineral was analyzed using energy dispersive spectroscopy. EDS is an analytical technique for elemental analysis based on x-ray emission caused by electrons that are dislodged from the inner orbitals by an x-ray beam from the instrument. As the inner electron is ejected from the inner shell, the electron hole is filled by electrons from higher-energy shells. This transformation from an outer- to an inner-shell releases energy in the form of an x-ray that can be detected and quantified. The energy of the x-ray is characteristic for different elements and can be displayed on an EDS spectrum as a function of electron volts (KeV). EDS and BSE plots for each sample analyzed is presented in Attachment 4.

Discussion

Based on review of historic aerial photographs, topographic maps and mine records, Golder has interpreted that the BSA and surrounding area are underlain by either fine-grained phosphatic mine tailings and/or unmined phosphate deposits. Results from visual observation, petrographic analysis, XRD analysis, bulk chemistry, and SEM analysis conducted for this work effort support this interpretation.

Two types of material were generally encountered in the six additional DPT borings advanced around the BSA. Based on the absence of glass (spherical or shards) in the thin sections or XRD patterns, and relatively low arsenic, beryllium and lithium concentrations, along with the high concentration of wavellite-cemented detrital quartz, microcline, zircon, staurolite, kyanite, ilmenite, and rutile, the upper sand unit encountered is not considered to represent coal combustion residuals (CCR). Although there is lithologic variability in this sand unit, there is no lateral continuity, giving the material a disturbed appearance; consequently, the absence of stratigraphy in a marine sand sequence and known land-use history indicates that this material likely represents backfilled materials, comprised of either removed and replaced overburden, unrecoverable ore, processed mine tailings, and/or mine waste. The underlying clayey-sand to sandy clay unit is interpreted to represent unmined, in-situ material, based on the occurrence of palygorskite, collophane apatite (with quartz inclusions), dolomitic carbonate, marine fossils, and bone fragments.

It is well-documented by Golder that phosphate deposits mined in this area contain naturally-occurring radiogenic minerals. Based on petrographic, XRD and SEM analysis, several potentially radiogenic minerals were identified in the soil samples collected, including: eylettersite (thorium-bearing aluminum phosphate); wavellite (uranium-bearing aluminum phosphate); collophane, apatite, hydroxyapatite, and fluorapatite (uranium-bearing calcium phosphates); and zircon, rutile, and ilmenite (uranium-bearing oxides). This is further supported by the detection of uranium concentrations up to 467ppm and thorium concentrations up to 23.4ppm in the bulk geochemistry, as summarized in Table 1 and presented in Attachment 3.

Radioactive decay products from naturally occurring radionuclides such as uranium and thorium are potential sources of Ra^{226} and Ra^{228}. Results from this investigation and regional mineral resource evaluations reveal significant uranium and other accessory constituents that are associated with the phosphate ore mined at and near the BSA. Published uranium concentrations in phosphate-bearing rocks have typical concentrations of up to 300 ppm, significantly exceeding concentrations reported for US coals and fly ash (USGS 1997). As shown on Table 1, naturally occurring radionuclides in phosphate ore and mine tailings surrounding the BSA are consistent with, and locally have higher concentrations of uranium than published concentrations in CCR.

Based on research conducted by Golder, the BSA is located in one of the most productive districts of the land-pebble phosphate mining in Florida. Because land-pebble deposits contain phosphates with elevated concentrations of uranium, this district was also of economic interest to the United States Atomic Energy Commission (USACE) (Cathcart, 1949). Uranium is associated in different ways with the aluminum phosphate and calcium phosphate mining zones that occur within these types of deposits. The upper sand unit encountered around the BSA, appears to represent materials originally derived from the aluminum phosphate zone, indicated by the presence of wavellite, eylettersite, and kaolinite. Materials located in the leached portions of the aluminum phosphate zone, originally formed by the downward migration of oxygen-rich acidic water, were noted to have uranium concentrated in the finest fraction (Cathcart, 1964). The principal fine fraction in the leached zone is kaolinitic clay and eylettersite.

The lower clayey-sand unit appears to represent the calcium phosphate zone, which was the target ore that was mined beneath the BSA. Cathcart (1964) described this zone as being comprised of unconsolidated sand, clayey sand, and sandy clay containing abundant nodules of calcium phosphate. We interpret the rounded collophane “balls” which consist of apatite, hydroxyapatite, and fluorapatite to represent the calcium phosphate nodules described by Cathart (1964). Samples from this zone represent unmined, in-situ material that are locally present beneath the BSA.

Based on the results of this work effort, multiple sources for naturally occurring uranium and thorium, and their decay products of Ra^{226} and Ra^{228}, were identified in the unconsolidated samples taken from the DPT borings advanced adjacent to monitoring wells installed around the BSA.

4.0 CLOSING

Petrologic Solutions appreciates the opportunity to work with Golder Associates on this project. Should you require additional information related to this evaluation, please do not hesitate to contact us.

Respectfully submitted,
PETROLOGIC SOLUTIONS INC.

Randy Kath, PhD, PG
Senior Geologist and Principal

References:

Cathcart, J.B., 1964, Economic Geology of the Lakeland Quadrangle Florida. USGS Survey Bulletin 1162-G. US Government Printing Office, Washington.

USGS 1997. Radioactive Elements in Coal and Fly Ash: Abundance, Forms, and Environmental Significance. USGS Fact Sheet FS-163-97

Table 1. Summary of Selected Geochemical Data

Attachment 1: Photomicrographs of Sediment Samples
Attachment 2: Qualitative X-Ray diffraction scans
Attachment 3: Bulk Geochemistry
Attachment 4: SEM Backscatter Images and Associated EDS Spectra

Table 1: Summary of Selected Geochemical Data

Sample Number	*Depth (ft. BGS)*	Al_2O_3 wt%	TiO_2 wt%	Fe_2O_3 wt%	MgO wt%	MnO wt%	CaO wt%	K_2O wt%	NaO wt%	P_20_5 wt%
CCR2A	*18.7-19*	1.37	1.34	0.35	<MDL	0.01	0.10	0.06	0.01	0.47
CCR2A	*23-23.5*	9.22	1.06	0.50	0.05	0.01	0.51	0.13	0.02	2.29
CCR4A	*12.5-12.8*	0.42	0.50	0.08	<MDL	0.00	0.19	0.03	<MDL	0.05
CCR4A	*17-17.4*	3.75	0.62	0.13	0.05	0.00	0.20	0.06	0.02	0.67
CCR4A	*26.1-26.4*	9.12	0.36	0.45	0.10	0.01	23.38	0.36	0.13	>2.30
CCR5A	*19.3-20*	1.11	0.31	0.06	<MDL	0.00	0.13	0.04	0.03	0.22
CCR5A	*22.3-22.6*	9.32	0.42	0.34	0.05	0.00	0.48	0.10	0.03	1.10
CCR7A	*7-7.4*	0.59	0.51	0.10	<MDL	0.00	0.20	<MDL	<MDL	0.11
CCR7A	*14.6-15*	0.73	0.62	0.13	<MDL	0.01	0.08	<MDL	<MDL	0.16
CCR7A	*23.2-23.5*	8.70	0.51	0.71	0.05	0.00	0.90	0.07	0.20	>2.30
CCR13A	*9.4-10*	0.54	0.94	0.12	<MDL	0.00	0.41	<MDL	<MDL	0.13
CCR13A	*17.3-17.6*	4.12	0.36	0.16	0.03	0.00	0.26	0.05	<MDL	1.29
CCR13A	*27.8-28.2*	17.87	0.68	1.41	0.81	0.01	0.59	0.66	0.05	>2.30
CCR14A	*8.6-8.8*	7.61	0.46	0.42	0.14	0.00	1.05	0.13	0.02	2.13
CCR14A	*16.5-18*	11.95	0.53	0.50	0.08	0.01	0.72	0.18	0.02	>2.30
CCR14A	*28.3-28.6*	2.99	0.17	3.37	6.37	0.02	20.09	0.43	0.26	>2.30
Sample Number	*Depth (ft. BGS)*	As ppm	Be ppm	Cr ppm	Pb ppm	Rb ppm	Th ppm	U ppm	V ppm	Zr ppm
CCR2A	*18.7-19*	0.30	0.17	19.5	25.00	4.00	8.50	5.0	19.00	71.0
CCR2A	*23-23.5*	<MDL	1.22	42.9	29.00	6.00	12.90	50.4	59.00	70.2
CCR4A	*12.5-12.8*	<MDL	0.01	7.7	<MDL	<MDL	1.70	1.2	6.00	17.6
CCR4A	*17-17.4*	0.30	0.20	19.2	13.00	3.00	6.80	5.3	16.00	37.7
CCR4A	*26.1-26.4*	3.40	1.80	136.1	11.00	16.00	9.70	185.5	119.00	51.8
CCR5A	*19.3-20*	<MDL	0.05	6.6	6.00	2.00	2.10	4.1	5.00	15.9
CCR5A	*22.3-22.6*	0.70	1.22	49.6	24.00	5.00	8.20	34.2	35.00	44.0
CCR7A	*7-7.4*	0.60	0.05	7.9	4.00	<MDL	1.70	1.4	6.00	42.5
CCR7A	*14.6-15*	<MDL	0.05	10.1	4.00	<MDL	2.00	0.9	6.00	30.7
CCR7A	*23.2-23.5*	<MDL	0.93	50.5	22.00	3.00	8.80	35.0	33.00	60.9
CCR13A	*9.4-10*	0.40	0.04	11.4	16.00	<MDL	4.80	3.0	13.00	76.1
CCR13A	*17.3-17.6*	<MDL	0.49	23.4	12.00	3.00	6.30	22.4	25.00	43.5
CCR13A	*27.8-28.2*	0.20	1.58	162.8	21.00	41.00	23.40	164.4	247.00	167.2
CCR14A	*8.6-8.8*	<MDL	1.47	48.4	26.00	8.00	11.40	96.2	50.00	93.3
CCR14A	*16.5-18*	0.60	4.24	112.3	31.00	10.00	16.60	467.0	48.00	94.2
CCR14A	*28.3-28.6*	5.30	0.69	84.3	6.00	20.00	4.00	34.8	123.00	19.0

<MDL- less than method detection limit

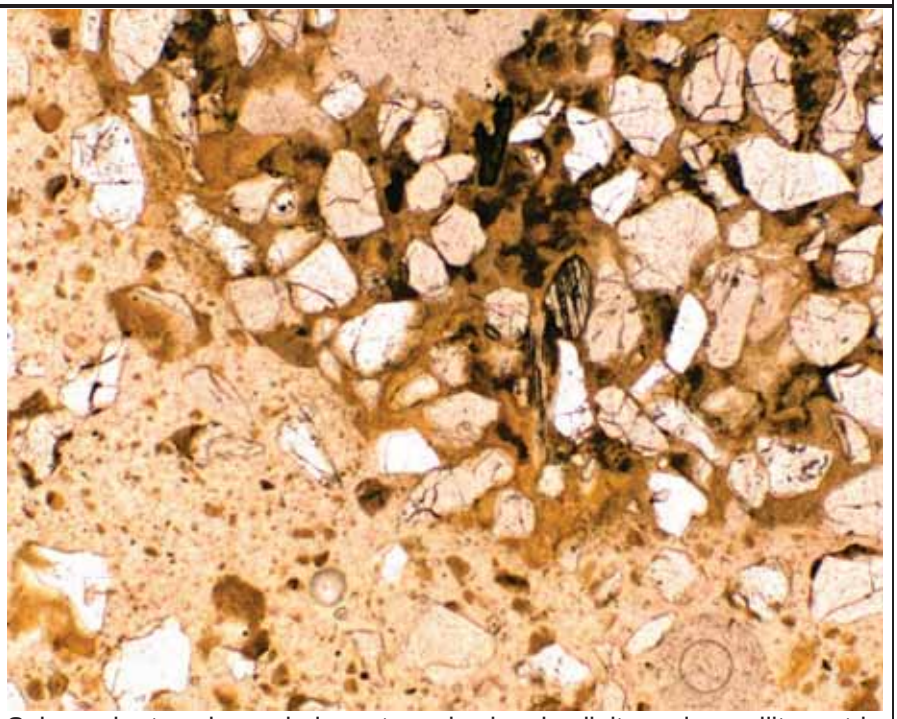
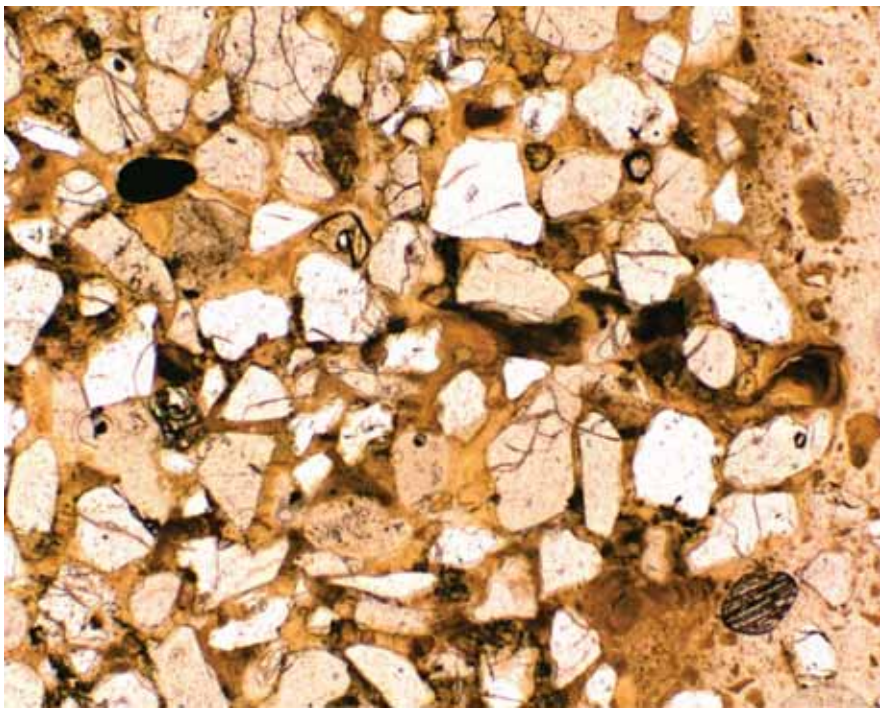
FN: T:\PetrologicSolutions\P18-2058_Lakeland Electric ASE\LakelandElectric_ASE_final.docx

PetroLOGIC Solutions, Inc.

3997 Oak Hill Road
Douglasville, GA 30135
Tel: (678) 313-4146
email: rlkath@comcast.net

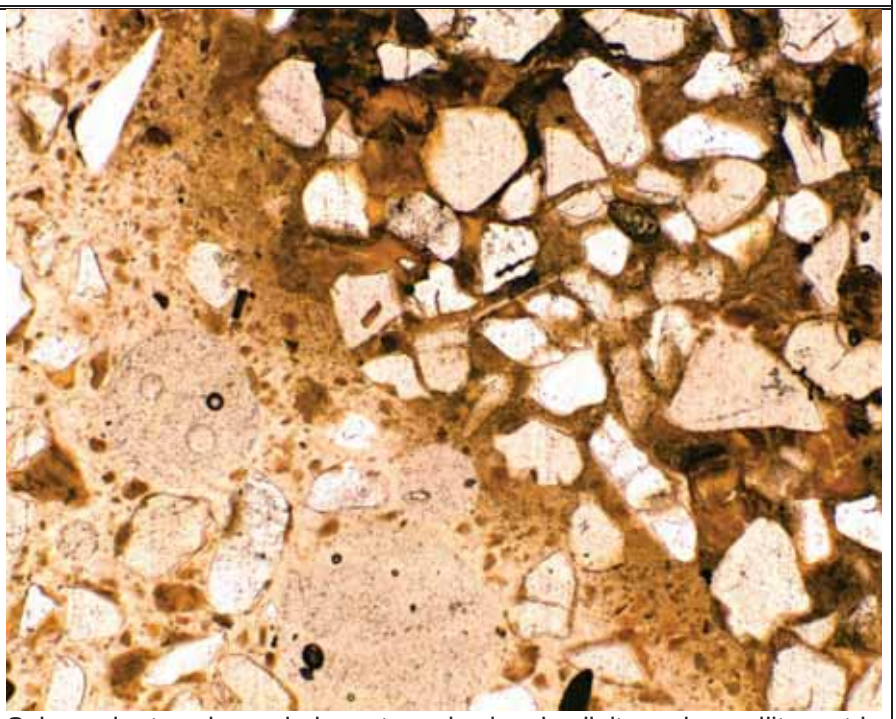
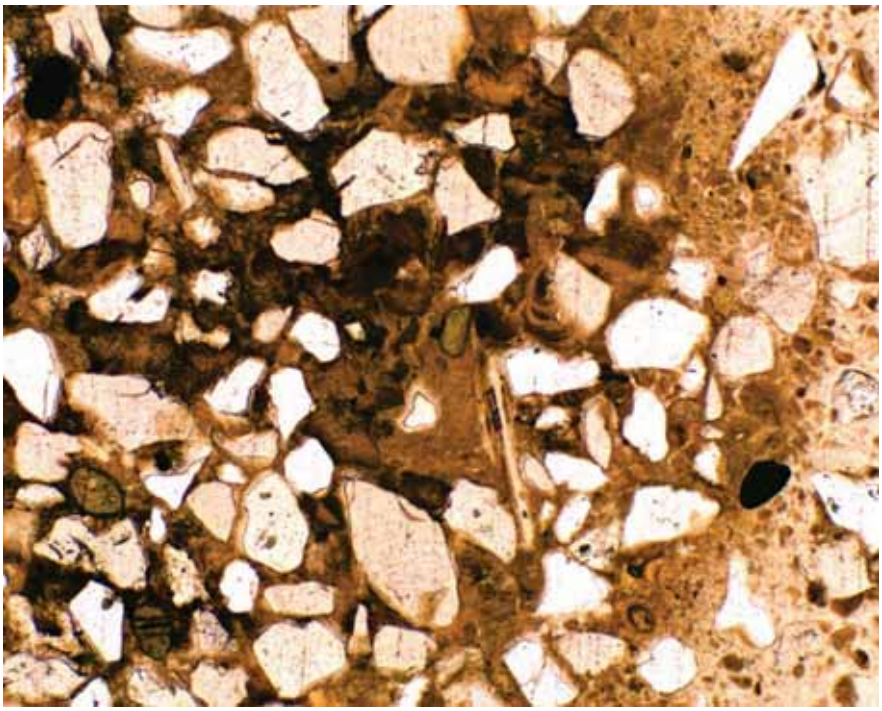
ATTACHMENT 1

PHOTOMICROGRAPHS OF SELECT THIN SECTIONS

Lakeland Electric	
PHOTO 1 CCR2A 23.0-23.5	 Subangular to subrounded quartz grains in a kaolinite and wavellite matrix (brown). Striated high-relief mineral is kyanite. Minor rutile. Plane light.
PHOTO 2 CCR2A 23.0-23.5	 Subangular to subrounded quartz grains in a kaolinite and wavellite matrix (brown). Striated high-relief mineral is kyanite; rounded opaque grain is ilmenite; pleochroic yellow minerals are staurolite. Plane light.

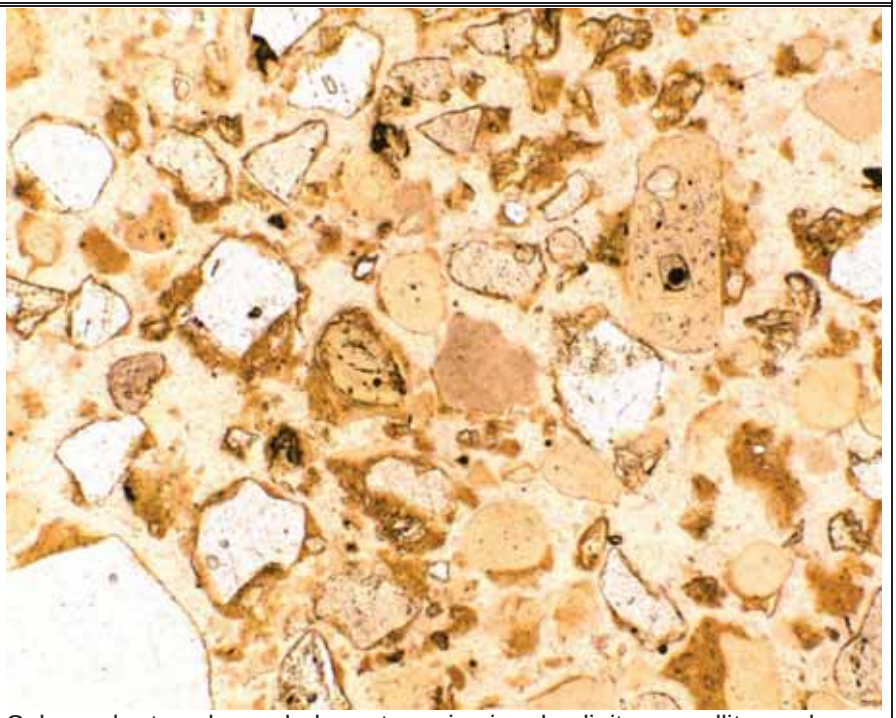
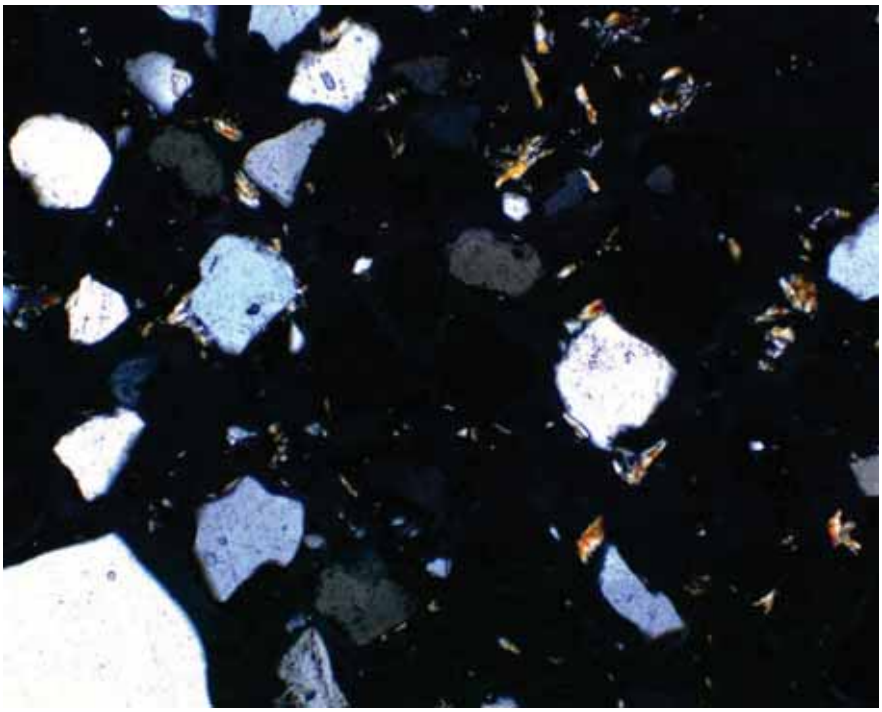
Unless otherwise indicated, all images were taken at 5x magnification; the long-edge of the field of view in the photographs is approximately 2.5 mm in length.

Lakeland Electric

PHOTO 3 CCR2A 23.0-23.5	 Subangular to subrounded quartz grains in a kaolinite and wavellite matrix (brown). Greenish mineral is zircon; elongate mineral is muscovite Plane light.
PHOTO 4 CCR2A 23.0-23.5	 Subangular to subrounded quartz grains in a kaolinite and wavellite matrix (brown). Greenish minerals are zircon; elongate mineral is muscovite; rounded opaque mineral is ilmenite. Plane light.

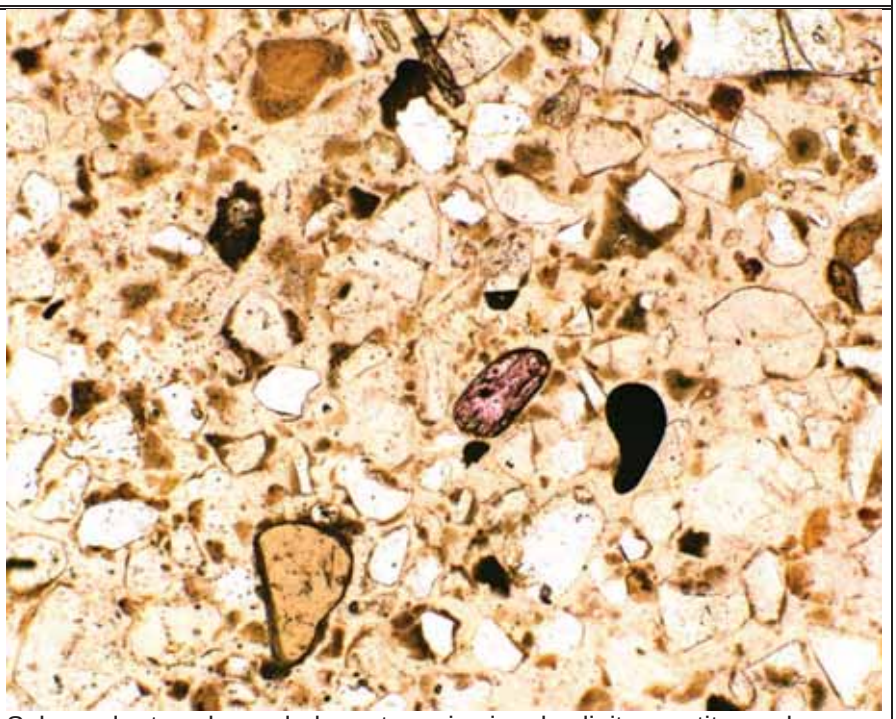
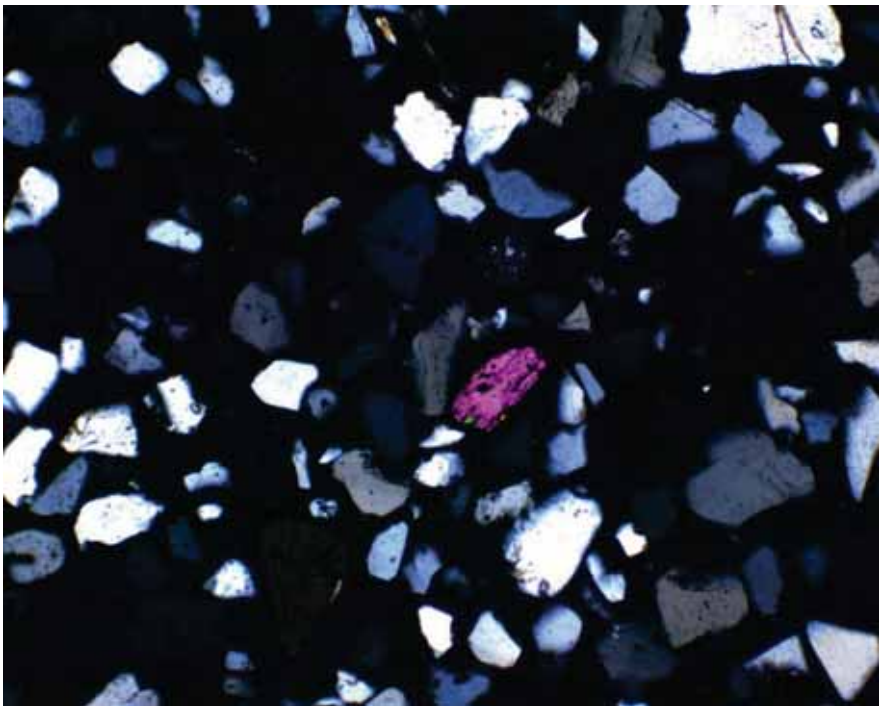
Unless otherwise indicated, all images were taken at 5x magnification; the long-edge of the field of view in the photographs is approximately 2.5 mm in length.

