

# 2019/2020 Annual Groundwater Monitoring Report

Columbia Fuel Fabrication Facility  
Hopkins, Richland County, South Carolina

Westinghouse Electric Company, LLC.

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## Quality information

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## List of Acronyms

AECOM	AECOM Technical Services, Inc.
AOC	Area of Concern
BLS	below land surface
CA	Consent Agreement
CFFF	Columbia Fuel Fabrication Facility
cis-1,2 DCE	cis-1,2-dichloroethene
COPC	constituent(s) of potential concern
CVOC	chlorinated volatile organic compound
DHEC	South Carolina Department of Health and Environmental Control
EPA	United States Environmental Protection Agency
GEL Labs	GEL Laboratories, LLC
µg/L	micrograms per liter
MCL	maximum contaminant level
mg/L	milligram per liter
MSL	mean sea level
NPDES	National Pollution Discharge Elimination System
NPL	National Priority List
OU	Operational Unit
Pace	Pace Analytical Services, LLC
PCE	tetrachloroethylene
pCi/L	picocuries per liter
RI	remedial investigation
Rust	Rust Environment and Infrastructure
S&ME	Soil and Material Engineers
SCRDI	SCRDI Bluff Road
Shealy	Shealy Environmental Services, Inc.
SVOC	Semi-Volatile Organic Compounds
TAL	Target Analyte List
Tc-99	Technetium-99
TCE	trichloroethylene
TCL	target compound list
U	uranium
VC	vinyl chloride
Westinghouse	Westinghouse Electric Company, LLC
WL2	West Lagoon 2
WWTP	wastewater treatment plant

## 1. Introduction

Westinghouse Electric Company, LLC (Westinghouse) Columbia Fuel Fabrication Facility (CFFF) is located at 5801 Bluff Road (site or property) in Hopkins, approximately 15 miles southeast of Columbia, South Carolina (**Figure 1**). The site includes approximately 1,151 acres, with the developed area encompassing approximately 75 acres centrally located on the site, thereby creating substantial buffers from adjoining properties. The property is surrounded by rural forested and agricultural property. CFFF was opened in 1969 and manufactures fuel assemblies and components for the commercial nuclear power industry. Site features are shown on **Figure 2** and monitoring well locations are displayed on **Figure 3**.

On February 26, 2019, the South Carolina Department of Health and Environmental Control (DHEC) and CFFF entered into Consent Agreement (CA) 19-02-HW to comprehensively assess potential environmental impacts from current and historical operations, including additional assessment of known impacts. The CA requires further assessment and potential remediation of known constituents of potential concern (COPCs) and assessment of additional areas where releases may have occurred. CFFF submitted a *Final Remedial Investigation Work Plan* to DHEC in June 2019 (AECOM, 2019a), which DHEC approved on June 19, 2019.

Assessment activities outlined in the June 2019 Final RI Work Plan (also referred to as Phase I) represented the first step in an iterative process to fulfill the requirements of the CA to assess the source, nature and extent of impacts from historical operations. The RI Phase I work was performed from June to December 2019.

As agreed with DHEC, an *Interim Remedial Investigation Data Summary Report* was prepared (AECOM, 2020a) to document the findings of the Phase I assessment activities. Based on comments from DHEC, CFFF submitted the *Final Interim Remedial Investigation Data Summary Report* on July 15, 2020 (AECOM, 2020b). On July 30, 2020, DHEC approved the report and requested a Phase II RI Work Plan be submitted by September 15, 2020.

In summary, the Phase I assessment data document the following:

- Groundwater, surface water and sediment data indicate that there are no COPCs migrating off the site, and the documented impacts pose no potentially significant threat to plant workers, the general public or the environment.
- A survey of water supply wells in the area identified the closest water supply well to be over 1 mile downgradient of the known areas impacted by COPCs. Analysis of groundwater samples from four private water supply wells, including the closest downgradient well, identified no COPCs related to CFFF manufacturing operations. These findings reinforce that there is no potential for COPCs from CFFF to impact private water supply wells.
- A recently completed study (Leidos, 2020) has determined that current operations are not the source of Technetium-99 (Tc-99) in groundwater above the MCL.
- In general, the vertical and horizontal extent of COPCs has been further defined and shows that the groundwater plume sizes and locations are similar to those previously identified.
- Conditions within the floodplain are conducive to natural degradation and attenuation of the CVOC plume which will limit the plume's size.
- Sediment impacted by COPCs is limited and well defined horizontally.
- An improved understanding of site geology and hydrogeology has been developed, particularly with respect to the floodplain and how shallow groundwater interacts with surface water and sediment. The Conceptual Site Model (CSM) has been enhanced by the newly acquired data, making it a more effective decision-making tool.

To address high priority, targeted issues more quickly, CFFF also conducted other focused data collection under the RI including:

- Addendum I to remove materials and intermodal (“sealand”) containers, investigate soil underneath and assure residential screening levels are met.
- Addendum II to assess East Lagoon sludge characteristics and facilitate preparation of the *East Lagoon Closure Plan* which is currently under DHEC review.
- An overall Tc-99 source investigation concluding that the impacts are historic and not the result of current operations.

In the past 2 years, Westinghouse also initiated risk reduction improvements including:

- eliminated a nickel plating operation;
- eliminated the use of tetrachloroethylene (PCE);
- re-designed the HF Spiking Station;
- installed a sentinel groundwater monitoring well network in the Chemical Area OU;
- significantly reduced stored materials via offsite disposal; and
- eliminated sources of potential storm water contamination from retired roof equipment.

In addition to the assessment activities performed by CFFF, DHEC conducted an assessment of potential CFFF impacts to fish in the Congaree River. DHEC's *Uranium and Fluoride in Fish from the Congaree River Technical Report No. 007-2020* dated May 2020 concluded:

“Overall, within the context of the point in time of sample collection, target species and analytical “methods, no signal for uranium from the Westinghouse Nuclear Fuels (WNF) facility was discerned. A slight, apparent signal for fluoride was observed from the WNF facility but it was not overall statistically significant from the other locations. The target species, as indicated by the noted limitations, were indicated to be healthy from an ecological viewpoint and safe for human consumption from a public health protection viewpoint.”

CFFF also performs routine environmental monitoring of gaseous and liquid effluents, surface water, groundwater, sediment, soil, vegetation and Congaree River fish tissue in addition to the activities being performed under the CA.

Groundwater sampling was completed during October 2019 and April 2020 to meet the ongoing groundwater monitoring requirements of the National Pollution Discharge Elimination System (NPDES) Permit SC0001848 and the CA between DHEC and CFFF. Details regarding the groundwater sample collection and QAQC procedures are contained within the AECOM *Final RI Work Plan* dated June 2019.

This report provides an overview of the site (**Section 1.0**), describes the sampling activities (**Section 2.0**), and presents the groundwater analytical results (**Section 3.0**). Conclusions and recommendations based on the results are discussed in **Section 4.0**. Cited references are provided in **Section 5.0**.

## 1.1 Site Location and Physical Setting

**Figures 1 through 3** illustrate the site features discussed below. The primary plant building is located approximately 2,700 feet southwest of Bluff Road on the northern portion of the property. The wastewater treatment plant (WWTP) is located near the southwest corner of the plant building. Treated wastewater is piped to the Congaree River where it is discharged under National Pollution Discharge Elimination System (NPDES) permit SC0001848 from a diffuser located along the bottom of the river at a location approximately 3 miles south of the developed portion of the property.

The SCRD Bluff Road site (formerly known as South Carolina Recycling and Disposal, Inc.) is located across Bluff Road from the northern property boundary. According to information on the internet (Justia US Law – law.justia.com), hazardous waste storage began on this property in late-1973 or early-1974, and operations ceased in 1982. This property was placed on the United States Environmental Protection Agency's (EPA) Superfund program's National Priority List (NPL) in 1983. Releases at SCRD are not known to have impacted CFFF.

The developed area of the property is approximately 130-140 feet above mean sea level (MSL). Elevations drop to approximately 110 feet above MSL immediately south of the plant/WWTP area, on the Congaree River floodplain and Mill Creek, a tributary of the Congaree River. The change in elevation occurs abruptly along a bluff that defines the southern edge of the developed portion of the property.

The Gator Pond is a manmade pond constructed prior to CFFF's development of the site. It is located approximately 500 feet southwest of the WWTP within a step-down area of the bluff (**Figures 2 and 3**). The pond is fed by groundwater and does not have a constructed spillway. Water discharges from the pond through groundwater seepage or overland flow during periods of high precipitation.

Upper and Lower Sunset Lakes are located west and south of the pond and approximately 900 feet southwest of the WWTP (**Figures 2 and 3**). Sunset Lakes are located within a natural oxbow of Mill Creek. A manmade dam approximately 1,700 feet south of the WWTP backs up water in Mill Creek, creating Lower Sunset Lake. A second manmade dam cuts across Mill Creek approximately 1,000 feet southwest of the WWTP, creating Upper Sunset Lake.

The southern portion of the property, including the Gator Pond, Mill Creek, and Sunset Lakes are located within the floodplain of the Congaree River. Surface drainage at the site flows into several drainage ditches across the property and surrounding areas. These ditches merge and flow into Upper Sunset Lake.

## 1.2 Site Operational Background

The main manufacturing activity is the fabrication of low-enriched uranium (U) fuel assemblies and components for the commercial nuclear power industry. The manufacturing process generates multiple wastewater streams which are treated by various physical/chemical/biological processes including WWTP lagoons prior to discharge to the Congaree River under a NPDES permit issued by DHEC.

Releases of COPCs have occurred from the wastewater treatment system and manufacturing operations. CFFF has assessed known releases and installed an extensive groundwater monitoring network beginning in the early 1980s. Assessment activities have determined that releases have impacted soil and groundwater in locations largely confined to the immediate plant area. Various remediation efforts have been undertaken in response to the identified releases. No offsite impacts are known to have occurred.

## 1.3 Facility Operational Units

The facility has been divided into eight operational units (OU) illustrated on **Figure 4** in recognition of the different types of site activities and potential sources of impact. The OUs are identified as the Northern Storage Area, Mechanical Area of the plant building, Chemical Area of the plant building, West Lagoons Area, Wastewater Treatment Area, Sanitary Lagoon Area, Southern Storage Area and Western Storage Area. One area of concern (AOC), the "Western Groundwater AOC," has also been identified. These OUs and the AOC are described in detail in the *Final Remedial Investigation Work Plan* dated June 2019 (AECOM, 2019a).

## 1.4 Geology and Hydrogeology

The CFFF is located in the Upper Coastal Plain physiographic province. The CFFF is underlain by three hydrogeologic units: the surficial aquifer, Black Mingo aquifer, and Middendorf aquifer.

Groundwater in the surficial aquifer occurs under unconfined (water table) conditions and generally flows from areas of higher topography in the vicinity of the plant building towards areas of lower topography in the floodplain of the Congaree River along Mill Creek. Previously, the water table aquifer above the bluff and the water table aquifer below the bluff were described as the two separate aquifers: the surficial aquifer and the floodplain aquifer. Although the river terrace sediment above and below the bluff were deposited during different time periods, the deposits are of

similar lithology and have been found to be connected based on data collected during Phase I of the RI. Since groundwater flows continuously from above the bluff into the floodplain in a single surficial aquifer, groundwater above the Black Mingo confining clay will be referred to as the surficial aquifer henceforth.

Surficial aquifer sediments generally occur to a depth of 30 to 40 feet below land surface (BLS), both above and below the bluff, and consist of clay, silt or silty sand at the surface coarsening downward to coarse sand and gravel on top of the Black Mingo confining clay. Silt and clay lenses occur at varying depths with the coarsening downward sands of the surficial aquifer. One notable surficial aquifer total thickness anomaly was discovered during Phase I of the RI near the location of monitoring well W-95 (**Figure 3**) where there is over 80 feet of sediment above the Black Mingo confining clay. Further assessment in this area will be performed during Phase II of the RI.

Groundwater monitoring wells were installed at differing depths to assess COPC migration within the surficial aquifer. Monitoring wells installed near the top of the surficial aquifer are designated as surficial aquifer upper zone monitoring wells, whereas wells installed on top of or within 5 feet of the Black Mingo confining clay are designated as surficial aquifer lower zone monitoring wells. One exception of the criteria above is well W-95. Monitoring well W-95 is designated as a surficial aquifer lower zone monitoring well because chlorinated volatile organic compounds (CVOCs) migrating within the lower zone of the surficial aquifer are found in it and the Black Mingo Formation is anomalously deep at this location.

There is a dynamic relationship between surface water in the ditches that transect the site above the bluff and groundwater in the upper zone of the surficial aquifer. The ditches continually or intermittently receive discharge of groundwater from the upper surficial aquifer depending on the elevation of the water table. The northern portions of the ditches are above the elevation of the seasonal high water table and thus the ditches at these locations are often dry. Runoff from precipitation that enters the dry portions of the ditches may infiltrate the water table, temporarily recharging the surficial aquifer. The southern portions of the ditches where the ditches are deeply incised may intermittently be above or below the water table, depending upon the extent of incision and seasonal variations in the elevation of the water table. Middle portions of the ditches may recharge the shallow aquifer during low water table conditions and may receive groundwater discharge during high water table conditions.

The predominant direction of groundwater flow in the surficial aquifer is to the southwest with components of flow to the south and southeast. Discharge of groundwater to the deeply incised portions of the ditches appears to influence groundwater flow and COPC migration within the upper zone of the surficial aquifer. The Gator Pond also appears to influence COPC migration as evidenced by COPC impacts in surficial aquifer groundwater migrating in a more easterly or westerly direction in the vicinity of the Gator Pond.

The surficial aquifer is underlain by a confining unit composed of dry silt/clay and brittle shale of the upper Black Mingo Formation. Previous geologic cross sections (AECOM, 2013) and Phase I of the RI indicate that the Black Mingo confining clay ranges in thickness from 39 to 83 feet. Beneath the clay confining unit is an artesian sand aquifer within the lower Black Mingo Formation known as the Black Mingo aquifer. Groundwater flow in the Black Mingo aquifer is inferred to the southwest based upon groundwater elevations from the four monitoring wells that are screened within this aquifer.

The Middendorf Formation occurs below the Black Mingo Formation. Sediments of the Middendorf Formation generally consist of multi-colored clay interbedded with fine to coarse grained sand. Subsurface investigations at CFFF have not extended into the Middendorf aquifer since there is no potential that it has been impacted. The Middendorf aquifer is unconformably underlain by bedrock.

Previous hydraulic characterization by AECOM Technical Services, Inc. (AECOM) and Rust Environment and Infrastructure (Rust), estimated the average linear flow velocity in the surficial aquifer to be 0.42 feet per day or 153 feet per year. The potential for flow between the surficial aquifer and the Black Mingo aquifer was previously assessed to be downward at vertical hydraulic gradients ranging between 0.04 and 0.1 feet per foot (Rust, 1995 and AECOM, 2013). However, low moisture content and vertical hydraulic conductivities of less than  $10^{-7}$  centimeters per second (S&ME, 1982) throughout the 39 to 83 foot thickness of the Black Mingo confining clay preclude migration of groundwater between the surficial aquifer and the Black Mingo aquifer which in turn precludes potential migration to the Middendorf Aquifer.

## 2. Groundwater Monitoring

The current monitoring well network consists of 90 monitoring wells (**Figure 3**). The monitoring well construction details are summarized on **Table 1**. Fall 2019 semi-annual sampling activities were completed by AECOM and CFFF personnel during October 2019. Spring 2020 semi-annual sampling activities were completed by AECOM and CFFF personnel during April 2020. Non-routine groundwater monitoring was conducted at monitoring well W-28 during 2019-2020. The non-routine groundwater sampling is described in further detail in **Section 3.3**. Monitoring activities were conducted in accordance with the requirements of the site's NPDES permit and by the procedures described in the *Final Remedial Investigation Work Plan* (AECOM, 2019a).

The depth to water in the monitoring wells was measured using electronic water level meters on October 14, 2019 and April 6, 2020. The water levels were converted to elevations and used to create potentiometric maps of the aquifer zones discussed in **Section 3.1** below.

The monitoring wells were purged by low flow methodology using a peristaltic pump and water levels were monitored during purging. Groundwater quality indicator parameters of pH, specific conductance, dissolved oxygen, oxidation-reduction potential (ORP), turbidity, and temperature were monitored during the groundwater purging process and recorded on the Field Data Logs for Groundwater Sampling, which are included in **Appendix A**. Samples were collected once the parameters had stabilized in accordance with the low-flow sampling procedure in the *Final Remedial Investigation Work Plan* (AECOM, 2019a).

Upon collection, all groundwater samples were labeled, preserved on ice, and kept under chain-of-custody protocol until received at the analytical laboratory. The groundwater samples were analyzed by DHEC certified laboratories Pace Analytical Services, LLC (Pace), formerly known as Shealy Environmental Services, Inc. (Shealy), GEL Laboratories, LLC (GEL Labs), and the Westinghouse Chemical Laboratory as appropriate for the following analyses:

- Target compound list (TCL) volatile organic compounds (VOCs) by EPA Method 8260B;
- TCL semi-VOCs by EPA Method 8270D;
- Target analyte list (TAL) metals by EPA Method 6010D/6020B;
- Nitrate by EPA Method 353.2;
- Ammonia by EPA Method 350.1;
- Fluoride by EPA Method 9056A;
- Gross Alpha by EPA Method 900.0;
- Gross Beta by EPA Method 900.0;
- Tritium by EPA 906.0 (Modified);
- Isotopic U by DOE EML HASL-300 (U-02-RC Modified);
- Isotopic U by EPA Method 200.8/200.2; and
- Tc-99 via DOE EML HASL-300 (Tc-02-RC Modified).

Laboratory analytical reports and chain-of-custody forms are included in **Appendix B**.

CFFF is transitioning from monitoring groundwater for gross alpha and gross beta to monitoring for isotopic U and Tc-99. Gross alpha and gross beta are typically used as screening parameters because they can represent various radionuclide components. In the past, action levels were established for gross alpha and gross beta whereby additional contingent tests were initiated for isotopic U and Tc-99 if the action levels were exceeded. Results below the action levels would not have been further speciated, thus calling to question whether the low detection of gross alpha or gross beta was a result of site activities or other circumstances such as natural radionuclide presence. CFFF has continued to monitor for gross alpha and gross beta but is relying on the site-specific COPC results for

isotopic U and Tc-99 to evaluate radionuclide concentrations in groundwater now that there is this data from four separate sampling events.

## 3. Results

The following sections summarize the results of the groundwater monitoring performed in October 2019 and April 2020.

### 3.1 Groundwater Flow

The water level measurements on October 14, 2019 and April 6, 2020 were converted to water level elevations using existing monitoring well top-of-casing elevation data and are summarized in **Table 2**. The water level elevations from monitoring wells screened in the surficial aquifer – upper zone and wells screened in the Black Mingo aquifer were used to prepare the potentiometric maps for the surficial aquifer and Black Mingo aquifer for the October 2019 and April 2020 monitoring periods (**Figures 5 through 8**).

#### 3.1.1 Surficial Aquifer

Based on the surficial aquifer potentiometric maps for October 14, 2019 and April 6, 2020 (**Figures 5 and 6**, respectively), groundwater flow in the unconfined surficial aquifer – upper zone is generally to the southwest with components of flow to the west and south. These surficial aquifer potentiometric contours and flow directions are similar to previous results.

#### 3.1.2 Black Mingo Aquifer

Based on the Black Mingo Aquifer potentiometric maps for October 14, 2019 and April 6, 2020 (**Figures 7 and 8**, respectively), groundwater in the Black Mingo aquifer is generally to the southwest. The Black Mingo aquifer potentiometric contours and flow directions are similar to previous results.

## 3.2 Groundwater Quality

Groundwater sampling indicator parameters measured in the field during the well purging and sampling are presented in **Table 3**. The groundwater sampling logs are included in **Appendix A**. Laboratory analytical reports are included in **Appendix B** and the analytical results for the monitoring wells are summarized in **Table 4**. Historic analytical data is summarized in **Table C-1** included in **Appendix C**.

Historic data trends for nitrate, fluoride, gross alpha and gross beta have been included in previous annual reports. This report includes historic data trends for nitrate, fluoride, U, and Tc-99 (**Appendix D**). As discussed in **Section 2.0**, the U concentration trends are included to replace the former trend analysis for gross alpha and the Tc-99 concentration trends are included to replace the former trend analysis for gross beta.

Based on previous groundwater assessment activities, COPCs in groundwater are CVOCs, nitrate, fluoride, U, and Tc-99. Also, there is currently no evidence that there are ongoing releases of COPCs.

#### 3.2.1 Chlorinated Volatile Organic Compounds (CVOCs)

Four CVOCs (tetrachloroethylene [PCE], trichloroethylene [TCE], cis-1,2-dichloroethene [cis-1,2-DCE], and vinyl chloride [VC]) were detected in the upper and lower zones of the surficial aquifer. TCE, cis-1,2-DCE, and VC are breakdown products of the dechlorination of PCE. CVOCs were not detected in the groundwater samples collected from the Black Mingo aquifer monitoring wells.

##### 3.2.1.1 PCE

PCE was detected in groundwater at concentrations at or above its maximum contaminant level (MCL) of 5.0 micrograms per liter ( $\mu\text{g/L}$ ) in groundwater from 21 of the 86 surficial aquifer monitoring wells (**Table 4**). There are three PCE plumes at CFFF contained within the property in the surficial aquifer. These CVOC plumes are generally

referred to as the Western Groundwater AOC, the main plume, and the eastern plume. These plumes are depicted on **Figures 9 through 12**. PCE was not detected in groundwater samples from the four Black Mingo monitoring wells.

#### **Surficial Aquifer – Upper Zone**

**Figures 9 and 10** illustrate the PCE concentrations in the surficial aquifer – upper zone during the October 2019 and April 2020 sampling periods, respectively. The highest PCE concentrations in surficial aquifer – upper zone wells were from wells W-39, W-41R, and W-66 in the main PCE plume at concentrations ranging from 180 µg/L to 480 µg/L. PCE was detected in the samples from monitoring well W-89 in the Western Groundwater AOC at concentrations of 2.1 µg/L and 6.7 µg/L during October 2019 and April 2020, respectively.

The main PCE plume in the surficial aquifer – upper zone appears to emanate from an area between West Lagoon 2 (WL2) and the plant building. Groundwater in this area migrates to the southwest. The southern PCE plume in the surficial aquifer – upper zone emanates from the southern developed areas of the site and extends to the south. It is currently unknown whether the Western Groundwater AOC PCE plume is the result of groundwater migration from the developed area of the facility or another source. Phase II RI investigation activities will assess the three plume areas further.

#### **Surficial Aquifer – Lower Zone**

**Figures 11 and 12** illustrate the PCE concentrations in the surficial aquifer – lower zone during the October 2019 and April 2020 sampling periods, respectively. Two PCE plumes are present in the surficial aquifer – lower zone, the Western Groundwater AOC and the main plume. In the surficial aquifer – lower zone, the main PCE plume was observed directly west of the facility in the same area as the main PCE plume observed in the surficial aquifer – upper zone, however with a greater aerial extent. The highest PCE concentrations in the surficial aquifer – lower zone were from wells W-33, W-48, W-65, and RW-2 in the main PCE plume at concentrations ranging from 140 µg/L to 300 µg/L. PCE was detected in the samples from monitoring wells W-19B and W-68 in the Western Groundwater AOC at concentrations ranging from 110 µg/L to 150 µg/L for October 2019 and April 2020 data.

The main PCE plume in the surficial aquifer – lower zone appears to emanate from an area between WL2 and the plant building and migrates to the southwest. It is currently unknown whether the Western Groundwater AOC PCE plume is the result of groundwater migration from the developed area of the facility or another source. Phase II RI investigation activities will assess the three plume areas further.

#### **3.2.1.2 TCE**

TCE was detected in groundwater at concentrations at or above its MCL of 5.0 µg/L from 10 of the 86 surficial aquifer monitoring wells (**Table 4**). There are four TCE plumes at CFFF in the surficial aquifer. These CVOC plumes are generally referred to as the Western Groundwater AOC, the main plume, the eastern plume, and a plume near the southwest corner of the plant building. These plumes are depicted on **Figures 13 through 16**. TCE was not detected in samples from the four Black Mingo monitoring wells.