Lakeland Electric

PHOTO 1 CCR4A 26.1-26.4	 Subangular to subrounded quartz grains in a kaolinite, wavellite, and apatite matrix (brown). Plane light.
PHOTO 2 CCR4A 26.1-26.4	 Subangular to subrounded quartz grains in a kaolinite, wavellite, and apatite matrix (brown). Polarized light.

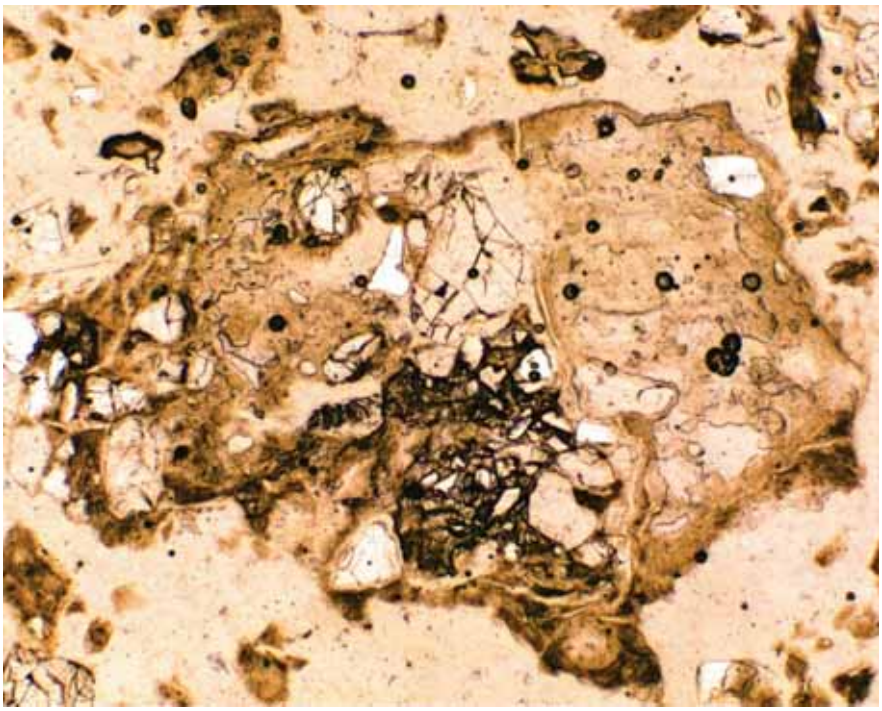
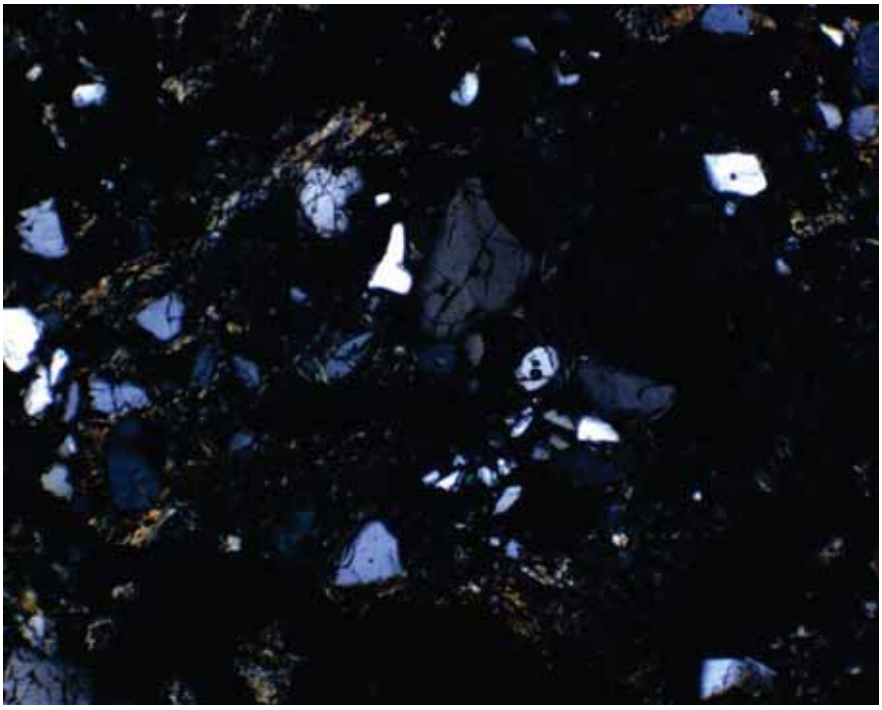
Unless otherwise indicated, all images were taken at 5x magnification; the long-edge of the field of view in the photographs is approximately 2.5 mm in length.

Lakeland Electric

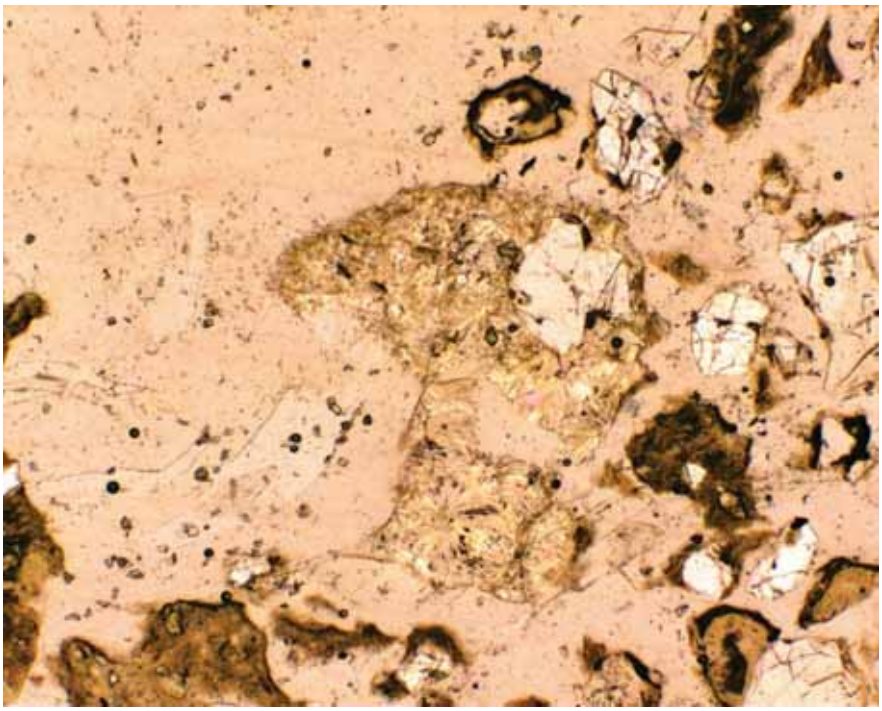
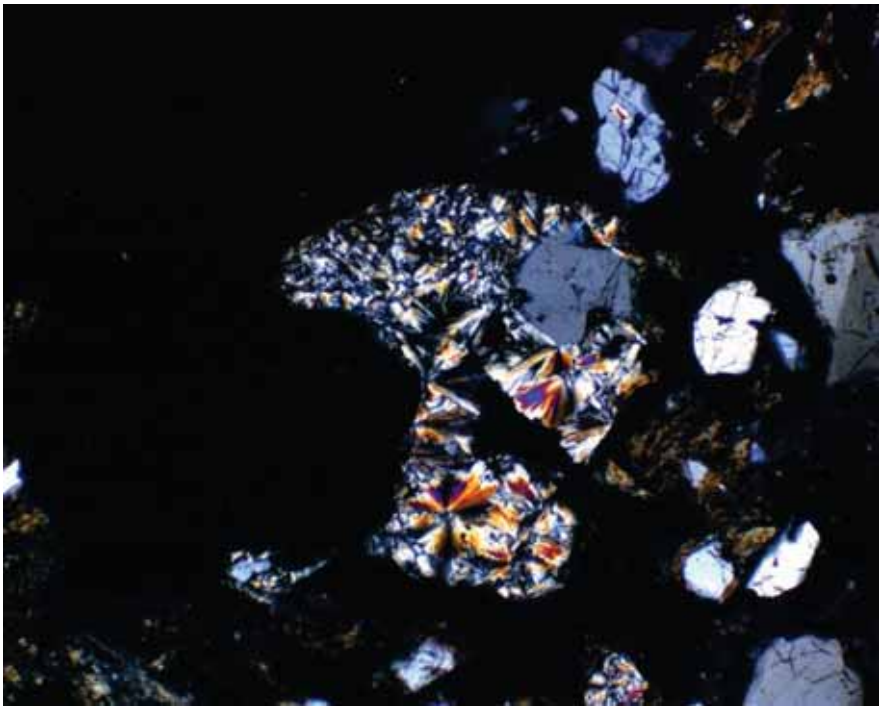
PHOTO 1 CCR7A 23.2-23.5	 Subangular to subrounded quartz grains in a kaolinite, apatite, and wavellite matrix (brown). Yellow and pleochroic minerals are staurolite; opaque mineral is ilmenite. Plane light.
PHOTO 2 CCR7A 23.2-23.5	 Subangular to subrounded quartz grains in a kaolinite, apatite, and wavellite matrix (brown). Greenish and purple mineral are staurolite. Polarized light.

Unless otherwise indicated, all images were taken at 5x magnification; the long-edge of the field of view in the photographs is approximately 2.5 mm in length.

Lakeland Electric

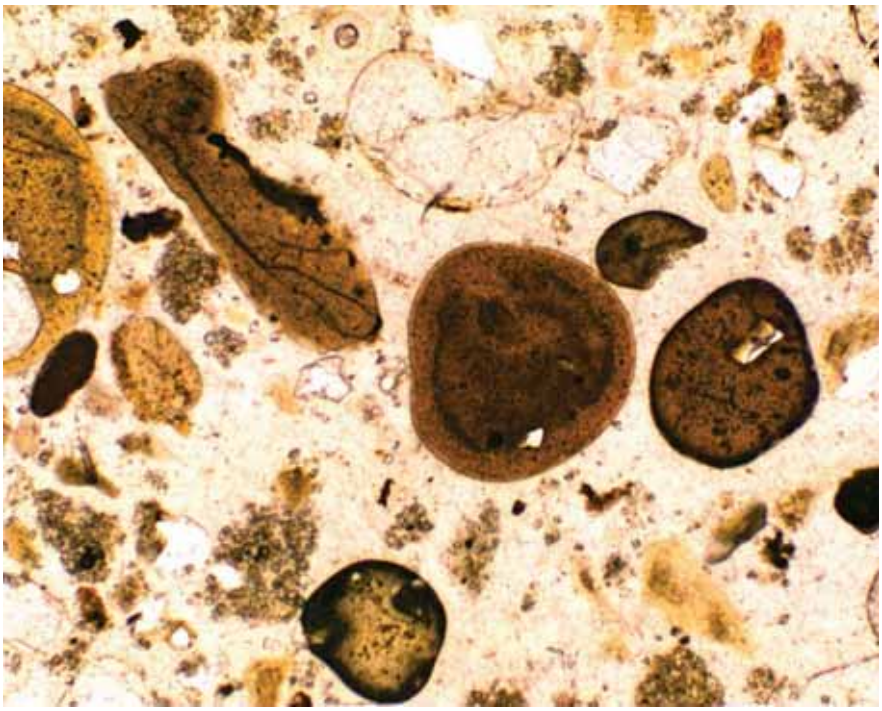
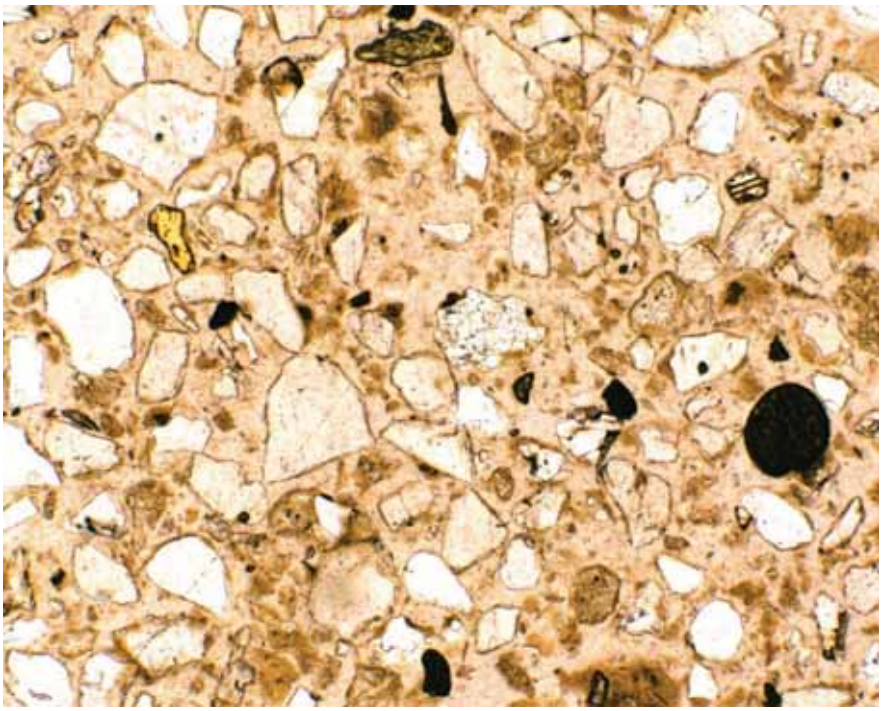
PHOTO 1 CCR13A 27.8-28.2	 Minor subangular quartz grins in a clay and wavellite matrix. Plane light.
PHOTO 2 CCR13A 27.8-28.2	 Minor subangular quartz grins in a clay and wavellite matrix. Polarized light.

Lakeland Electric

PHOTO 3 CCR13A 27.8-28.2	 Wavellite cement around an angular quartz grain. Plane light.
PHOTO 4 CCR13A 27.8-28.2	 Wavellite cement around an angular quartz grain. Polarized light.

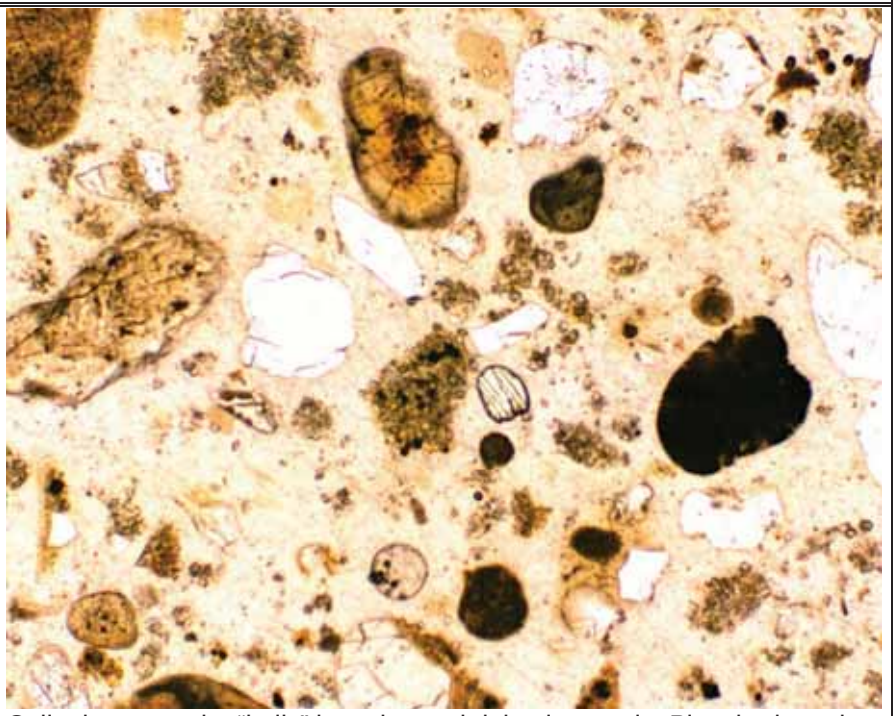
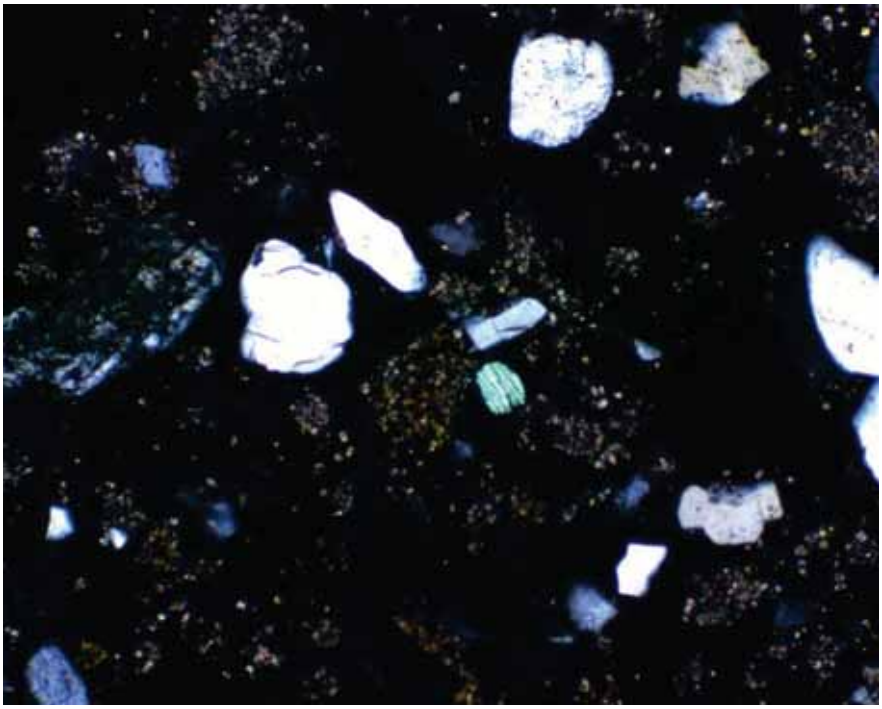
Unless otherwise indicated, all images were taken at 5x magnification; the long-edge of the field of view in the photographs is approximately 2.5 mm in length

Lakeland Electric

PHOTO 1 CCR14A 28.3-28.66	 Collophane apatite “balls” in a clay matrix. Plane light
PHOTO 2 CCR14A 16.5-18.0	 Subangular to subrounded quartz grains in a kaolinite and wavellite matrix (brown). Yellow mineral is staurolite, striated high-relief mineral is kyanite, and large round mineral is rutile. Plane light.

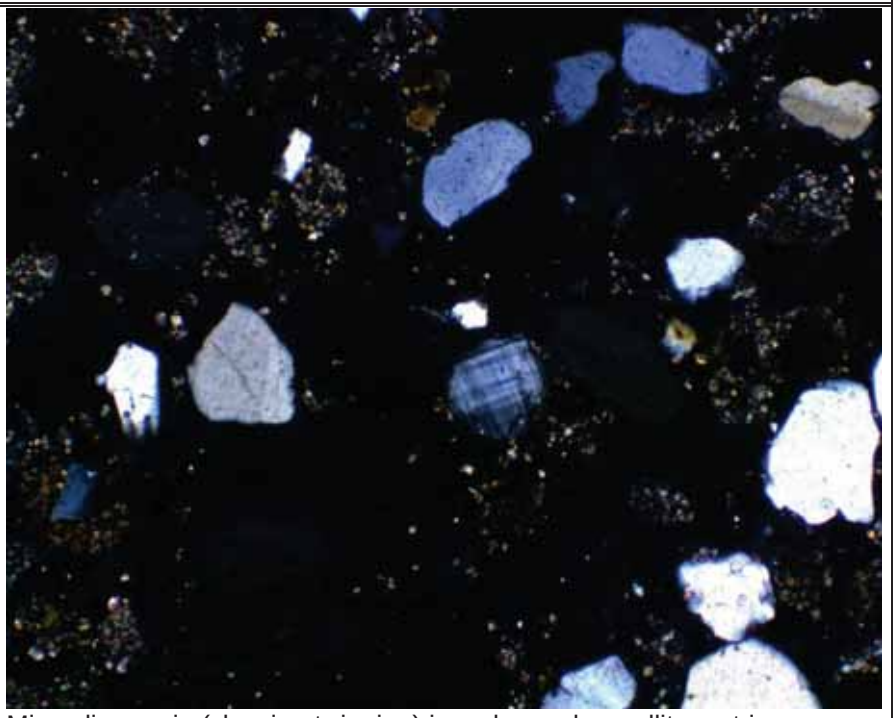
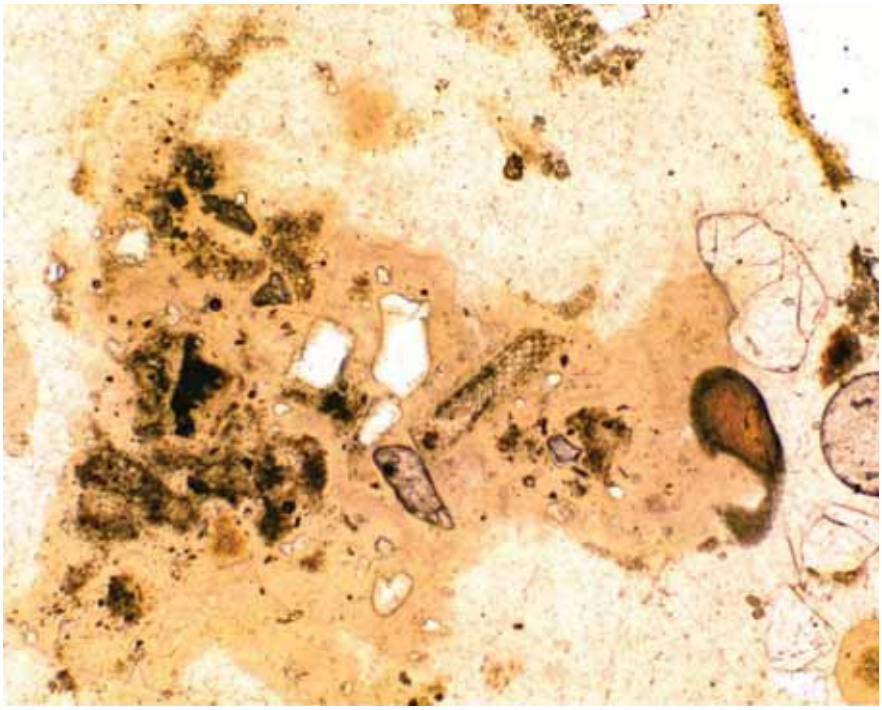
Unless otherwise indicated, all images were taken at 5x magnification; the long-edge of the field of view in the photographs is approximately 2.5 mm in length

Lakeland Electric

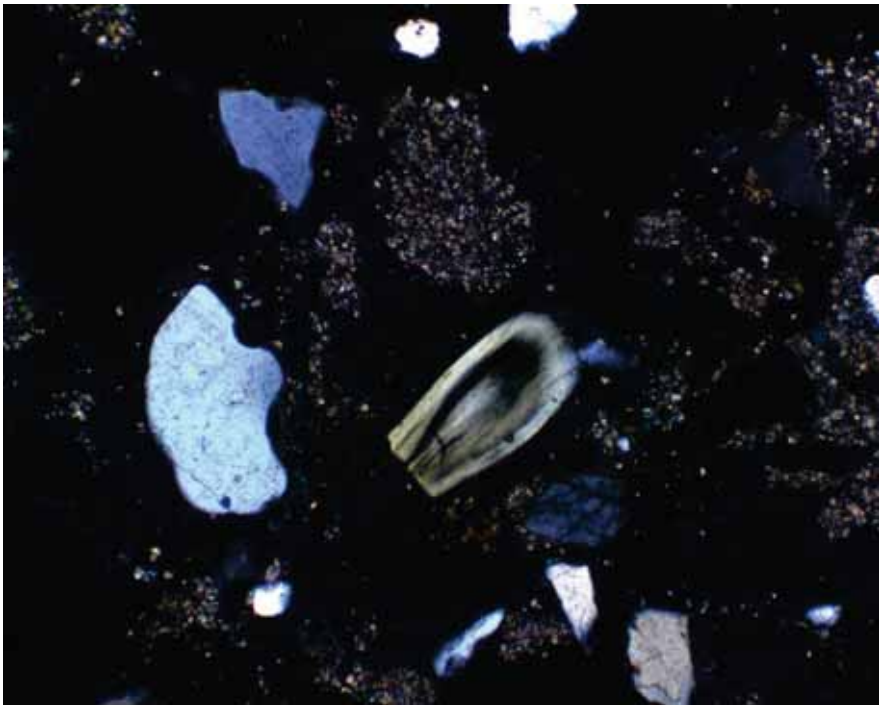
PHOTO 3 CCR14A 28.3-28.66	 Collophane apatite “balls” in a clay and dolomite matrix. Pleochroic grain near the center of the image is staurolite. Plane light.
PHOTO 4 CCR14A 16.5-18.0	 Collophane apatite “balls” in a clay and dolomite matrix. Greenish grain near the center of the image is staurolite. Polarized light.

Unless otherwise indicated, all images were taken at 5x magnification; the long-edge of the field of view in the photographs is approximately 2.5 mm in length

Lakeland Electric

PHOTO 5 CCR14A 28.3-28.66	 Microcline grain (showing twinning) in a clay and wavellite matrix. Polarized light.
PHOTO 6 CCR14A 16.5-18.0	 Fossil fragment (bryozoan?) in a clay-rich matrix . Plane light.

Unless otherwise indicated, all images were taken at 5x magnification; the long-edge of the field of view in the photographs is approximately 2.5 mm in length

Lakeland Electric	
PHOTO 7 CCR14A 28.3-28.66	 Phosphatic bone fragment and collophane “balls” in a dolomitic, clay-rich matrix (brown). Polarized light.
PHOTO 8 CCR14A 16.5-18.0	 Phosphatic bone fragment and collophane “balls” in a dolomitic, clay-rich matrix (brown). Note undulatory extinction. Polarized light.

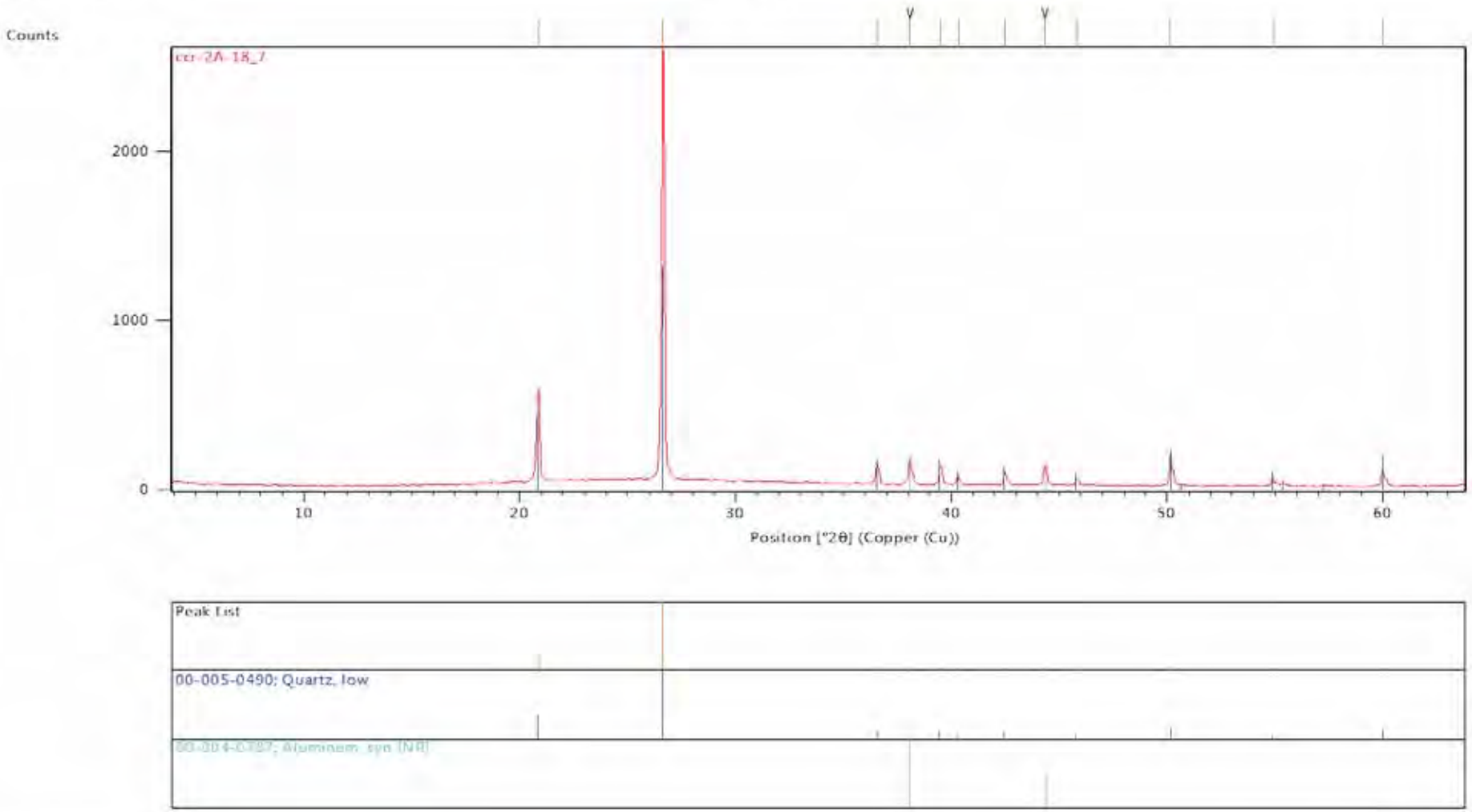
Unless otherwise indicated, all images were taken at 5x magnification; the long-edge of the field of view in the photographs is approximately 2.5 mm in length

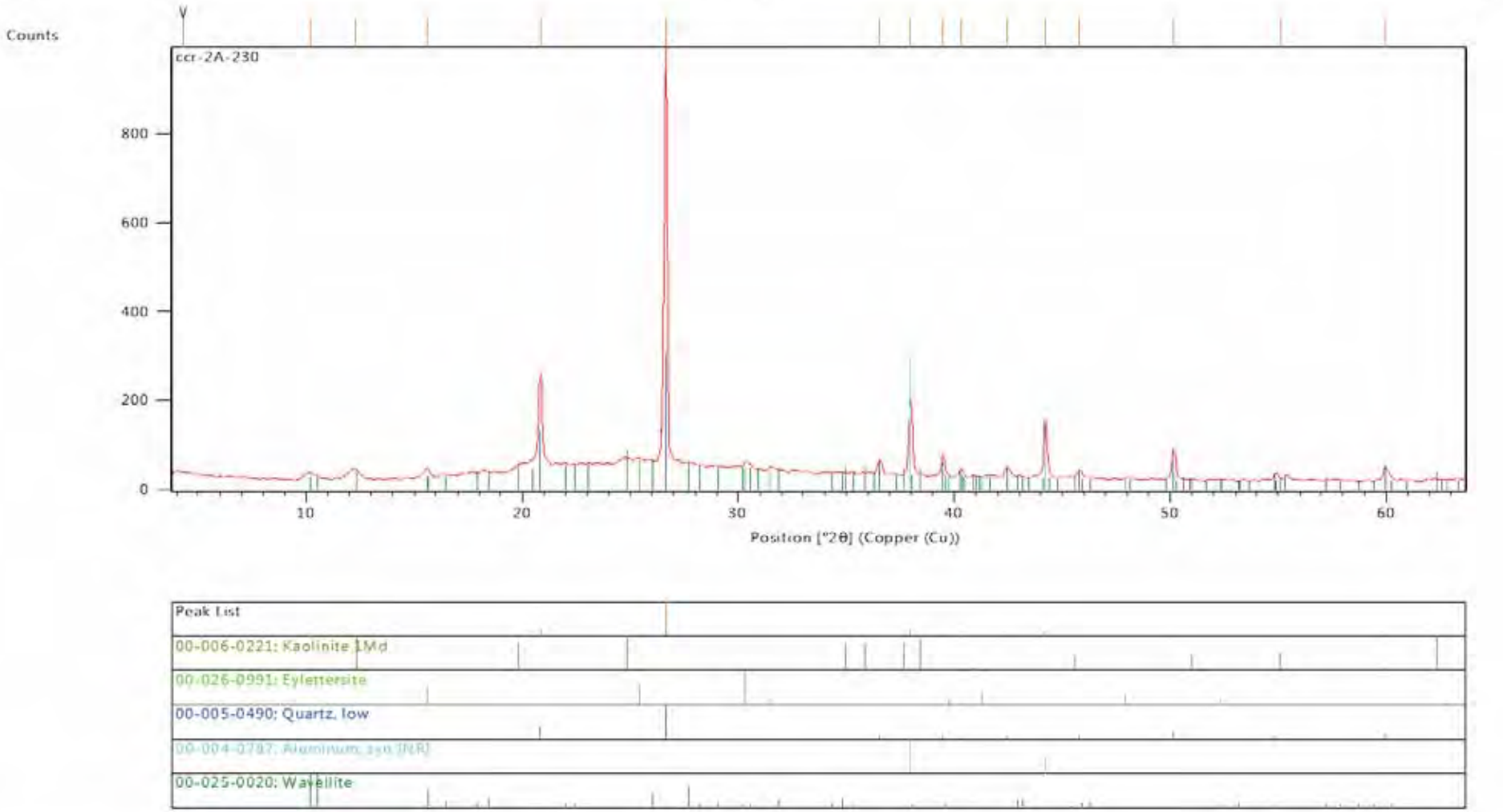
PetroLOGIC Solutions, Inc.

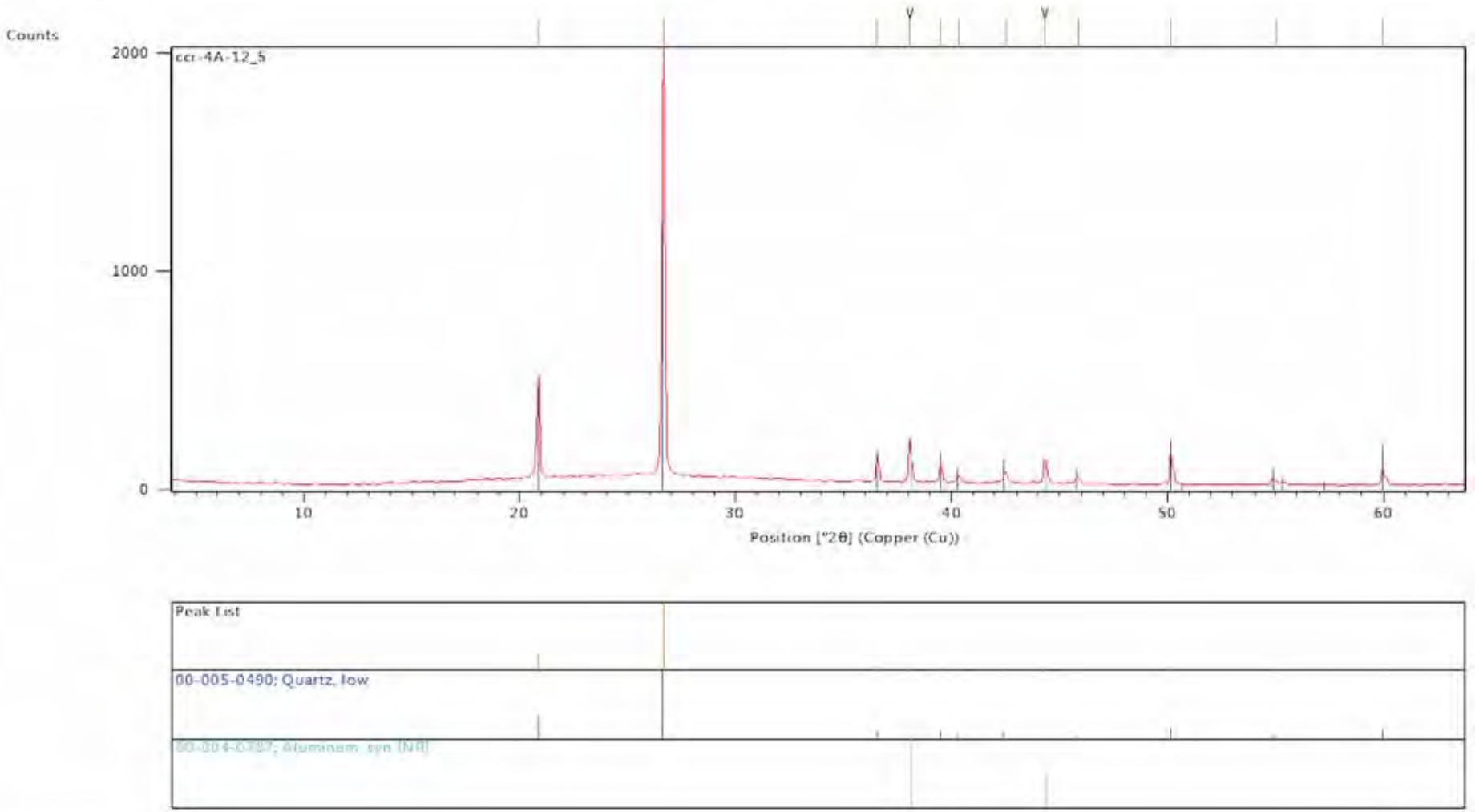
3997 Oak Hill Road
Douglasville, GA 30135
Tel: (678) 313-4146
email: rlkath@comcast.net

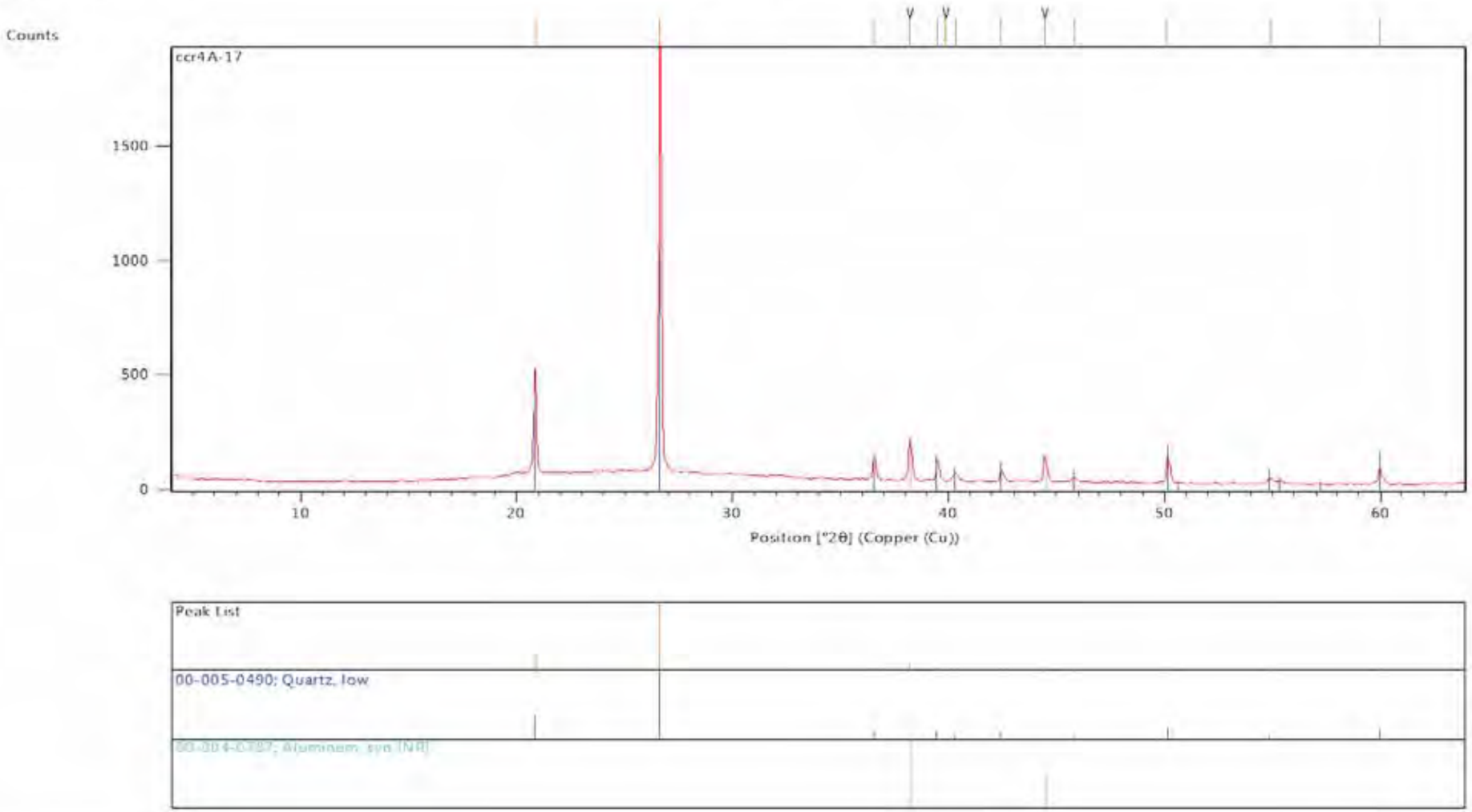
ATTACHMENT 2

QUALITATIVE X-RAY DIFFRACTION DATA

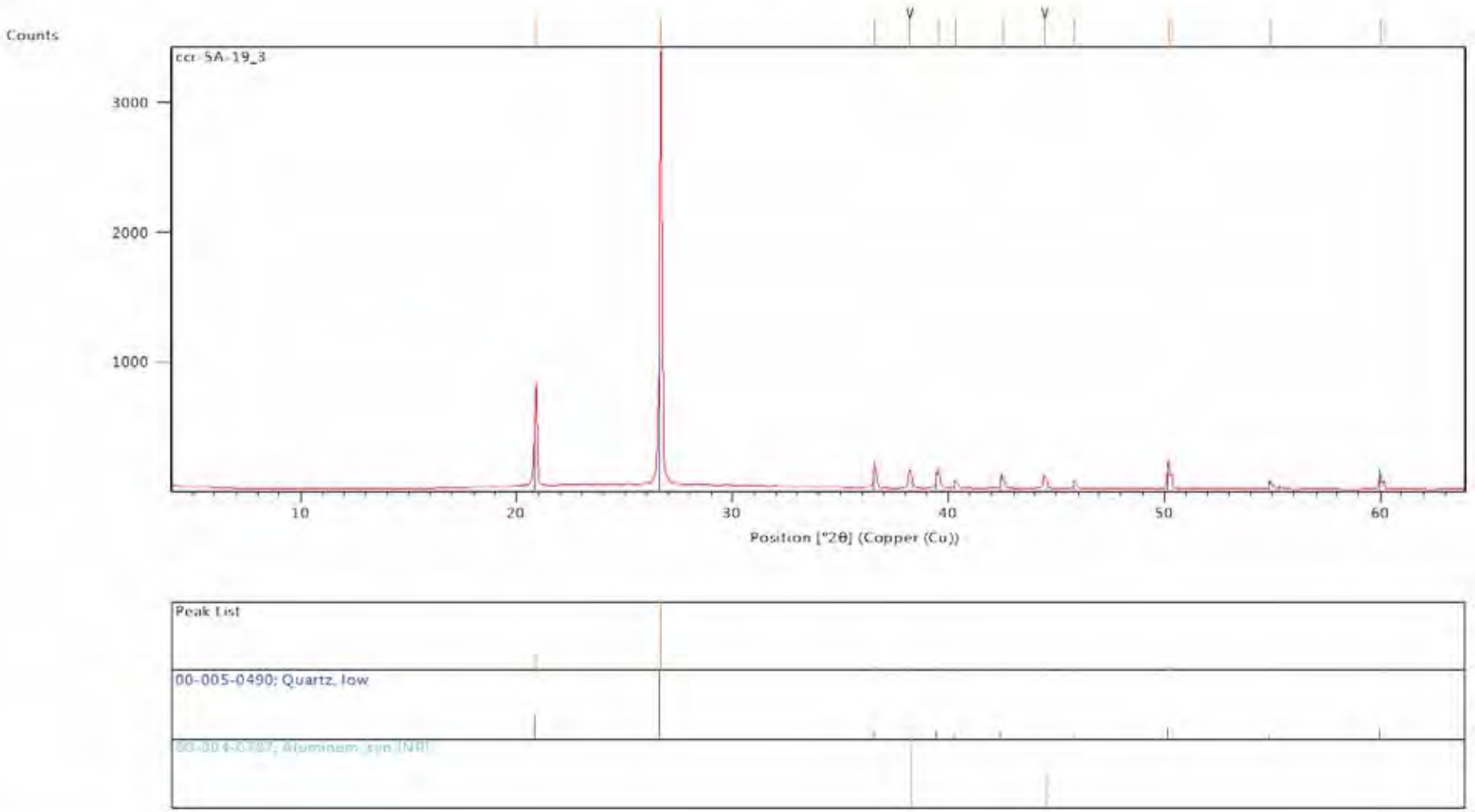

Counts
ccr-2A-18_7
2000
1000
0
10
20
30
40
50
60
Position [°2θ] (Copper (Cu))
Peak List
00-005-0490; Quartz, low
00-004-0787; Aluminium, syn (NR)

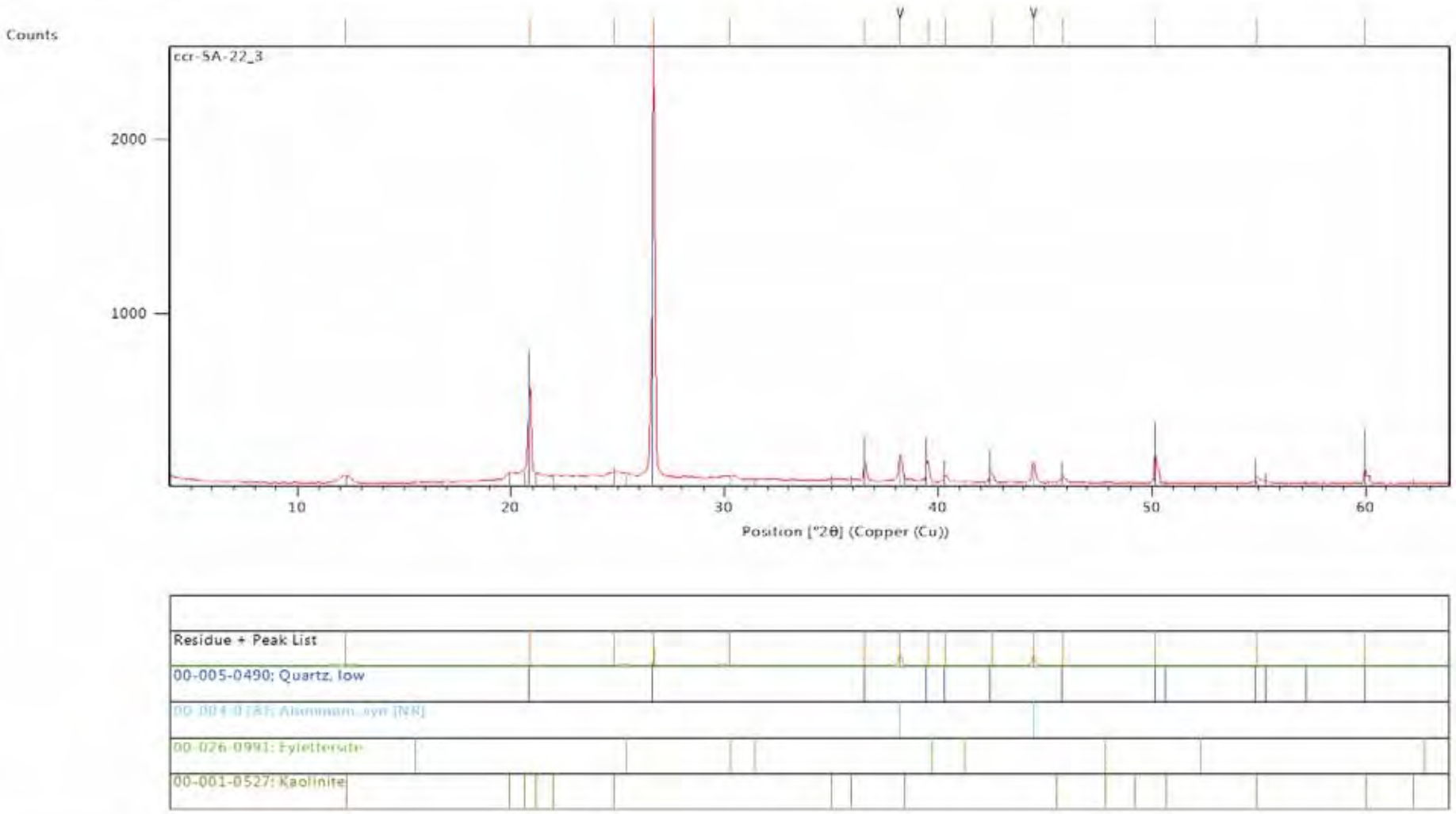

Counts
ccr-2A-230
800
600
400
200
0
10
20
30
40
50
60
Position [°2θ] (Copper (Cu))
Peak List
00-006-0221: Kaolinite 1Md
00-026-0991: Eyelettersite
00-005-0490: Quartz, low
00-004-0787: Aluminum, syn (NR)
00-025-0020: Wavellite

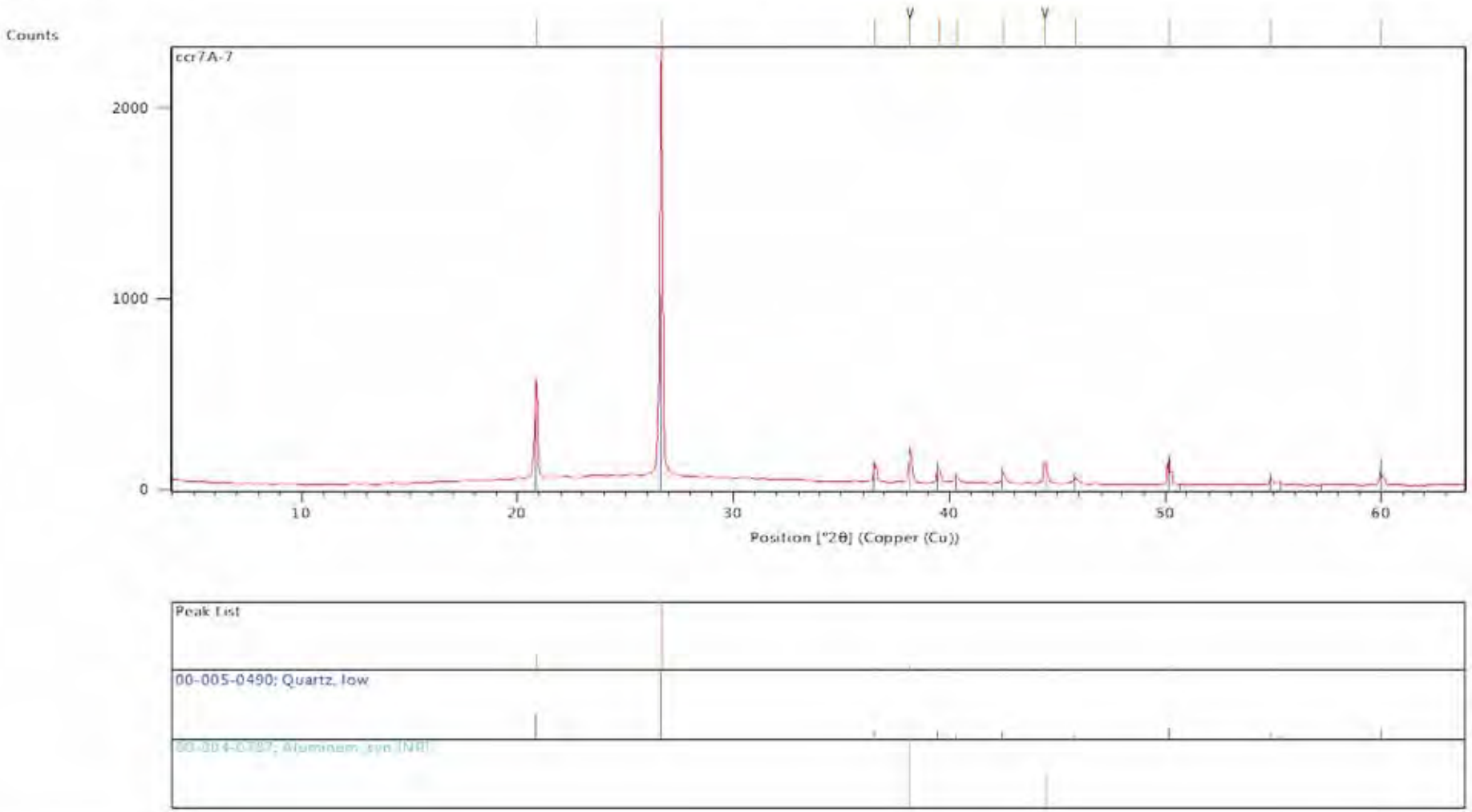

Counts
2000
1000
0
ccr-4A-12_5
10
20
30
40
50
60
Position [°2θ] (Copper (Cu))
Peak List
00-005-0490; Quartz, low
00-004-0787; Aluminum, syn (NR)