#### **Surficial Aquifer – Upper Zone**

The surficial aquifer – upper zone middle and eastern TCE plumes are in the same general locations as the corresponding PCE plumes but with a smaller aerial extent during the October 2019 and April 2020 sampling periods (**Figures 13 and 14**, respectively). TCE exceeded the MCL in groundwater samples from monitoring wells W-39, W-41R, and W-66 in the main TCE plume, W-67 in the eastern TCE plume, and monitoring wells W-38 and W-76 near the southwest corner of the plant building.

#### **Surficial Aquifer – Lower Zone**

In the surficial aquifer – lower zone, the main TCE plume was observed directly west of the facility extending in a southwestern direction in the same general location as the main PCE plume. **Figures 15 and 16** illustrate the TCE concentrations in the surficial aquifer – lower zone during the October 2019 and April 2020 sampling periods, respectively. The TCE MCL was exceeded in the main TCE plume in groundwater from surficial aquifer – lower zone wells W-33, W-65, W-87, and RW-2R in October 2019 and January 2020 at concentrations ranging from 8.3 µg/L to 84 µg/L. The greatest TCE concentration was observed in the groundwater from W-65 at a concentration of 84 µg/L during the April 2020 sampling event.

### 3.2.1.3 Cis-1,2-Dichloroethene

Concentrations of cis-1,2 DCE did not exceed the MCL of 70 µg/L in groundwater from the 90 monitoring wells. Cis-1,2-DCE was detected at concentrations ranging from 1.0 µg/L to 22 µg/L in groundwater from 20 surficial aquifer monitoring wells during the October 2019 and April 2020 sampling periods.

### 3.2.1.4 Vinyl Chloride

Groundwater from one monitoring well (W-95) contained VC at 2.9 µg/L during the October 2019 and April 2020 sampling periods, which exceeds the VC MCL of 2 µg/L.

## 3.2.2 SVOCs

SVOCs were not detected in groundwater above MCLs in the monitoring well network..

### 3.2.3 Nitrate

Nitrate was detected in groundwater at concentrations at or above its MCL of 10 milligrams per liter (mg/L) from 22 of the 90 monitoring wells (**Table 4**). **Figures 17 and 18** illustrate the nitrate concentrations for the October 2019 and April 2020 sampling periods, respectively. The highest nitrate concentrations were observed in the groundwater collected from surficial aquifer – lower zone monitoring well W-18R near the southwest corner of the South Lagoon at concentrations of 770 mg/L and 790 mg/L during the October 2019 and April 2020 sampling periods, respectively. The aerial extent of the nitrate plume is primarily in the area of the facility WWTP and extends to areas to the west, southwest, and south. Nitrate was detected in groundwater from one Black Mingo aquifer monitoring well (W-71) below its MCL at a concentration of 0.021 mg/L in October 2019. Nitrate is a naturally occurring compound and the detected concentration in monitoring well W-71 is orders of magnitude below the MCL indicating that this detection is not likely the result of facility operations. Phase II RI investigation activities will assess nitrate plume areas further.

**Figure D1 in Appendix D** illustrates nitrate concentration trends for groundwater from 12 monitoring wells. Based on a review of time-series plots from 2015-2020, the site nitrate plume is stable. Groundwater from these monitoring wells were selected for trend analysis by including wells that are within the plume and along the edges of the plume. Since 2015, nitrate concentrations have decreased in groundwater from monitoring wells, W-10, W-14, W-29, and W-38. These monitoring wells are upgradient to sidegradient of the area of highest nitrate concentrations. Nitrate concentrations in groundwater from monitoring well W-47 previously indicated a slow increasing trend through 2018 but has decreased since then. This monitoring well is along the center line of the migration of nitrate in groundwater. Groundwater trends from the remaining monitoring wells indicate that nitrate concentrations remained stable and within historic ranges over the last five years.

### 3.2.4 Fluoride

Fluoride was detected at concentrations at or above its MCL of 4 mg/L in groundwater from 15 of the 90 monitoring wells (**Table 4**). Fluoride is a naturally occurring compound and many of the detected concentrations in groundwater were orders of magnitude below the MCL indicating that these detections are not likely resulting from facility operations. **Figures 19 and 20** illustrate the fluoride concentrations for the October 2019 and April 2020 sampling events, respectively. The greatest fluoride concentration was observed in the groundwater from upper surficial well W-78 at concentrations of 13.4 mg/L and 11.3 mg/L during the October 2019 and April 2020 sampling periods, respectively. The fluoride plume exceeding the MCL in the surficial aquifer is primarily in the southern area of the plant building and the WWTP and extends to the south toward the Gator Pond and Lower Sunset Lake. Fluoride was detected in groundwater from the four Black Mingo aquifer monitoring wells below its MCL at concentrations ranging from 0.003 mg/L to 0.084 mg/L. Again, it is not likely that these detections are resulting from facility operations. Phase II RI investigation activities will assess fluoride plume areas further.

**Figure D2 in Appendix D** illustrates fluoride concentration trends for groundwater from 10 monitoring wells. Based on a review of time-series plots from 2015-2020, the site fluoride plume is stable. Groundwater from these monitoring wells were selected for trend analysis by including wells that were within the plume and along the edges of the plume. Fluoride concentrations in W-7A, W-13R, W-18R, and W-30 decreased from 2015 until April 2020. These monitoring wells are in the center of the area of impact near the lagoons or downgradient of the center of the fluoride impact. Fluoride concentrations from monitoring well W-29 increased from April 2017 to April 2018 but groundwater from this

well has indicated a decreasing trend since the high in April 2018. This well is upgradient of the center of the area of impact near the lagoons. Fluoride concentrations in groundwater from monitoring wells W-18 and W-47 have indicated an overall decreasing trend. These monitoring wells are in the center of the area of impact near the lagoons or downgradient of the center of the fluoride impact. Groundwater trends from the remaining monitoring wells indicate that fluoride concentrations remained stable and within historic concentration ranges.

### 3.2.5 Uranium

Total U was detected in groundwater at concentrations at or above its MCL of 30 µg/L from 3 of the 90 monitoring wells (**Table 4**). The exceedance of the groundwater MCL for U is localized to two areas adjacent to the plant building, one area on the west side of the building near the southwest corner (monitoring wells W-55 and W-56) and another area on the south side of the building (monitoring well W-77). **Figures 21 and 22** illustrate the total U concentrations detected during the October 2019 and the April 2020 sampling periods, respectively. The highest total U concentration of 264 µg/L was detected in groundwater from monitoring well W-77 during the April 2020 sampling event. The next closest downgradient well, monitoring well W-28, is 25 feet away and contains total U at concentrations less than 1.0 µg/L.

U was detected in groundwater from the four Black Mingo aquifer monitoring wells at concentrations below its MCL ranging from 0.0695 µg/L to 0.165 µg/L. Total U occurs naturally in groundwater in South Carolina. A study performed in the Aiken, SC and Augusta, GA area reported an average background groundwater U concentration from private water supply wells of 0.35 µg/L (Westinghouse Savannah River Company, 1992). Another study of state-wide groundwater analytical results from private water supply wells using statistical analysis predicted an average background groundwater U concentration of 1.26 µg/L (Wagner, S.E., et al.). Private water supply wells are typically installed in the aquifer below the surficial aquifer. The total U detected in groundwater from the Black Mingo wells is typical of regional background concentrations and not likely the result of facility operations.

The U trend plot is included as **Figure D3 in Appendix D**. Groundwater from these monitoring wells were selected for trend analysis by including wells that were within and near the localized total U detections. The U concentration trends are included to replace the former trend analysis for gross alpha in previous annual reports. The monitoring wells used to create the trend plots have been sampled three to five times for U since October 2018. Therefore, **Figure D3** represents recent, short-term trends. Of the monitoring wells exhibiting U concentrations greater than the MCL, U decreased in samples from wells W-55 and W-56 over three sampling periods and increased in samples from W-77 over two sampling periods.

### 3.2.6 Tc-99

Tc-99 was detected above its MCL of 900 picocuries per liter (pCi/L) in the groundwater samples collected from two surficial aquifer monitoring wells (W-6 and W-11). **Figures 23 and 24** illustrate the Tc-99 concentrations detected during the October 2019 and the April 2020 sampling periods, respectively. Tc-99 concentrations detected in groundwater from monitoring wells W-6 and W-11 ranged from 2,440 pCi/L to 3440 pCi/L from October 2019 to April 2020. The aerial extent of the Tc-99 exceeding the MCL is within the WWTP area and the Southern Storage Area. The aerial extent of the Tc-99 plume at concentrations below the MCL extends from the WWTP area toward the west, southwest, and southeast. Tc-99 was not detected in groundwater samples from the four Black Mingo monitoring wells. Additional assessment is planned to further define the extent of Tc-99 in groundwater. Phase II RI investigation activities will assess Tc-99 plume areas further.

The Tc-99 trend plot is included as **Figure D4 in Appendix D**. Groundwater from these monitoring wells were selected for trend analysis by including wells that were within the plume and along the edges of the plume. The Tc-99 concentration trends are included to replace the former trend analysis for gross beta in previous annual reports. Tc-99 concentrations in monitoring wells sampled since 2015 have fluctuated over time but have generally decreased or remained stable. Groundwater from monitoring wells W-6 and W-11 has been sampled since 2018 with Tc-99 remaining stable in both wells. Concentration trends from the remaining monitoring wells that were plotted also remain stable.

### 3.2.7 Other Monitoring Requirements

Tritium is not a COPC for the CFFF site. CFFF is a fuel fabrication facility that manufactures nuclear fuel from un-irradiated uranium which does not contain tritium. Tritium is a byproduct of a nuclear criticality that is produced after the nuclear fuel is irradiated in a nuclear reactor at the CFFF's customer site.

As required by the NPDES permit, CFFF includes analysis for tritium in groundwater samples from 20 monitoring wells. Based on the laboratory results, tritium was not detected above the laboratory minimum detectable concentration during the 2019-2020 monitoring period or during previous periods (**Table 4** and **Appendix C**). The laboratory results further demonstrate that tritium is not present in groundwater at CFFF as a result of fuel manufacturing activities.

## 3.3 Non-Routine Groundwater Sampling

During 2019-2020, non-routine groundwater sampling was conducted at CFFF to coincide with additional investigative activities at the site. Groundwater analytical results from non-routine groundwater sampling events are displayed in **Table 4**.

### Monitoring Well W-28

In July of 2018, the site had a leak from Hydrofluoric Acid Spiking Station #2 and subsequently remediated the impacted area. To monitor the potential migration of groundwater impact associated with this release, the site has sampled groundwater from downgradient monitoring well W-28 on a quarterly basis.

## 4. Conclusions and Recommendations

### 4.1 Conclusions

The following conclusions are based upon review of the groundwater monitoring data collected during October 2019 and April 2020 sampling periods:

- Groundwater flow in the unconfined surficial aquifer is generally to the southwest with components of flow to the west and south. These surficial aquifer potentiometric contours and flow directions are similar to previous results. Groundwater flow in the Black Mingo aquifer is generally to the southwest. The Black Mingo aquifer potentiometric contours and flow directions are similar to previous results.
- CVOCs detected during October 2019 and April 2020 exceeding MCLs were primarily PCE and, to a lesser extent, TCE. Two additional breakdown products of PCE reductive dechlorination, cis-1,2 DCE and VC, were detected in groundwater at the CFFF site at concentrations below the MCL for cis-1,2 DCE and above the MCL for VC. Trans-1,2-Dichloroethene was not detected in groundwater from the monitoring wells.
- The groundwater analytical results indicate that there are PCE and TCE groundwater plumes in the upper and lower zones of the surficial aquifer west of the plant building and in the surficial aquifer - upper zone south of the plant building. The CVOC plumes have been referred to as the Western Groundwater AOC, main plume, eastern plume, and a plume near the southwest corner of the plant building.
- The main CVOC plume appears to emanate from a source(s) between the plant building and WL2. Elevated PCE concentrations in the main CVOC plume extend from the surficial aquifer – upper zone to the surficial aquifer – lower zone. Concentrations of TCE above its MCL occur primarily in the surficial aquifer – lower zone.
- It is currently not known whether the PCE concentrations in the Western Groundwater AOC are the result of the plume emanating from the WL2/plant area or another source. There are no known manufacturing processes in this area that currently or historically used PCE. Additional assessment of the Western Groundwater AOC will occur in Phase II of the RI.
- The eastern CVOC plume is located in the southern portion of the developed area of the facility and upgradient of the Gator Pond. PCE concentrations above the MCL within this plume appear to be within the surficial aquifer

- upper zone only, based on previous assessment (AECOM, 2017). PCE concentrations in this plume are an order of magnitude lower than the PCE concentrations in the middle plume and do not appear to be related to a specific potential source area of the CFFF site. There are no known processes in this area that currently or historically used PCE.
- Nitrate concentrations during October 2019 and April 2020 exceeding MCLs were in areas west, southwest, and south of the WWTP. The highest nitrate concentrations were observed in the groundwater samples collected from surficial monitoring wells south of the South Lagoon area of the WWTP.
- Fluoride concentrations during October 2019 and April 2020 exceeding MCLs were in areas west, southwest, and south of the WWTP. The highest fluoride concentrations were observed in the groundwater samples collected from surficial monitoring wells in the area of the southern portion of the WWTP. The aerial extent of the fluoride plume is primarily in the area of the facility WWTP and extends to areas to the west, southwest, and south.
- U concentrations exceeded the MCL during the October 2019 and April 2020 in three surficial monitoring wells located near the southwest side of the facility building and one monitoring well located near the south end of the building. The exceedance of the U MCL in groundwater is localized near the plant building and is delineated by the existing monitoring well network.
- Tc-99 concentrations exceeded the MCL during October 2019 and April 2020 in two surficial aquifer monitoring wells at stable concentrations.
- Based upon historical and current groundwater analytical results, no off-site impacts of COPCs are known or believed to have occurred.

## 4.2 Recommendations

Based on the results of the Phase I RI work performed under the CA with the DHEC Bureau of Land and Waste Management (AECOM, 2020b), and subsequent meetings with DHEC, Westinghouse is planning to perform additional groundwater assessment as outlined in the *Phase II Remedial Investigation Work Plan* (AECOM, 2020c). The Phase II work will include the installation of additional monitoring wells. These new wells will be included in the semi-annual groundwater monitoring program as part of the CA, and the results will also be included in the 2021 annual report.

Based upon the above conclusions, continued semiannual monitoring in accordance with the NPDES Permit and the CA is recommended. The next groundwater sampling periods are Fall 2020 and Spring 2021.

## 5. References

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- AECOM, 2019b. Preliminary Human Health Risk Assessment, Westinghouse Columbia Fuel Fabrication Facility, 5801 Bluff Road, Hopkins, South Carolina, March 2019.
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## Tables

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Table 1  
 Monitoring Well Construction Details  
 Westinghouse Columbia Fuel Fabrication Facility  
 AECOM Project No. 60595649

Well Number	Northing	Easting	Date Installed	Ground Surface Elevation (ft msl)	Top of Casing Elevation (ft msl)	Casing Stickup (ft)	Well Diameter (in)	Casing Type	Total Depth (ft bgs)	Screen Length (ft)	Screen Interval (ft bgs)	Classification
W-RW-1	745689.8390	2024255.5150	4/1/1995	136.00	136.95	0.95	4.0	Steel	32.20	10	22.2-32.2	Surficial - Lower Zone
W-RW2	745325.1547	2023458.2190	3/10/1995	136.98	139.93	2.95	4.0	Steel	28.43	10	19-29.2	Surficial - Lower Zone
W-3A	744340.2273	2023926.2926	6/11/1985	117.64	120.08	2.44	2.0	PVC	82.86	10	72.5-82.5	Black Mingo
W-4	744343.6686	2023959.5730	1977	116.50	116.09	-0.41	4.0	PVC	15.01	2	10-12	Surficial - Upper Zone
W-6	744963.2941	2024109.6154	5/15/1980	136.96	136.46	-0.50	2.0	PVC	27.78	5	23.5-28.5	Surficial - Lower Zone
W-7A	744907.4275	2023872.2237	2/19/1992	132.94	135.06	2.12	2.0	PVC	17.92	5	13-18	Surficial - Upper Zone
W-10	744897.8502	2023659.8964	5/14/1980	136.89	136.81	-0.08	2.0	PVC	22.30	5	18.5-23.5	Surficial - Upper Zone
W-11	744743.0468	2023914.5566	5/14/1980	138.45	140.76	2.31	2.0	PVC	24.90	3	25.5-28.5	Surficial - Upper Zone
W-13R	744648.7070	2024279.2522	10/8/2010	136.38	136.13	-0.25	2.0	PVC	20.52	5	15-20	Surficial - Upper Zone
W-14A	744603.1956	2024478.6507	5/4/1988	136.22	137.83	1.61	2.0	PVC	28.91	5	23.5-28.5	Surficial - Upper Zone
W-15	744663.4226	2023716.7929	5/15/1980	126.67	127.90	1.23	2.0	PVC	20.66	5	13.5-18.5	Surficial - Upper Zone
W-16	744602.3196	2024060.2560	5/15/1980	125.64	124.93	-0.71	2.0	PVC	13.23	3	15.5-18.5	Surficial - Upper Zone
W-17	745055.2186	2023785.3818	5/30/1980	137.57	139.27	1.70	2.0	PVC	27.92	5	23.5-28	Surficial - Lower Zone
W-18R	745012.6889	2023939.2527	Unknown	137.15	136.71	-0.44	2.0	PVC	27.63	5	12.5-17.5	Surficial - Lower Zone
W-19B	746172.6764	2022552.9543	3/17/1995	140.58	142.85	2.27	4.0	PVC	40.73	10	30-40.5	Surficial - Lower Zone
W-20	743739.6310	2022975.3834	7/10/1980	113.27	116.16	2.89	2.0	PVC	15.66	5	11.5-16.3	Surficial - Upper Zone
W-22	744960.9243	2024116.3963	7/12/1980	137.08	136.51	-0.57	2.0	PVC	15.10	5	13.4-17.8	Surficial - Upper Zone
W-23R	744674.7363	2024851.2620	7/22/2011	137.45	140.47	3.02	2.0	PVC	20.93	5	15.5-20.5	Surficial - Upper Zone
W-24	746742.5552	2027344.7554	7/9/1980	139.83	141.94	2.11	2.0	PVC	15.00	5	10.1-15.1	Surficial - Upper Zone
W-25	742114.3330	2022728.9859	7/9/1980	114.98	115.88	0.90	2.0	PVC	27.25	5	22.9-27.7	Surficial - Upper Zone
W-26	744855.2926	2023417.6899	7/11/1980	140.59	142.21	1.62	2.0	PVC	30.64	5	25.5-30.5	Surficial - Upper Zone
W-27	744383.9028	2023708.2286	7/13/1980	120.22	121.87	1.65	2.0	PVC	14.72	5	14.1-18.9	Surficial - Upper Zone
W-28	745121.7794	2024317.4127	7/13/1980	136.98	138.88	1.90	2.0	PVC	15.30	5	9.8-14.7	Surficial - Upper Zone
W-29	745182.7704	2024101.6410	7/12/1980	136.96	138.61	1.65	2.0	PVC	13.95	5	10-15.1	Surficial - Upper Zone
W-30	745095.1563	2024150.8369	7/11/1980	136.87	138.81	1.94	2.0	PVC	14.86	5	10.2-15.2	Surficial - Upper Zone
W-32	744742.1011	2023919.8088	7/15/1980	138.33	140.61	2.28	2.0	PVC	21.75	5	17-22.5	Surficial - Upper Zone
W-33	745402.9946	2023548.6640	7/15/1980	138.06	139.33	1.27	2.0	PVC	22.88	5	15.1-20.7	Surficial - Lower Zone
W-35	745716.6972	2024227.9328	2/18/1992	136.59	139.07	2.48	2.0	PVC	20.35	5	16-21	Surficial - Upper Zone
W-36	746084.8252	2024573.1745	2/19/1992	134.16	136.29	2.13	2.0	PVC	19.77	5	15-20	Surficial - Upper Zone
W-37	745407.3901	2024230.7318	2/11/1992	136.58	139.04	2.46	2.0	PVC	20.46	5	15.5-20.5	Surficial - Upper Zone
W-38	745250.3065	2024192.9679	2/18/1992	136.71	136.51	-0.20	2.0	PVC	20.16	5	15-20	Surficial - Upper Zone
W-39	745587.4130	2023656.6724	1/27/1994	139.08	141.15	2.07	2.0	PVC	23.17	10	12-22	Surficial - Upper Zone
W-40	745646.5324	2024112.4795	7/18/1984	136.42	139.26	2.84	2.0	PVC	14.39	10	5-15	Surficial - Upper Zone
W-41R	745372.8885	2023252.5925	Unknown	131.02	133.81	2.79	2.0	PVC	24.33	10	14-24	Surficial - Upper Zone
W-42	745072.3463	2023203.3177	1/27/1994	137.83	140.96	3.13	2.0	PVC	29.91	10	20-30	Surficial - Upper Zone

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Well Number	Northing	Easting	Date Installed	Ground Surface Elevation (ft msl)	Top of Casing Elevation (ft msl)	Casing Stickup (ft)	Well Diameter (in)	Casing Type	Total Depth (ft bgs)	Screen Length (ft)	Screen Interval (ft bgs)	Classification
W-43	745904.3053	2023600.1186	1/27/1994	138.09	141.33	3.24	2.0	PVC	21.12	10	10.5-20.5	Surficial - Upper Zone
W-44	745579.8931	2022950.1077	2/1/1994	131.93	134.86	2.93	2.0	PVC	27.04	10	16-26	Surficial - Lower Zone
W-45	745644.0322	2024296.0965	7/18/1984	137.20	140.02	2.82	2.0	PVC	15.38	10	6-16	Surficial - Upper Zone
W-46	745154.5936	2023494.4570	3/27/1995	132.39	134.74	2.35	4.0	PVC	25.84	10	15.5-25.5	Surficial - Upper Zone
W-47	744633.7657	2023515.8706	3/31/1995	140.70	141.90	1.20	4.0	PVC	45.60	10	34.3-44.8	Surficial - Lower Zone
W-48	744913.2226	2023290.4438	3/30/1995	139.74	142.56	2.82	4.0	PVC	41.30	10	30.7-41.3	Surficial - Lower Zone
W-49	745073.2286	2023192.6302	3/15/1995	137.82	140.25	2.43	2.0	PVC	117.77	10	105-115	Black Mingo
W-50	745637.2219	2024107.3993	3/21/1995	136.79	139.58	2.79	2.0	PVC	125.41	10	114.5-124.5	Black Mingo
W-51	745583.8582	2024270.8300	9/19/2018	136.67	136.51	-0.16	2.0	PVC	14.66	5	10-15	Surficial - Upper Zone
W-52	745542.3624	2024260.1657	9/19/2018	136.71	136.19	-0.52	2.0	PVC	15.55	5	10-15	Surficial - Upper Zone
W-53	745495.9968	2024247.5619	9/19/2018	136.83	136.54	-0.29	2.0	PVC	15.74	5	10-15	Surficial - Upper Zone
W-54	745442.5511	2024229.9796	9/19/2018	136.79	136.52	-0.27	2.0	PVC	15.85	5	10-15	Surficial - Upper Zone
W-55	745397.6509	2024214.0049	9/20/2018	136.90	136.63	-0.27	2.0	PVC	15.24	5	10-15	Surficial - Upper Zone
W-56	745351.3097	2024203.7460	9/20/2018	136.83	136.68	-0.15	2.0	PVC	15.11	5	10-15	Surficial - Upper Zone
W-57	745307.4270	2024190.7853	9/20/2018	136.90	136.73	-0.17	2.0	PVC	15.11	5	10-15	Surficial - Upper Zone
W-58	745254.0864	2024176.3347	9/18/2018	136.85	136.37	-0.48	2.0	PVC	15.49	5	10-15	Surficial - Upper Zone
W-59	745219.3681	2024165.8802	9/18/2018	136.10	136.42	0.32	2.0	PVC	14.65	5	10-15	Surficial - Upper Zone
W-60	745835.5835	2023286.8131	10/8/2018	137.25	140.20	2.95	2.0	PVC	37.86	5	32-37	Surficial - Lower Zone
W-61	745829.2570	2023288.2599	10/9/2018	137.34	140.60	3.26	2.0	PVC	23.51	10	13-23	Surficial - Upper Zone
W-62	745485.4613	2022726.0792	10/9/2018	125.63	128.38	2.75	2.0	PVC	24.85	5	19-24	Surficial - Lower Zone
W-63	745098.1342	2023019.4184	10/10/2018	138.78	141.02	2.24	2.0	PVC	41.91	5	37-42	Surficial - Lower Zone
W-64	744643.8030	2023511.3331	10/10/2018	140.15	142.75	2.60	2.0	PVC	31.61	10	21-31	Surficial - Upper Zone
W-65	745693.7040	2024027.4543	10/12/2018	138.17	140.95	2.78	2.0	PVC	31.59	5	26.5-31.5	Surficial - Lower Zone
W-66	745687.8186	2024027.1699	10/12/2018	138.01	140.91	2.90	2.0	PVC	22.34	10	12-22	Surficial - Upper Zone
W-67	744459.5852	2024485.7938	10/15/2018	132.60	135.26	2.66	2.0	PVC	31.81	10	21-31	Surficial - Upper Zone
W-68	745329.2457	2022496.2174	11/1/2018	113.40	116.53	3.13	2.0	PVC	18.14	5	13-18	Surficial - Lower Zone
W-69	745726.9177	2026064.2900	6/11/2019	137.67	140.64	2.97	2.0	PVC	18.08	10	7.75-17.75	Surficial - Upper Zone
W-70	745719.2209	2026062.8740	6/20/2019	138.02	141.00	2.98	2.0	PVC	48.92	5	44-49	Surficial - Lower Zone
W-71	745716.6462	2026052.3340	9/19/2019	137.96	140.72	2.77	2.0	PVC	103.03	10	93-103	Black Mingo
W-72	745450.2503	2024162.6920	6/30/2019	136.81	136.29	-0.53	2.0	PVC	15.00	10	5-15	Surficial - Upper Zone
W-73	745339.3056	2024166.2500	6/30/2019	136.85	136.45	-0.40	2.0	PVC	16.09	10	5-15	Surficial - Upper Zone
W-74	745325.1257	2024067.1720	9/17/2019	136.64	139.93	3.29	2.0	PVC	30.60	5	25-30	Surficial - Lower Zone
W-75	745317.2335	2024064.7580	9/17/2019	136.60	139.85	3.25	2.0	PVC	15.33	10	5-15	Surficial - Upper Zone
W-76	745181.1851	2024223.5230	6/29/2019	137.04	136.85	-0.19	2.0	PVC	15.12	10	5-15	Surficial - Upper Zone
W-77	745158.9297	2024346.1090	9/18/2019	136.85	136.53	-0.32	2.0	PVC	15.67	10	5-15	Surficial - Upper Zone