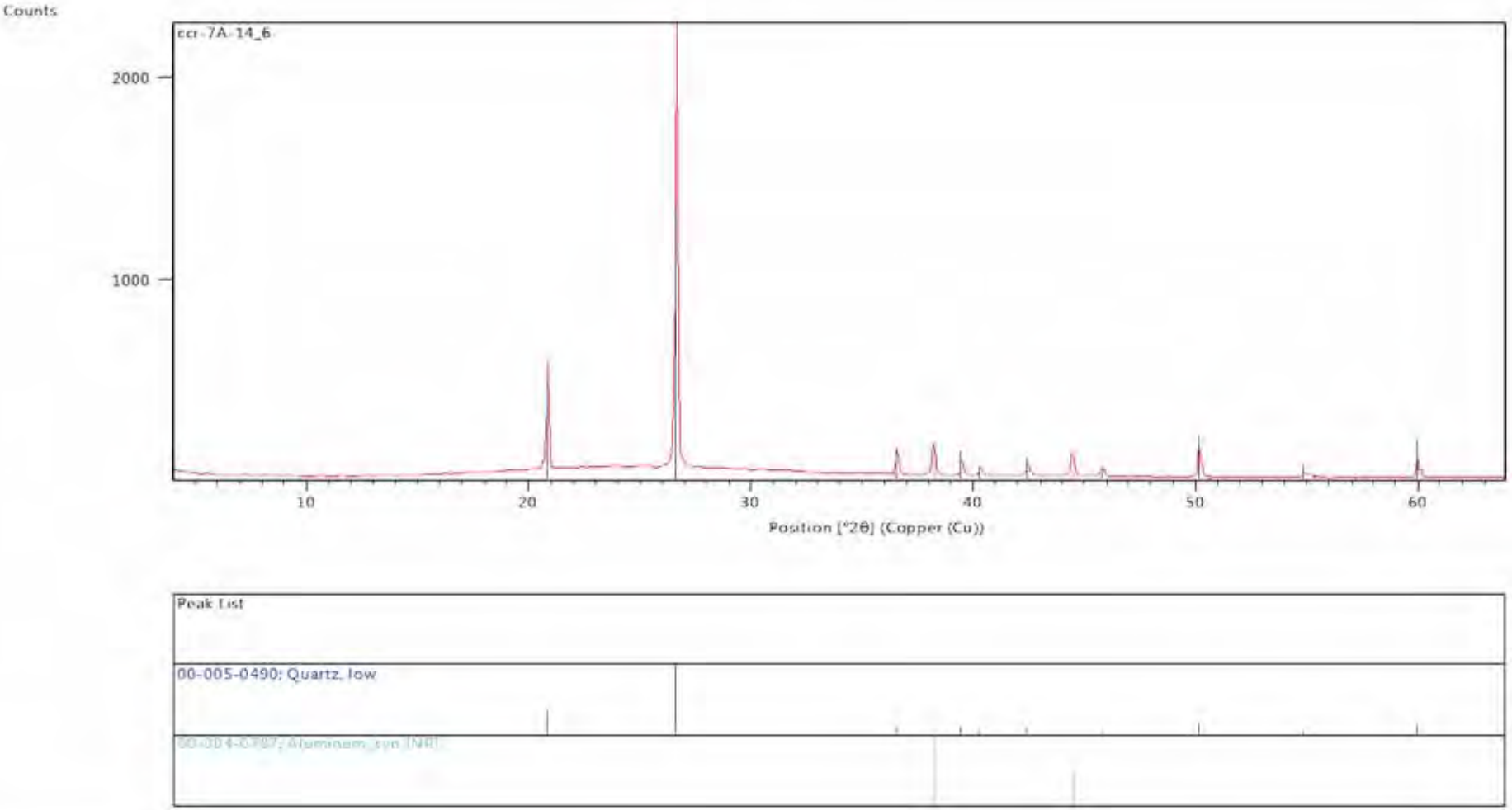

Counts
ccr4A-17
1500
1000
500
0
10
20
30
40
50
60
Position [°2θ] (Copper (Cu))
Peak List
00-005-0490; Quartz, low
00-004-0787; Aluminium, syn [NR]

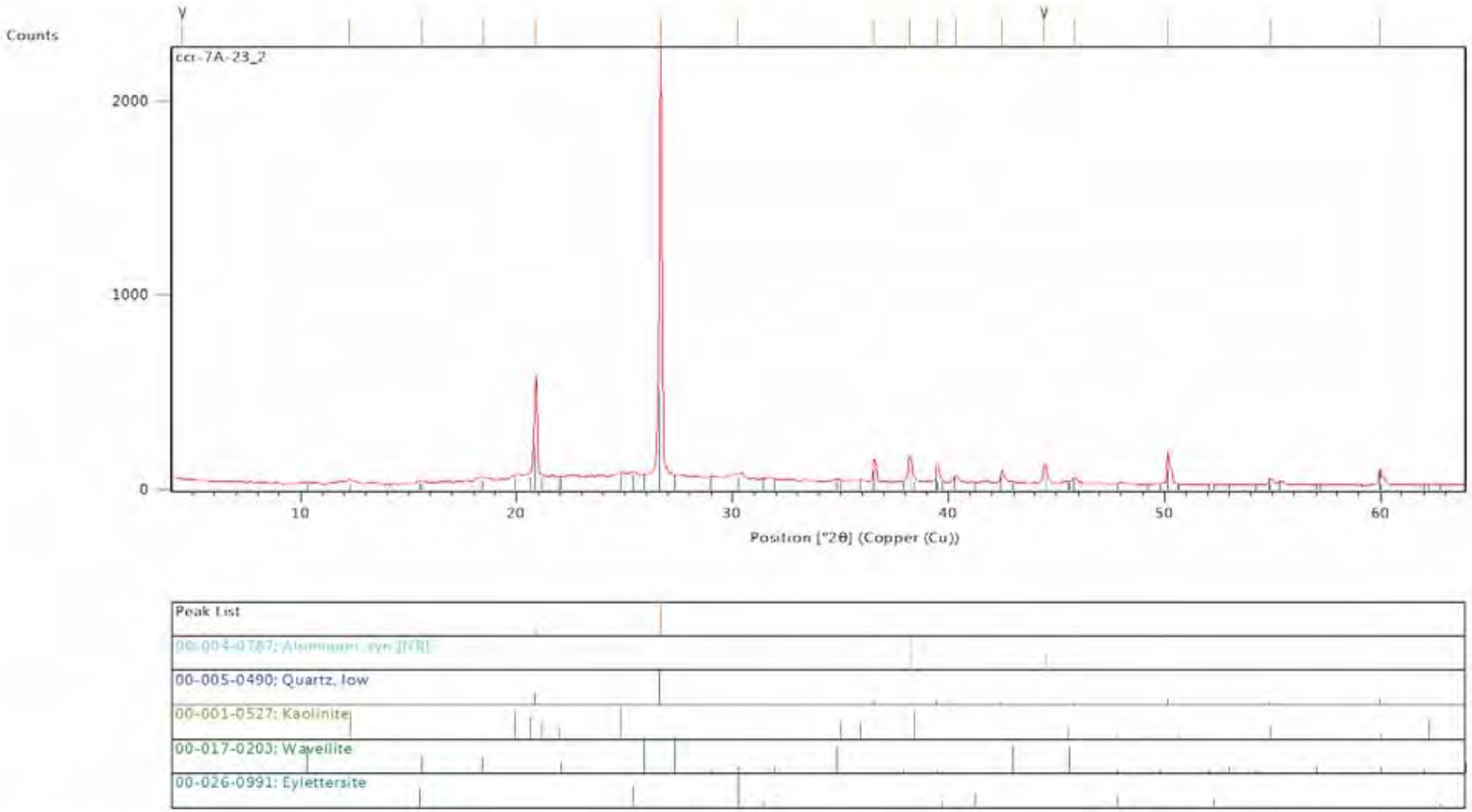

Counts
ccr4A-26_1
400
200
0
10
20
30
40
50
60
Position [°2θ] (Copper (Cu))
Peak List
00-005-0490: Quartz, low
00-027-0019: Wavellite

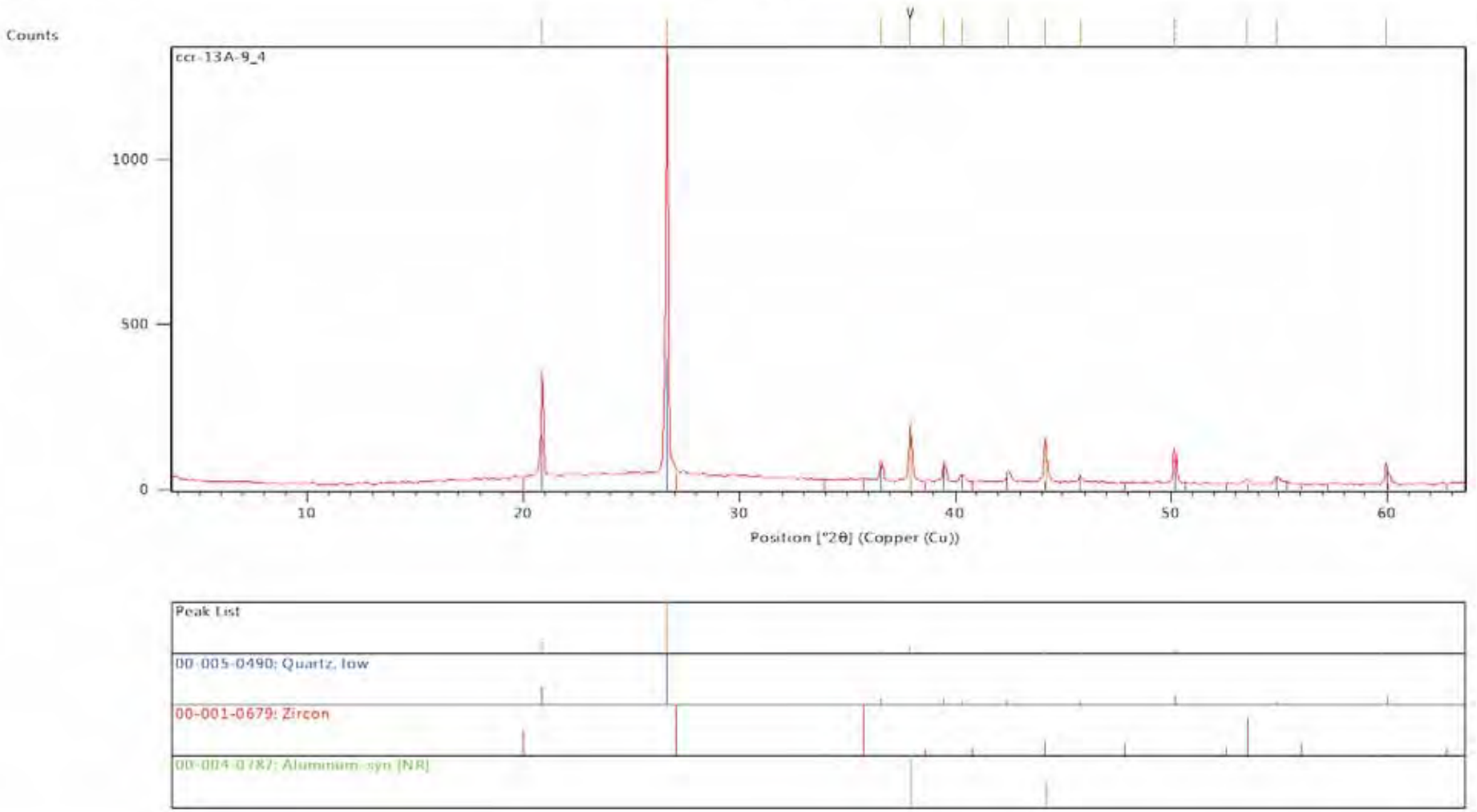

Counts
ccr-5A-19_3
3000
2000
1000
10
20
30
40
50
60
Position [°2θ] (Copper (Cu))
Peak List
00-005-0490; Quartz, low
00-004-0787; Aluminium, syn (NR)

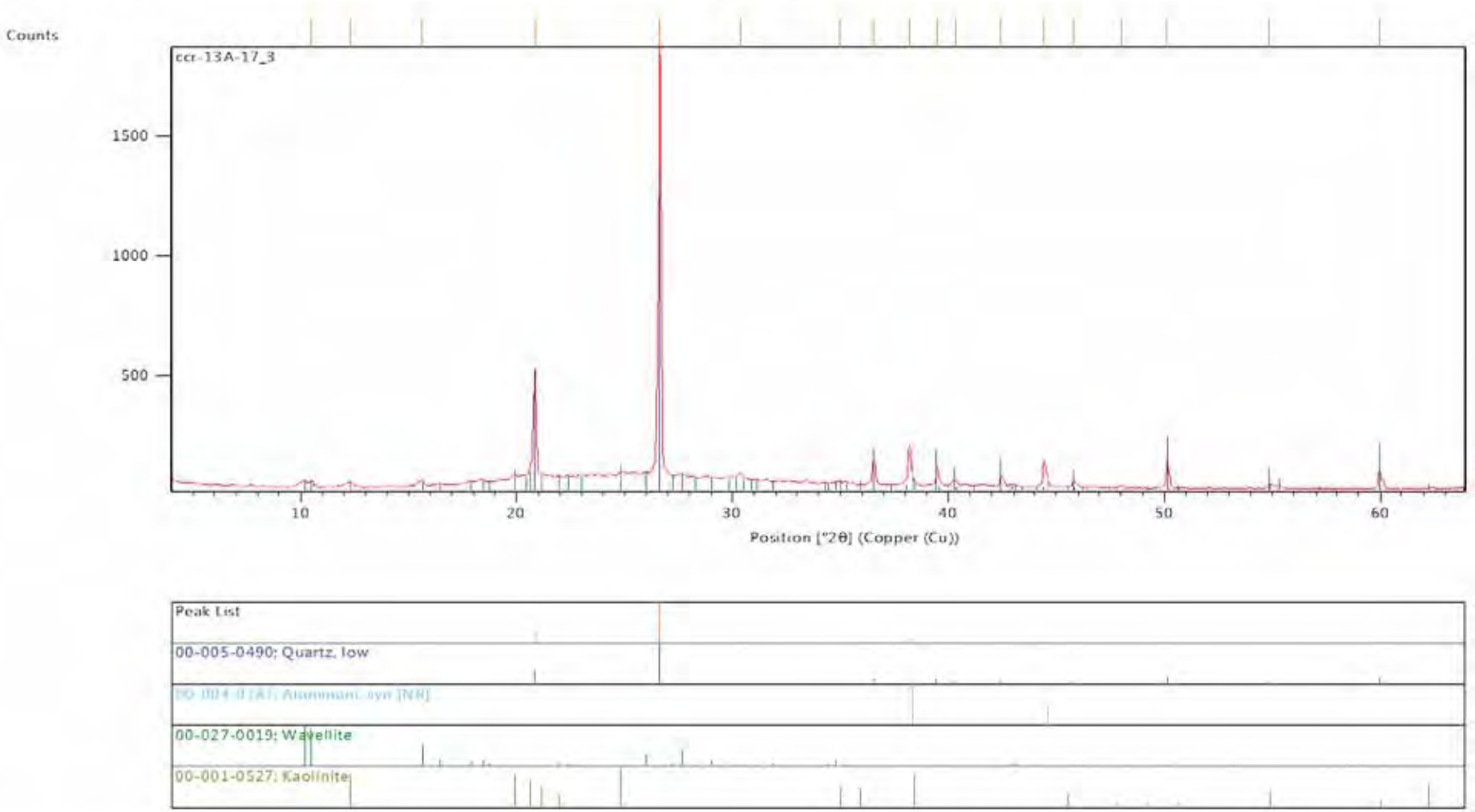

Counts
ccr-5A-22_3
2000
1000
10
20
30
40
50
60
Position [°2θ] (Copper (Cu))
Residue + Peak List
00-005-0490: Quartz, low
00-026-0991: Eyelletersite
00-001-0527: Kaolinite

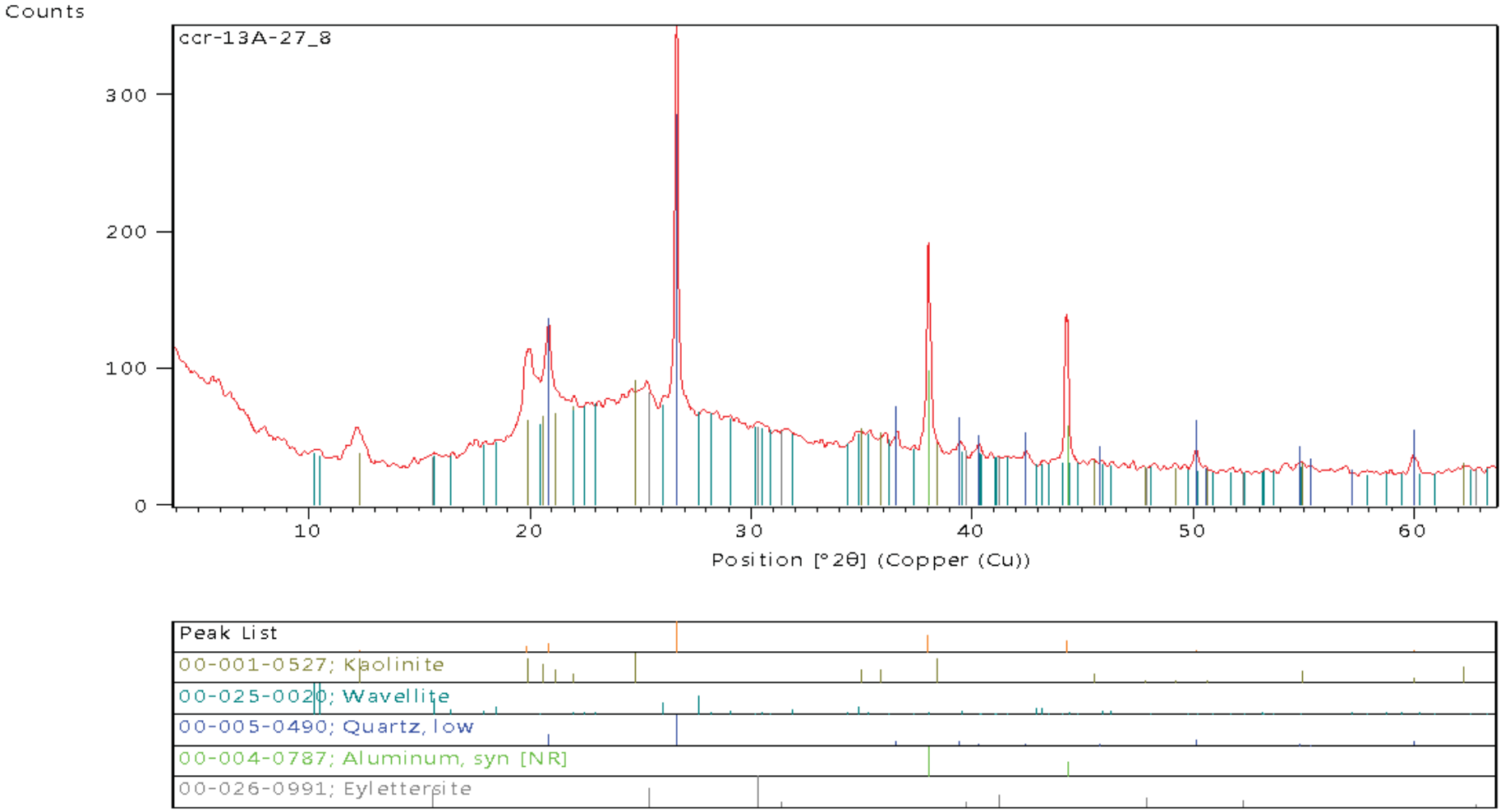

Counts
ccr7A-7
2000
1000
0
10
20
30
40
50
60
Position [°2θ] (Copper (Cu))
Peak List
00-005-0490; Quartz, low
00-004-0787; Aluminium, syn (NR)

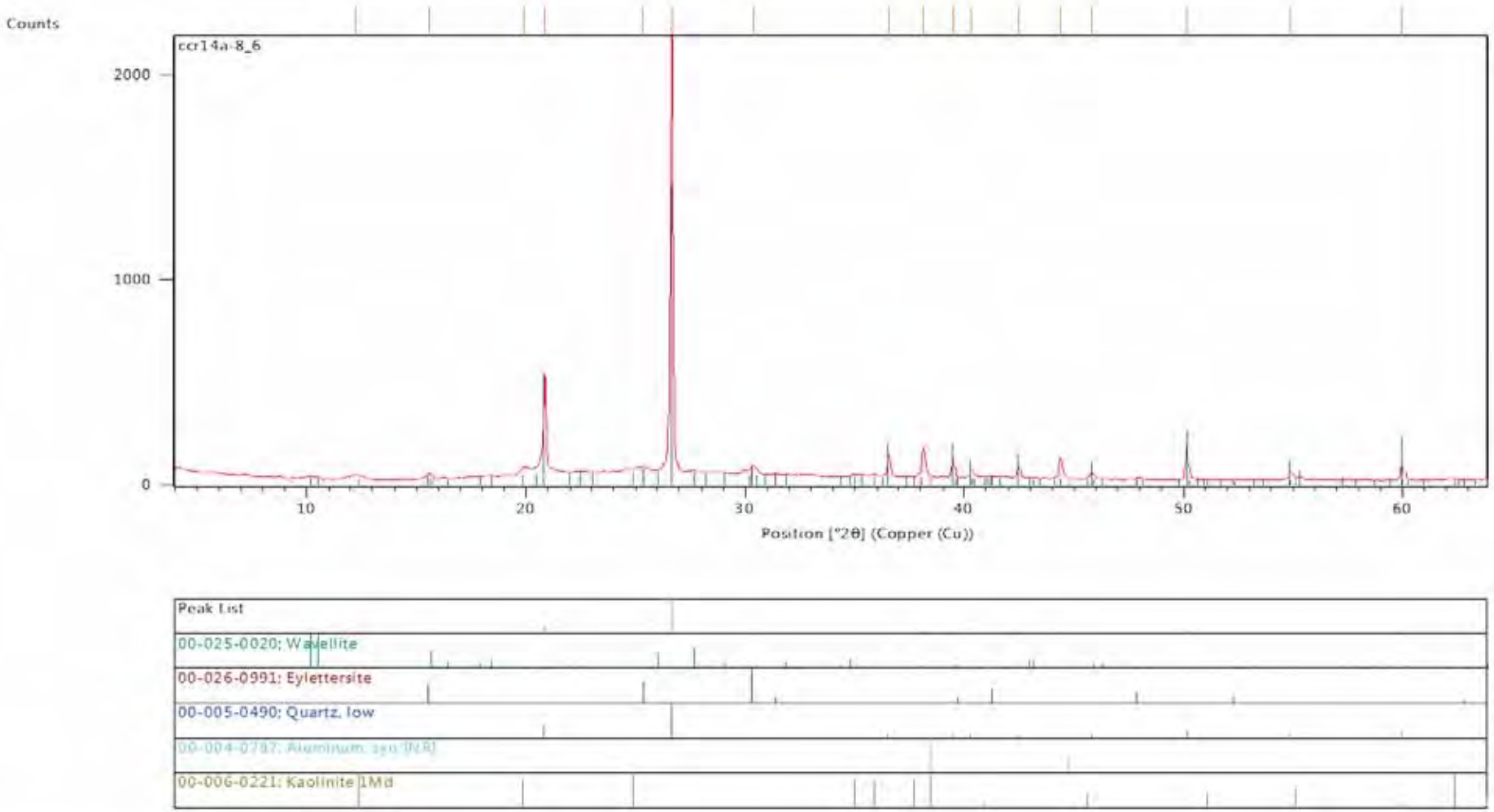

Counts
ccr-7A-14_6
2000
1000
10
20
30
40
50
60
Position [°2θ] (Copper (Cu))
Peak List
00-005-0490; Quartz, low

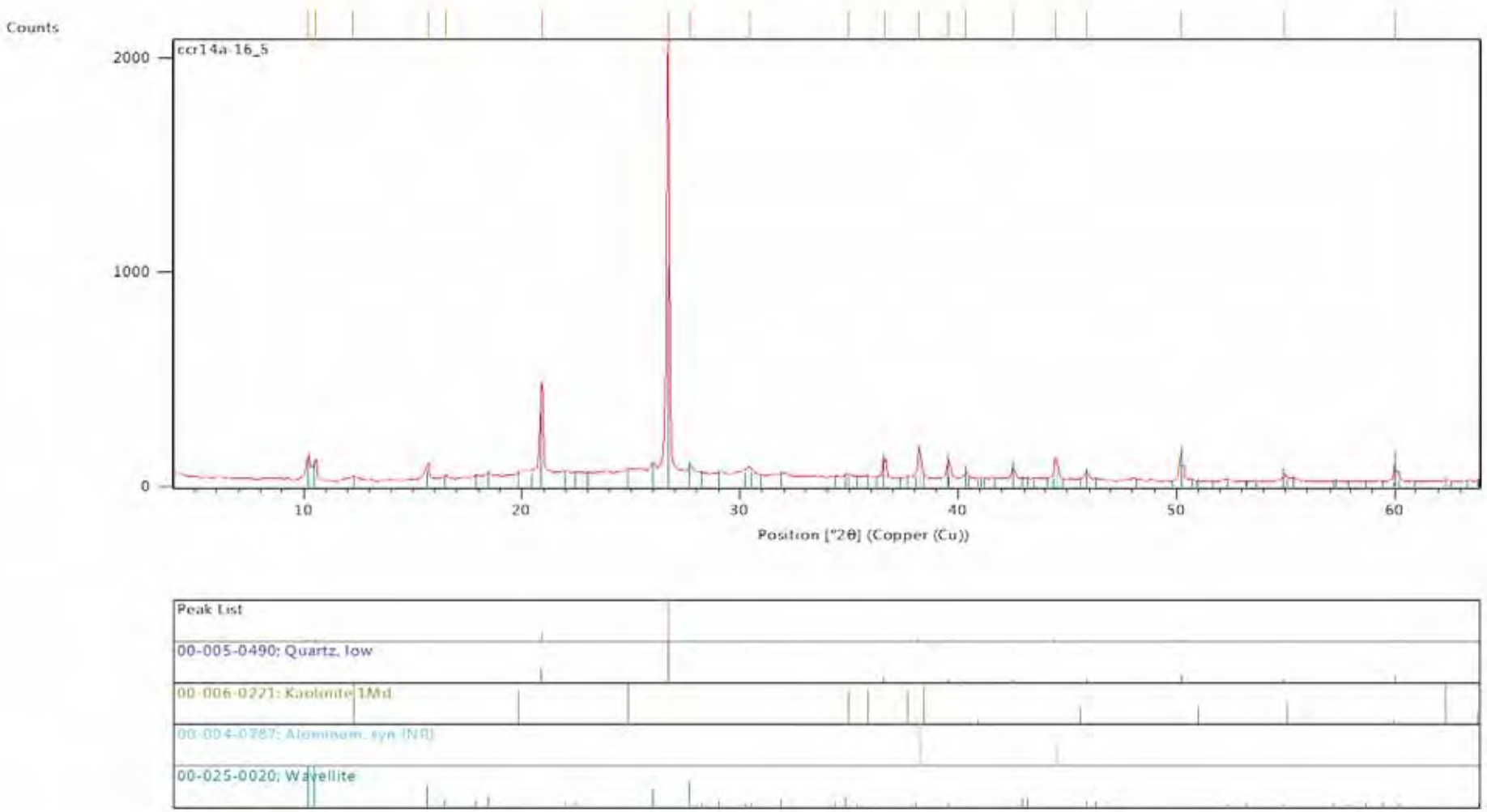

Counts
ccr-7A-23_2
2000
1000
0
10
20
30
40
50
60
Position [°2θ] (Copper (Cu))
Peak List
00-004-0787; Aluminum, syn [NR]
00-005-0490; Quartz, low
00-001-0527; Kaolinite
00-017-0203; Wavellite
00-026-0991; Eylettersite

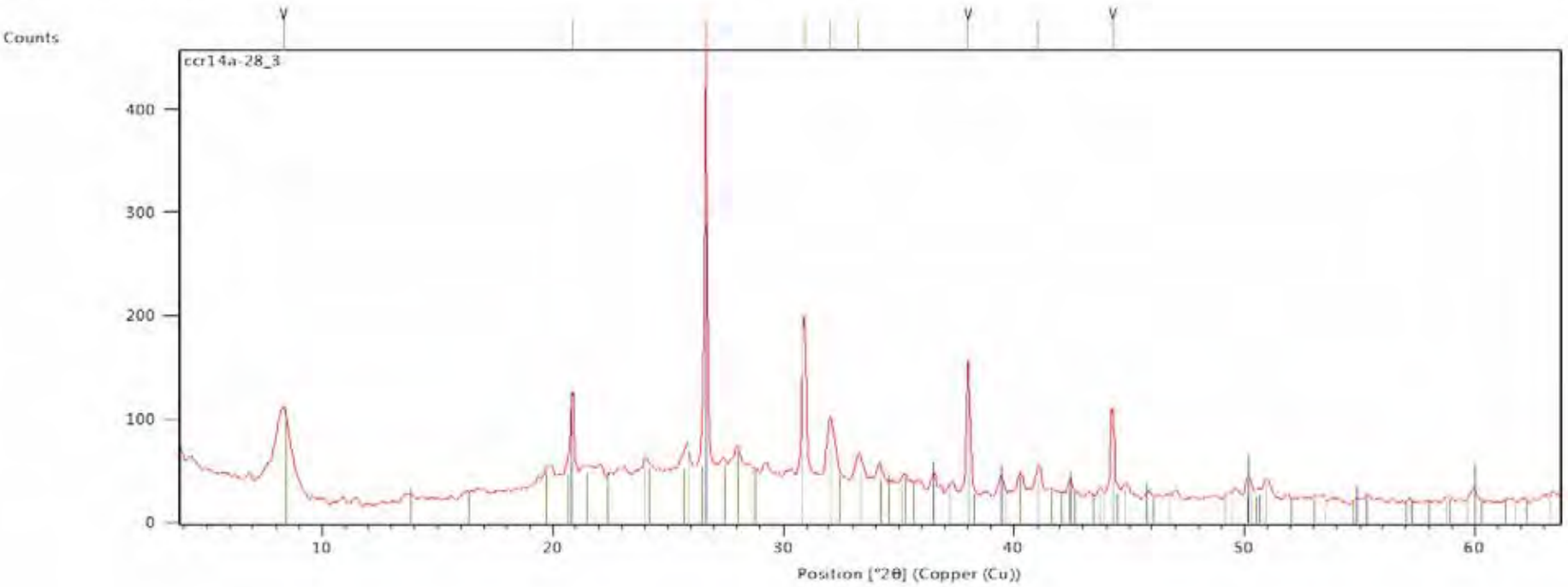

Counts
ccr-13A-9_4
1000
500
0
10
20
30
40
50
60
Position [°2θ] (Copper (Cu))
Peak List
00-005-0490: Quartz, low
00-001-0679: Zircon
00-004-0787: Aluminum, syn [NR]


Counts
ccr-13A-17_3
1500
1000
500
10
20
30
40
50
60
Position [°2θ] (Copper (Cu))
Peak List
00-005-0490: Quartz, low
00-027-0019: Wavellite
00-001-0527: Kaolinite


Counts
ccr-13A-27_8
300
200
100
0
10
20
30
40
50
60
Position [°2θ] (Copper (Cu))
Peak List
00-001-0527; Kaolinite
00-025-0020; Wavellite
00-005-0490; Quartz, low
00-004-0787; Aluminum, syn [NR]
00-026-0991; Eylettersite


Counts
ccr14a-8_6
2000
1000
0
10
20
30
40
50
60
Position [°2θ] (Copper (Cu))
Peak List
00-025-0020; Wavellite
00-026-0991; Eylettersite
00-005-0490; Quartz, low
00-004-0787; Aluminum, syn (NR)
00-006-0221; Kaolinite 1Md


Counts
ccr14a-16_5
2000
1000
0
10
20
30
40
50
60
Position [°2θ] (Copper (Cu))
Peak List
00-005-0490: Quartz, low
00-006-0221: Kaolinite 1Md
00-004-0787: Aluminum, syn (NR)
00-025-0020: Wavellite



Peak List
00-004-0787; Aluminum, syn [NR]
00-005-0490; Quartz, low
00-029-0855; Palygorskite
00-024-0517; Dolomite, ferroan
[illegible]

PetroLOGIC Solutions, Inc.

3997 Oak Hill Road
Douglasville, GA 30135
Tel: (678) 313-4146
email: rlkath@comcast.net

ATTACHMENT 3

GEOCHEMISTRY DATA

	Al_2O_3	TiO_2	Fe_2O_3	MgO	MnO	CaO	K_2O	NaO	P_20_5
Sample Number	**wt%**	**wt%**	**wt%**	**wt%**	**wt%**	**wt%**	**wt%**	**wt%**	**wt%**
CCR2A 18.7-19	1.37	1.34	0.35	<MDL	0.01	0.10	0.06	0.01	0.47
CCR2A 23-23.5	9.22	1.06	0.50	0.05	0.01	0.51	0.13	0.02	2.29
CCR4A 12.5-12.8	0.42	0.50	0.08	<MDL	0.00	0.19	0.03	<MDL	0.05
CCR4A 17-17.4	3.75	0.62	0.13	0.05	0.00	0.20	0.06	0.02	0.67
CCR4A 26.1-26.4	9.12	0.36	0.45	0.10	0.01	23.38	0.36	0.13	>2.30
CCR5A 19.3-20	1.11	0.31	0.06	<MDL	0.00	0.13	0.04	0.03	0.22
CCR5A 22.3-22.6	9.32	0.42	0.34	0.05	0.00	0.48	0.10	0.03	1.10
CCR7A 7-7.4	0.59	0.51	0.10	<MDL	0.00	0.20	<MDL	<MDL	0.11
CCR7A 14.6-15	0.73	0.62	0.13	<MDL	0.01	0.08	<MDL	<MDL	0.16
CCR7A 23.2-23.5	8.70	0.51	0.71	0.05	0.00	0.90	0.07	0.20	>2.30
CCR13A 9.4-10	0.54	0.94	0.12	<MDL	0.00	0.41	<MDL	<MDL	0.13
CCR13A 17.3-17.6	4.12	0.36	0.16	0.03	0.00	0.26	0.05	<MDL	1.29
CCR13A 27.8-28.2	17.87	0.68	1.41	0.81	0.01	0.59	0.66	0.05	>2.30
CCR14A 8.6-8.8	7.61	0.46	0.42	0.14	0.00	1.05	0.13	0.02	2.13
CCR14A 16.5-18	11.95	0.53	0.50	0.08	0.01	0.72	0.18	0.02	>2.30
CCR14A 28.3-28.6	2.99	0.17	3.37	6.37	0.02	20.09	0.43	0.26	>2.30

	Ag	As	Ba	Be	Bi	Ce	Cd	Co	Cr
	ppm	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**	**ppm**
CCR2A 18.7-19	0.27	0.30	128.00	0.17	0.29	57.9	<MDL	12.20	19.5
CCR2A 23-23.5	<MDL	<MDL	679.00	1.22	0.19	93.7	<MDL	10.10	42.9
CCR4A 12.5-12.8	<MDL	<MDL	6.00	0.01	0.03	6.1	<MDL	4.50	7.7
CCR4A 17-17.4	0.06	0.30	137.00	0.20	0.12	39.4	0.05	5.70	19.2
CCR4A 26.1-26.4	0.34	3.40	131.00	1.80	0.13	69.8	42.65	3.30	136.1
CCR5A 19.3-20	<MDL	<MDL	39.00	0.05	0.03	13.2	<MDL	2.80	6.6
CCR5A 22.3-22.6	0.06	0.70	617.00	1.22	0.31	60.0	0.16	10.30	49.6
CCR7A 7-7.4	0.14	0.60	18.00	0.05	0.05	12.3	<MDL	23.30	7.9
CCR7A 14.6-15	0.07	<MDL	12.00	0.05	0.02	10.1	<MDL	14.50	10.1
CCR7A 23.2-23.5	<MDL	<MDL	516.00	0.93	0.14	60.0	0.42	21.20	50.5
CCR13A 9.4-10	0.27	0.40	45.00	0.04	0.18	37.9	<MDL	18.40	11.4
CCR13A 17.3-17.6	0.14	<MDL	189.00	0.49	0.06	39.3	<MDL	20.10	23.4
CCR13A 27.8-28.2	0.48	0.20	136.00	1.58	0.30	64.7	0.12	15.10	162.8
CCR14A 8.6-8.8	0.22	<MDL	377.00	1.47	0.27	81.5	0.54	18.80	48.4
CCR14A 16.5-18	0.91	0.60	673.00	4.24	0.32	138.8	0.31	21.90	112.3
CCR14A 28.3-28.6	1.01	5.30	81.00	0.69	0.11	25.3	35.09	11.30	84.3

<MDL less than method detection limit

	Cs	Cu	Ga	Ge	Hf	In	La	Li	Mo
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
CCR2A 18.7-19	0.30	6.40	7.25	0.04	1.77	0.02	32.7	1.10	2.70
CCR2A 23-23.5	0.70	2.60	11.27	0.08	1.84	0.03	50.1	3.90	2.10
CCR4A 12.5-12.8	<MDL	1.50	2.04	<MDL	0.51	<MDL	2.4	0.70	1.70
CCR4A 17-17.4	0.40	3.40	6.76	0.03	1.09	0.03	20.7	4.20	2.20
CCR4A 26.1-26.4	1.50	8.50	10.30	0.06	1.76	0.06	63.2	3.20	2.30
CCR5A 19.3-20	0.10	0.90	2.41	0.02	0.44	0.01	6.5	6.10	1.10
CCR5A 22.3-22.6	0.40	1.40	9.16	0.05	1.44	0.07	30.6	7.50	1.50
CCR7A 7-7.4	<MDL	1.30	2.21	0.01	0.65	0.01	4.5	1.80	1.50
CCR7A 14.6-15	<MDL	2.00	2.81	0.01	0.55	0.02	4.0	1.20	1.60
CCR7A 23.2-23.5	0.30	1.20	10.57	0.06	1.55	0.04	31.8	7.00	2.10
CCR13A 9.4-10	0.10	3.10	3.95	<MDL	1.60	0.01	20.1	2.20	4.10
CCR13A 17.3-17.6	0.30	2.20	5.30	0.05	1.06	0.02	21.3	6.40	0.90
CCR13A 27.8-28.2	4.20	6.50	19.57	0.05	5.21	0.16	39.0	20.60	2.10
CCR14A 8.6-8.8	1.00	4.00	9.10	0.06	3.10	0.05	45.2	5.40	1.30
CCR14A 16.5-18	1.00	11.60	11.94	0.12	2.97	0.06	83.6	3.00	1.70
CCR14A 28.3-28.6	1.20	1.30	4.03	0.04	0.78	0.01	21.3	8.30	2.80

	Nb	Ni	Pb	Rb	Re	S	Sb	Sc	Se
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
CCR2A 18.7-19	17.45	1.50	25.00	4.00	<MDL	245.0	0.37	2.7	0.30
CCR2A 23-23.5	16.51	6.90	29.00	6.00	<MDL	315.0	0.64	4.8	0.30
CCR4A 12.5-12.8	4.81	1.30	<MDL	<MDL	<MDL	219.0	0.13	0.9	0.40
CCR4A 17-17.4	10.05	6.30	13.00	3.00	<MDL	344.0	0.23	1.8	0.80
CCR4A 26.1-26.4	7.58	4.10	11.00	16.00	0.00	624.0	1.07	8.2	0.50
CCR5A 19.3-20	4.14	2.00	6.00	2.00	<MDL	112.0	0.10	0.7	<MDL
CCR5A 22.3-22.6	7.17	10.90	24.00	5.00	0.01	144.0	0.76	8.6	0.30
CCR7A 7-7.4	5.81	2.40	4.00	<MDL	0.03	<MDL	0.16	0.8	<MDL
CCR7A 14.6-15	6.32	1.30	4.00	<MDL	0.02	142.0	0.13	0.9	<MDL
CCR7A 23.2-23.5	9.17	10.70	22.00	3.00	0.03	261.0	0.35	5.9	1.30
CCR13A 9.4-10	14.68	1.60	16.00	<MDL	0.02	218.0	0.41	1.5	0.80
CCR13A 17.3-17.6	6.31	4.70	12.00	3.00	0.03	291.0	0.29	2.3	0.30
CCR13A 27.8-28.2	15.13	21.20	21.00	41.00	0.01	270.0	1.24	82.1	<MDL
CCR14A 8.6-8.8	8.44	10.00	26.00	8.00	0.03	345.0	0.39	18.2	0.20
CCR14A 16.5-18	10.31	5.70	31.00	10.00	0.03	534.0	0.45	13.5	0.20
CCR14A 28.3-28.6	3.66	56.60	6.00	20.00	0.01	1645.0	1.41	2.7	0.50

	Sn	Sr	Ta	Te	Th	Tl	U	V	W
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
CCR2A 18.7-19	1.40	207.0	1.64	0.08	8.5	0.03	5.0	19.00	1.2
CCR2A 23-23.5	1.30	929.0	1.09	0.03	12.9	0.22	50.4	59.00	1.1
CCR4A 12.5-12.8	0.90	12.0	0.66	0.01	1.7	<MDL	1.2	6.00	0.5
CCR4A 17-17.4	1.50	227.0	1.65	0.03	6.8	0.04	5.3	16.00	0.9
CCR4A 26.1-26.4	1.50	308.0	0.12	0.05	9.7	0.50	185.5	119.00	0.8
CCR5A 19.3-20	0.60	63.0	0.46	<MDL	2.1	0.01	4.1	5.00	0.4
CCR5A 22.3-22.6	1.10	748.0	0.06	0.02	8.2	0.10	34.2	35.00	66.3
CCR7A 7-7.4	0.80	30.0	0.60	<MDL	1.7	<MDL	1.4	6.00	184.8
CCR7A 14.6-15	0.80	18.0	0.69	0.01	2.0	<MDL	0.9	6.00	97.1
CCR7A 23.2-23.5	1.20	786.0	<MDL	0.03	8.8	0.04	35.0	33.00	173.9
CCR13A 9.4-10	1.10	91.0	1.44	0.01	4.8	0.03	3.0	13.00	104.3
CCR13A 17.3-17.6	0.50	458.0	0.30	0.01	6.3	0.08	22.4	25.00	175.2
CCR13A 27.8-28.2	2.50	210.0	0.12	0.02	23.4	1.00	164.4	247.00	77.8
CCR14A 8.6-8.8	0.90	815.0	0.18	0.02	11.4	0.23	96.2	50.00	153.1
CCR14A 16.5-18	1.50	1185.0	1.04	<MDL	16.6	0.28	467.0	48.00	185.1
CCR14A 28.3-28.6	0.80	461.0	<MDL	<MDL	4.0	0.60	34.8	123.00	37.0

<MDL less than method detection limit

	Y	Zn	Zr
	ppm	ppm	ppm
CCR2A 18.7-19	12.10	4.00	71.0
CCR2A 23-23.5	49.30	11.00	70.2
CCR4A 12.5-12.8	1.10	<MDL	17.6
CCR4A 17-17.4	9.40	4.00	37.7
CCR4A 26.1-26.4	96.30	87.00	51.8
CCR5A 19.3-20	3.00	<MDL	15.9
CCR5A 22.3-22.6	33.30	7.00	44.0
CCR7A 7-7.4	2.20	4.00	42.5
CCR7A 14.6-15	1.40	4.00	30.7
CCR7A 23.2-23.5	25.80	7.00	60.9
CCR13A 9.4-10	6.80	3.00	76.1
CCR13A 17.3-17.6	17.00	5.00	43.5
CCR13A 27.8-28.2	33.90	49.00	167.2
CCR14A 8.6-8.8	48.90	12.00	93.3
CCR14A 16.5-18	93.50	10.00	94.2
CCR14A 28.3-28.6	30.70	49.00	19.0

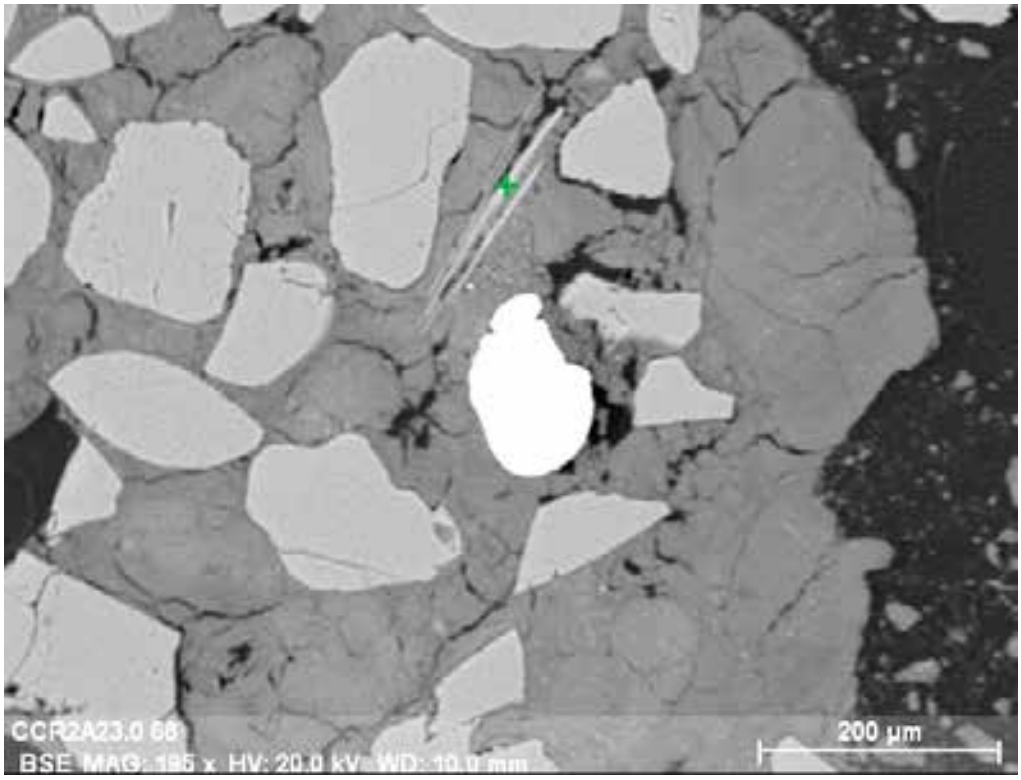
<MDL less than method detection limit

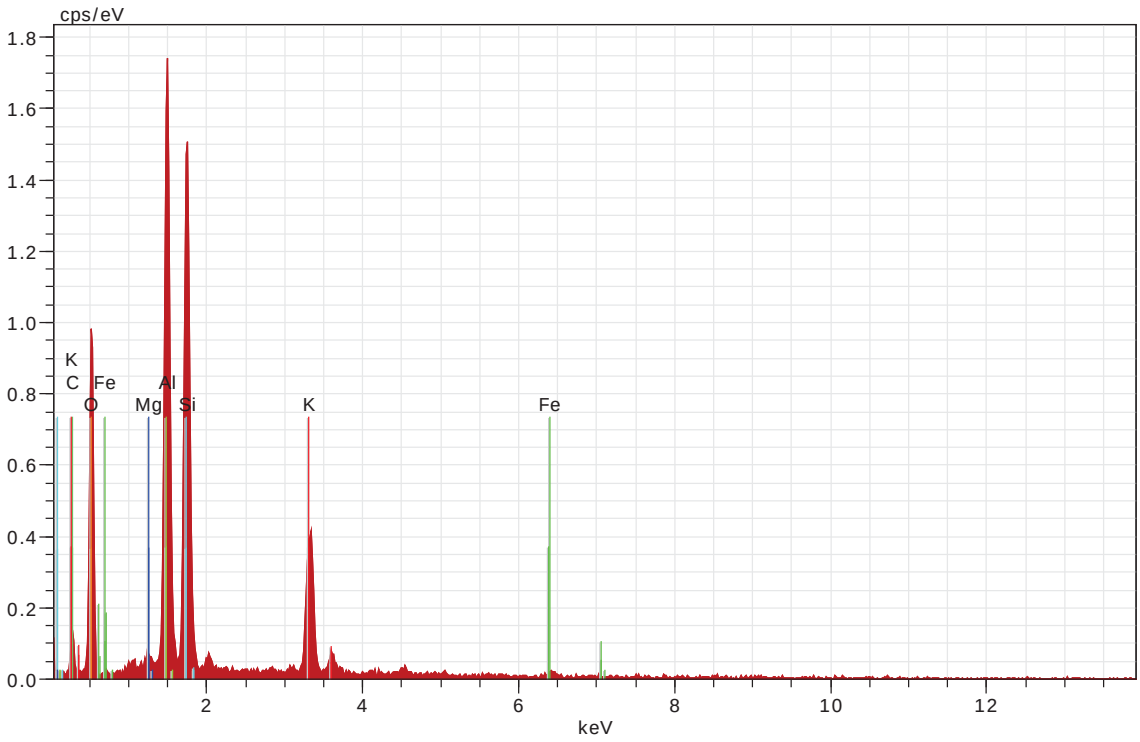
PetroLOGIC Solutions, Inc.