Table 1  
 Monitoring Well Construction Details  
 Westinghouse Columbia Fuel Fabrication Facility  
 AECOM Project No. 60595649

Well Number	Northing	Easting	Date Installed	Ground Surface Elevation (ft msl)	Top of Casing Elevation (ft msl)	Casing Stickup (ft)	Well Diameter (in)	Casing Type	Total Depth (ft bgs)	Screen Length (ft)	Screen Interval (ft bgs)	Classification
W-78	745117.7529	2024371.0300	9/19/2019	136.75	136.31	-0.44	2.0	PVC	15.57	10	5-15	Surficial - Upper Zone
W-79	745200.3957	2024450.2660	6/29/2019	136.49	136.12	-0.38	2.0	PVC	15.66	10	5-15	Surficial - Upper Zone
W-80	745024.3899	2024414.6850	6/29/2019	136.34	135.87	-0.47	2.0	PVC	15.62	10	5-15	Surficial - Upper Zone
W-81	744938.6049	2024469.8490	6/29/2019	136.81	136.43	-0.39	2.0	PVC	15.74	10	5-15	Surficial - Upper Zone
W-82	744895.9297	2024594.1720	6/29/2019	136.57	136.23	-0.34	2.0	PVC	15.69	10	5-15	Surficial - Upper Zone
W-83	744975.0629	2024667.4890	6/29/2019	136.22	135.81	-0.41	2.0	PVC	26.46	10	15.5-25.5	Surficial - Upper Zone
W-84	745177.2489	2024721.4980	6/30/2019	136.66	135.99	-0.67	2.0	PVC	21.05	10	10-20	Surficial - Upper Zone
W-85	745079.7122	2025107.6820	6/11/2019	135.74	138.69	2.95	2.0	PVC	44.77	5	39-44	Surficial - Lower Zone
W-86	745082.2852	2025100.8040	6/11/2019	135.68	138.77	3.09	2.0	PVC	35.09	10	24-34	Surficial - Upper Zone
W-87	745952.7641	2024385.8120	6/30/2019	136.66	136.39	-0.27	2.0	PVC	33.17	5	27-32	Surficial - Lower Zone
W-88	746574.7739	2022883.9580	6/17/2019	140.06	143.10	3.04	2.0	PVC	41.37	5	36-41	Surficial - Lower Zone
W-89	746583.3384	2022888.2490	6/13/2019	140.12	142.82	2.70	2.0	PVC	25.46	10	15-25	Surficial - Upper Zone
W-90	745981.1215	2022011.5510	6/13/2019	140.23	143.33	3.10	2.0	PVC	39.90	5	35-40	Surficial - Lower Zone
W-91	745976.3596	2022016.7650	6/13/2019	139.57	142.81	3.24	2.0	PVC	25.05	10	15-25	Surficial - Upper Zone
W-92	744382.4699	2023714.9210	6/12/2019	120.11	123.33	3.22	2.0	PVC	33.67	5	29-34	Surficial - Lower Zone
W-93	745162.2579	2024346.8430	9/18/2019	136.87	136.49	-0.38	2.0	PVC	35.38	5	30-35	Surficial - Lower Zone
W-94	744728.0254	2021983.5560	9/17/2019	115.28	118.04	2.76	2.0	PVC	29.40	5	24-29	Surficial - Lower Zone
W-95	744375.6603	2022553.4620	9/17/2019	113.53	116.40	2.86	2.0	PVC	33.41	5	28-33	Surficial - Lower Zone
W-96	743746.7835	2024643.8120	9/17/2019	113.65	116.46	2.81	2.0	PVC	30.03	5	25-30	Surficial - Upper Zone
W-97	744244.0503	2024547.7590	9/17/2019	113.92	116.93	3.01	2.0	PVC	18.91	5	13-18	Surficial - Upper Zone
Gator SG	744600.5136	2023820.4020	7/16/2019	NS	120.31	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Upper SG	744292.2317	2023220.4190	7/16/2019	NS	112.41	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Lower SG	743333.8536	2024092.0010	7/16/2019	NS	112.39	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Creek SG	743263.2548	2024076.8640	7/16/2019	NS	109.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A

**Notes:**

ft = feet

in = inches

ft msl = feet above mean sea level

ft bgs = feet below ground surface

NS - not surveyed

N/A - not applicable

SG - staff gauge

Top of casing and ground surface elevations surveyed by AECOM during November 2018 and November 2019

Horizontal coordinates are referenced to the State Plane Coordinate System and the North American Datum of 1983 (NAD 83).

Vertical locations are referenced to the North American Vertical Datum of 1988 (NAVD 88).

**Table 2**  
**Groundwater Levels and Elevations**  
**Westinghouse Columbia Fuel Fabrication Facility**  
**Hopkins, SC**  
**AECOM Project No. 60595649**

Well	Date Measured	Screen Interval (ft bgs)	Ground Surface Elevation (ft)	Top of Casing Elevation (ft)	Depth to Water (ft)	Groundwater Elevation (ft)
WRW-1	10/14/19 04/06/20	22.2-32.2	136.00	136.95	9.64 7.62	127.31 129.33
WRW-2	10/14/19 04/06/20	19-29.2	136.98	139.93	18.62 17.90	121.31 122.03
W-3A	10/14/19 04/06/20	72.5-82.5	117.64	120.08	8.79 4.90	111.29 115.18
W-4	10/14/19 04/06/20	10-12	116.50	116.09	10.38 3.29	105.71 112.80
W-6	10/14/19 04/06/20	23.5-28.5	136.96	136.46	11.22 9.65	125.24 126.81
W-7A	10/14/19 04/06/20	13-18	132.94	135.06	12.35 10.87	122.71 124.19
W-10	10/14/19 04/06/20	18.5-23.5	136.89	136.81	16.50 14.87	120.31 121.94
W-11	10/14/19 04/06/20	25.5-28.5	138.45	140.76	19.02 17.25	121.74 123.51
W-13R	10/14/19 04/06/20	15-20	136.38	136.13	12.96 10.80	123.17 125.33
W-14	10/14/19 04/06/20	23.5-28.5	136.22	137.83	17.62 15.23	120.21 122.60
W-15	10/14/19 04/06/20	13.5-18.5	126.67	127.90	12.90 11.20	115.00 116.70
W-16	10/14/19 04/06/20	15.5-18.5	125.64	124.93	3.71 1.93	121.22 123.00
W-17	10/14/19 04/06/20	23.5-28	137.57	139.27	14.56 13.59	124.71 125.68
W-18R	10/14/19 04/06/20	12.5-17.5	137.15	136.71	12.20 10.95	124.51 125.76
W-19B	10/14/19 04/06/20	30-40.5	140.58	142.85	25.17 23.90	117.68 118.95
W-20	10/14/19 04/06/20	11.5-16.3	113.27	116.16	10.60 6.92	105.56 109.24
W-22	10/14/19 04/06/20	13.4-17.8	137.08	136.51	11.68 9.90	124.83 126.61
W-23R	10/14/19 04/06/20	15.5-20.5	137.45	140.47	19.19 17.52	121.28 122.95
W-24	10/14/19 04/06/20	10.1-15.1	139.83	141.94	11.78 7.68	130.16 134.26
W-25	10/14/19 04/06/20	22.9-27.7	114.98	115.88	10.95 7.40	104.93 108.48
W-26	10/14/19 04/06/20	25.5-30.5	140.59	142.21	26.37 24.20	115.84 118.01
W-27	10/14/19 04/06/20	14.1-18.9	120.22	121.87	11.28 9.72	110.59 112.15
W-28	10/14/19 04/06/20	9.8-14.7	136.98	138.88	12.60 11.32	126.28 127.56
W-29	10/14/19 04/06/20	10-15.1	136.96	138.61	12.41 11.10	126.20 127.51
W-30	10/14/19 04/06/20	10.2-15.2	136.87	138.81	12.65 11.40	126.16 127.41

**Table 2**  
**Groundwater Levels and Elevations**  
**Westinghouse Columbia Fuel Fabrication Facility**  
**Hopkins, SC**  
**AECOM Project No. 60595649**

Well	Date Measured	Screen Interval (ft bgs)	Ground Surface Elevation (ft)	Top of Casing Elevation (ft)	Depth to Water (ft)	Groundwater Elevation (ft)
W-32	10/14/19 04/06/20	17-22.5	138.33	140.61	19.59 18.12	121.02 122.49
W-33	10/14/19 04/06/20	15.1-20.7	138.06	139.33	15.85 14.90	123.48 124.43
W-35	10/14/19 04/06/20	16-21	136.59	139.07	11.78 9.75	127.29 129.32
W-36	10/14/19 04/06/20	15-20	134.16	136.29	8.66 6.25	127.63 130.04
W-37	10/14/19 04/06/20	15.5-20.5	136.58	139.04	12.05 10.25	126.99 128.79
W-38	10/14/19 04/06/20	15-20	136.71	136.51	10.45 9.10	126.06 127.41
W-39	10/14/19 04/06/20	12-22	139.08	141.15	16.25 14.89	124.90 126.26
W-40	10/14/19 04/06/20	5-15	136.42	139.26	11.95 10.00	127.31 129.26
W-41R	10/14/19 04/06/20	14-24	131.02	133.81	15.94 14.97	117.87 118.84
W-42	10/14/19 04/06/20	20-30	137.83	140.96	26.32 24.55	114.64 116.41
W-43	10/14/19 04/06/20	10.5-20.5	138.09	141.33	15.65 13.31	125.68 128.02
W-44	10/14/19 04/06/20	16-26	131.93	134.86	18.42 17.38	116.44 117.48
W-45	10/14/19 04/06/20	6-16	137.20	140.02	12.85 10.92	127.17 129.10
W-46	10/14/19 04/06/20	15.5-25.5	132.39	134.74	14.02 13.49	120.72 121.25
W-47	10/14/19 04/06/20	34.3-44.8	140.70	141.90	26.99 25.01	114.91 116.89
W-48	10/14/19 04/06/20	30.7-41.3	139.74	142.56	27.21 25.25	115.35 117.31
W-49	10/14/19 04/06/20	105-115	137.82	140.25	31.07 27.15	109.18 113.10
W-50	10/14/19 04/06/20	114.5-124.5	136.79	139.58	25.27 21.52	114.31 118.06
W-51	10/14/19 04/06/20	10-15	136.67	136.51	9.27 7.30	127.24 129.21
W-52	10/14/19 04/06/20	10-15	136.71	136.19	9.15 7.20	127.04 128.99
W-53	10/14/19 04/06/20	10-15	136.83	136.54	9.42 7.60	127.12 128.94
W-54	10/14/19 04/06/20	10-15	136.79	136.52	9.53 7.65	126.99 128.87

**Table 2**  
**Groundwater Levels and Elevations**  
**Westinghouse Columbia Fuel Fabrication Facility**  
**Hopkins, SC**  
**AECOM Project No. 60595649**

Well	Date Measured	Screen Interval (ft bgs)	Ground Surface Elevation (ft)	Top of Casing Elevation (ft)	Depth to Water (ft)	Groundwater Elevation (ft)
W-55	10/14/19 04/06/20	10-15	136.90	136.63	9.72 7.92	126.91 128.71
W-56	10/14/19 04/06/20	10-15	136.83	136.68	9.75 8.00	126.93 128.68
W-57	10/14/19 04/06/20	10-15	136.90	136.73	9.97 8.50	126.76 128.23
W-58	10/14/19 04/06/20	10-15	136.85	136.37	10.63 9.30	125.74 127.07
W-59	10/14/19 04/06/20	10-15	136.10	136.42	10.77 9.60	125.65 126.82
W-60	10/14/19 04/06/20	32-37	137.25	140.20	22.12 20.77	118.08 119.43
W-61	10/14/19 04/06/20	13-23	137.34	140.60	18.96 16.59	121.64 124.01
W-62	10/14/19 04/06/20	19-24	125.63	128.38	13.59 12.66	114.79 115.72
W-63	10/14/19 04/06/20	37-42	138.78	141.02	27.31 26.00	113.71 115.02
W-64	10/14/19 04/06/20	21-31	140.15	142.75	27.25 25.21	115.50 117.54
W-65	10/14/19 04/06/20	26.5-31.5	138.17	140.95	14.07 12.15	126.88 128.80
W-66	10/14/19 04/06/20	12-22	138.01	140.91	13.72 11.75	127.19 129.16
W-67	10/14/19 04/06/20	21-31	132.60	135.26	19.54 16.57	115.72 118.69
W-68	10/14/19 04/06/20	13-18	113.40	116.53	13.53 5.59	103.00 110.94
W-69	10/14/19 04/06/20	7.75-17.75	137.67	140.64	9.75 7.54	130.89 133.10
W-70	10/14/19 04/06/20	44-49	138.02	141.00	14.88 10.46	126.12 130.54
W-71	10/14/19 04/06/20	93-103	137.96	140.72	25.98 22.27	114.74 118.45
W-72	10/14/19 04/06/20	5-15	136.81	136.29	9.24 7.43	127.05 128.86
W-73	10/14/19 04/06/20	5-15	136.85	136.45	9.61 7.89	126.84 128.56
W-74	10/14/19 04/06/20	25-30	136.64	139.93	13.46 11.88	126.47 128.05
W-75	10/14/19 04/06/20	5-15	136.60	139.85	13.06 11.40	126.79 128.45
W-76	10/14/19 04/06/20	5-15	137.04	136.85	9.78 9.35	127.07 127.50
W-77	10/14/19 04/06/20	5-15	136.85	136.53	9.98 8.47	126.55 128.06
W-78	10/14/19 04/06/20	5-15	136.75	136.31	10.05 8.75	126.26 127.56
W-79	10/14/19 04/06/20	5-15	136.49	136.12	9.06 7.60	127.06 128.52

**Table 2**  
**Groundwater Levels and Elevations**  
**Westinghouse Columbia Fuel Fabrication Facility**  
**Hopkins, SC**  
**AECOM Project No. 60595649**

Well	Date Measured	Screen Interval (ft bgs)	Ground Surface Elevation (ft)	Top of Casing Elevation (ft)	Depth to Water (ft)	Groundwater Elevation (ft)
W-80	10/14/19 04/06/20	5-15	136.34	135.87	11.08 9.07	124.79 126.80
W-81	10/14/19 04/06/20	5-15	136.81	136.43	12.02 10.40	124.41 126.03
W-82	10/14/19 04/06/20	5-15	136.57	136.23	12.72 10.83	123.51 125.40
W-83	10/14/19 04/06/20	15.5-25.5	136.22	135.81	13.95 12.04	121.86 123.77
W-84	10/14/19 04/06/20	10-20	136.66	135.99	8.45 5.40	127.54 130.59
W-85	10/14/19 04/06/20	39-44	135.74	138.69	22.01 18.85	116.68 119.84
W-86	10/14/19 04/06/20	24-34	135.68	138.77	20.59 17.76	118.18 121.01
W-87	10/14/19 04/06/20	27-32	136.66	136.39	8.93 6.85	127.46 129.54
W-88	10/14/19 04/06/20	36-41	140.06	143.10	23.42 21.42	119.68 121.68
W-89	10/14/19 04/06/20	15-25	140.12	142.82	22.10 20.04	120.72 122.78
W-90	10/14/19 04/06/20	35-40	140.23	143.33	27.38 25.84	115.95 117.49
W-91	10/14/19 04/06/20	15-25	139.57	142.81	27.56 25.70	115.25 117.11
W-92	10/14/19 04/06/20	29-34	120.11	123.33	17.77 14.28	105.56 109.05
W-93	10/14/19 04/06/20	30-35	136.87	136.49	10.42 8.55	126.07 127.94
W-94	10/14/19 04/06/20	24-29	115.28	118.04	12.14 8.51	105.90 109.53
W-95	10/14/19 04/06/20	28-33	113.53	116.40	10.71 7.03	105.69 109.37
W-96	10/14/19 04/06/20	25-30	113.65	116.46	11.08 7.39	105.38 109.07
W-97	10/14/19 04/06/20	13-18	113.92	116.93	7.43 4.30	109.50 112.63
Gator SG	10/14/19 04/06/20	N/A	NS	120.31	0.85 1.46	117.16 117.77
Upper SG	10/14/19 04/06/20	N/A	NS	112.41	0.60 1.46	109.01 109.87
Lower SG	10/14/19 04/06/20	N/A	NS	112.39	0.26 0.96	108.65 109.35
Creek SG	10/14/19 04/06/20	N/A	NS	109.05	0.64 1.20	105.69 106.25

**Notes**

ft - feet

ft bgs - feet below ground surface

SG - staff gauge

N/A - not applicable

NS - Not Surveyed

**Table 3**  
**Summary of Groundwater Field Parameter Data**  
**Westinghouse Columbia Fuel Fabrication Facility**  
**AECOM Project No. 60595649**

Well	Sample Date	Temperature (°C)	pH (S.U.)	Conductivity (μs/cm)	Dissolved Oxygen (mg/L)	ORP (mv)	Turbidity (NTU)	Color	Odor
W-RW1	10/03/19	26.7	5.27	82	39.00	253	9.05	clear	none
	04/15/20	20.6	5.01	82	3.19	269	3.90	clear	none
W-RW2	10/11/19	21.4	4.77	148	28.10	222	0.41	clear	none
	04/20/20	17.9	4.68	139	1.65	318	0.74	clear	none
W-3A	10/10/19	19.2	4.51	25	0.38	238	8.50	clear	none
	04/27/20	18.3	4.38	21	0.14	242	5.21	clear	none
W-4	10/10/19	22.2	6.36	293	0.68	-16	9.17	clear	none
	04/27/20	19.3	6.91	229	2.00	112	0.51	clear	none
W-6	10/07/19	23.6	6.27	2,000	0.40	186	5.59	clear	none
	04/07/20	20.6	6.15	1,319	2.40	208	62.68	clear	none
W-7A	10/09/19	22.0	6.66	2,988	0.38	168	6.72	clear	none
	04/10/20	17.6	6.77	1,985	0.26	191	4.92	clear	none
W-10	10/09/19	23.5	5.68	669	0.37	165	3.68	clear	none
	04/13/20	20.2	5.88	479	0.28	172	5.58	clear	none
W-11	10/08/19	22.0	5.35	490	0.53	202	8.28	clear	none
	04/10/20	19.4	5.09	327	0.43	209	5.32	clear	none
W-13R	10/08/19	25.3	5.97	464	0.20	187	8.13	clear	none
	04/08/20	21.5	5.80	365	0.23	192	9.48	clear	none
W-14	10/18/19	21.2	6.12	494	0.38	18	7.49	clear	none
	04/22/20	19.2	6.15	480	0.70	-46	0.00	clear	none
W-15	10/21/19	21.4	5.85	453	0.34	208	2.86	clear	none
	04/21/20	18.9	5.94	406	0.19	216	11.16	clear	none
W-16	10/21/19	21.9	5.90	331	0.27	102	6.47	clear	none
	04/21/20	19.9	6.05	258	0.24	116	8.62	clear	none
W-17	10/21/19	22.3	6.22	259	0.27	173	0.44	clear	none
	04/20/20	19.4	6.42	344	0.86	192	10.83	clear	none
W-18R	10/07/19	23.6	7.39	5,490	0.71	136	2.52	clear	none
	04/07/20	22.0	7.56	3,924	4.60	184	19.02	clear	none
W-19B	10/21/19	19.2	4.85	72	3.88	279	5.10	clear	none
	04/17/20	18.8	4.67	61	4.09	315	1.90	clear	none
W-20	10/15/19	20.7	5.04	126	0.32	219	6.58	clear	none
	04/27/20	17.0	5.31	91	0.16	169	3.16	clear	none
W-22	10/07/19	25.7	5.45	1,442	0.37	200	4.57	clear	none
	04/07/20	20.0	5.40	519	1.90	204	7.38	clear	none
W-23R	10/18/19	18.5	4.86	49	4.24	310	3.65	clear	none
	04/21/20	18.1	4.51	51	5.76	317	2.15	clear	none
W-24	10/11/19	22.6	5.13	36	3.40	31	4.75	clear	none
	04/22/20	18.5	4.50	44	2.44	200	10.26	clear	none
W-25	10/15/19	19.0	6.04	171	0.30	-53	36.15	clear	none
	04/27/20	17.2	6.36	140	0.25	-81	15.61	clear	Woodsy
W-26	10/14/19	19.5	5.44	233	0.50	229	7.50	clear	none
	04/16/20	18.3	5.26	140	0.40	260	3.18	clear	none
W-27	10/10/19	19.6	6.08	351	0.36	-71	6.15	clear	none
	04/27/20	17.2	6.12	319	0.18	-68	19.90	clear	none

**Table 3**  
**Summary of Groundwater Field Parameter Data**  
**Westinghouse Columbia Fuel Fabrication Facility**  
**AECOM Project No. 60595649**

Well	Sample Date	Temperature (°C)	pH (S.U.)	Conductivity (μs/cm)	Dissolved Oxygen (mg/L)	ORP (mv)	Turbidity (NTU)	Color	Odor
W-28	10/07/19	25.6	5.76	498	5.60	183	4.63	clear	none
	04/03/20	20.0	6.22	380	4.10	311	3.16	clear	none
W-29	10/07/19	25.6	7.50	310	2.80	150	2.75	clear	none
	04/03/20	19.8	6.89	324	2.10	151	0.99	clear	none
W-30	10/07/19	26.3	6.16	839	4.70	178	4.16	clear	none
	04/13/20	21.0	6.09	1,178	4.55	176	6.01	clear	none
W-32	10/08/19	22.0	6.64	1,741	0.50	172	4.14	clear	none
	04/10/20	18.8	6.74	1,022	0.29	186	2.72	clear	none
W-33	10/17/19	20.6	5.21	121	14.90	221	1.30	clear	none
	04/16/20	18.0	5.04	120	1.05	255	1.52	clear	none
W-35	10/02/19	24.0	5.40	191	2.32	205	2.43	clear	none
	04/21/20	19.1	5.46	107	3.89	241	6.11	clear	none
W-36	10/02/19	25.8	5.42	35	3.90	175	7.92	clear	none
	04/20/20	18.1	5.36	30	0.24	159	4.80	clear	none
W-37	10/02/19	25.5	5.38	194	2.80	205	2.24	clear	none
	04/08/20	21.5	5.21	126	3.48	228	3.15	clear	none
W-38	10/04/19	26.1	4.84	216	3.17	271	4.32	clear	none
	04/03/20	23.0	4.86	145	2.61	280	1.54	clear	none
W-39	10/18/19	23.5	5.15	482	26.00	253	0.40	clear	none
	04/24/20	20.6	5.32	451	2.35	225	13.39	clear	none
W-40	10/15/19	25.3	6.24	79	18.70	157	5.28	clear	none
	04/16/20	19.9	6.31	69	7.69	165	17.43	clear	none
W-41R	10/14/19	21.9	5.19	407	3.16	231	0.27	clear	none
	04/17/20	18.5	5.43	418	6.13	256	0.61	clear	none
W-42	10/22/19	21.2	4.59	84	0.30	327	5.40	clear	none
	04/23/20	18.2	4.63	51	1.27	303	3.46	clear	none
W-43	10/18/19	21.8	4.87	66	31.90	240	0.92	clear	none
	04/23/20	18.0	5.07	73	3.98	247	12.52	clear	none
W-44	10/14/19	19.9	4.98	58	3.51	244	0.22	clear	none
	04/16/20	16.6	5.13	71	4.37	232	9.89	clear	none
W-45	10/02/19	25.5	6.11	2,623	1.02	-24	9.15	clear	none
	04/15/20	18.3	6.24	141	0.23	-97	12.02	clear	none
W-46	10/21/19	20.7	5.38	172	0.39	194	3.96	clear	none
	04/22/20	17.6	5.39	165	1.89	386	0.92	clear	none
W-47	10/17/19	19.1	5.72	520	0.52	225	7.79	clear	none
	04/20/20	18.7	5.66	501	0.43	213	1.63	clear	none
W-48	10/21/19	19.8	5.19	71	2.41	234	0.94	clear	none
	04/21/20	18.7	4.90	97	3.34	263	2.11	clear	none
W-49	10/24/19	20.3	4.88	20	2.44	172	12.70	clear	none
	04/23/20	18.3	4.75	28	0.56	181	18.49	clear	none
W-50	10/15/19	22.3	4.71	18	13.50	29	16.60	clear	none
	04/16/20	20.6	4.84	23	0.30	16	16.43	Cloudy	none
W-51	10/03/19	26.7	6.17	254	0.26	-113	5.24	clear	none
	04/09/20	20.2	6.35	220	0.12	-126	12.86	clear	none

**Table 3**  
**Summary of Groundwater Field Parameter Data**  
**Westinghouse Columbia Fuel Fabrication Facility**  
**AECOM Project No. 60595649**

Well	Sample Date	Temperature (°C)	pH (S.U.)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	ORP (mv)	Turbidity (NTU)	Color	Odor
W-52	10/03/19	27.1	5.72	247	0.52	41	4.61	clear	none
	04/09/20	20.1	5.53	175	1.26	114	3.96	clear	none
W-53	10/03/19	27.9	6.08	180	3.50	53	6.19	clear	none
	04/09/20	20.1	5.51	140	0.17	70	8.15	clear	none
W-54	10/04/19	27.8	5.96	126	36.50	122	17.78	clear	none
	04/09/20	20.4	5.42	123	2.22	236	4.40	clear	none
W-55	10/04/19	26.0	5.40	160	3.02	202	4.86	clear	none
	04/08/20	20.8	5.13	120	3.23	225	3.66	clear	none
W-56	10/04/19	27.4	5.66	131	44.50	241	2.14	clear	none
	04/07/20	21.1	5.36	126	1.73	235	4.21	clear	none
W-57	10/03/19	28.8	5.15	166	2.23	205	3.16	clear	none
	04/07/20	21.2	5.54	136	1.16	224	2.66	clear	none
W-58	10/04/19	27.8	6.52	406	0.29	159	5.16	clear	none
	04/07/20	20.6	6.51	248	0.56	181	1.31	clear	none
W-59	10/05/19	28.0	6.49	318	3.80	181	3.28	clear	none
	04/07/20	176.7	6.48	409	0.18	177	1.86	clear	none
W-60	10/17/19	17.7	5.62	93	0.49	80	8.46	clear	none
	04/10/20	18.1	5.16	95	0.51	102	19.21	clear	none
W-61	10/17/19	18.8	5.18	97	1.26	219	8.68	clear	none
	04/10/20	17.6	5.47	119	2.92	112	14.56	cloudy	none
W-62	10/22/19	18.7	4.98	84	2.73	272	3.25	clear	none
	04/20/20	17.6	5.40	67	3.16	244	4.90	clear	none
W-63	10/21/19	21.0	6.88	250	0.52	-68	3.06	clear	none
	04/21/20	19.4	6.81	319	0.63	-83	12.61	clear	none
W-64	10/17/19	19.8	5.54	499	0.42	242	2.76	clear	none
	04/20/20	18.6	5.63	458	0.39	208	1.30	clear	none
W-65	10/17/19	21.1	6.27	99	38.20	-84	3.18	clear	none
	04/24/20	19.1	5.85	91	0.24	31	15.80	Clear	none
W-66	10/17/19	21.7	5.29	55	9.00	235	1.48	clear	none
	04/24/20	18.0	5.26	57	0.56	180	3.74	clear	none
W-67	10/18/19	18.0	5.47	200	0.46	219	3.52	clear	none
	04/21/20	18.5	5.03	189	0.30	280	1.96	clear	none
W-68	10/22/19	20.5	5.07	50	57.20	232	1.51	clear	none
	04/20/20	17.4	4.95	70	5.33	271	3.04	clear	none
W-69	10/23/19	21.4	5.42	85	0.43	84	7.40	clear	none
	04/16/20	18.0	5.33	57	0.21	108	16.32	clear	none
W-70	10/23/19	20.7	4.55	53	3.94	312	8.68	cloudy	none
	04/16/20	19.8	4.66	45	4.63	302	12.29	clear	none
W-71	10/23/19	21.1	5.71	86	0.31	18	9.12	clear	none
	04/16/20	20.3	4.79	35	0.33	136	6.64	clear	none
W-72	10/04/19	24.3	5.72	182	1.24	71	8.62	clear	none
	04/03/20	19.9	6.22	324	3.18	198	9.45	clear	none
W-73	10/04/19	27.0	5.70	108	20.20	180	11.55	clear	none
	04/03/20	20.4	5.36	115	0.45	205	4.67	clear	none

**Table 3**  
**Summary of Groundwater Field Parameter Data**  
**Westinghouse Columbia Fuel Fabrication Facility**  
**AECOM Project No. 60595649**

Well	Sample Date	Temperature (°C)	pH (S.U.)	Conductivity (μs/cm)	Dissolved Oxygen (mg/L)	ORP (mv)	Turbidity (NTU)	Color	Odor
W-74	10/09/19	22.7	5.37	118	0.81	197	3.49	clear	none
	04/08/20	21.8	5.12	118	1.31	251	1.60	clear	none
W-75	10/09/19	25.2	5.85	161	0.40	21	6.66	clear	none
	04/08/20	20.9	5.25	136	0.21	156	6.47	clear	none
W-76	10/05/19	27.2	5.21	119	32.90	344	1.14	clear	none
	04/14/20	23.1	4.54	126	3.42	330	6.14	clear	none
W-77	10/06/19	27.5	8.77	977	4.50	73	23.15	clear	none
	04/14/20	21.6	7.59	1,959	0.21	170	1.84	clear	none
W-78	10/05/19	25.4	6.24	180	46.00	198	2.45	clear	none
	04/14/20	20.3	6.03	210	2.95	193	1.23	clear	none
W-79	10/07/19	27.5	5.50	165	3.92	188	7.96	clear	none
	04/13/20	22.5	6.33	191	7.79	195	2.67	clear	none
W-80	10/06/19	26.2	4.83	261	11.50	253	8.92	clear	none
	04/14/20	20.5	4.91	232	2.79	292	9.33	clear	none
W-81	10/08/19	23.7	5.56	145	0.54	64	7.02	clear	none
	04/14/20	21.0	8.65	81	0.23	149	5.75	clear	none
W-82	10/08/19	23.9	5.08	157	1.43	126	20.52	clear	none
	04/14/20	19.3	5.43	81	2.34	220	12.09	clear	none
W-83	10/08/19	23.7	5.40	144	1.37	178	8.61	clear	none
	04/13/20	22.5	5.64	145	1.43	152	3.56	clear	none
W-84	10/08/19	26.9	5.68	127	0.52	116	6.79	clear	none
	04/13/20	21.9	5.43	156	0.25	76	6.45	clear	none
W-85	10/23/19	20.6	5.93	276	0.34	-40	5.65	clear	none
	04/28/20	19.4	6.10	224	0.29	-49	3.35	clear	none
W-86	10/23/19	21.1	5.91	230	0.31	27	10.00	clear	none
	04/28/20	20.8	5.57	186	0.60	115	18.59	clear	none
W-87	10/02/19	24.0	6.21	216	0.59	-31	45.14	clear	none
	04/15/20	20.8	6.18	125	0.15	-18	17.96	clear	none
W-88	10/22/19	19.5	5.20	52	67.10	229	1.02	clear	none
	04/17/20	17.5	5.45	60	5.67	282	3.21	clear	none
W-89	10/22/19	19.9	4.92	41	71.40	253	2.01	clear	none
	04/17/20	18.0	5.03	54	6.02	301	2.95	clear	none
W-90	10/22/19	19.8	4.82	74	4.78	282	8.76	clear	none
	04/17/20	19.4	5.12	53	4.76	246	10.08	clear	none
W-91	10/22/19	NS	NS	NS	NS	NS	NS	NS	NS
	04/22/20	19.5	5.06	67	4.17	219	3.59	clear	none
W-92	10/10/19	18.4	5.78	208	0.60	23	7.33	clear	none
	04/27/20	17.8	5.82	188	0.20	-16	1.62	clear	none
W-93	10/06/19	24.9	5.39	90	19.20	240	35.58	clear	none
	04/14/20	22.0	5.41	107	1.84	220	1.05	clear	none
W-94	10/15/19	17.6	5.94	138	0.42	-19	8.34	clear	none
	04/24/20	17.4	5.67	122	0.13	14	3.26	clear	none
W-95	10/15/19	18.3	5.97	193	0.36	-36	8.37	clear	none
	04/24/20	17.1	6.01	190	0.17	-63	12.27	clear	none

**Table 3**  
**Summary of Groundwater Field Parameter Data**  
**Westinghouse Columbia Fuel Fabrication Facility**  
**AECOM Project No. 60595649**

Well	Sample Date	Temperature (°C)	pH (S.U.)	Conductivity (us/cm)	Dissolved Oxygen (mg/L)	ORP (mv)	Turbidity (NTU)	Color	Odor
W-96	10/11/19	20.1	5.99	257	0.27	3	13.06	clear	none
	04/24/20	18.8	5.65	238	0.13	-8	15.56	cloudy	none
W-97	10/11/19	19.2	5.68	206	0.48	125	8.75	clear	none
	04/24/20	16.6	5.13	184	0.13	191	4.31	clear	none

Notes:

°C - degrees celcius

S.U. - standard units

us/cm - microSiemens per centimeter

mg/L - milligrams per liter

ORP - Oxidation Reduction Potential

mv - millivolts

NTU - nephelometric turbidity units

NS - not sampled

Table 4

Summary of Groundwater Analytical Results  
 Westinghouse Columbia Fuel Fabrication Facility  
 Hopkins, South Carolina  
 AECOM Project No. 60595649

		VOCs							SVOCs					Inorganics			Radionuclides												
		Carbon Disulfide ug/L	Chloroform ug/L	cis-1,2-Dichloroethene ug/L	Ethylbenzene ug/L	Tetrachloroethene ug/L	Trichloroethene ug/L	Vinyl Chloride ug/L	1,1'-Biphenyl ug/L	2-Methylnaphthalene ug/L	Acenaphthene ug/L	Carbazole ug/L	Fluorene ug/L	Naphthalene ug/L	Phenanthrene ug/L	Fluoride mg/L	Ammonia NH3(N) mg/L	Nitrate NO3 mg/L	Gross Alpha pCi/L	Isotopic Uranium 233/234 pCi/L	Isotopic Uranium 235/236 pCi/L	Isotopic Uranium 238 (HASL300) pCi/L	Isotopic Uranium 234 ug/L	Isotopic Uranium 235 ug/L	Total Uranium ug/L	Gross Beta pCi/L	Tc-99 pCi/L	Tritium pCi/L	
MCL/Action Level		70	700	5	5	2									4	10	15 *						30	50 *	900				
Well	Date																												
W-RW1	10/03/19	< 1.0	< 1.0	< 1.0	< 1.0	1.4	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	0.055	0.0129	2.1	2.51 U	0.126 U	0.139 U	0.169 U	< 0.050	< 0.070	0.0815 J	0.0815 J	3.98	1.40 U	NA
	04/15/20	< 1.0	< 1.0	< 1.0	< 1.0	1.7	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	0.06	0.0196	2.0	1.01 U	0.195 U	0.0329 U	-0.00701 U	< 0.0500	< 0.0700	< 0.200	< 0.200	1.65 U	0.209 U	NA
W-RW2	10/11/19	< 1.0	< 1.0	< 1.0	< 1.0	140	8.3	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	NA	NA	20	2.00 U	0.252 U	0.107 U	0.0958 U	< 0.050	< 0.070	0.0743 J	0.0743 J	11.9	23.1 U	270 U
	04/20/20	< 1.0	< 1.0	< 1.0	< 1.0	140	11	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	0.089	0.0204	12	3.17 U	0.00526 U	-0.00930 U	0.0482 U	< 0.0500	< 0.0700	< 0.200	< 0.200	3.53 U	3.26 U	79.8 U
W-3A	10/10/19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	0.015	0.0256	< 0.020	2.36 U	0.287 U	0.0414 U	0.145 U	< 0.050	< 0.070	< 0.200	< 0.200	1.15 U	7.25 U	NA
	04/27/20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	< 0.10	0.0146	< 0.020	3.56 U	0.0204 U	0 U	0.0308 U	< 0.0500	< 0.0700	0.106 J	0.106 J	2.21 U	-0.726 U	NA
W-4	10/11/19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	4.86	0.404	0.023	3.36 U	0.124 U	0.392	< 0.050	< 0.070	0.146 J	0.146 J	19.4	41.3	NA	
	04/27/20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	4.89	0.0225	1.4	-0.539 U	0.112 U	-0.000240 U	0.116 U	< 0.0500	< 0.0700	0.181 J	0.181 J	20.9	24.5	NA
W-6	10/07/19	< 1.0	< 1.0	2.8	< 1.0	16	2.5	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	0.126	134	210	9.09	0.372	0.0443 U	0.153 U	< 0.050	< 0.070	0.232	1370	2440	NA	
	04/07/20	< 1.0	< 1.0	2.7	< 1.0	19	2.7	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	0.112	58	190	37.6	0.0213 U	0 U	0.0977 U	< 0.0500	< 0.0700	0.183 J	0.183 J	1260	2450	NA
W-7A	10/09/19	< 1.0	< 1.0	< 1.0	< 1.0	1.9	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	6.47	48.5	390	6.35	0.409	0.0909 U	0.259	< 0.050	< 0.070	0.698	0.698	114	210	-16.9 U
	04/10/20	< 1.0	< 1.0	< 1.0	< 1.0	1.6	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	6.04	44.6	330	1.99 U	0.240	-0.0195 U	0.219	< 0.0500	< 0.0700	0.716	0.716	54.0	180	115 U
W-10	10/09/19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	3.32	6.46	37	3.19	0.0993 U	0.0935 U	0.180 U	< 0.050	< 0.070	0.083 J	0.083 J	81.3	118	32.7 U
	04/13/20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	2.95	4.24	21	-0.113 U	0.0637 U	0.00902 U	0.0301 U	< 0.0500	< 0.0700	< 0.200	< 0.200	47.8	81.2	145 U
W-11	10/08/19	< 1.0	1.1	< 1.0	< 1.0	1.4	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	0.021	4.09	56	7.82	0.205 U	0.0769 U	0.133 U	< 0.050	< 0.070	< 0.200	< 0.200	2450	3420	NA
	04/10/20	< 1.0	1	< 1.0	< 1.0	1.4	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	0.017	4.95	51	36.3	-0.0539 U	0.0116 U	0.00916 U	< 0.0500	< 0.0700	< 0.200	< 0.200	2080	3440	NA
W-13R	10/08/19	< 1.0	< 1.0	< 1.0	< 1.0	15	1.4	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	8.11	31.5	18	2.15 U	0.246 U	0.0418 U	0.221	< 0.050	< 0.070	0.139 J	0.139 J	53.2	63.4	116 U
	04/08/20	< 1.0	< 1.0	< 1.0	< 1.0	14	1.3	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	7.07	21.4	13	3.48 U	0.0454 U	-0.000219 U	0.0527 U	< 0.0500	< 0.0700	0.076 J	0.076 J	36.0	58.9	-95.1 U
W-14	10/18/19	< 1.0	< 1.0	< 1.0	< 1.0	1.1	< 1.0	< 1																					

**Table 4**  
**Summary of Groundwater Analytical Results**  
**Westinghouse Columbia Fuel Fabrication Facility**  
**Hopkins, South Carolina**  
**AECOM Project No. 60595649**

		VOCs							SVOCs					Inorganics			Radionuclides													
		Carbon Disulfide ug/L	Chloroform ug/L	cis-1,2-Dichloroethene ug/L	Ethylbenzene ug/L	Tetrachloroethene ug/L	Trichloroethene ug/L	Vinyl Chloride ug/L	1,1'-Biphenyl ug/L	2-Methylnaphthalene ug/L	Acenaphthene ug/L	Carbazole ug/L	Fluorene ug/L	Naphthalene ug/L	Phenanthrene ug/L	Fluoride mg/L	Ammonia NH3(N) mg/L	Nitrate NO3 mg/L	Gross Alpha pCi/L	Isotopic Uranium 233/234 pCi/L	Isotopic Uranium 235 (HASL300) pCi/L	Isotopic Uranium 235 ug/L	Isotopic Uranium 238 ug/L	Total Uranium ug/L	Gross Beta pCi/L	Tc-99 pCi/L	Tritium pCi/L			
MCL/Action Level				70	700	5	5	2							4		10	15 *						30	50 *	900				
Well	Date																													
W-28	10/07/19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	5.45	0.884	6.3	3.14 U	0.672	0 U	0.119 U	< 0.050	< 0.070	0.429	0.429	8.26	20.1 U	NA	
	02/04/20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	NA	NA	8.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	02/04/20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	6.55	0.032	8.0	< 5.00	0.828	< 0.500	< 0.500	0.0101 J	0.546	0.556	6.09	< 5.00	NA	NA	
	04/03/20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	5.43	0.0355	7.0	1.78 U	0.665	-0.0112 U	0.0287 U	< 0.0500	0.0136 J	0.696	0.71	3.86	-0.551 U	NA	NA
	07/13/20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 0.8	< 0.16	< 0.16	< 0.8	< 0.16	< 0.16	< 0.16	NA	NA	6.6	1.96 U	0.680	-0.0121 U	0.0846 U	< 0.0500	0.017 J	0.877	0.894	6.29	-2.76 U	NA	NA
W-29	10/07/19	< 1.0	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	4.8	22.4	11	2.25 U	1.20	0 U	0.972	< 0.050	0.026 J	2.03	2.05	7.67	11.6 U	116 U	NA
	04/03/20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	3.77	13.2	17	0.844 U	0.0704 U	0.0220 U	0.129 U	< 0.0500	0.0167 J	1.36	1.38	8.48	8.62	-38.7 U	NA
W-30	10/07/19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	8.06	1.83	120	7.57	11.5	0.914	3.31	< 0.050	0.199	8.71	8.91	20.8	49.7	443 U	NA
	04/13/20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	7.98	0.932	120	14.2	8.43	2.55	< 0.0500	0.173	6.91	7.08	33.9	48.4	-133 U	NA	
W-32	10/08/19	< 1.0	< 1.0	< 1.0	< 1.0	1.4	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	3.66	47.9	170	7.17	0.322	-0.00982 U	0.191	< 0.050	< 0.070	0.224	0.224	175	321	81.8 U	NA
	04/10/20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	3.50	34.2	140	3.47	-0.0634 U	-0.0231 U	-0.0103 U	< 0.0500	< 0.0700	0.154 J	0.154 J	106	270	-54.0 U	NA
W-33	10/17/19	< 1.0	< 1.0	1.0	< 1.0	300	38	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	0.152	0.0134	13	2.89 U	0.102 U	0.0445 U	0.0274 U	< 0.050	< 0.070	< 0.200	< 0.200	7.78	-24.7 U	-44.2 U	NA
	04/16/20	< 5.0	< 5.0	< 5.0	< 5.0	270	33	< 5.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	0.146	0.0194	8.2	2.26 U	-0.0495 U	0.0619 U	0.206 U	< 0.0500	< 0.0700	< 0.200	< 0.200	5.00	2.90 U	65.3 U	NA
W-35	10/02/19	< 1.0	< 1.0	< 1.0	2.6	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	0.025	0.0075	3.2	0.793 U	0.304	0.0450 U	0.109	< 0.050	< 0.070	< 0.200	< 0.200	3.54 U	21.7 U	NA	NA
	04/21/20	< 1.0	< 1.0	< 1.0	< 1.0	2.5	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	0.022	0.0186	3.3	0.263 U	0.123 U	0.0570 U	0.00288 U	< 0.0500	< 0.0700	< 0.200	< 0.200	2.32 U	-0.918 U	NA	NA
W-36	10/02/19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	0.007	0.0089	0.11	0.270 U	0.148 U	-0.0134 U	-0.0108 U	< 0.050	< 0.070	< 0.200	< 0.200	-0.343 U	15.0 U	NA	NA
	04/20/20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	0.014	0.0250	0.056	0.779 U	-0.0208 U	0 U	-0.0293 U	< 0.0500	< 0.0700	< 0.200	< 0.200	4.21	-1.03 U	NA	NA
W-37	10/02/19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	0.02	0.0088	3.5	1.75 U	0.103 U	-0.0108 U	0.0277 U	< 0.050	< 0.070	0.0936 J	0.0936 J	-0.310 U	-14.9 U	NA	NA
	04/08/20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	0.029	0.0100	2.0</td												

Table 4

Summary of Groundwater Analytical Results  
 Westinghouse Columbia Fuel Fabrication Facility  
 Hopkins, South Carolina  
 AECOM Project No. 60595649