3997 Oak Hill Road
Douglasville, GA 30135
Tel: (678) 313-4146
email: rlkath@comcast.net

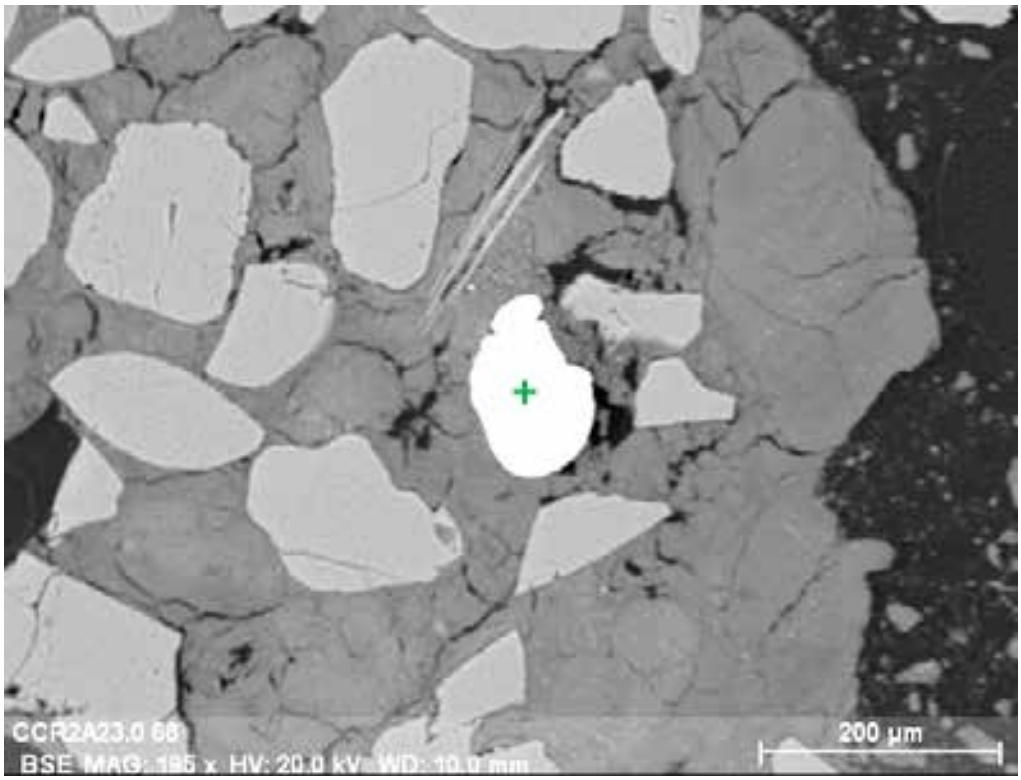
ATTACHMENT 4

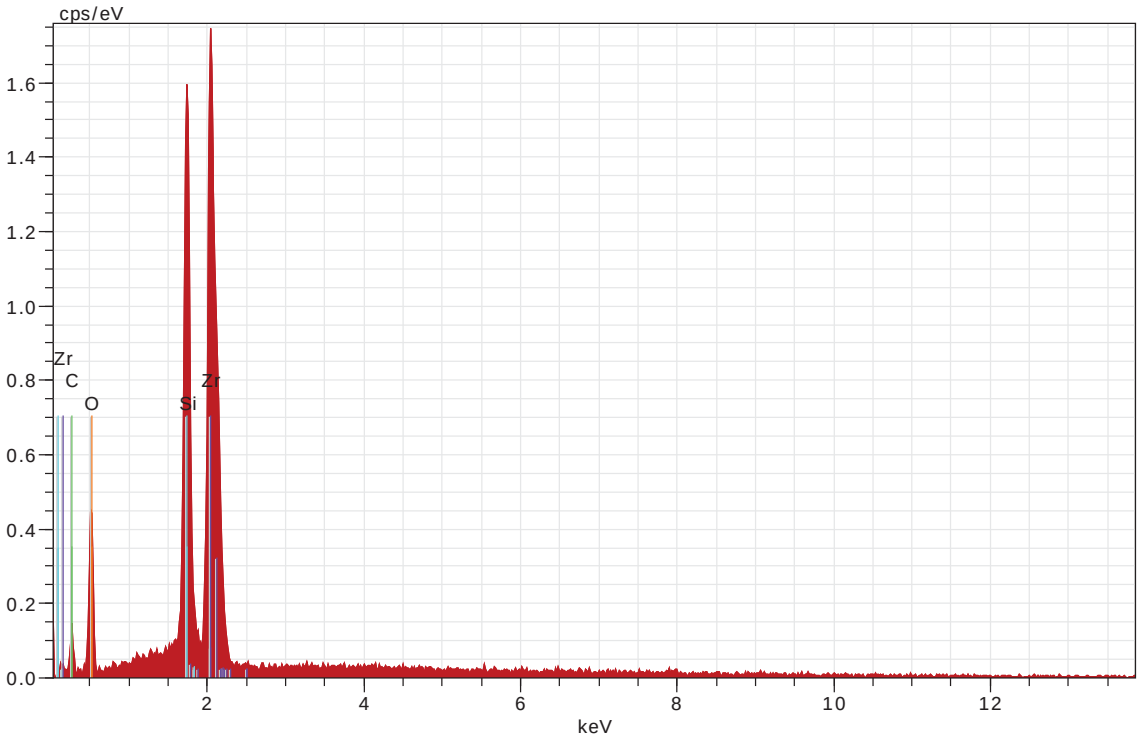
SCANNING ELECTRON MICROSCOPY DATA



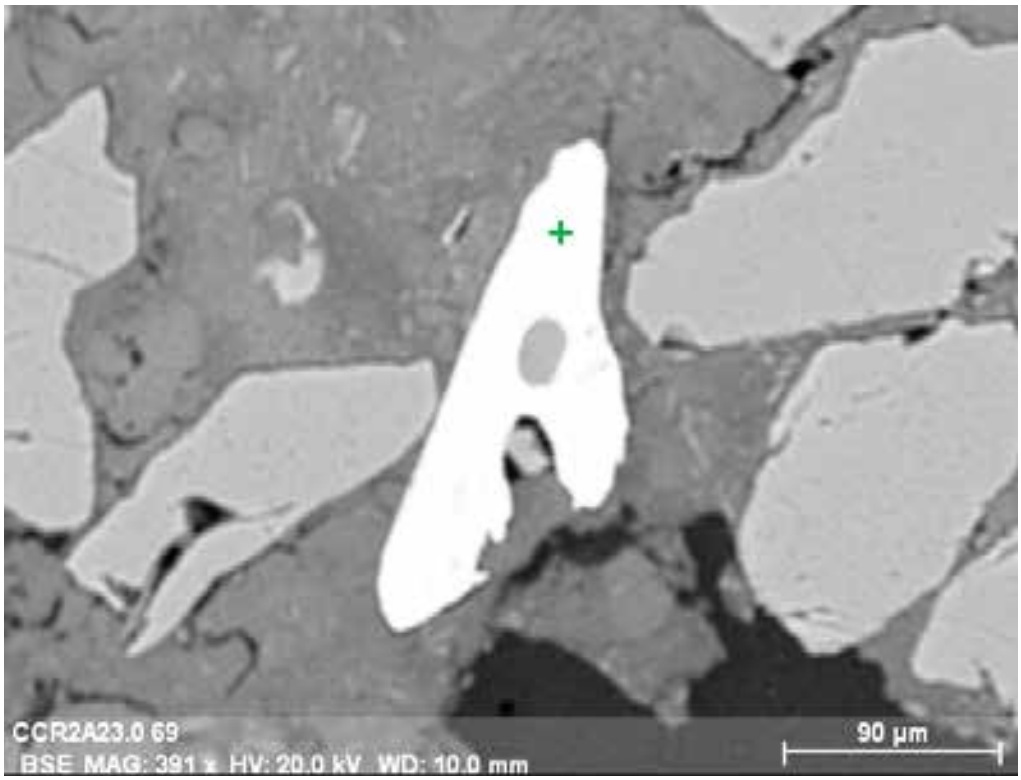


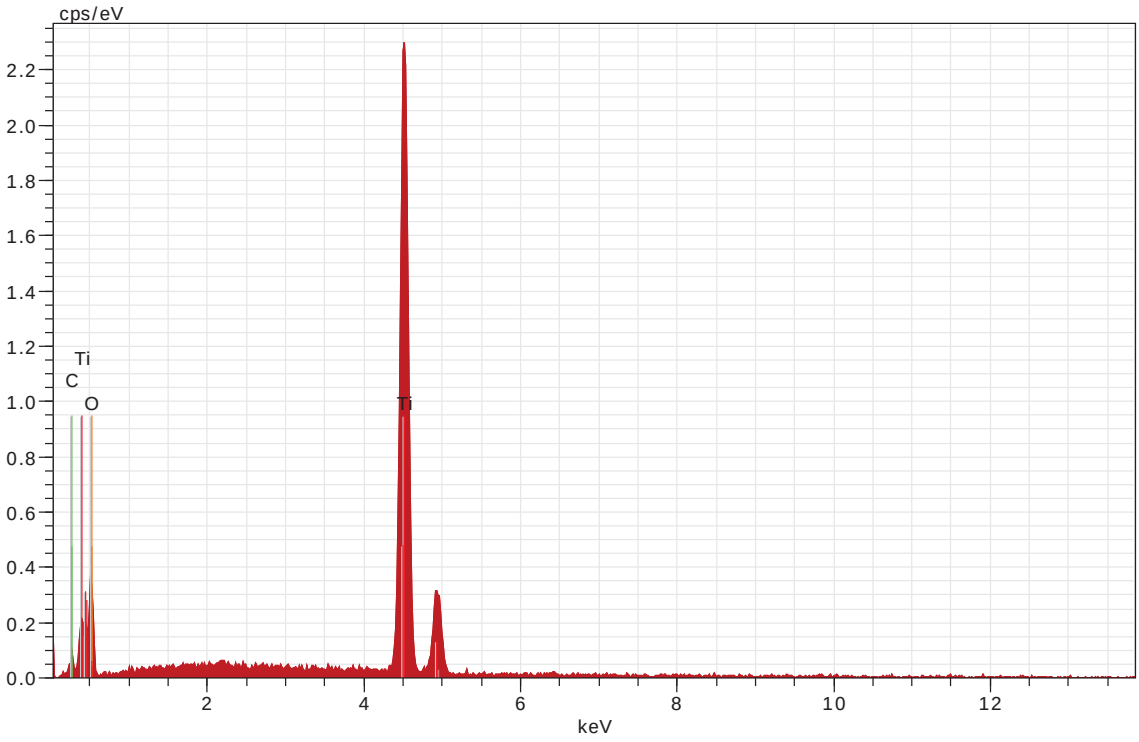
CCR2A 23.0-23.5: BSE image (top) and EDS spectrum (bottom) for muscovite; green crosshair on BSE image marks analysis location.



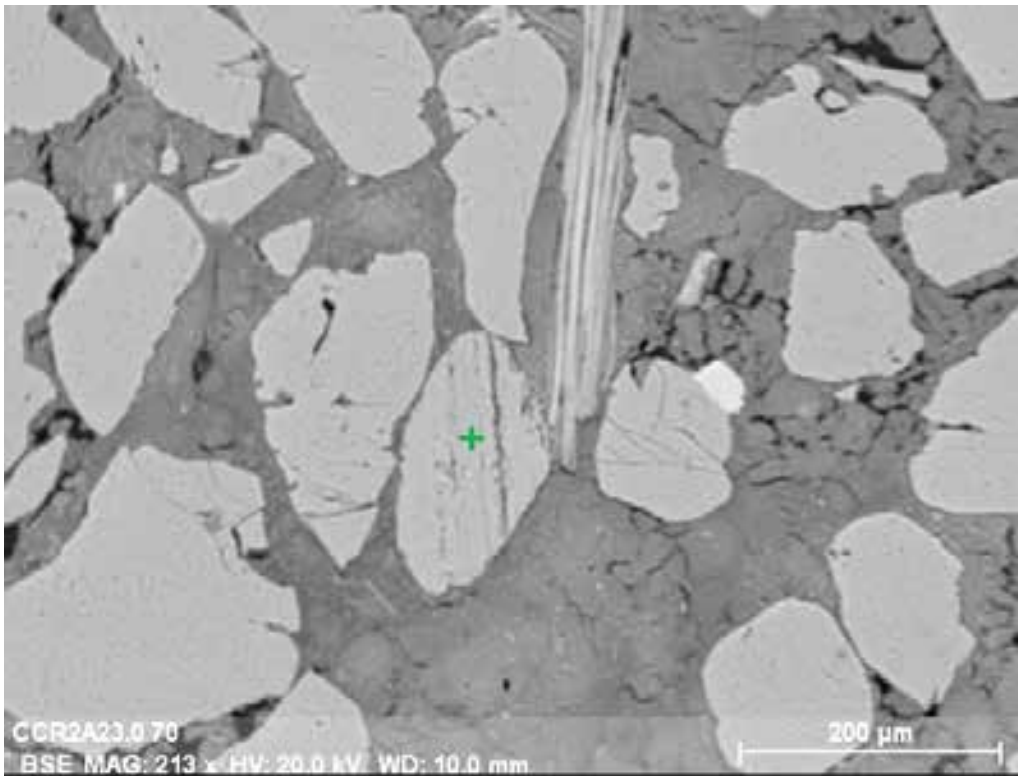


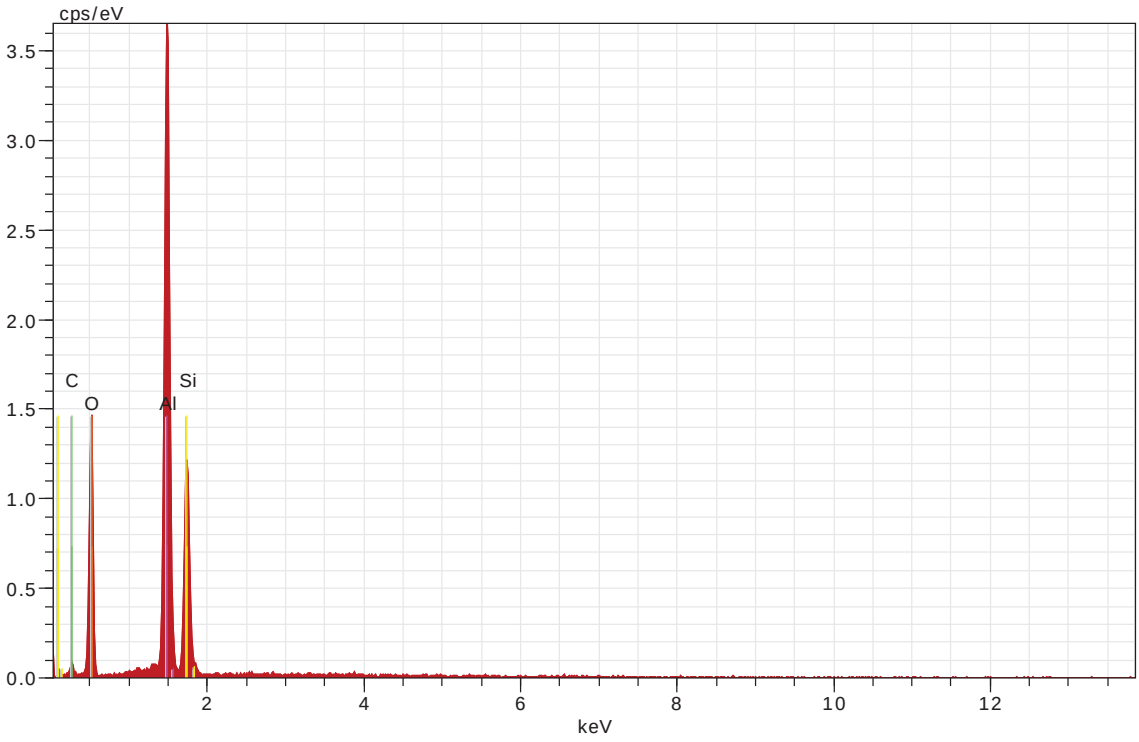
CCR2A 23.0-23.5: BSE image (top) and EDS spectrum (bottom) for zircon; green crosshair on BSE image marks analysis location.



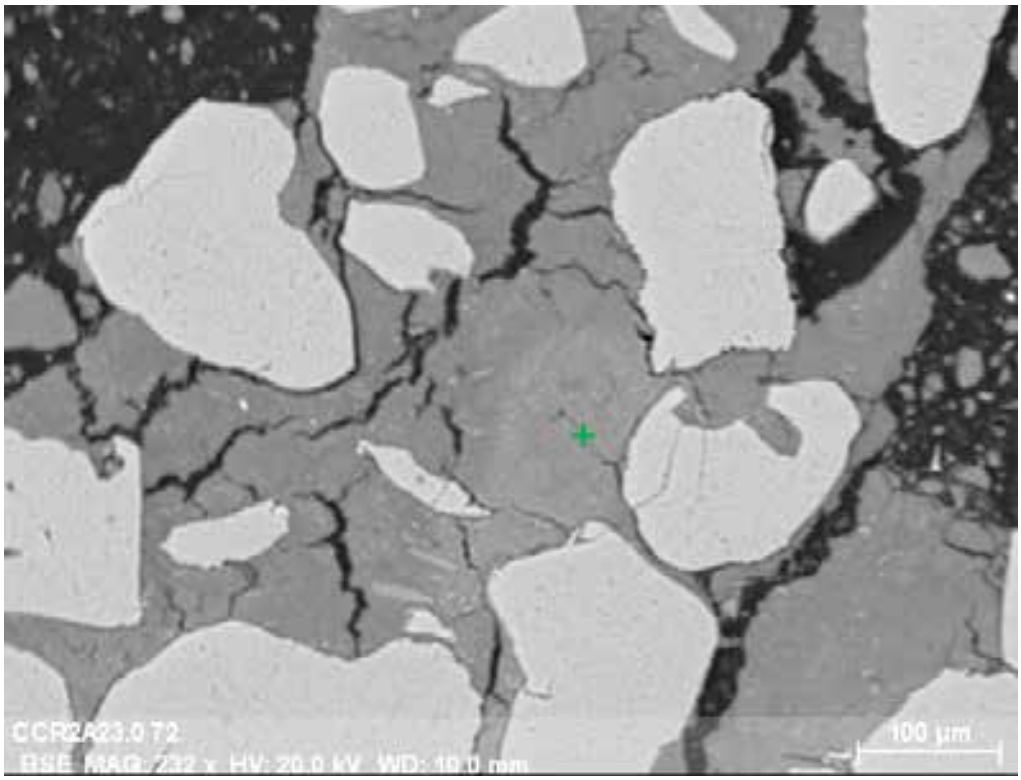


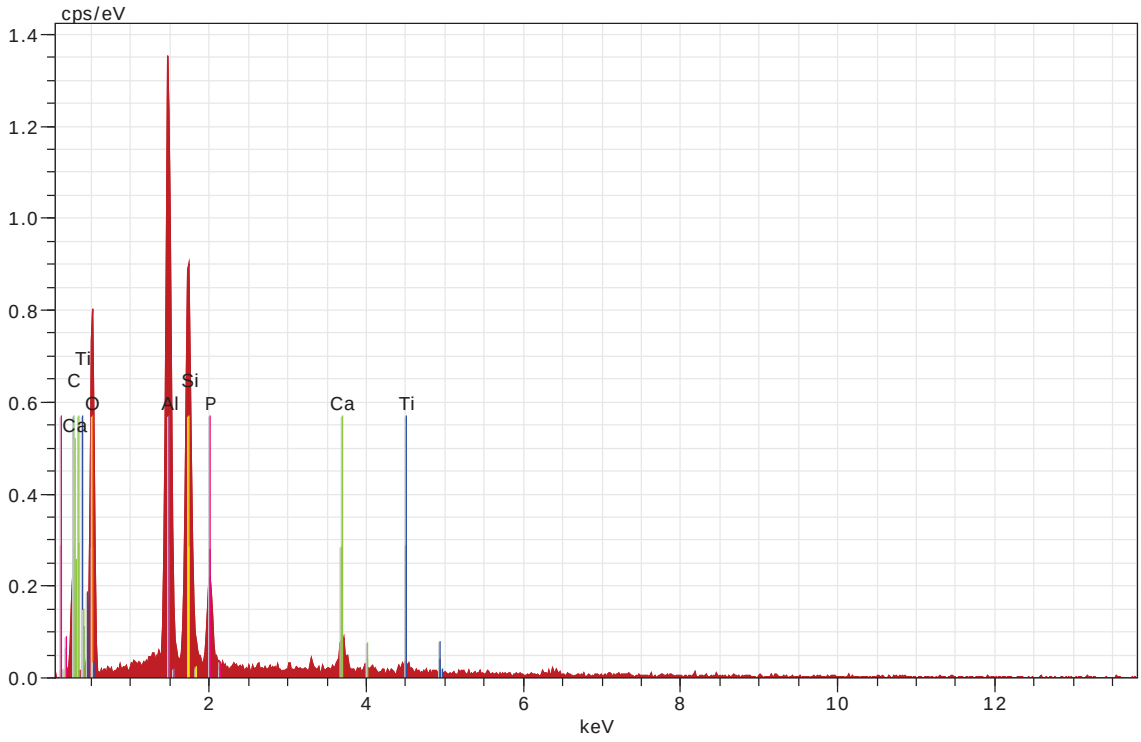
CCR2A 23.0-23.5: BSE image (top) and EDS spectrum (bottom) for rutile; green crosshair on BSE image marks analysis location.



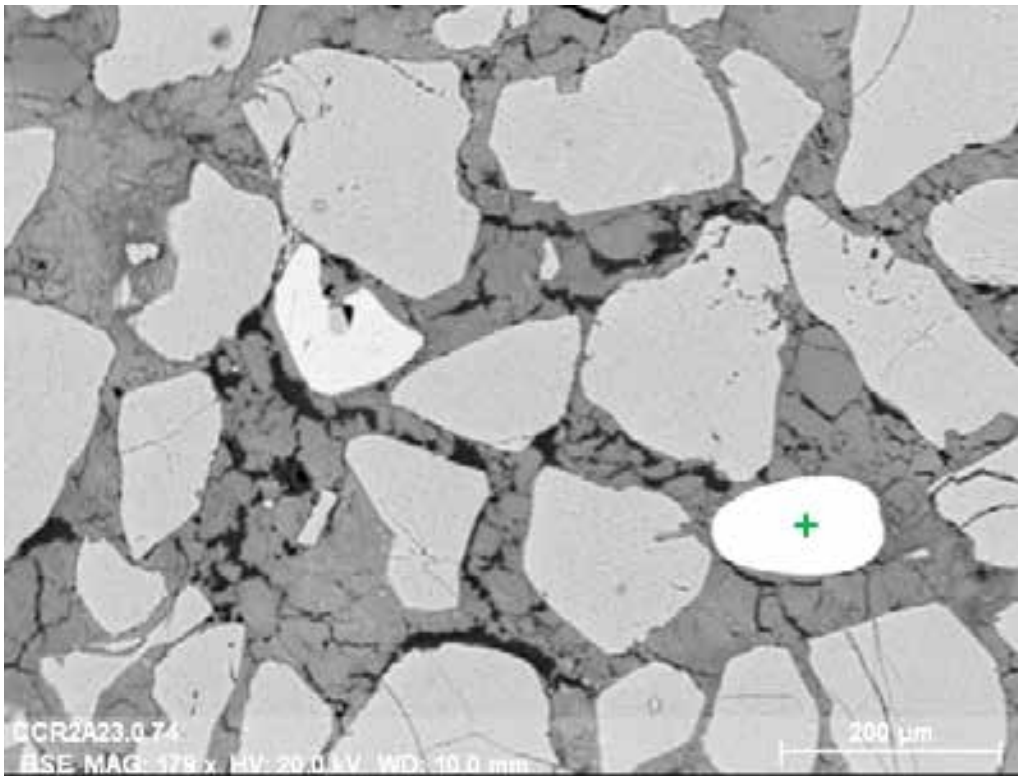


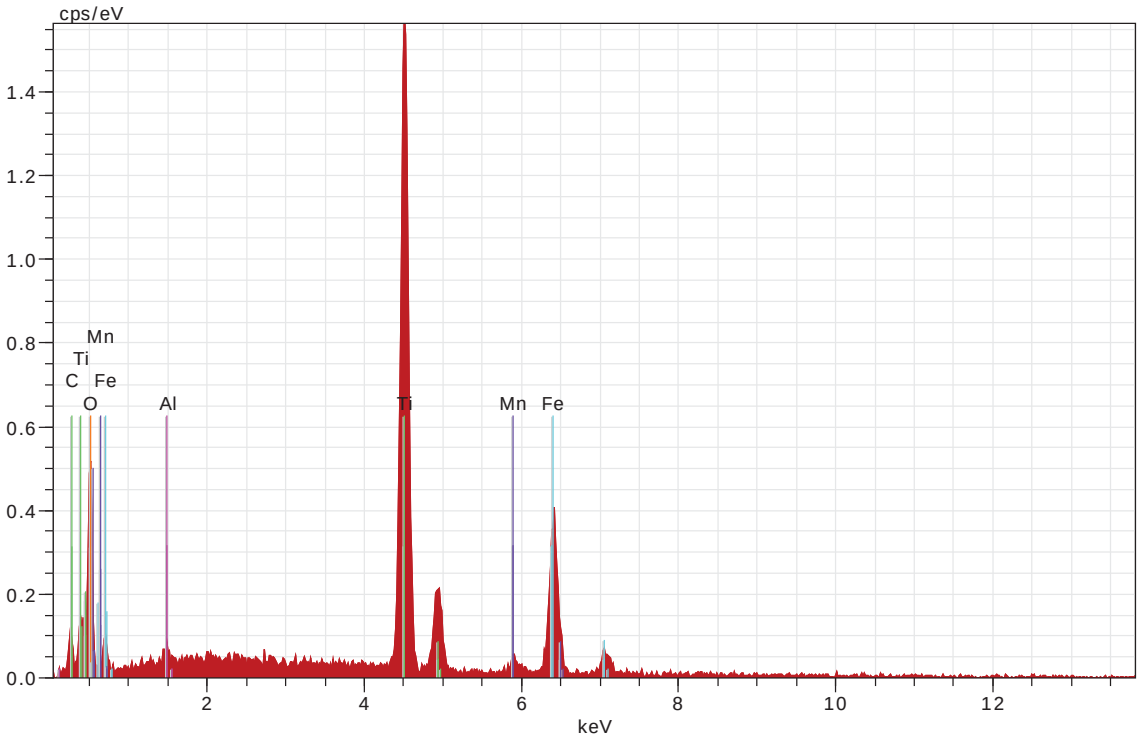
CCR2A 23.0-23.5: BSE image (top) and EDS spectrum (bottom) for kyanite; green crosshair on BSE image marks analysis location.



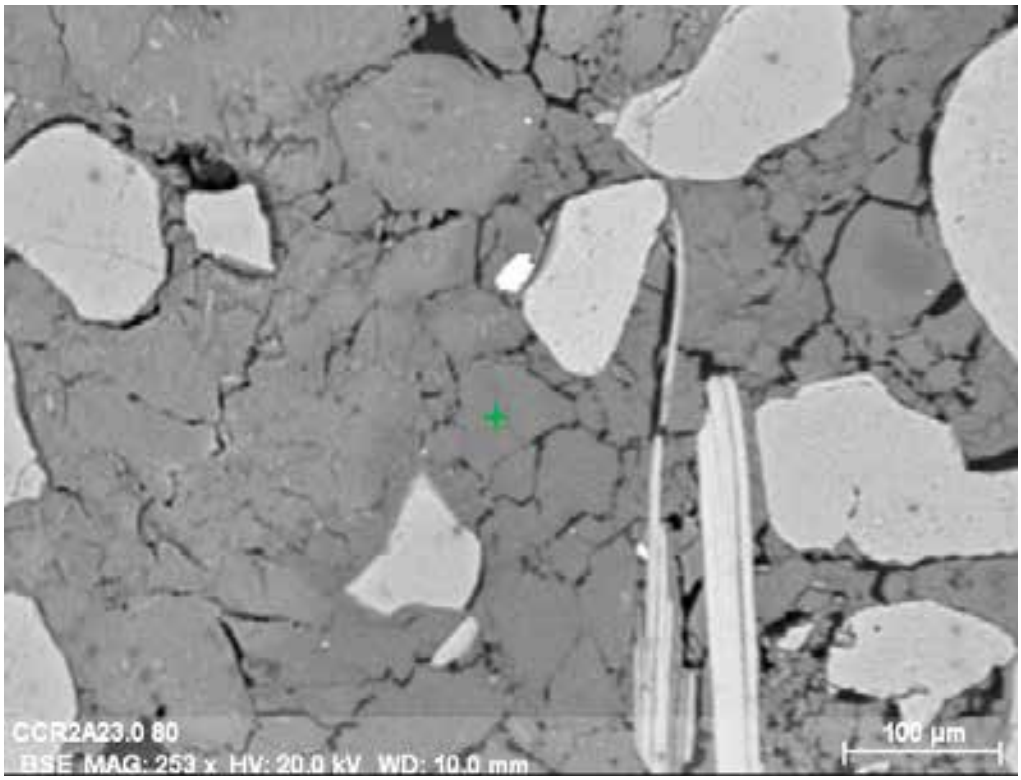


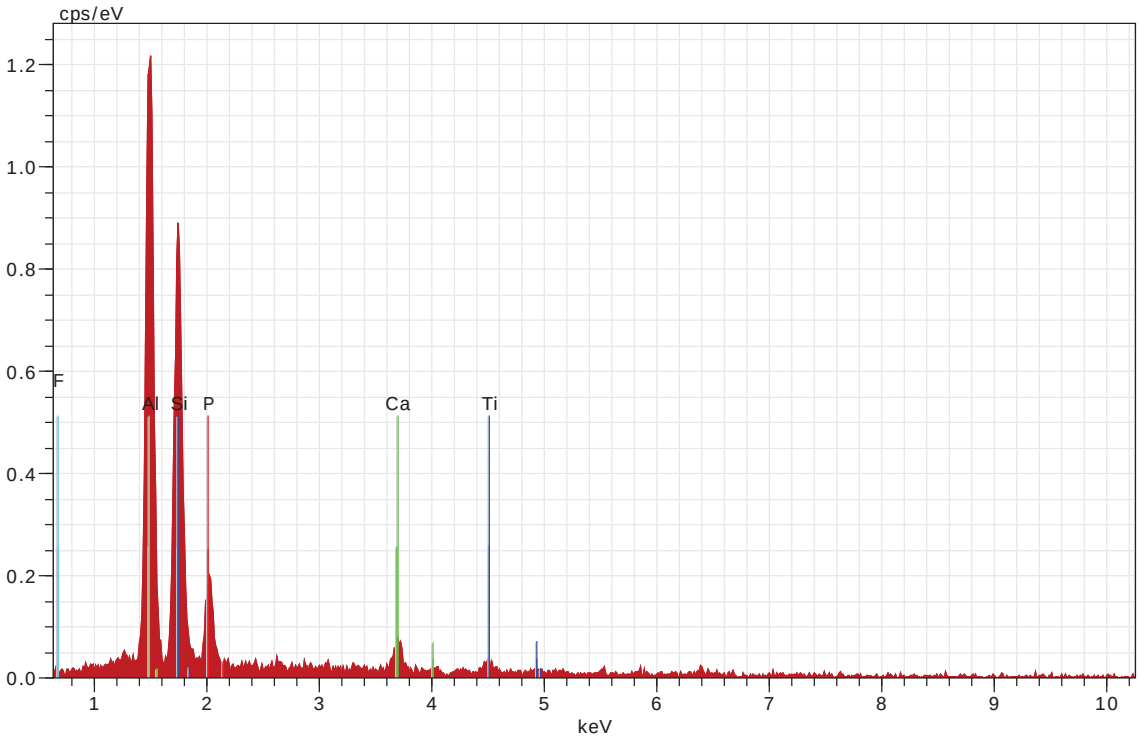
CCR2A 23.0-23.5: BSE image (top) and EDS spectrum (bottom) for wavellite and clay matrix; green crosshair on BSE image marks analysis location.



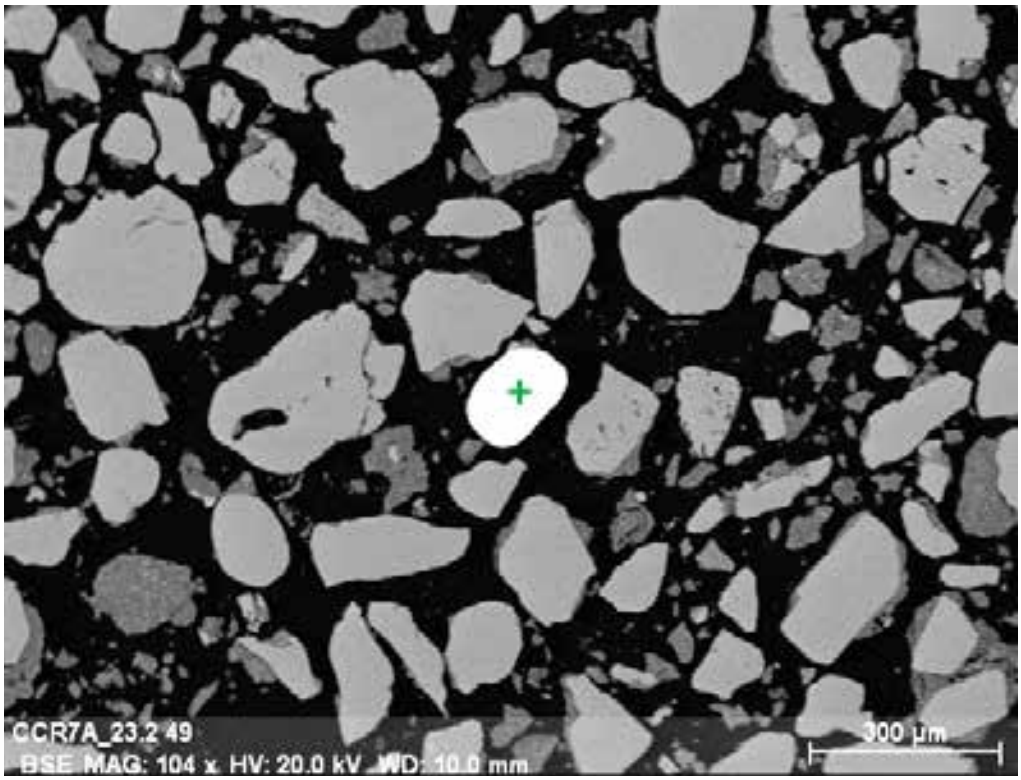


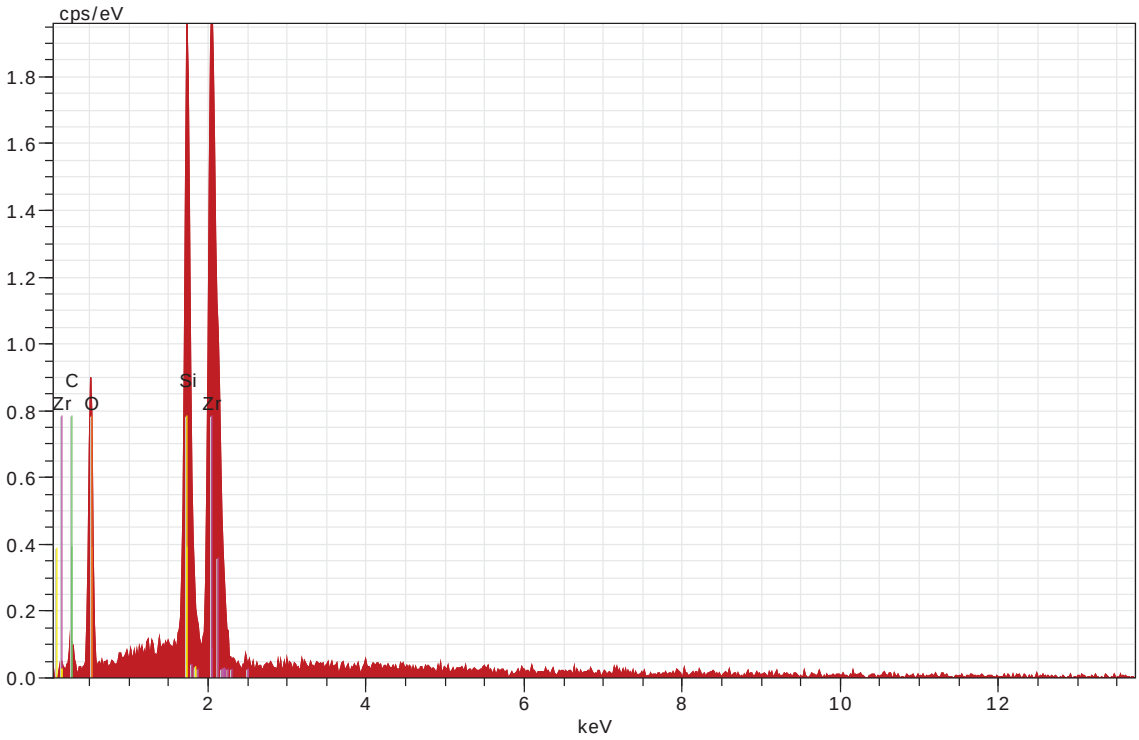
CCR2A 23.0-23.5: BSE image (top) and EDS spectrum (bottom) for ilmenite; green crosshair on BSE image marks analysis location.



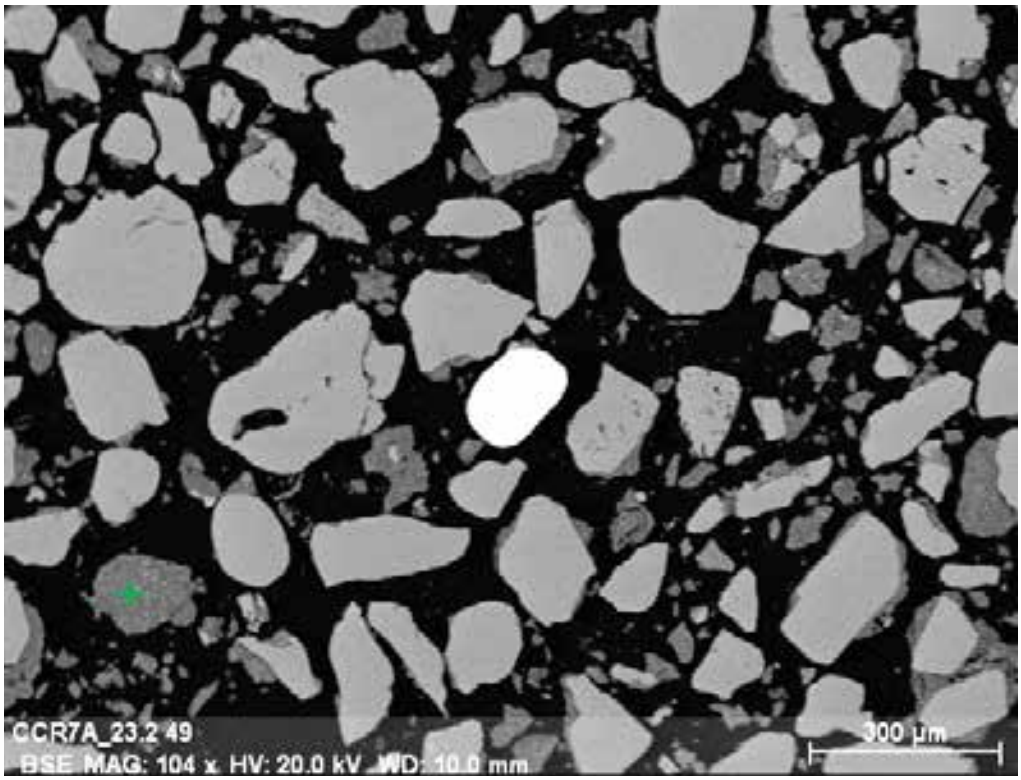


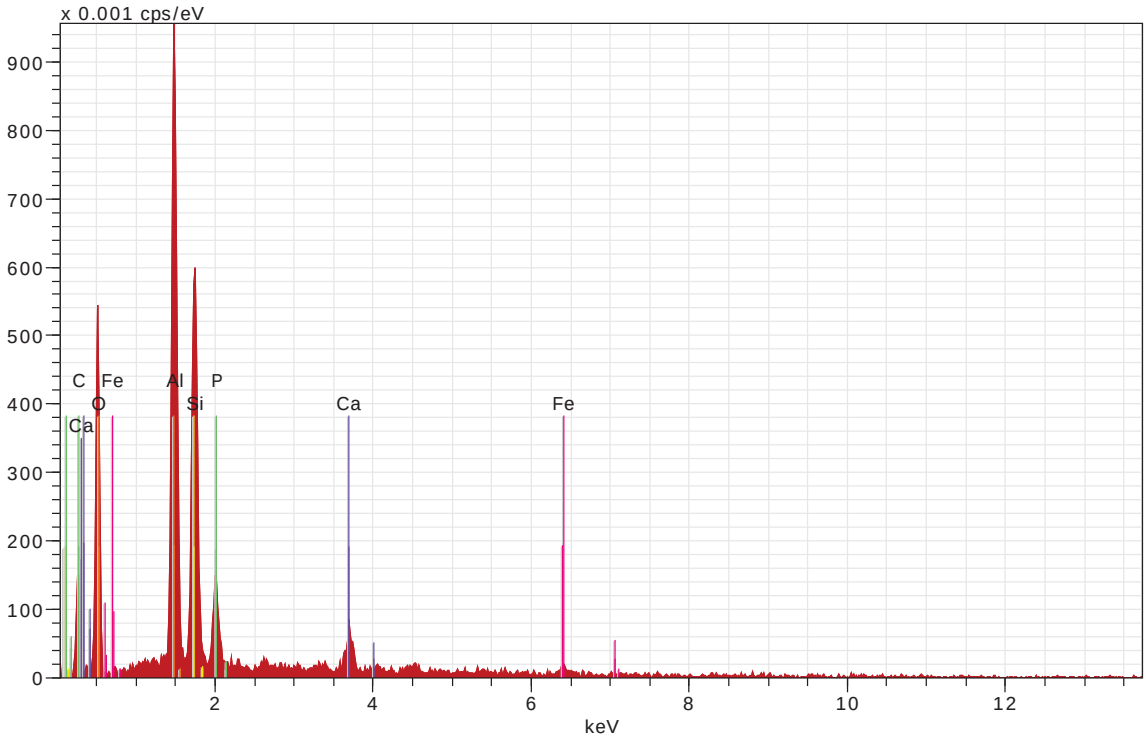
CCR2A 23.0-23.5: BSE image (top) and EDS spectrum (bottom) for wavellite and clay matrix; green crosshair on BSE image marks analysis location.



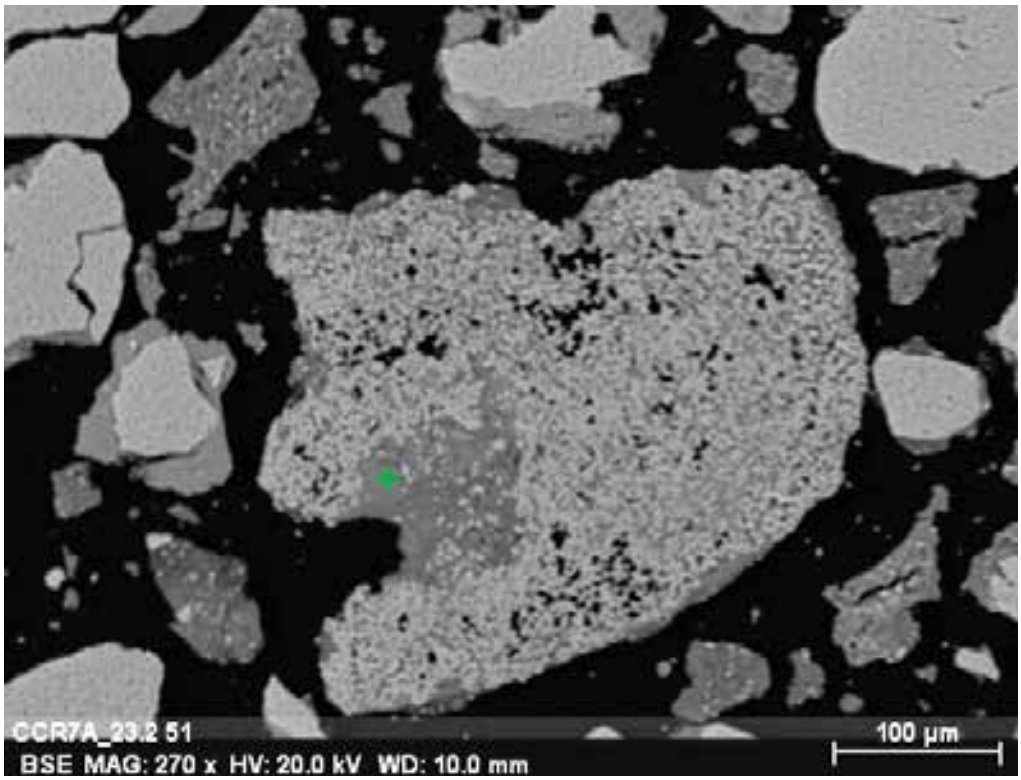


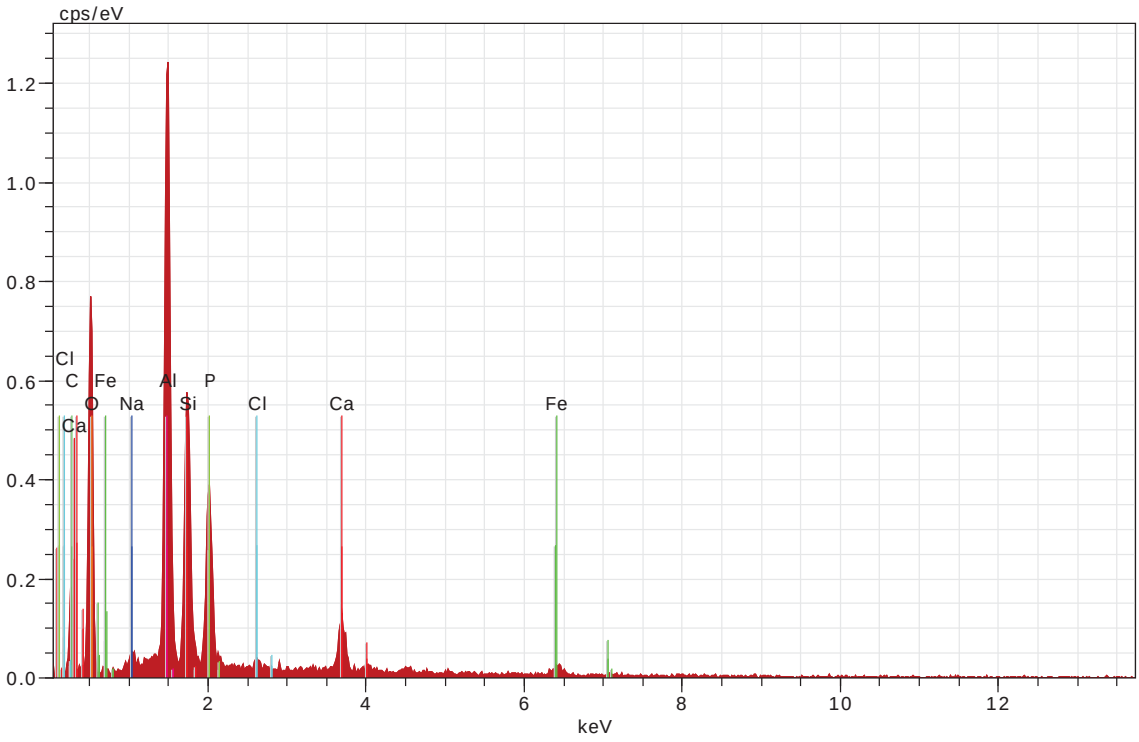
CCR7A 23.2-23.5: BSE image (top) and EDS spectrum (bottom) for zircon; green crosshair on BSE image marks analysis location.



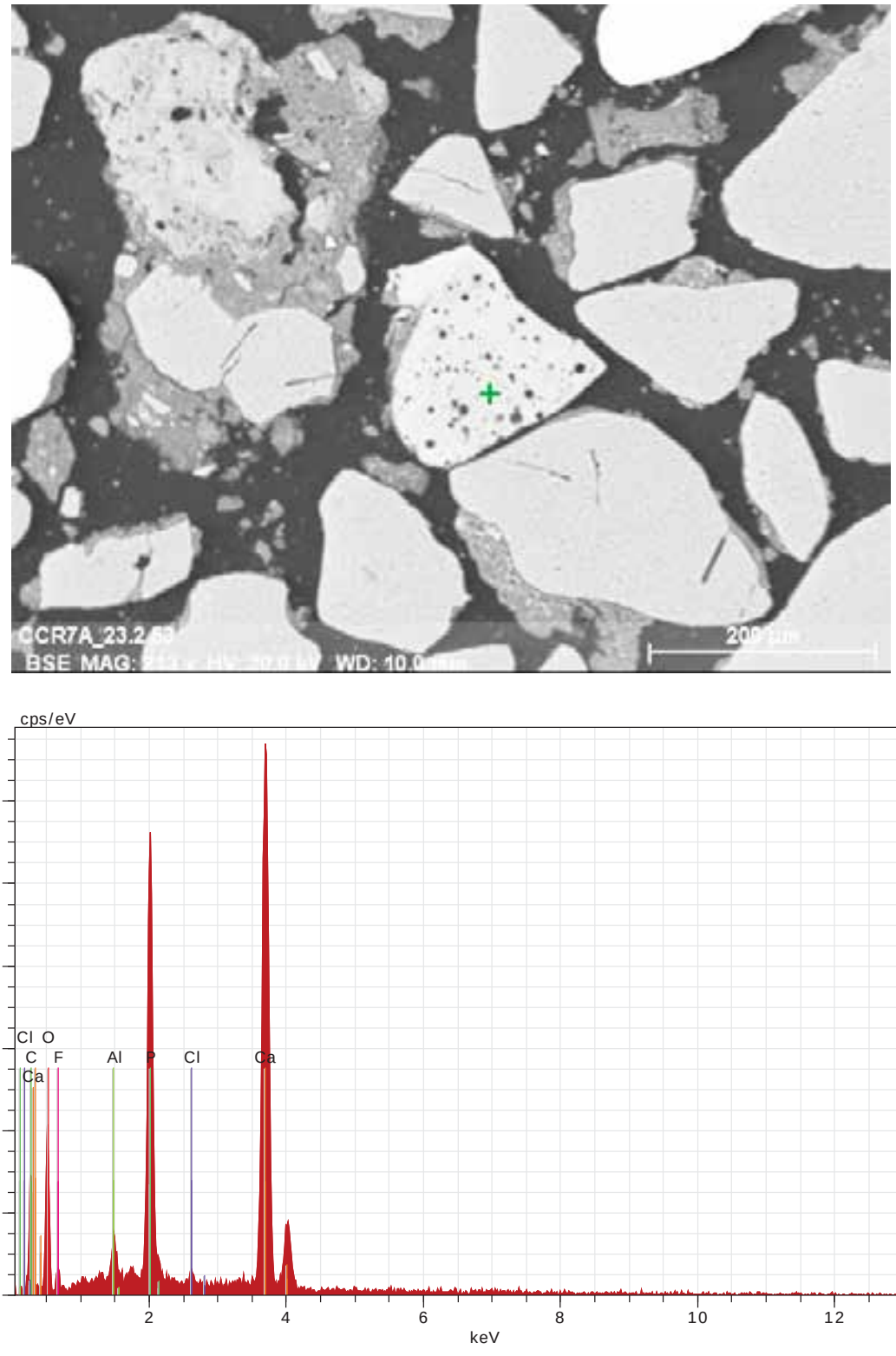


CCR7A 23.2-23.5: BSE image (top) and EDS spectrum (bottom) for Ca- and Al-phosphate matrix; green crosshair on BSE image marks analysis location.

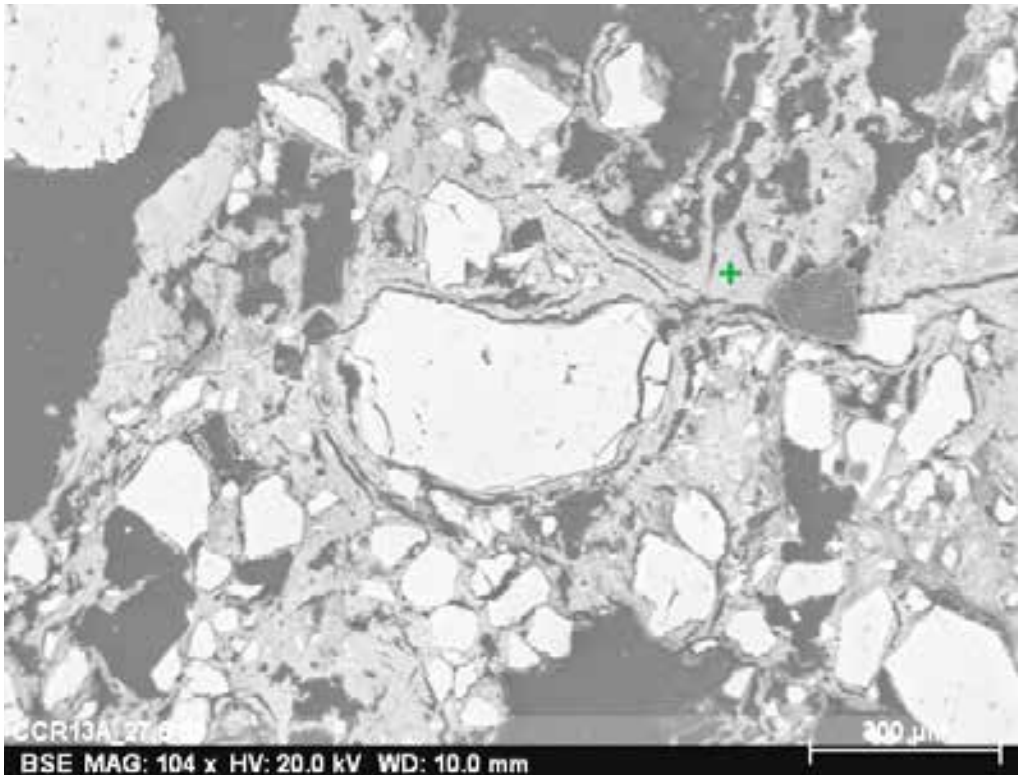


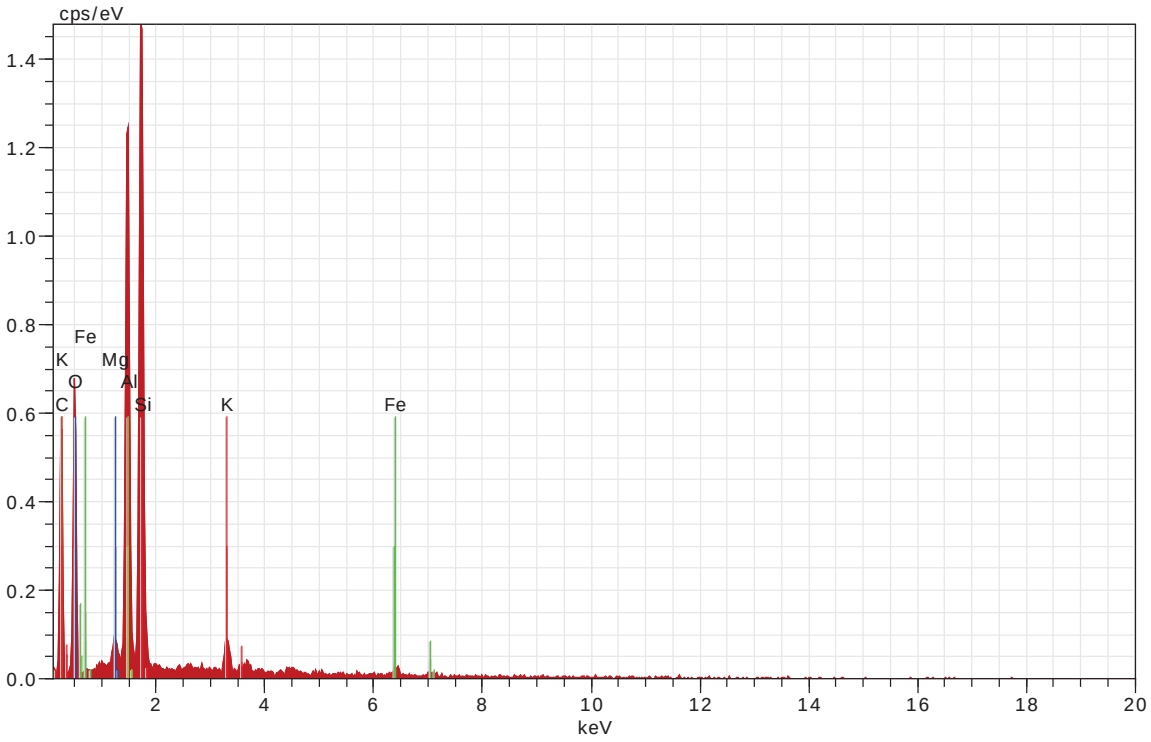


CCR7A 23.2-23.5: BSE image (top) and EDS spectrum (bottom) for wavellite and apatite matrix; green crosshair on BSE image marks analysis location.