		VOCs							SVOCs					Inorganics			Radionuclides													
		Carbon Disulfide ug/L	Chloroform ug/L	cis-1,2-Dichloroethene ug/L	Ethylbenzene ug/L	Tetrachloroethene ug/L	Trichloroethene ug/L	Vinyl Chloride ug/L	1,1'-Biphenyl ug/L	2-Methylnaphthalene ug/L	Acenaphthene ug/L	Carbazole ug/L	Fluorene ug/L	Naphthalene ug/L	Phenanthrene ug/L	Fluoride mg/L	Ammonia NH3(N) mg/L	Nitrate NO3 mg/L	Gross Alpha pCi/L	Isotopic Uranium 233/234 pCi/L	Isotopic Uranium 235/236 (HASL300) pCi/L	Isotopic Uranium 234 ug/L	Isotopic Uranium 235 ug/L	Total Uranium ug/L	Gross Beta pCi/L	Tc-99 pCi/L	Tritium pCi/L			
MCL/Action Level		70	700	5	5	2									4	10	15 *						30	50 *	900					
Well	Date																													
W-51	10/03/19 04/09/20	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 <b>5.2</b>	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 <b>7.4</b>	< 0.80 13	< 0.80 <b>8.5</b>	< 4.0 <b>1.1</b>	< 0.80 <b>6.1</b>	< 0.80 <b>3</b>	< 0.80 <b>12</b>	< 0.80 <b>2.9</b>	0.215 0.173	0.256 0.0106	0.11 0.046	0.544 U 0.101 U	0.0146 U -0.0978 U	0.0799 U -0.0224 U	-0.0705 U -0.0817 U	< 0.050 < 0.050	< 0.070 < 0.0700	< 0.200 < 0.200	< 0.200 < 0.200	<b>3.56</b> 0.258 U	-16.3 U -1.23 U	NA	NA
W-52	10/03/19 04/09/20	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 <b>1.0</b>	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 <b>4.0</b>	< 0.80 13	< 0.80 <b>8.5</b>	< 4.0 <b>1.1</b>	< 0.80 13	< 0.80 <b>3</b>	< 0.80 <b>12</b>	< 0.80 <b>2.9</b>	1.39 0.0212	0.0212 0.0272	1.3 2.0	-0.521 U 2.41 U	0.121 U 0.0567 U	0.00124 U 0.00430 U	< 0.050 0.00348 U	< 0.070 0.0500	< 0.200 0.0700	< 0.200 0.200	<b>1.61 U</b> 2.43 U	-20.8 U -0.253 U	NA	NA	
W-53	10/03/19 04/09/20	< 1.0 < 1.0	< 1.0 <b>5.4</b>	< 1.0 <b>1.3</b>	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 <b>4.0</b>	< 0.80 13	< 0.80 <b>8.5</b>	< 4.0 <b>1.1</b>	< 0.80 13	< 0.80 <b>3</b>	< 0.80 <b>12</b>	< 0.80 <b>2.9</b>	0.081 0.0397	0.0397 0.108	0.57 0.033	1.61 U -0.727 U	0.0359 U -0.0556 U	0.0157 U 0.0382 U	< 0.050 0.0614 U	< 0.070 0.0627 U	< 0.200 0.0500	< 0.200 0.0700	<b>1.72 U</b> 3.20 U	-35.1 U 0.874 U	NA	NA	
W-54	10/04/19 04/09/20	< 1.0 < 1.0	< 1.0 <b>1.9</b>	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 <b>4.0</b>	< 0.80 13	< 0.80 <b>8.5</b>	< 4.0 <b>1.1</b>	< 0.80 13	< 0.80 <b>3</b>	< 0.80 <b>12</b>	< 0.80 <b>2.9</b>	0.258 0.0037	0.0037 0.0156	2.8 1.7	1.55 U 0.275 U	0.0685 U -0.141 U	0.0666 U 0.0287 U	< 0.050 0.0479 U	< 0.070 0.0500	< 0.200 0.0700	< 0.200 0.200	<b>1.96 U</b> 1.60 U	-19.6 U -0.513 U	NA	NA	
W-55	10/04/19 04/08/20	< 1.0 < 1.0	< 1.0 <b>1.0</b>	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 <b>4.0</b>	< 0.80 13	< 0.80 <b>8.5</b>	< 4.0 <b>1.1</b>	< 0.80 13	< 0.80 <b>3</b>	< 0.80 <b>12</b>	< 0.80 <b>2.9</b>	0.062 0.0108	0.0108 0.0260	3.7 2.0	438 271	290 197	16.3 9.43	60.5 39.4	0.052 0.032 J	5.79 3.77	177 112	<b>183</b> 115	<b>77.3</b> 52.9	-11.9 U -1.04 U	NA	NA
W-56	10/04/19 04/07/20	< 1.0 < 1.0	< 1.0 <b>1.2</b>	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 <b>4.0</b>	< 0.80 13	< 0.80 <b>8.5</b>	< 4.0 <b>1.1</b>	< 0.80 13	< 0.80 <b>3</b>	< 0.80 <b>12</b>	< 0.80 <b>2.9</b>	0.257 0.0110	0.0090 0.0110	4.2 2.8	264 60.9	192 47.7	9.18 2.29	37.9 9.79	0.034 J < 0.0500	4.19 0.98	130 30	<b>134</b> 31	<b>54.5</b> 10.1	-20.5 U -1.35 U	NA	NA
W-57	10/03/19 04/07/20	< 1.0 < 1.0	< 1.0 <b>1.7</b>	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 <b>4.0</b>	< 0.80 13	< 0.80 <b>8.5</b>	< 4.0 <b>1.1</b>	< 0.80 13	< 0.80 <b>3</b>	< 0.80 <b>12</b>	< 0.80 <b>2.9</b>	0.057 0.0155	0.0155 0.0155	4.6 3.5	0.202 U 0.00106 U	-0.0917 U 0.0293 U	0.0165 U -0.0225 U	< 0.050 0.0500	< 0.070 0.0700	< 0.200 0.200	<b>0.207</b> 0.207	3.09 U 5.21	-16.3 U -0.855 U	NA	NA	
W-58	10/04/19 04/07/20	< 1.0 < 1.0	<b>1.0</b> < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 <b>4.0</b>	< 0.80 13	< 0.80 <b>8.5</b>	< 4.0 <b>1.1</b>	< 0.80 13	< 0.80 <b>3</b>	< 0.80 <b>12</b>	< 0.80 <b>2.9</b>	0.180 0.099	18.6 6.28	9.7 4.3	4.21 2.39 U	2.10 1.62	0.104 U -0.0132 U	0.331 U 0.399	< 0.050 0.0500	<b>0.049 J</b> 0.0326 J	1.67 1.02	1.72 1.05	2.43 U 1.85 U	-26.1 U -0.0365 U	NA	NA
W-59	10/05/19 04/07/20	< 1.0 < 1.0	< 1.0 <b>1.0</b>	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 <b>4.0</b>	< 0.80 13	< 0.80 <b>8.5</b>	< 4.0 <b>1.1</b>	< 0.80 13	< 0.80 <b>3</b>	< 0.80 <b>12</b>	< 0.80 <b>2.9</b>	4.18 8.82	12.3 20	14 25.3	44.4 20.1	38.0 0.927	2.02 4.58	< 0.050 0.0500	8.26 4.58	0.659 0.379	21.6 12.4	22.2 12.8	17.4 9.33	13.0 U 7.86	NA	NA
W-60	10/17/19 04/10/20	< 1.0 < 1.0	< 1.0 <b>1.0</b>	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 <b>4.0</b>	< 0.80 13	< 0.80 <b>8.5</b>	< 4.0 <b>1.1</b>	< 0.80 13	< 0.80 <b>3</b>	< 0.80 <b>12</b>	< 0.80 <b>2.9</b>	0.034 0.128	0.0251 0.128	0.035 < 0.020	0.200 U 0.543 U	0.0248 U -0.0712 U	0.0418 U -0.00912 U	0.00356 U -0.0148 U	< 0.050 0.0500	< 0.070 0.0700	< 0.200 0.200	< 0.200 0.200	1.38 U 3.08 U	-7.75 U -1.89 U	NA	NA
W-61	10/17/19 04/10/20	< 1.0 < 1.0	< 1.0 <b>1.0</b>	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 <b>4.0</b>	< 0.80 13	< 0.80 <b>8.5</b>	< 4.0 <b>1.1</b>	< 0.80 13	< 0.80 <b>3</b>	< 0.80 <b>12</b>	< 0.80 <b>2.9</b>	0.036 0.041	0.0274 0.0550	2.5 1.4	1.31 U 0.373 U	-0.0719 U 0.0228 U	0.0596 U -0.0101 U	0.0254 U 0.00788 U	&							

Table 4

Summary of Groundwater Analytical Results  
 Westinghouse Columbia Fuel Fabrication Facility  
 Hopkins, South Carolina  
 AECOM Project No. 60595649

		VOCs							SVOCs					Inorganics			Radionuclides												
		Carbon Disulfide ug/L	Chloroform ug/L	cis-1,2-Dichloroethene ug/L	Ethylbenzene ug/L	Tetrachloroethene ug/L	Trichloroethene ug/L	Vinyl Chloride ug/L	1,1'-Biphenyl ug/L	2-Methylnaphthalene ug/L	Acenaphthene ug/L	Carbazole ug/L	Fluorene ug/L	Naphthalene ug/L	Phenanthrene ug/L	Fluoride mg/L	Ammonia NH3(N) mg/L	Nitrate NO3 mg/L	Gross Alpha pCi/L	Isotopic Uranium 233/234 pCi/L	Isotopic Uranium 235/236 (HASL300) pCi/L	Isotopic Uranium 234 ug/L	Isotopic Uranium 235 ug/L	Total Uranium ug/L	Gross Beta pCi/L	Tc-99 pCi/L	Tritium pCi/L		
MCL/Action Level		70	700	5	5	2									4	10	15 *					30	50 *	900					
Well	Date																												
W-73	10/04/19 04/03/20	< 1.0 < 1.0	< 1.0 < 1.0	1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 4.0 < 4.0	< 0.80 < 0.80	< 0.80 < 0.80	< 4.0 < 4.0	< 0.80 < 0.80	< 0.80 < 0.80	< 0.80 < 0.80	0.071 0.0383	0.0167 0.159	2.0 4.9	0.241 U -2.20 U	-0.00420 U 0.155 U	0.0655 U 0.0780 U	0.121 U -0.0258 U	< 0.050 < 0.050	< 0.070 < 0.070	0.0831 J 0.0873 J	0.0831 J 0.0873 J	1.85 U 2.27 U	-23.0 U -1.62 U	NA NA
W-74	10/09/19 04/08/20	< 1.0 < 1.0	< 1.0 < 1.0	1.9 1.6	< 1.0 < 1.0	19 19	4.5 4.2	< 1.0 < 1.0	< 4.0 < 4.0	< 0.80 < 0.80	< 0.80 < 0.80	< 4.0 < 4.0	< 0.80 < 0.80	< 0.80 < 0.80	< 0.80 < 0.80	0.019 0.010	0.159 0.0129	4.9 5.4	-0.595 U -0.164 U	0.111 U -0.0540 U	0.00238 U -0.0593 U	0.0963 U -0.00979 U	< 0.050 < 0.050	< 0.070 < 0.070	< 0.200 < 0.200	< 0.200 < 0.200	1.29 U 2.38 U	11.5 U -1.38 U	NA NA
W-75	10/09/19 04/08/20	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	1 1	< 1.0 < 1.0	< 1.0 < 1.0	< 4.0 < 4.0	< 0.80 < 0.80	< 0.80 < 0.80	< 4.0 < 4.0	< 0.80 < 0.80	< 0.80 < 0.80	< 0.80 < 0.80	0.109 0.068	0.391 0.268	0.063 1.6	2.10 U 1.80 U	0.0135 U -0.0429 U	0.0780 U -0.0219 U	0.00143 U 0.00834 U	< 0.050 < 0.050	< 0.070 < 0.070	< 0.200 < 0.200	< 0.200 < 0.200	3.89 U 3.68	-15.8 U -1.17 U	NA NA
W-76	10/05/19 04/14/20	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	63 44	< 1.0 < 1.0	< 4.0 < 4.0	< 0.80 < 0.80	< 0.80 < 0.80	< 4.0 < 4.0	< 0.80 < 0.80	< 0.80 < 0.80	< 0.80 < 0.80	1.45 1.40	0.0154 0.0163	9.8 8.7	2.77 U 12.7	1.60 4.92	-0.0126 U 0.196	0.354 0.830	< 0.050 < 0.050	0.0308 J 0.0999	0.915 2.87	0.946 2.97	6.88 4.56 U	-14.6 U -0.741 U	NA NA	
W-77	10/06/19 04/14/20	< 1.0 < 1.0	11 11	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 4.0 < 4.0	< 0.80 < 0.80	< 0.80 < 0.80	< 4.0 < 4.0	< 0.80 < 0.80	< 0.80 < 0.80	9.21 7.39	7.11 17.0	12 20	865 399	511 591	26.0 28.5	81.0 88.7	0.089 0.104	10.1 11.2	237 253	247 264	111 41.7	101 5.10	NA NA	
W-78	10/05/19 04/14/20	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 4.0 < 4.0	< 0.80 < 0.80	< 0.80 < 0.80	< 4.0 < 4.0	< 0.80 < 0.80	< 0.80 < 0.80	13.4 11.3	0.0271 0.0286	3.5 4.4	-0.146 U 1.82 U	0.0921 U 0.0631 U	0.0466 U 0.0946 U	0.105 U 0.0207 U	< 0.050 < 0.050	< 0.070 < 0.070	0.0933 J 0.203	0.0933 J 0.203	4.12 U 2.97 U	-6.50 U 0.0509 U	NA NA	
W-79	10/07/19 04/13/20	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 4.0 < 4.0	< 0.80 < 0.80	< 0.80 < 0.80	< 4.0 < 4.0	< 0.80 < 0.80	< 0.80 < 0.80	2.40 0.323	0.0146 0.0099	4.0 5.1	2.99 U 0.312 U	0.0539 U -0.0423 U	-0.0112 U -0.00965 U	0.115 U 0.0449 U	< 0.050 < 0.050	< 0.070 < 0.070	0.0892 J < 0.200	0.0892 J 0.203	5.90 5.06	3.52 U 0.135 U	NA NA	
W-80	10/06/19 04/14/20	< 1.0 < 1.0	< 1.0 2.3	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 4.0 < 4.0	< 0.80 < 0.80	< 0.80 < 0.80	< 4.0 < 4.0	< 0.80 < 0.80	< 0.80 < 0.80	1.57 0.121	0.0927 0.0158	8.3 16	1.30 U 0.167 U	0.154 U 0.0226 U	0.0254 U 0.106 U	0.0695 U < 0.050	< 0.050 < 0.070	0.151 J 0.177 J	0.151 J 0.177 J	7.29 9.42	2.56 U -1.32 U	NA NA		
W-81	10/08/19 04/14/20	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 4.0 < 4.0	< 0.80 < 0.80	< 0.80 < 0.80	< 4.0 < 4.0	< 0.80 < 0.80	< 0.80 < 0.80	0.042 0.067	0.0762 0.381	3.1 1.4	-0.177 U 0.0590 U	0.00840 U 0.150 U	-0.0482 U 0.112 U	0.0482 U 0.112 U	< 0.050 < 0.050	< 0.070 < 0.070	0.0728 J 0.393	0.0728 J 0.393	1.23 U 8.64	-11.9 U -0.0743 U	NA NA	
W-82	10/08/19 04/14/20	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 4.0 < 4.0	< 0.80 < 0.80	< 0.80 < 0.80	< 4.0 < 4.0	< 0.80 < 0.80	< 0.80 < 0.80	0.046 0.041	0.0275 0.0209	0.99 1.8	1.37 U 2.27 U	0.0453 U 0.0344 U	0.0453 U 0.00931 U	0.140 U 0.00738 U	< 0.050 < 0.050	< 0.070 < 0.070	0.151 J 0.0500	0.151 J 0.0700	4.82 6.49	-1.54 U -1.65 U	NA NA	
W-83	10/08/19 04/13/20	2.1 < 1.0	1.3 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 1.0 < 1.0	< 4.0 < 4.0	< 0.80 < 0.80	< 0.80 < 0.80	< 4.0 < 4.0	< 0.80 < 0.80	< 0.80 < 0.80	0.079 0.104	0.0099 0.0099	0.76 0.80	0.300 U 1.90 U	0.603 0.0991 U	0.161 U 0.0149 U	-0.0584 U 0.0242 U	< 0.050<br							

Table 4

Summary of Groundwater Analytical Results  
 Westinghouse Columbia Fuel Fabrication Facility  
 Hopkins, South Carolina  
 AECOM Project No. 60595649

		VOCs												SVOCs												Inorganics						Radionuclides					
		Carbon Disulfide ug/L	Chloroform ug/L	cis-1,2-Dichloroethene ug/L	Ethylbenzene ug/L	Tetrachloroethene ug/L	Trichloroethene ug/L	Vinyl Chloride ug/L	1,1'-Biphenyl ug/L	2-Methylnaphthalene ug/L	Acenaphthene ug/L	Carbazole ug/L	Fluorene ug/L	Naphthalene ug/L	Phenanthrene ug/L	Fluoride mg/L	Ammonia NH3(N) mg/L	Nitrate NO3 mg/L	Gross Alpha pCi/L	Isotopic Uranium 233/234 pCi/L	Isotopic Uranium 235/236 pCi/L	Isotopic Uranium 238 (HASL300) pCi/L	Isotopic Uranium 234 ug/L	Isotopic Uranium 235 ug/L	Total Uranium ug/L	Gross Beta pCi/L	Tc-99 pCi/L	Tritium pCi/L									
MCL/Action Level		70	700	5	5	2									4	10	15 *						30	50 *	900												
Well	Date																																				
W-96	10/11/19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	1.2	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.111	0.228	0.054	2.51 U	0.0695 U	0.108 U	0.0719 U	< 0.050	< 0.070	< 0.200	< 0.200	4.36	-1.25 U	NA								
	04/24/20	< 1	< 1.0	< 1.0	< 1.0	4.3	1.2	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	0.059	0.165	< 0.020	0.667 U	0.0173 U	-0.000182 U	0.110 U	< 0.0500	< 0.0700	< 0.200	< 0.200	3.11 U	0.00377 U	NA								
W-97	10/11/19	< 1.0	< 1.0	< 1.0	< 1.0	9.8	2	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	0.375	4.89	3.4	0.168 U	0.106 U	0.0403 U	0.0495 U	< 0.050	< 0.070	< 0.200	< 0.200	11.0	10.3 U	NA								
	04/24/20	< 1.0	< 1.0	< 1.0	< 1.0	9.8	2	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	0.233	2.32	6.0	6.24	0.0625 U	0.00869 U	-0.0452 U	< 0.0500	< 0.0700	< 0.200	< 0.200	53.8	88.3	NA								

## Notes:

ug/L - Micrograms per liter

mg/L - Milligrams per liter

pCi/L - Picocuries per liter

MCL - Maximum Contaminant Level

\* - site specific action level

Tc-99 - Technetium-99

NA - Not analyzed

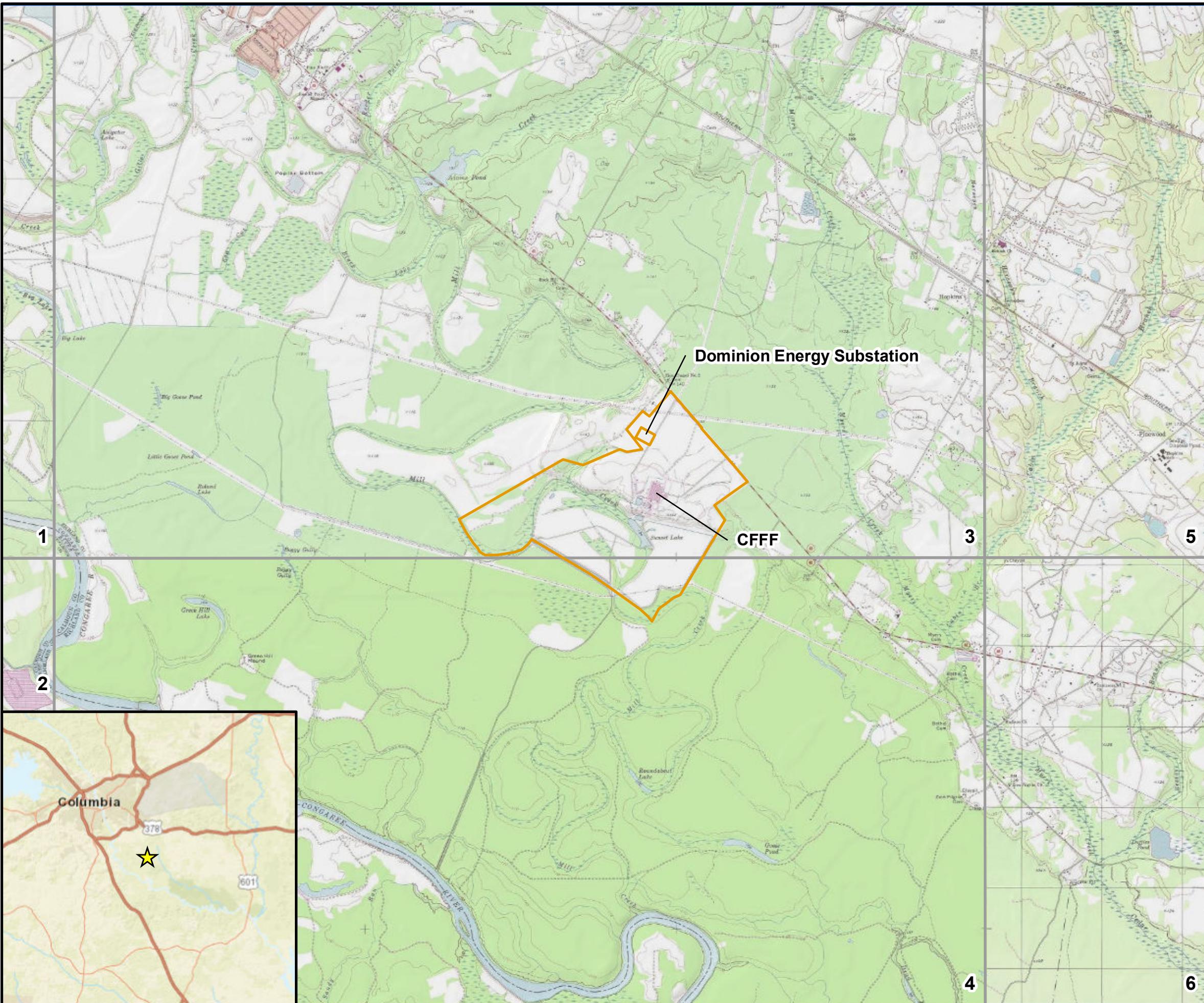
U - Analyte was not detected above the minimum detectable level, concentration, or activity

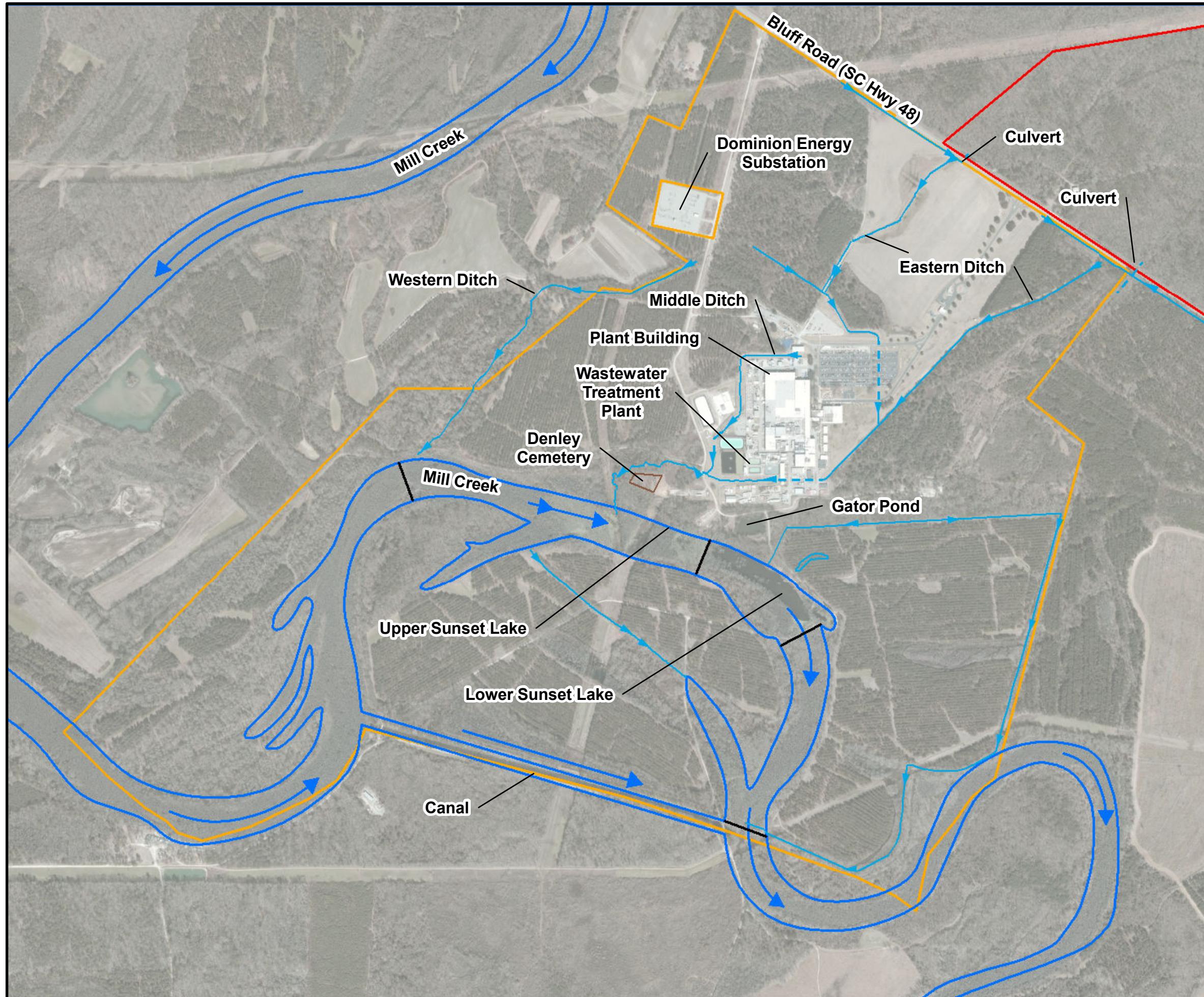
J - Estimated result is less than the practical quantitation limit and greater than the method detection limit

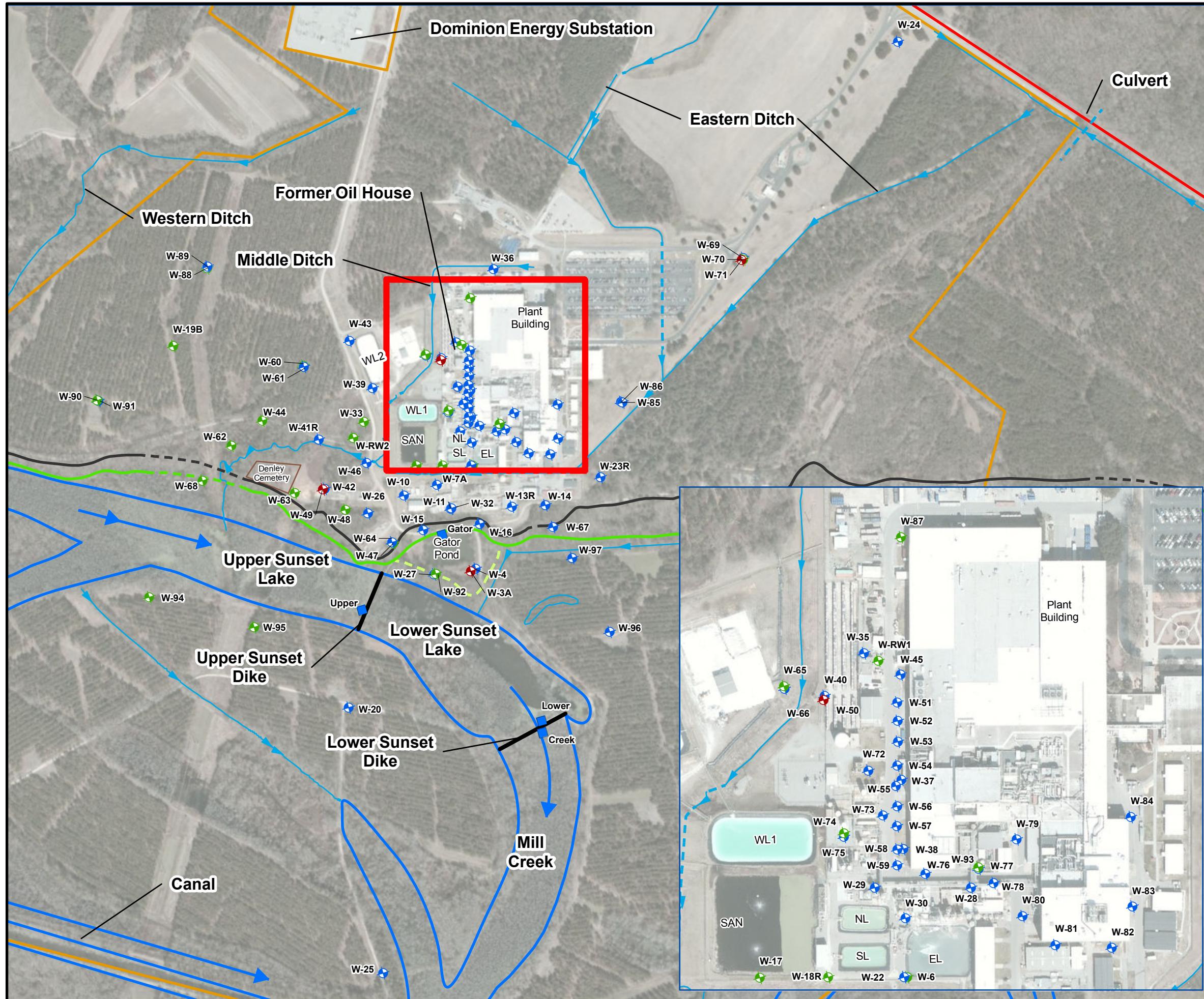
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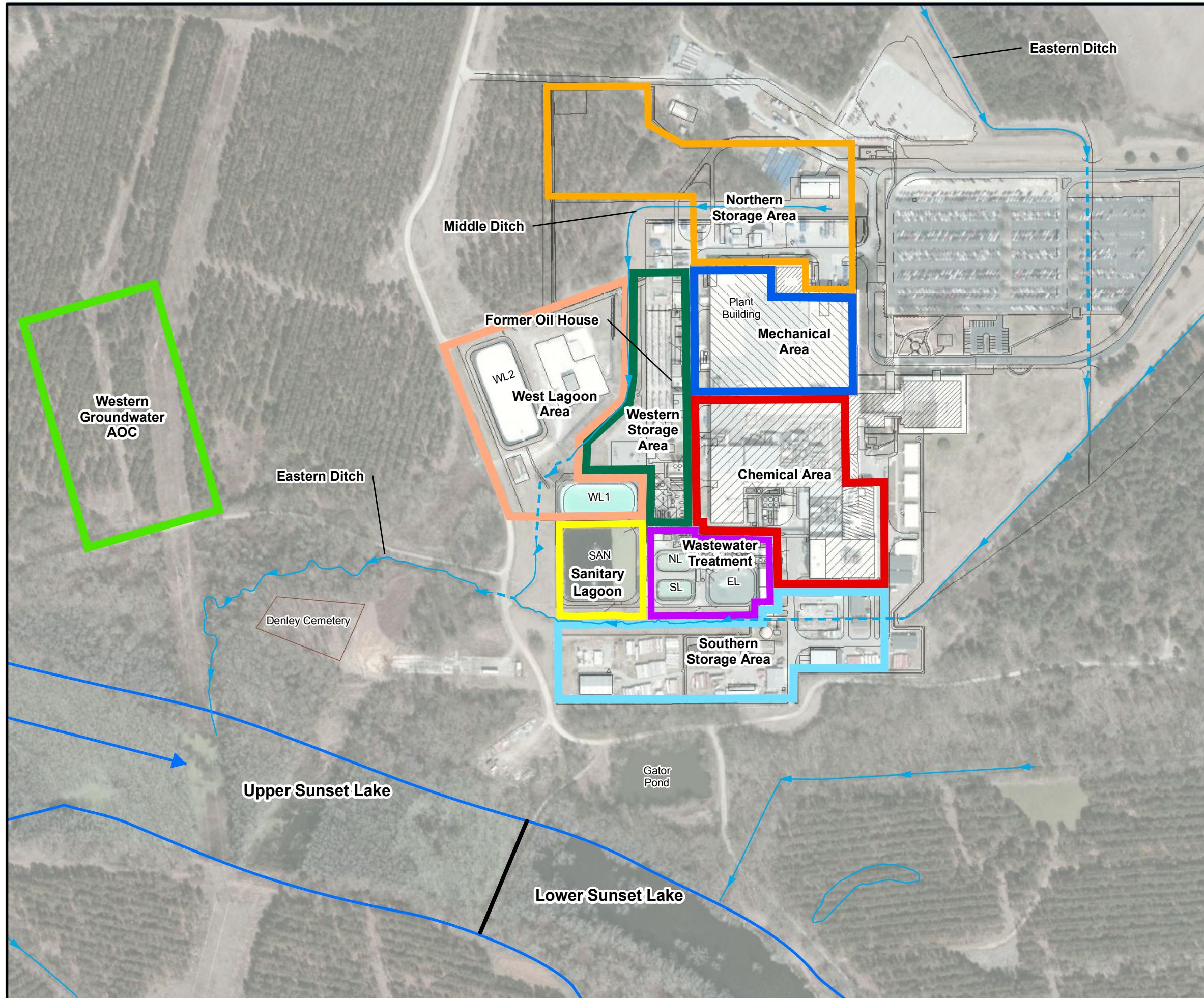
## Figures

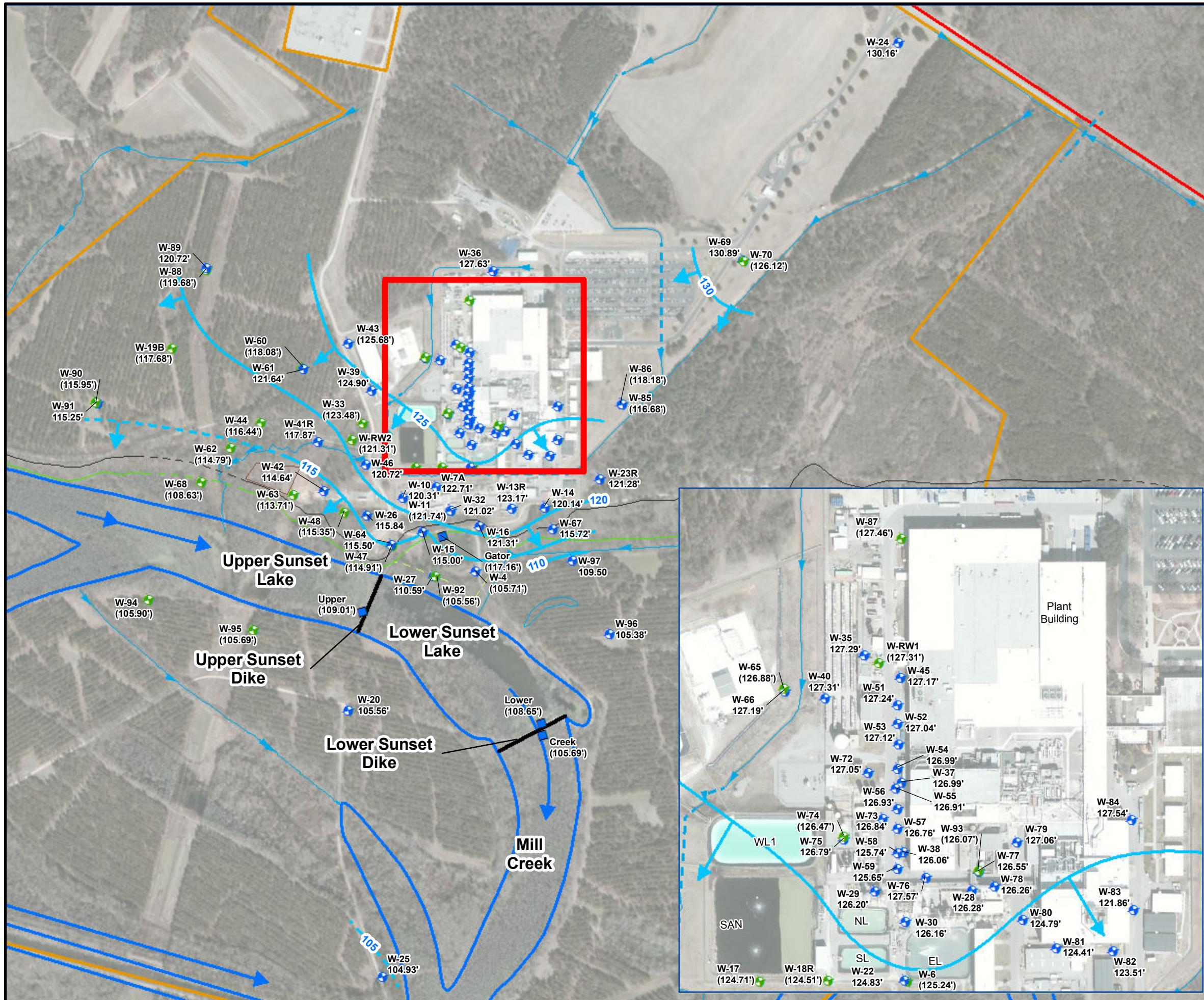
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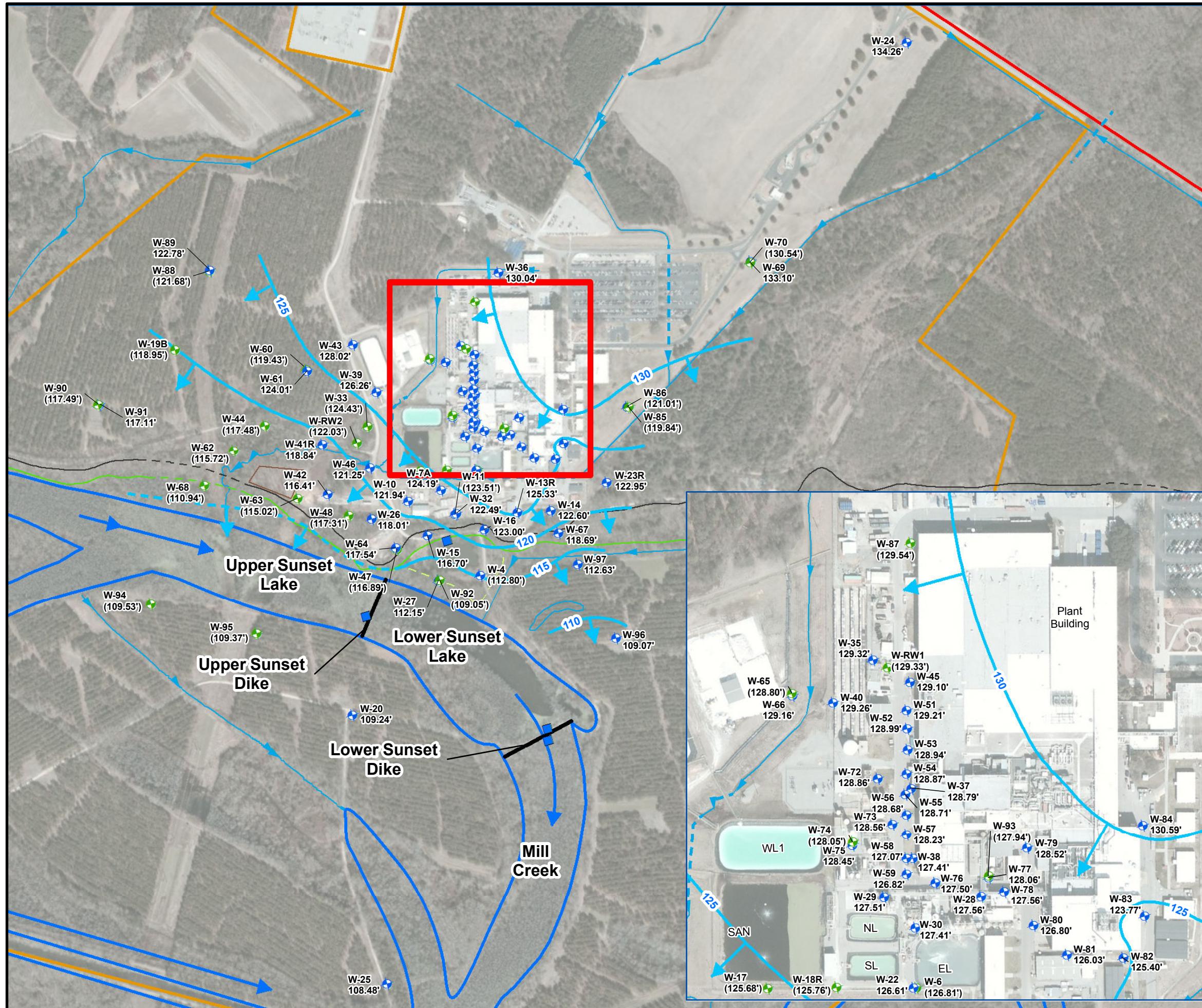