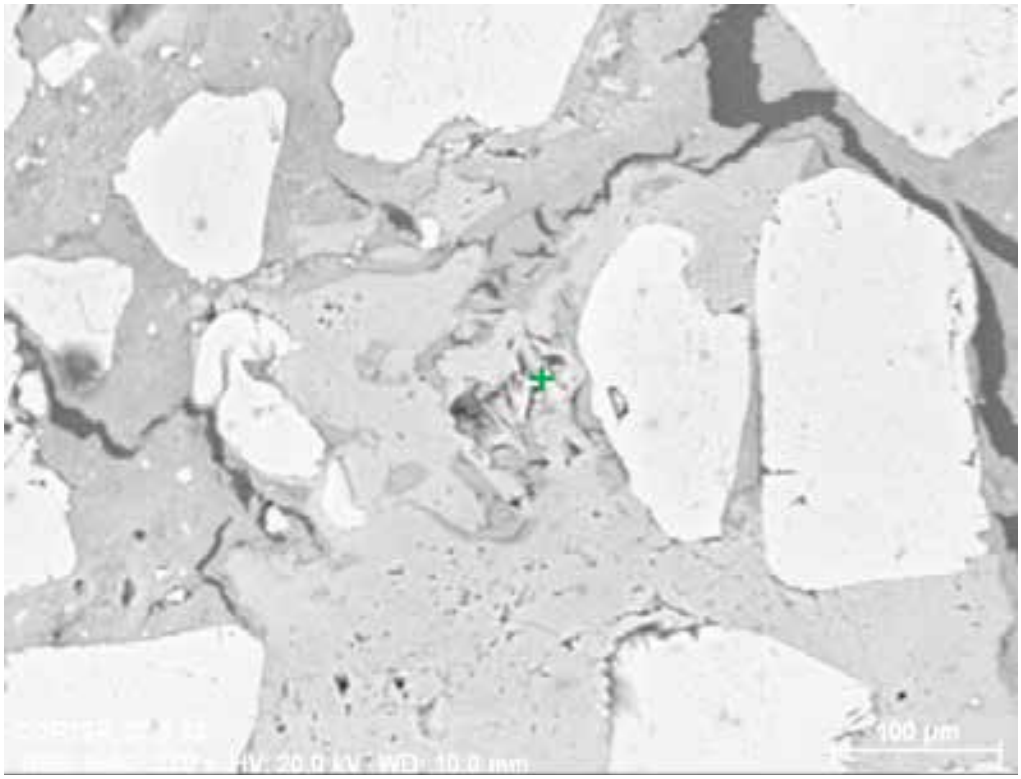


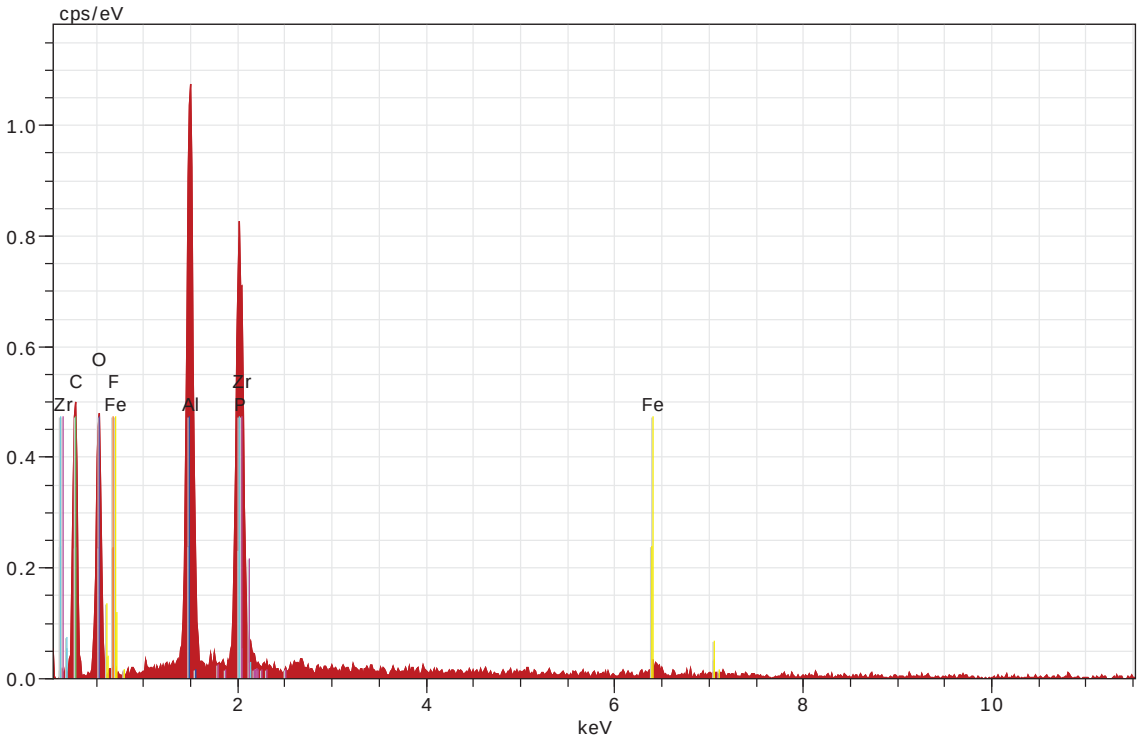
CCR7A 23.2-23.5: BSE image (top) and EDS spectrum (bottom) for apatite matrix; green crosshair on BSE image marks analysis location.



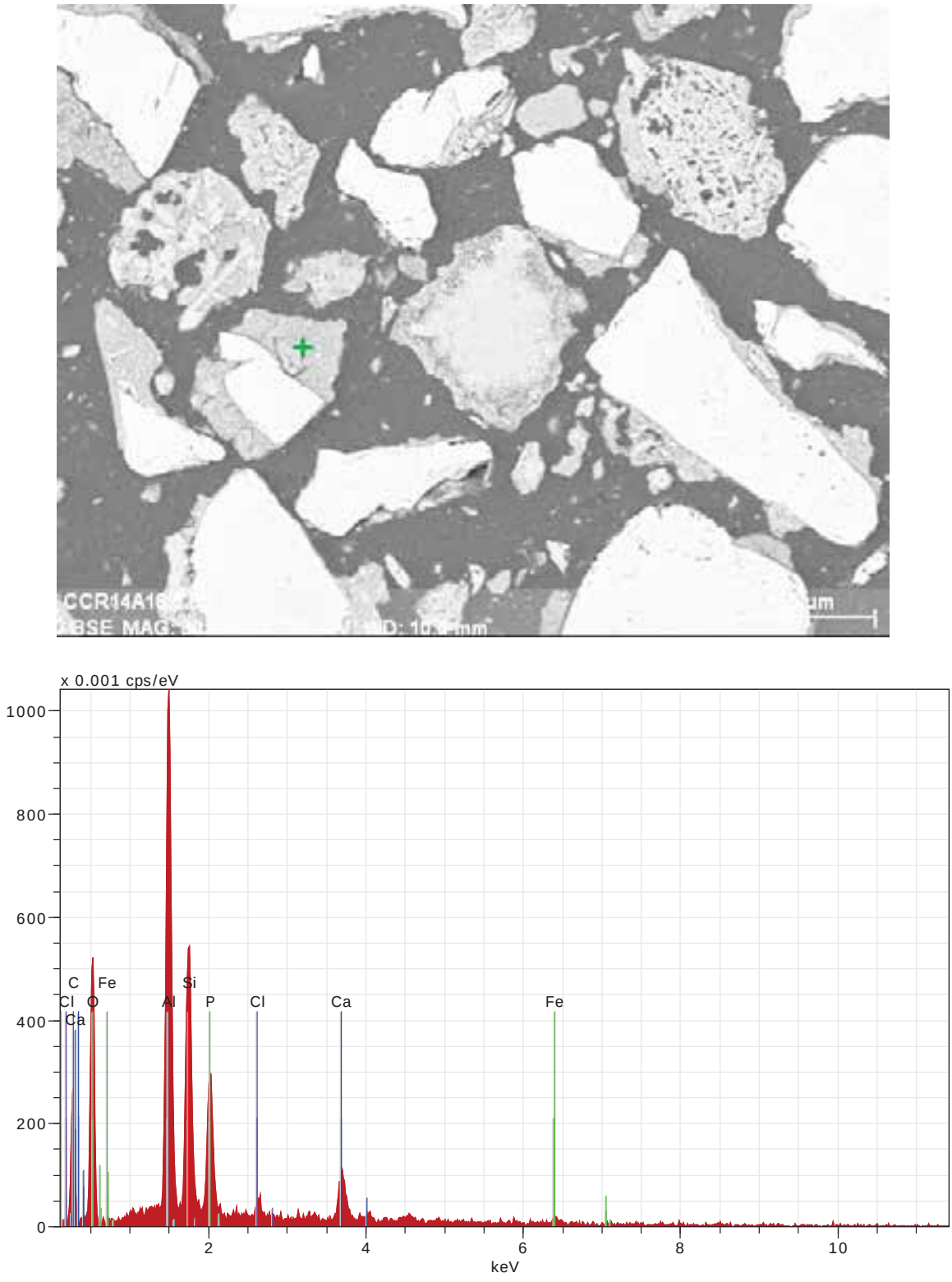


CCR13A 27.8-28.2: BSE image (top) and EDS spectrum (bottom) for kaolinite and muscovite matrix; green crosshair on BSE image marks analysis location.

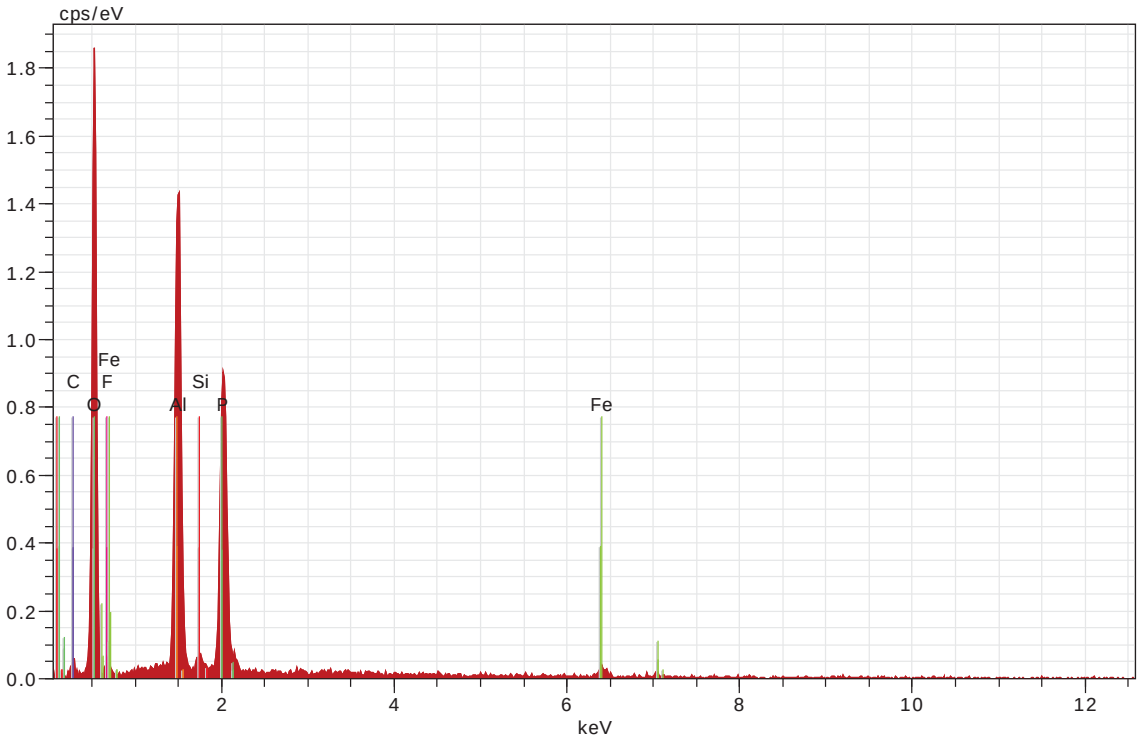




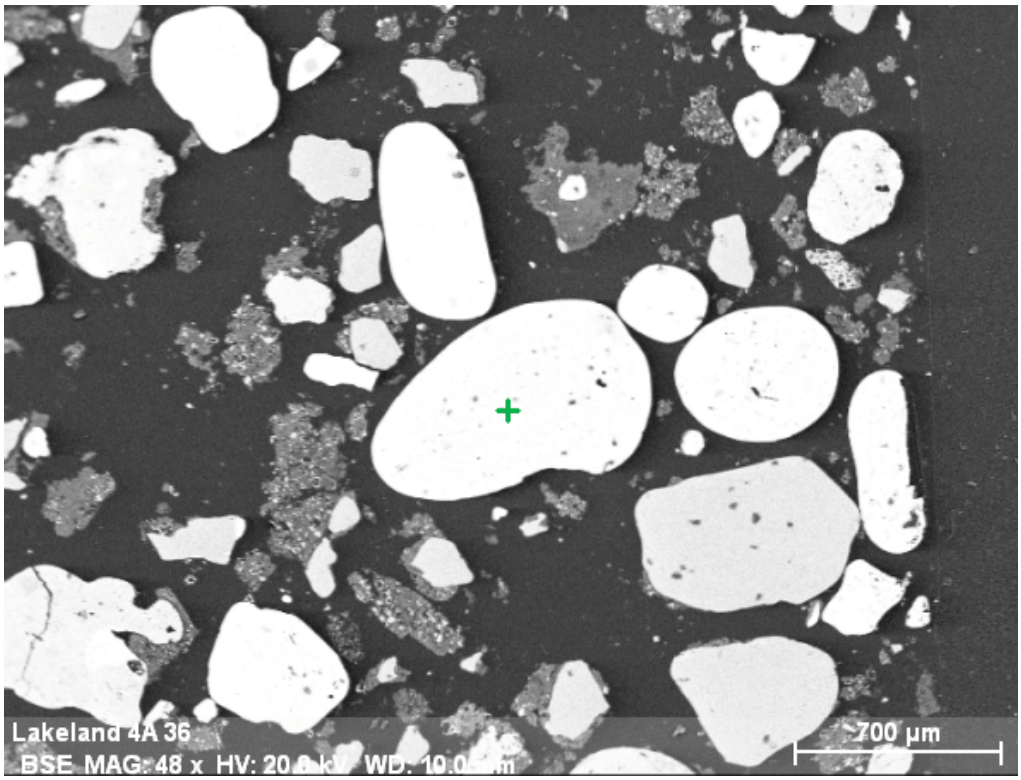
CCR13A 27.8-28.2: BSE image (top) and EDS spectrum (bottom) for wavellite; green crosshair on BSE image marks analysis location.

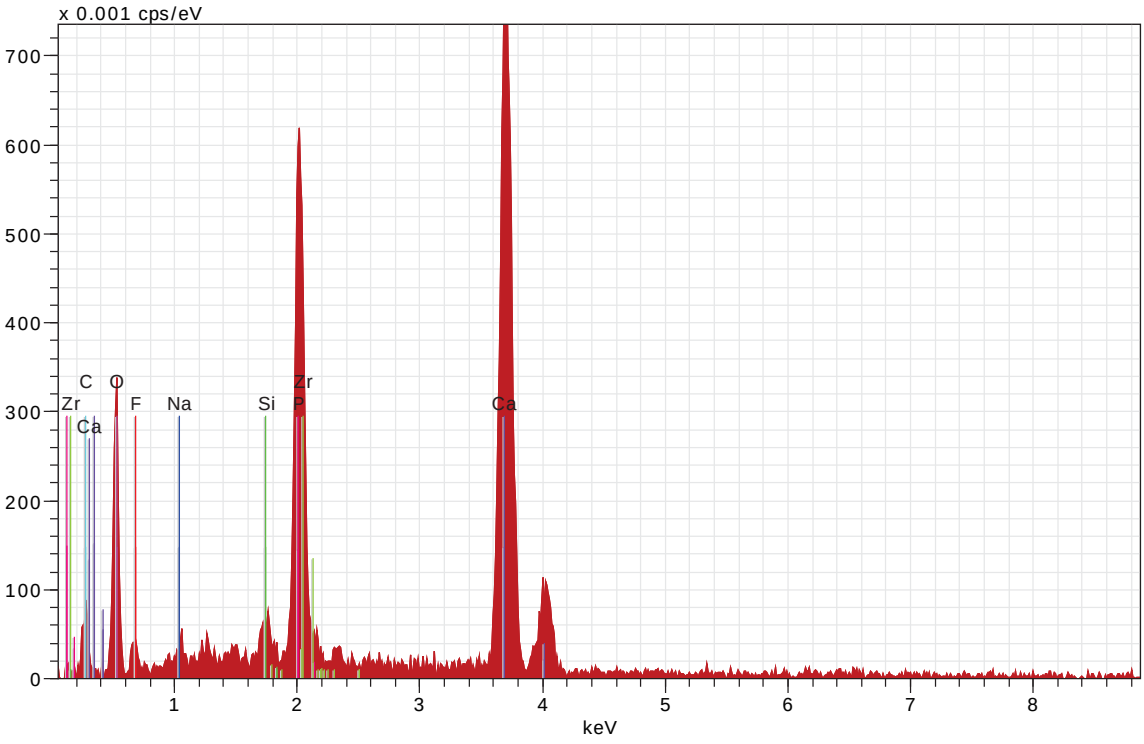


CCR14A 16.5-18.0: BSE image (top) and EDS spectrum (bottom) for apatite and wavellite matrix; green crosshair on BSE image marks analysis location.

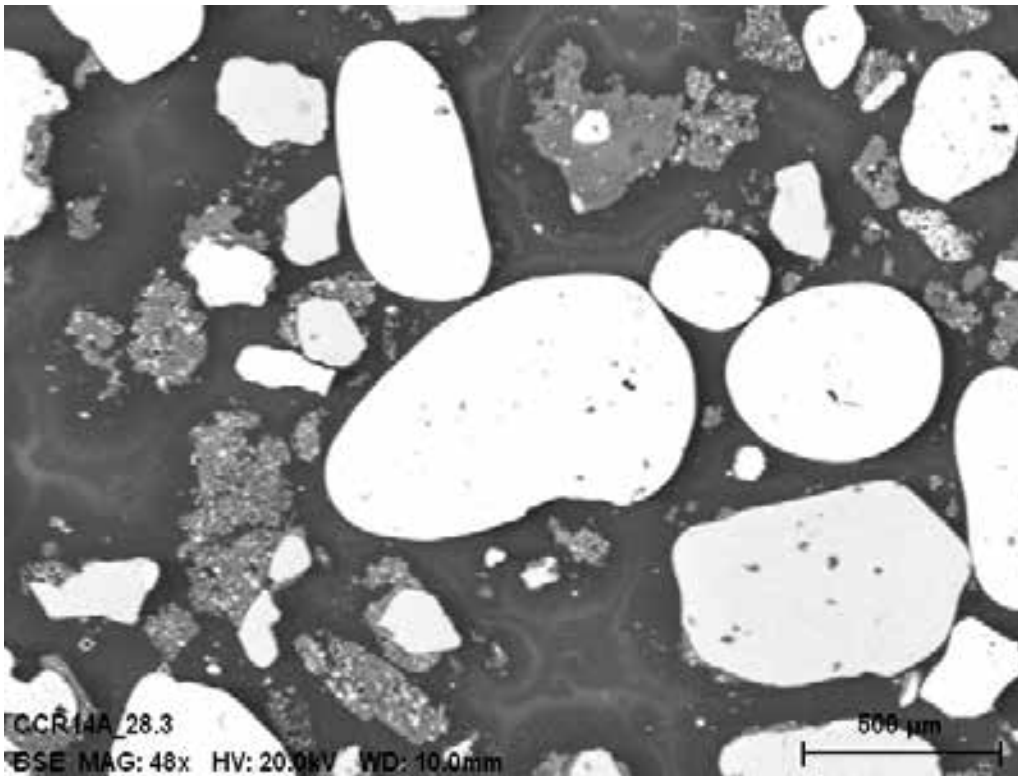


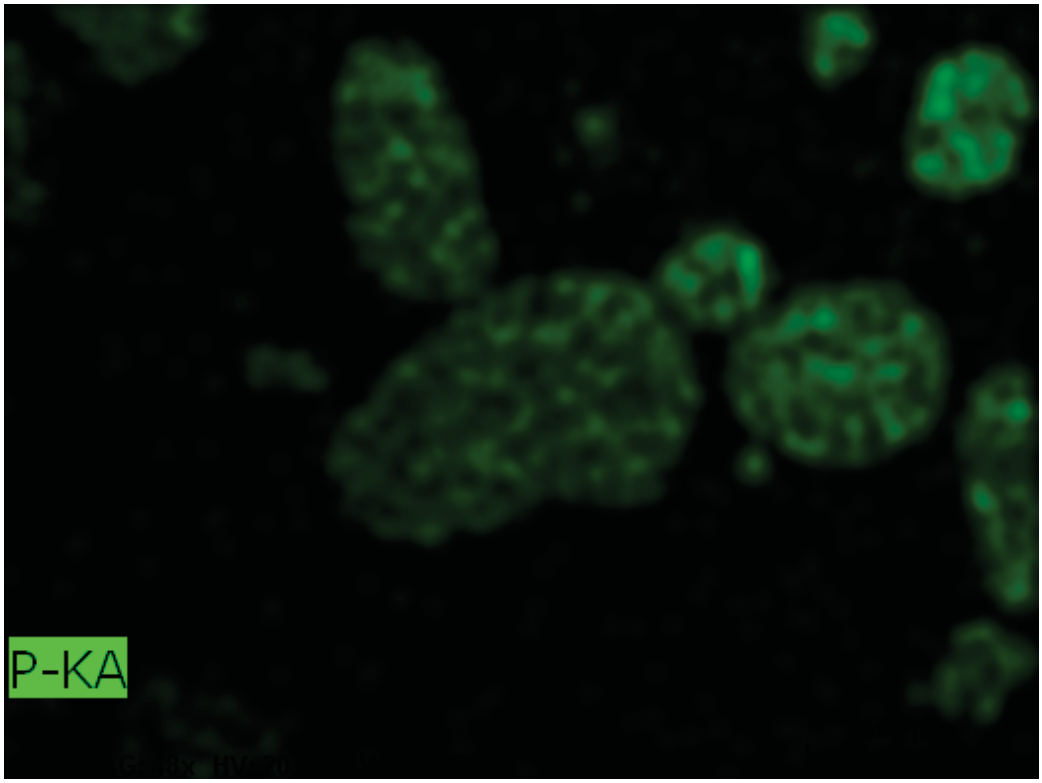
CCR14A 16.5-18.0: BSE image (top) and EDS spectrum (bottom) for wavellite; green crosshair on BSE image marks analysis location.



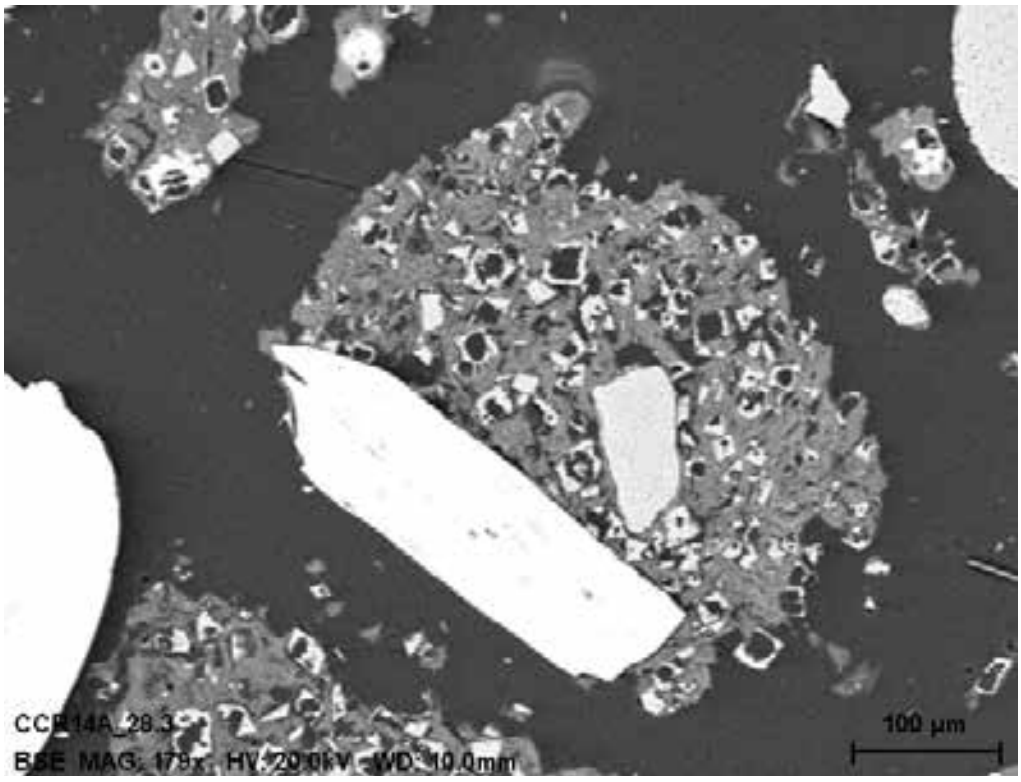


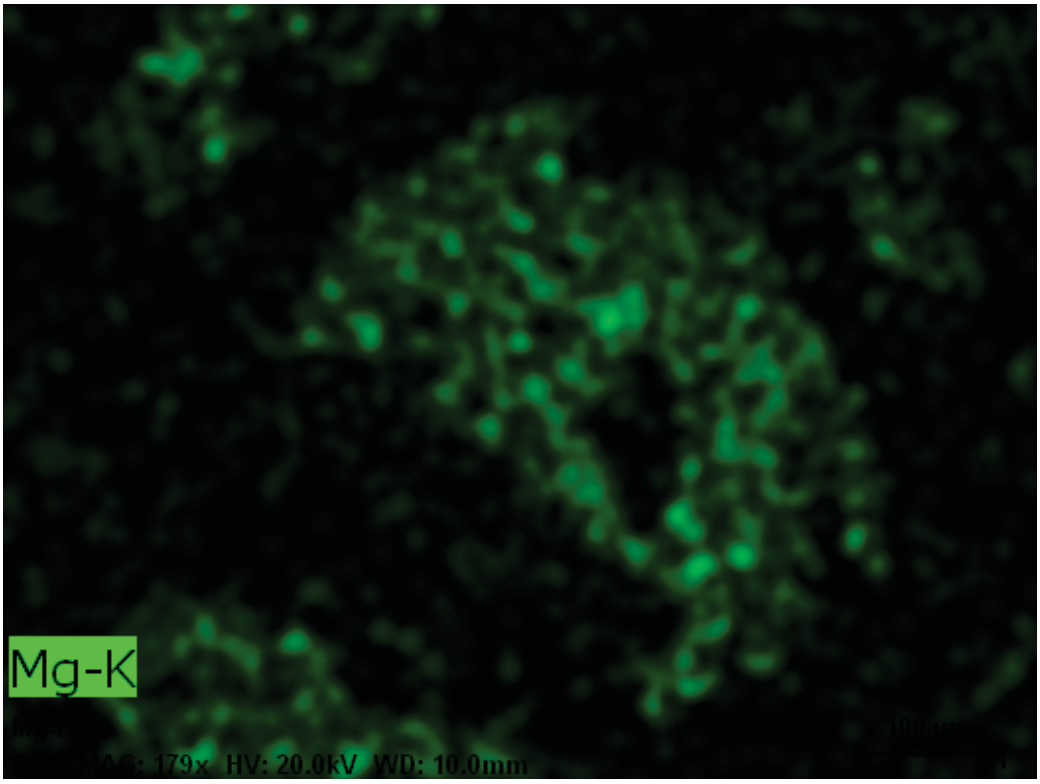
CCR14A 28.3-28.6: BSE image (top) and EDS spectrum (bottom) for collophane (apatite) "ball" with quartz inclusions (light gray); green crosshair on BSE image marks analysis location.





CCR7A 23.2-23.5: BSE image (top) and phosphorous map (bottom) of collophane apatite with quartz inclusions.





CCR7A 23.2-23.5: BSE image (top) of dolomite (high relief rhombohedral grains) in a clay matrix and magnesium map (bottom) of dolomite.

golder.com