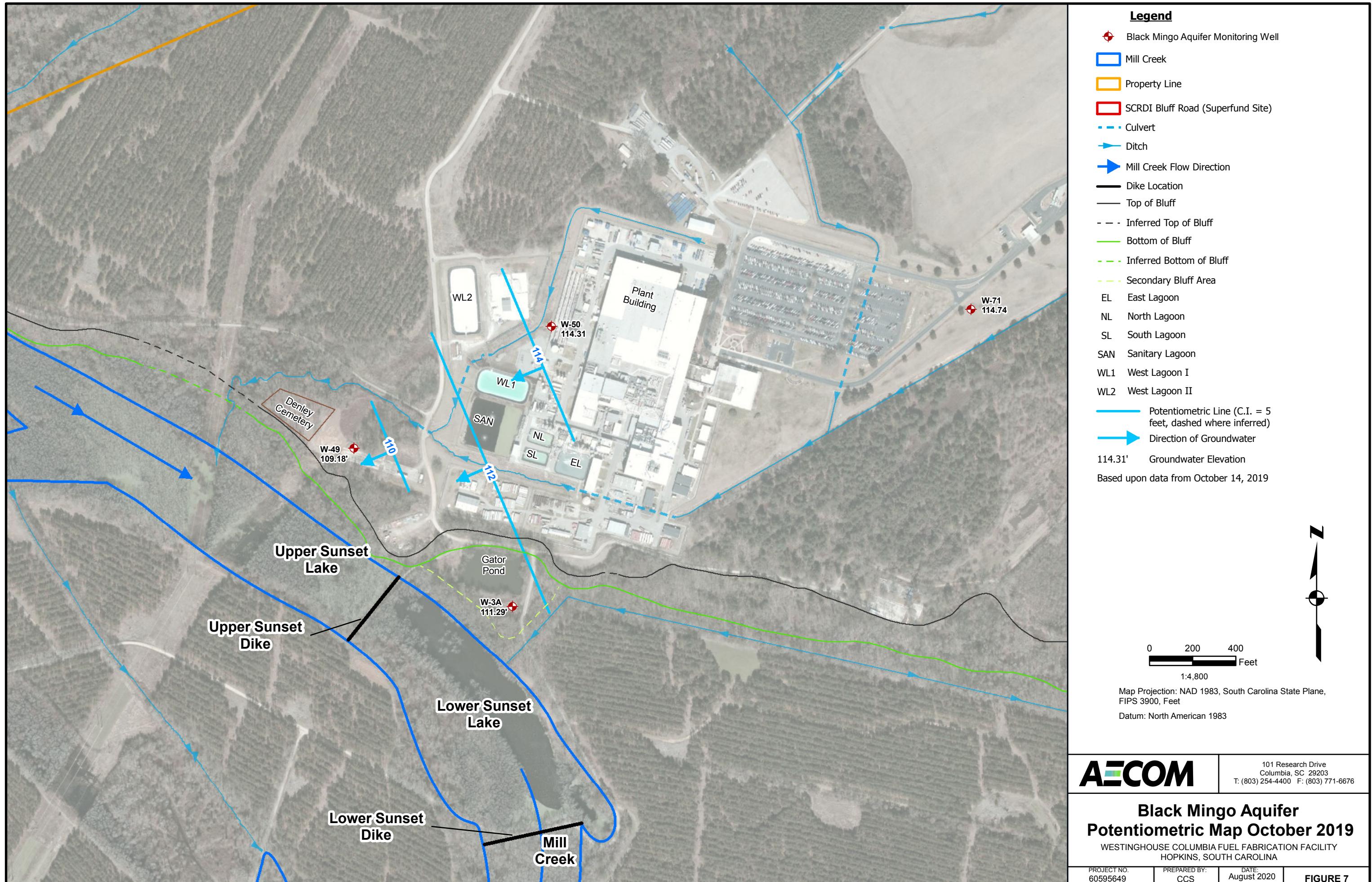


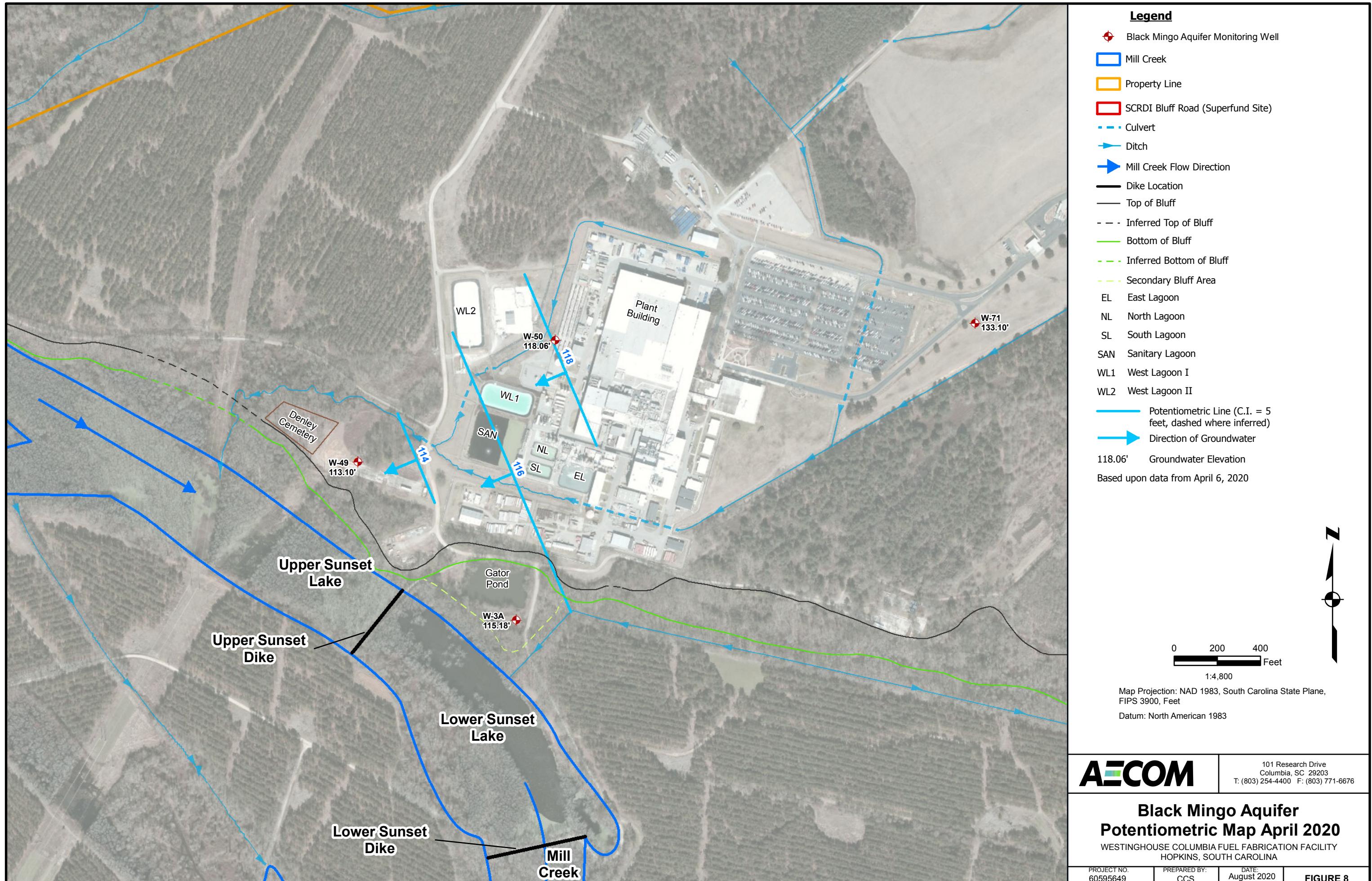


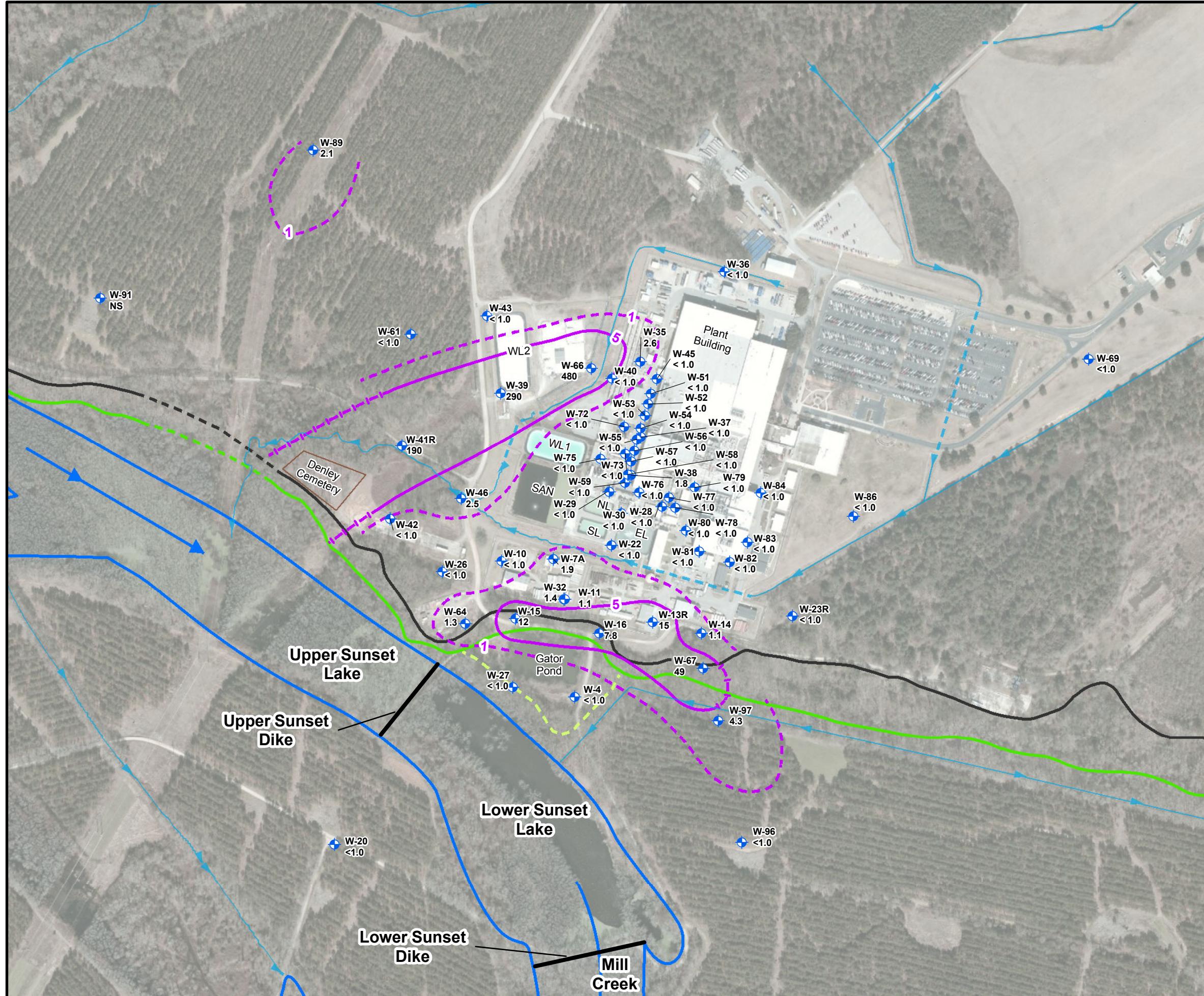












## Legend

-  Surficial Aquifer - Upper Zone Monitoring Well
  -  Ditch
  -  Culvert
  -  Dike Location
  -  Mill Creek
  -  Mill Creek Flow Direction
  -  Top of Bluff
  -  Inferred Top of Bluff
  -  Bottom of Bluff
  -  Inferred Bottom of Bluff
  -  Secondary Bluff Area
  -  PCE Isoconcentration Contour ( $\mu\text{g/L}$ )
  -  PCE Inferred Isoconcentration Contour ( $\mu\text{g/L}$ )
  -  PCE Isoconcentration Contour at a Concentration Less Than the Maximum Contaminant Level ( $\mu\text{g/L}$ )

480 PCE Concentration in  $\mu\text{g/L}$

NS Not Sampled

EL East Lagoon

NL North Lagoon

SL South Lagoon

SAN Sanitary Lagoon

WL1 West Lagoon 1

WL2 West Lagoon 2

Note:

Based upon data collected in October 2019



A scale bar with three tick marks labeled 0, 200, and 400. The first tick mark is at the left end. The second tick mark is located in the middle of a thick black segment. The third tick mark is at the right end of the thick black segment. To the right of the thick black segment, the word "Feet" is written in a slanted font.

Map Projection: NAD 1983, South Carolina State Plane,  
FIPS 3900, Feet

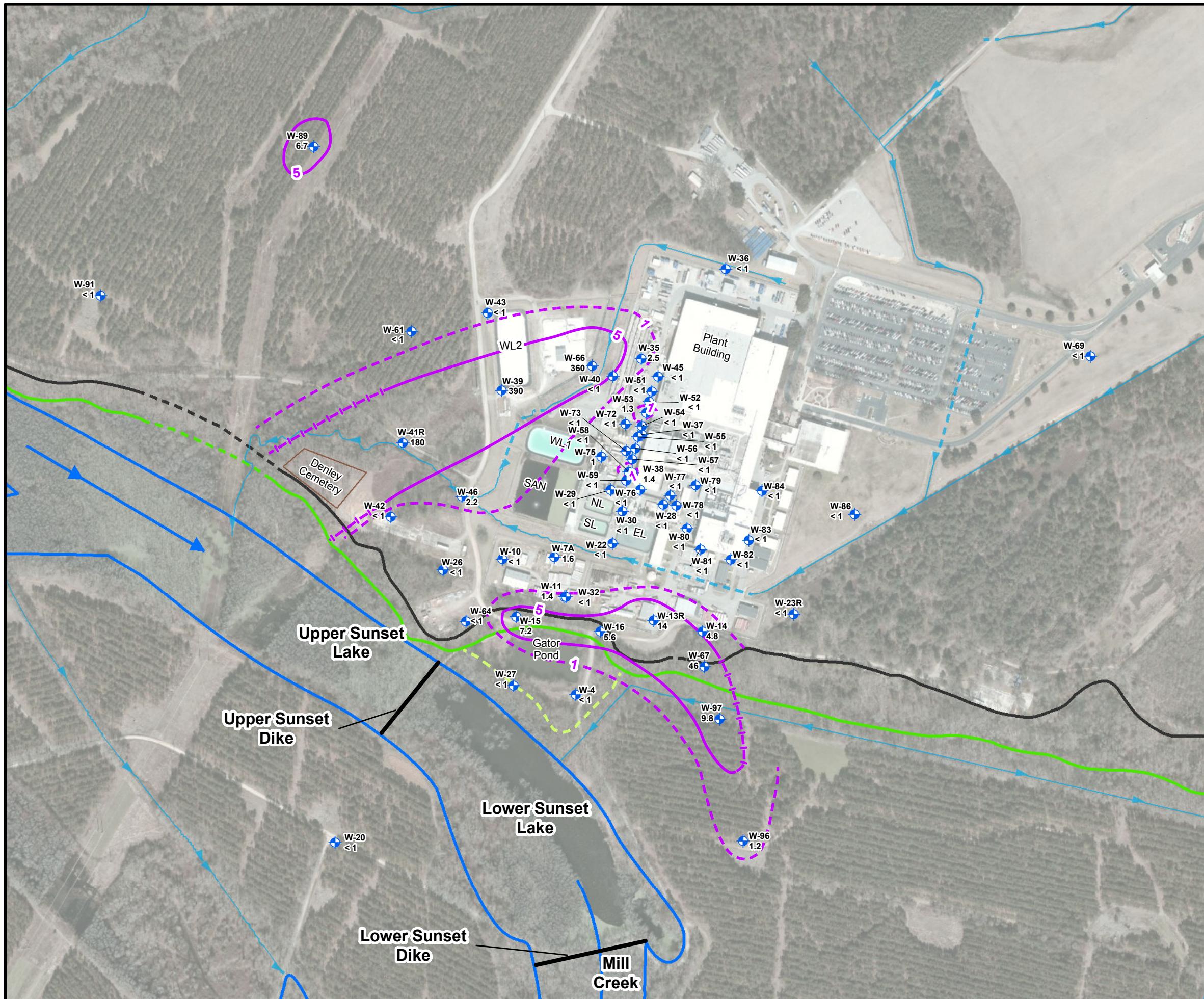
AECOM

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Columbia, SC 29203  
E: (803) 254-4400 F: (803) 771-6676

## **Extent of PCE Surficial Aquifer - Upper Zone October 2019**

**WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY  
HOPKINS, SOUTH CAROLINA**

PROJECT NO. PREPARED BY: DATE:  
60595649 RGM August 2020 **FIGURE 9**



### Legend

- Surficial Aquifer - Upper Zone Monitoring Well
- Ditch
- - - Culvert
- Dike Location
- Mill Creek
- Mill Creek Flow Direction
- Top of Bluff
- - - Inferred Top of Bluff
- Bottom of Bluff
- - - Inferred Bottom of Bluff
- - - Secondary Bluff Area
- PCE Isoconcentration Contour ( $\mu\text{g}/\text{L}$ )
- - - PCE Inferred Isoconcentration Contour ( $\mu\text{g}/\text{L}$ )
- - - PCE Isoconcentration Contour at a concentration less than the maximum contaminant level ( $\mu\text{g}/\text{L}$ )
- 390 PCE Concentration in  $\mu\text{g}/\text{L}$
- NS Not Sampled
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

Note:

Based upon data collected in April 2020



0 200 400  
Feet  
1:4,800

Map Projection: NAD 1983, South Carolina State Plane,  
FIPS 3900, Feet

Datum: North American 1983

**AECOM**

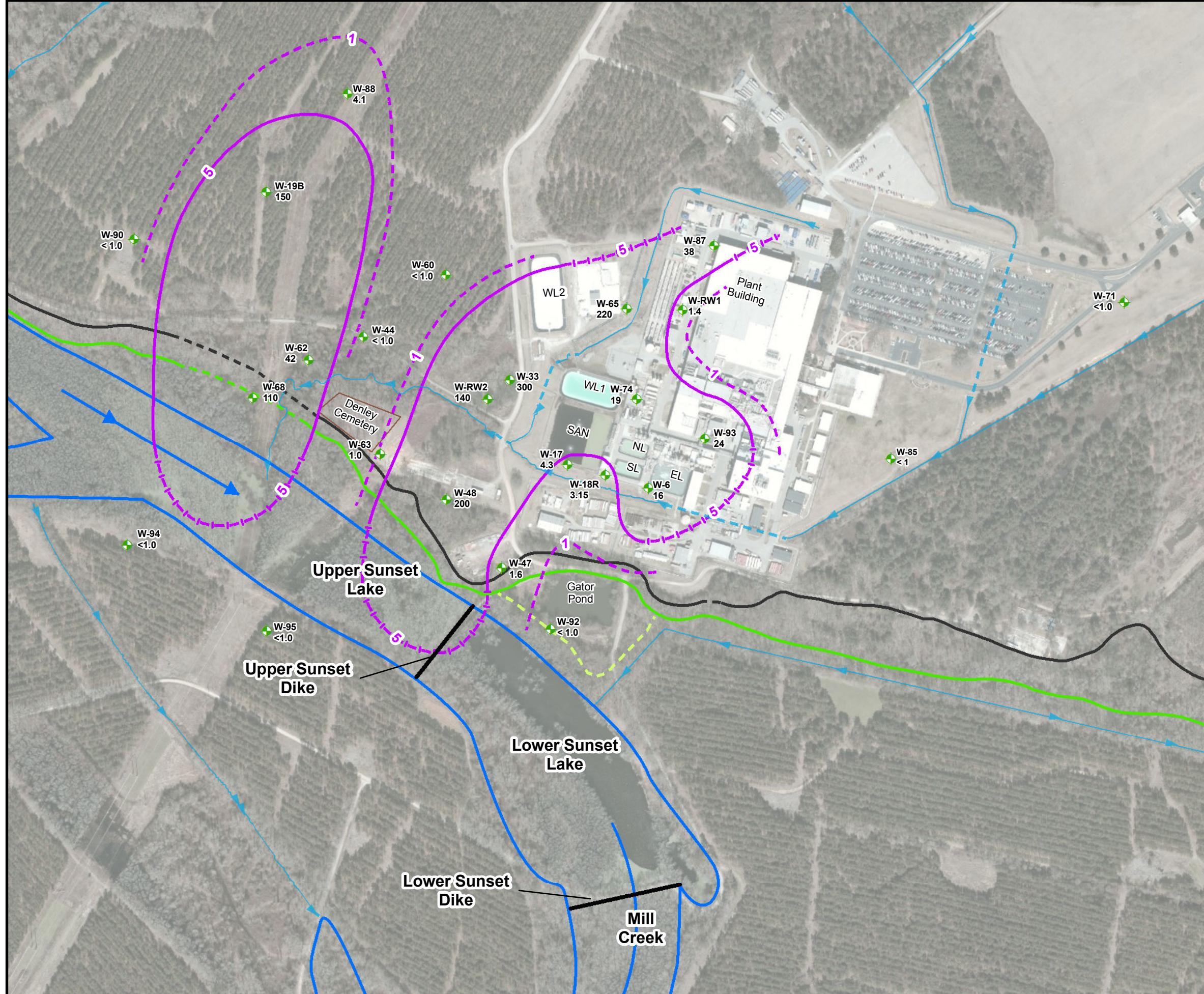
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### Extent of PCE Surficial Aquifer - Upper Zone April 2020

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY  
HOPKINS, SOUTH CAROLINA

PROJECT NO. 60595649	PREPARED BY: CCS	DATE: June 2020
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**FIGURE 10**



### Legend

- Surficial Aquifer - Lower Zone Monitoring Well
- Ditch
- - - Culvert
- Dike Location
- Mill Creek Flow Direction
- Mill Creek
- Top of Bluff
- - - Inferred Top of Bluff
- Bottom of Bluff
- - - Inferred Bottom of Bluff
- Secondary Bluff Area
- PCE Isoconcentration Contour (µg/L)
- PCE Inferred Isoconcentration Contour (µg/L)
- PCE Isoconcentration Contour at a Concentration Less Than the Maximum Contaminant Level (µg/L)
- 300 PCE Concentration in µg/L
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2



Note:

Based upon data collected in October 2019

0 205 410  
Feet  
1:4,800

Map Projection: NAD 1983, South Carolina State Plane,  
FIPS 3900, Feet

Datum: North American 1983

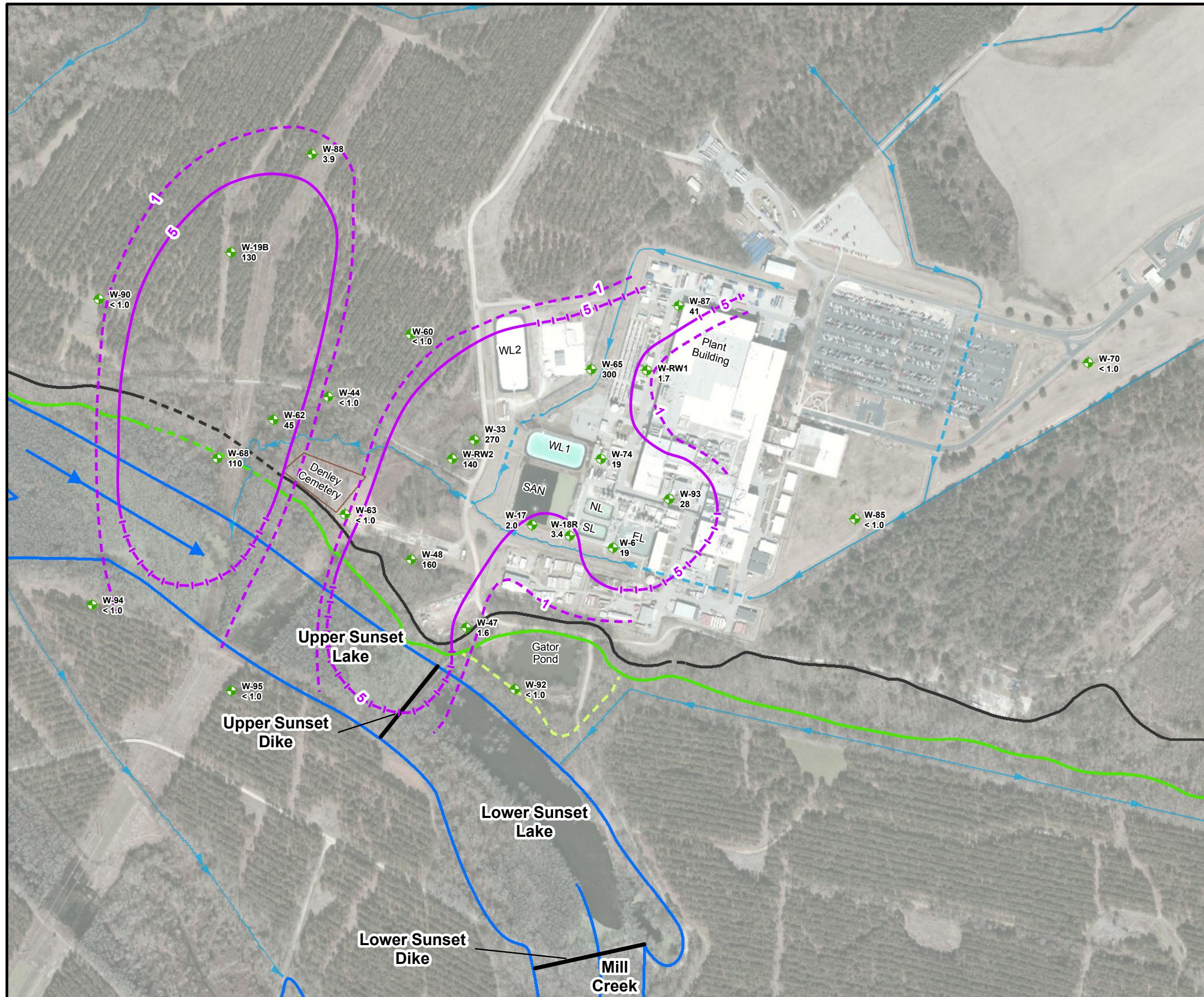
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**Extent of PCE  
Surficial Aquifer - Lower Zone  
October 2019**

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY  
HOPKINS, SOUTH CAROLINA

PROJECT NO. 60595649	PREPARED BY: RGM	DATE: August 2020	FIGURE 11
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### Legend

- Surficial Aquifer - Lower Zone Monitoring Well
- Ditch
- - - Culvert
- Dike Location
- Mill Creek Flow Direction
- Mill Creek
- Top of Bluff
- - - Inferred Top of Bluff
- Bottom of Bluff
- - - Inferred Bottom of Bluff
- Secondary Bluff Area
- PCE Isoconcentration Contour (µg/L)
- PCE Inferred Isoconcentration Contour (µg/L)
- - - PCE Isoconcentration Contour at a concentration less than the Maximum Contaminant Level (µg/L)
- 300 PCE Concentration in µg/L
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

Note:

Based upon data collected in April 2020



0 205 410  
Feet  
1:4,800

Map Projection: NAD 1983, South Carolina State Plane,  
FIPS 3900, Feet

Datum: North American 1983

**AECOM**

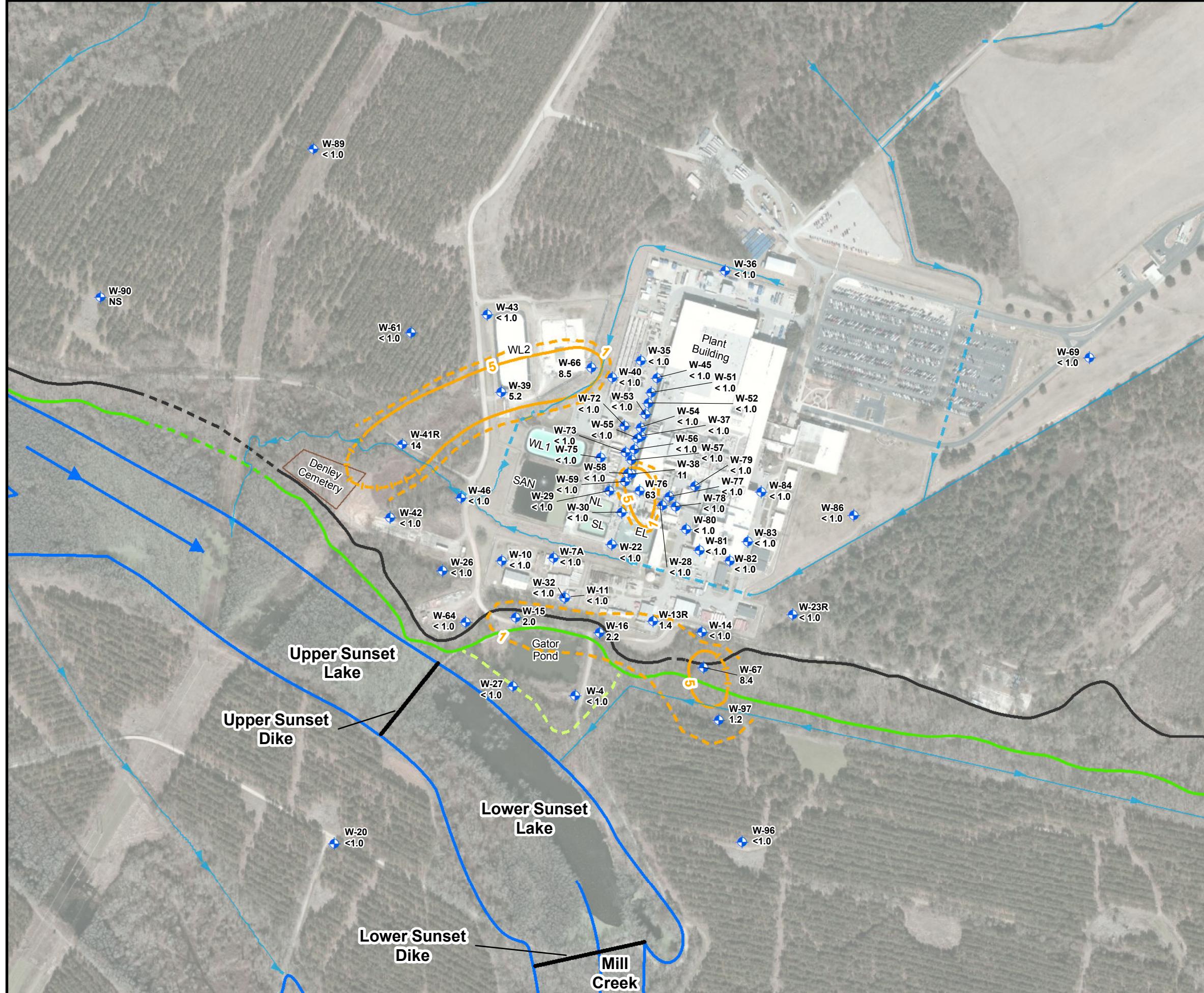
101 Research Drive  
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**Extent of PCE  
Surficial Aquifer - Lower Zone  
April 2020**

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY  
HOPKINS, SOUTH CAROLINA

PROJECT NO. 60595649	PREPARED BY: CCS	DATE: April 2020
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**FIGURE 12**



### Legend

- Surficial Aquifer - Upper Zone Monitoring Well
- Ditch
- - - Culvert
- Dike Location
- Mill Creek Flow Direction
- Mill Creek
- Top of Bluff
- - - Inferred Top of Bluff
- Bottom of Bluff
- - - Inferred Bottom of Bluff
- Secondary Bluff Area
- TCE Isoconcentration Contour (ug/L)
- TCE Inferred Isoconcentration Contour (ug/L)
- TCE Isoconcentration Contour at a Concentration Less Than the Maximum Contaminant Level (ug/L)

63 TCE Concentration in ug/L

EL East Lagoon

NL North Lagoon

SL South Lagoon

SAN Sanitary Lagoon

WL1 West Lagoon 1

WL2 West Lagoon 2

Note:

Based upon data collected in October 2019



0 205 410  
Feet  
1:4,800

Map Projection: NAD 1983, South Carolina State Plane,  
FIPS 3903, Feet

Datum: North American 1983

**AECOM**

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**Extent of TCE  
Surficial Aquifer - Upper Zone  
October 2019**

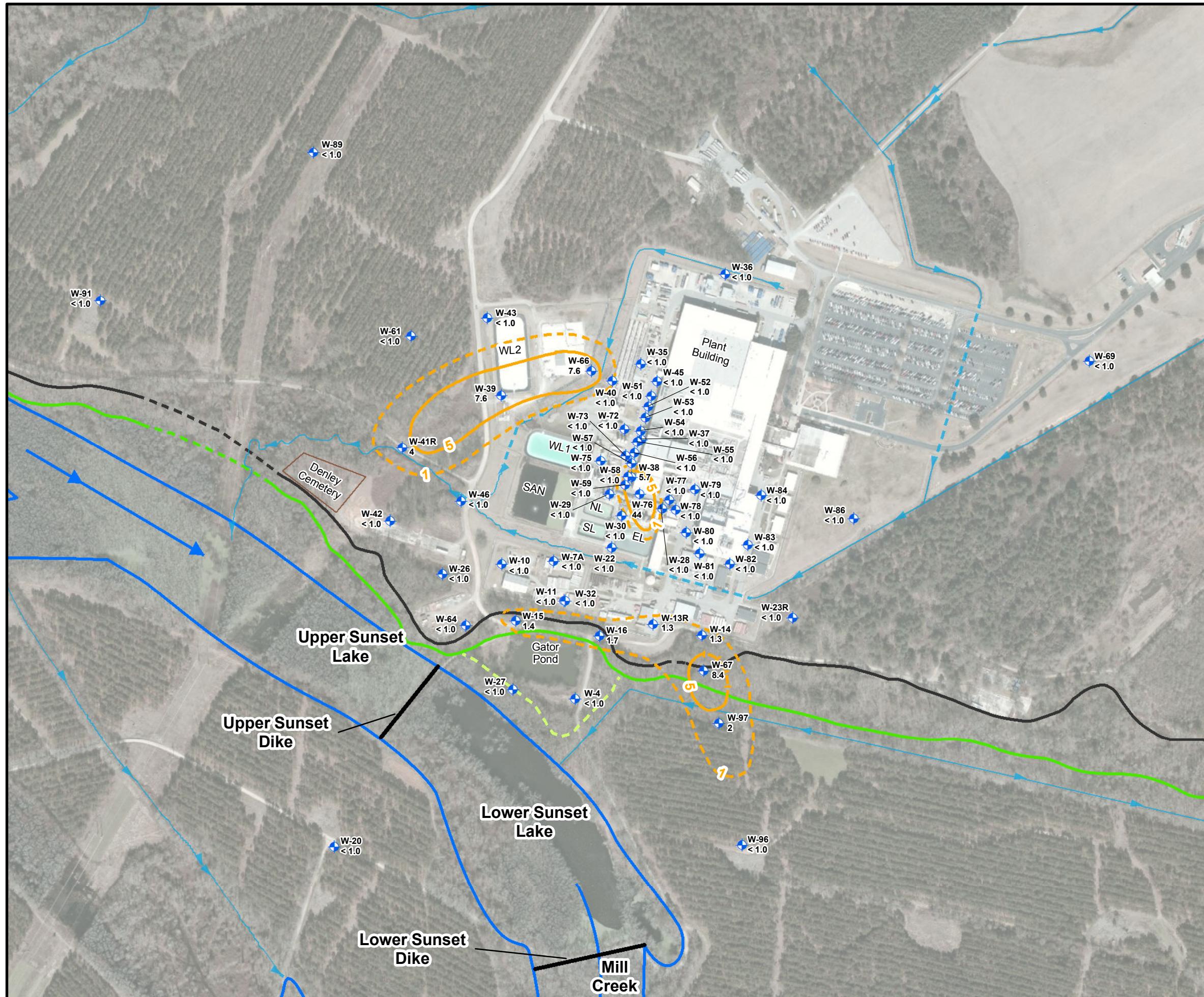
WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY  
HOPKINS, SOUTH CAROLINA

PROJECT NO.  
60595649

PREPARED BY:  
RGM

DATE:  
August 2020

**FIGURE 13**



### Legend

- Surficial Aquifer - Upper Zone Monitoring Well
- Ditch
- - - Culvert
- Dike Location
- Mill Creek Flow Direction
- Mill Creek
- Top of Bluff
- - - Inferred Top of Bluff
- Bottom of Bluff
- - - Inferred Bottom of Bluff
- Secondary Bluff Area
- TCE Isoconcentration Contour (ug/L)
- TCE Inferred Isoconcentration Contour (ug/L)
- TCE Isoconcentration Contour at a concentration less than the Maximum Contaminant Level (ug/L)
- 8.4 TCE Concentration in ug/L
- NS Not Sampled
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

Note:

Based upon data collected in April 2020



0 205 410  
Feet  
1:4,800

Map Projection: NAD 1983, South Carolina State Plane,  
FIPS 3900, Feet

Datum: North American 1983

**AECOM**

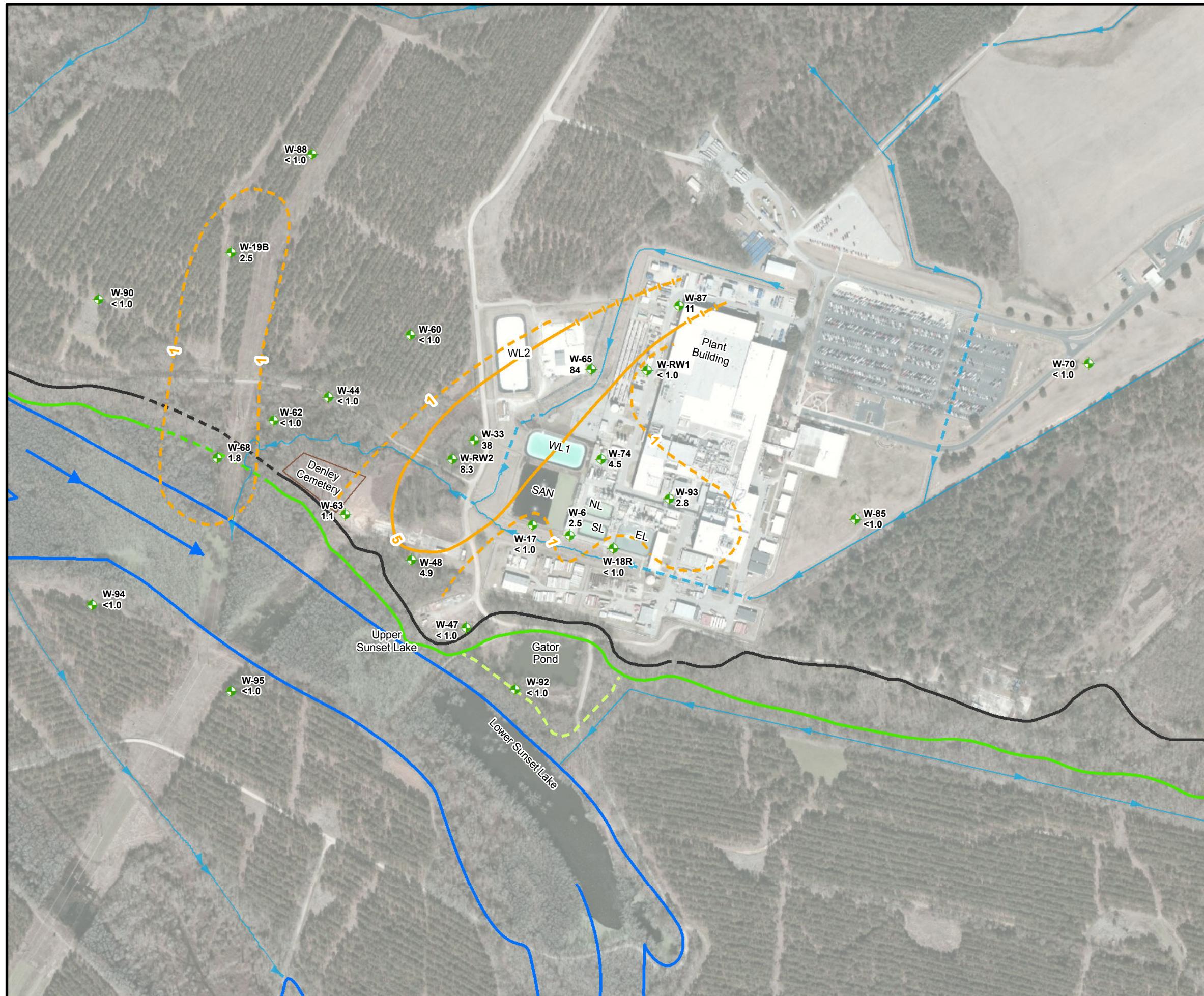
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**Extent of TCE  
Surficial Aquifer - Upper Zone  
April 2020**

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY  
HOPKINS, SOUTH CAROLINA

PROJECT NO. 60595649	PREPARED BY: LJG	DATE: August 2020
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**FIGURE 14**



### Legend

- Surficial Aquifer - Lower Zone Monitoring Well
- Ditch
- - - Culvert
- Mill Creek Flow Direction
- Mill Creek
- Top of Bluff
- - - Inferred Top of Bluff
- Bottom of Bluff
- - - Inferred Bottom of Bluff
- - - Secondary Bluff Area
- TCE Isoconcentration Contour (ug/L)
- TCE Inferred Isoconcentration Contour (ug/L)
- TCE Inferred Isoconcentration Contour at a Concentration Less Than the Maximum Contaminant Level (ug/L)

84 TCE Concentration in ug/L

EL East Lagoon

NL North Lagoon

SL South Lagoon

SAN Sanitary Lagoon

WL1 West Lagoon 1

WL2 West Lagoon 2

### Note:

Based upon data collected in October 2019



0 205 410

Feet

1:4,800

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

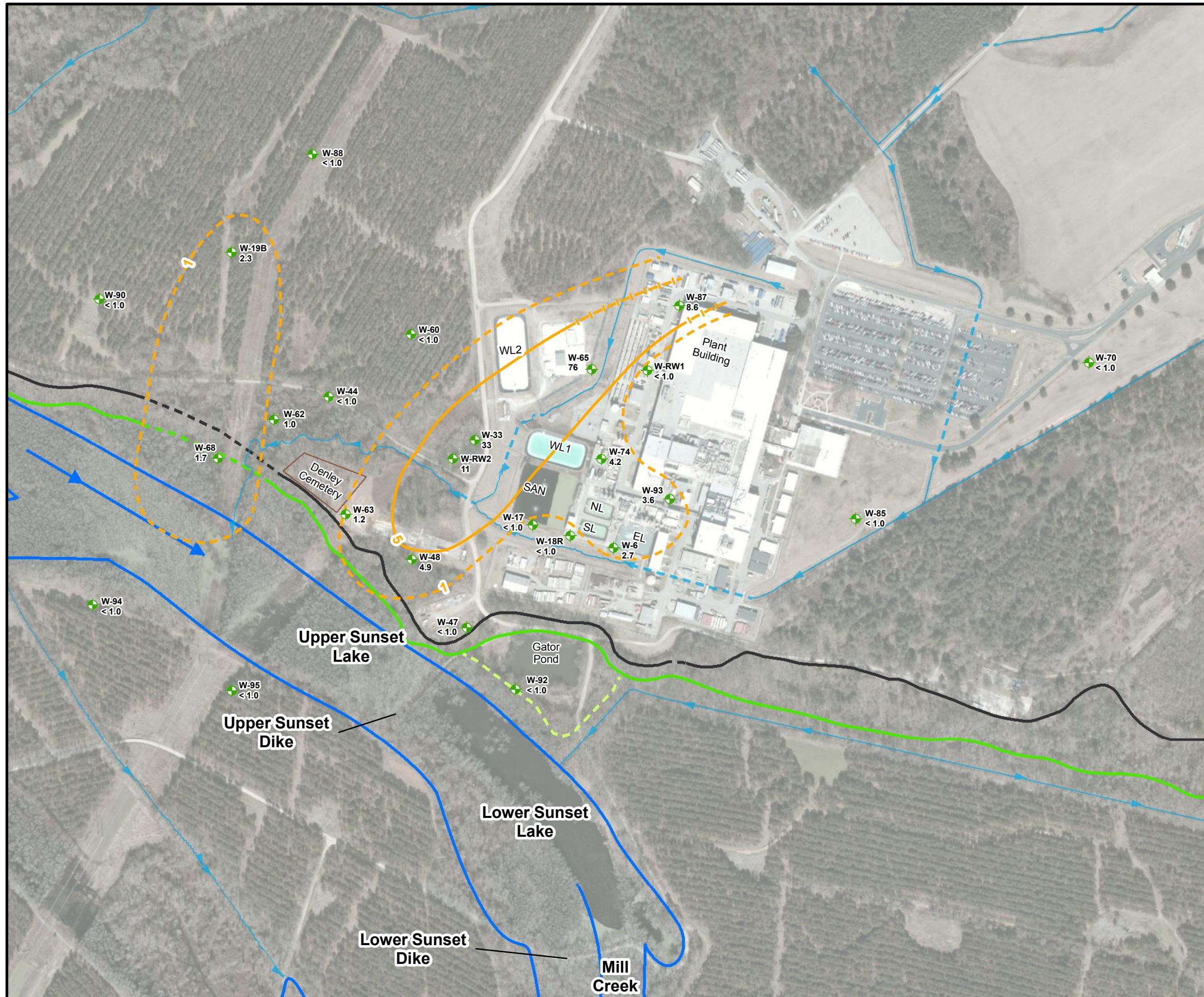
**AECOM**

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Columbia, SC 29203  
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**Extent of TCE**  
**Surficial Aquifer - Lower Zone**  
**October 2019**

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY  
HOPKINS, SOUTH CAROLINA

PROJECT NO. 60595649	PREPARED BY: RGM	DATE: August 2020	FIGURE 15
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### Legend

- Surficial Aquifer - Lower Zone Monitoring Well
- Ditch
- Culvert
- Mill Creek Flow Direction
- Mill Creek
- Top of Bluff
- Inferred Top of Bluff
- Bottom of Bluff
- Inferred Bottom of Bluff
- Secondary Bluff Area
  
- TCE Isoconcentration Contour (ug/L)
- TCE Inferred Isoconcentration Contour (ug/L)
- TCE Isoconcentration Contour at a concentration less than the Maximum Contaminant Level (ug/L)
  
- 76 TCE Concentration in ug/L
- NS Not Sampled
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

Note:

Based upon data collected in April 2020



0 205 410  
Feet  
1:4,800

Map Projection: NAD 1983, South Carolina State Plane,  
FIPS 3900, Feet

Datum: North American 1983

**AECOM**

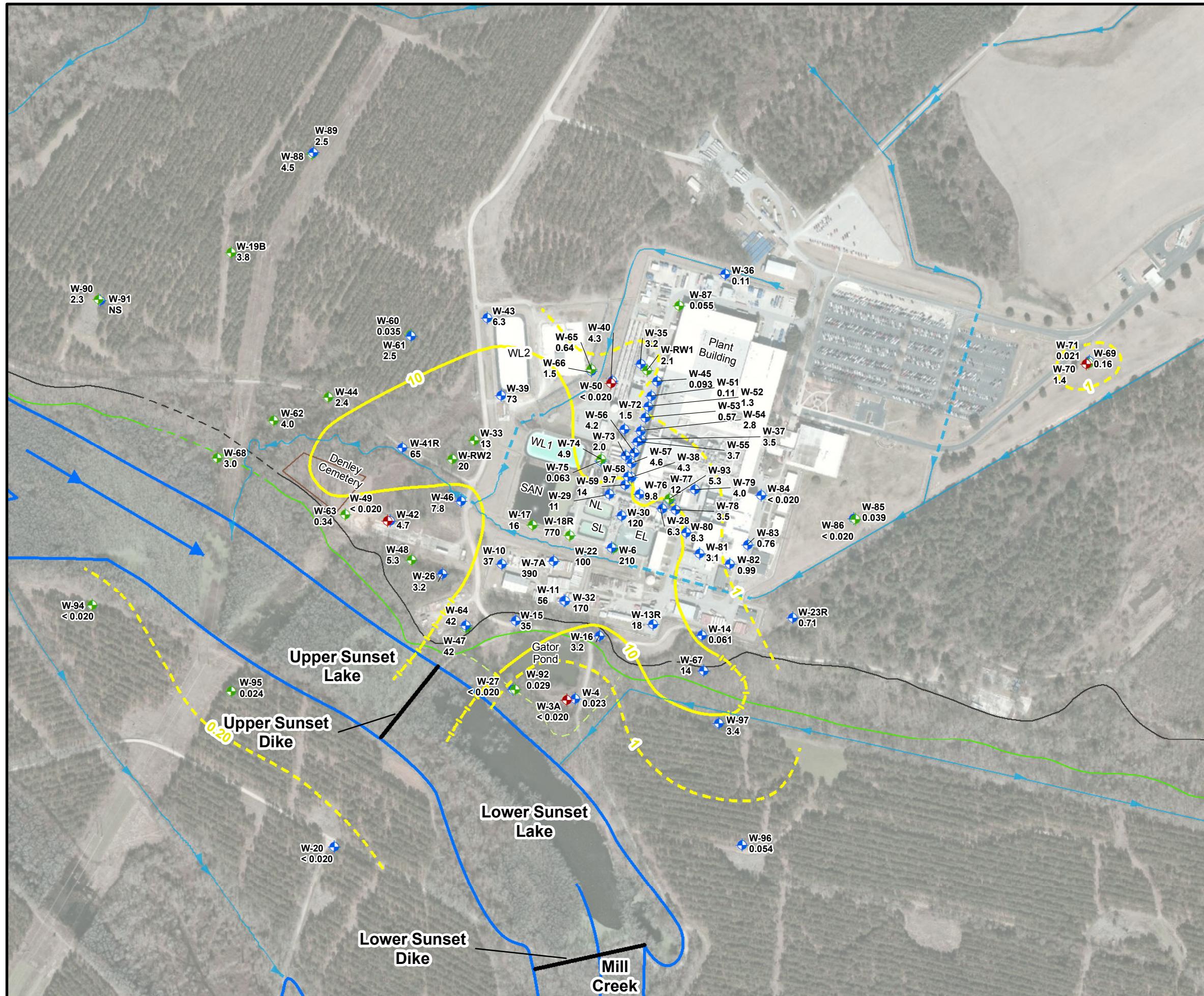
101 Research Drive  
Columbia, SC 29203  
T: (803) 254-4400 F: (803) 771-6676

**Extent of TCE**  
**Surficial Aquifer - Lower Zone**  
**April 2020**

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY  
HOPKINS, SOUTH CAROLINA

PROJECT NO.	PREPARED BY:	DATE:
60595649	LJG	August 2020

**FIGURE 16**



### Legend

- Surficial Aquifer - Upper Zone Monitoring Well
- Surficial Aquifer - Lower Zone Monitoring Well
- Black Mingo Aquifer Monitoring Well
- Ditch
- - - Culvert
- Dike Location
- Mill Creek Flow Direction
- Mill Creek
- Top of Bluff
- - - Inferred Top of Bluff
- Bottom of Bluff
- - - Inferred Bottom of Bluff
- Secondary Bluff Area
- Nitrate Isoconcentration Contour (mg/L)
- Nitrate Inferred Isoconcentration Contour (mg/L)
- Nitrate Isoconcentration Contour at a Concentration Less Than the Maximum Contaminant Level (mg/L)
- 770 Nitrate Concentration in mg/L
- NS Not Sampled
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

Note:

Based upon data collected in October 2019



0 205 410  
1:4,800  
Feet

Map Projection: NAD 1983, South Carolina State Plane,  
FIPS 3900, Feet  
Datum: North American 1983

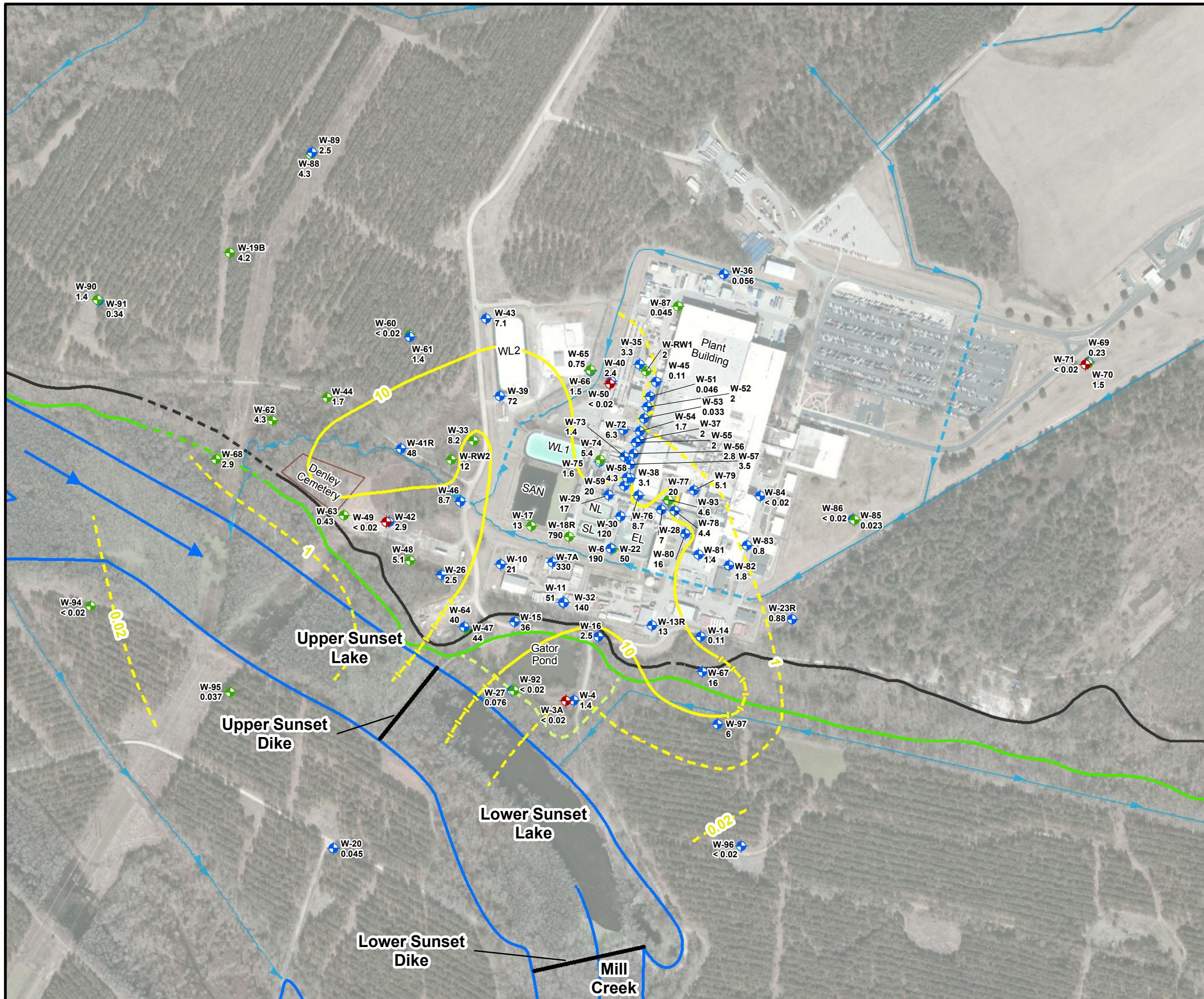
**AECOM**

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Columbia, SC 29203  
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### Extent of Nitrate in Groundwater October 2019

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY  
HOPKINS, SOUTH CAROLINA

PROJECT NO. 60595649	PREPARED BY: LJG	DATE: June 2020	FIGURE 17
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### Legend

- Surficial Aquifer - Upper Zone Monitoring Well
- Surficial Aquifer - Lower Zone Monitoring Well
- Black Mingo Aquifer Monitoring Well
- Ditch
- - - Culvert
- Dike Location
- Mill Creek Flow Direction
- Mill Creek
- Top of Bluff
- - - Inferred Top of Bluff
- Bottom of Bluff
- - - Inferred Bottom of Bluff
- Secondary Bluff Area
- Nitrate Isoconcentration Contour (mg/L)
- - - Nitrate Inferred Isoconcentration Contour (mg/L)
- - - Nitrate Isoconcentration Contour at a concentration less than the Maximum Contaminant Level (mg/L)
- 790 Nitrate Concentration in mg/L
- NS Not Sampled
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

Note:

Based upon data collected in April 2020



0 205 410  
Feet  
1:4,800

Map Projection: NAD 1983, South Carolina State Plane,  
FIPS 3900, Feet

Datum: North American 1983

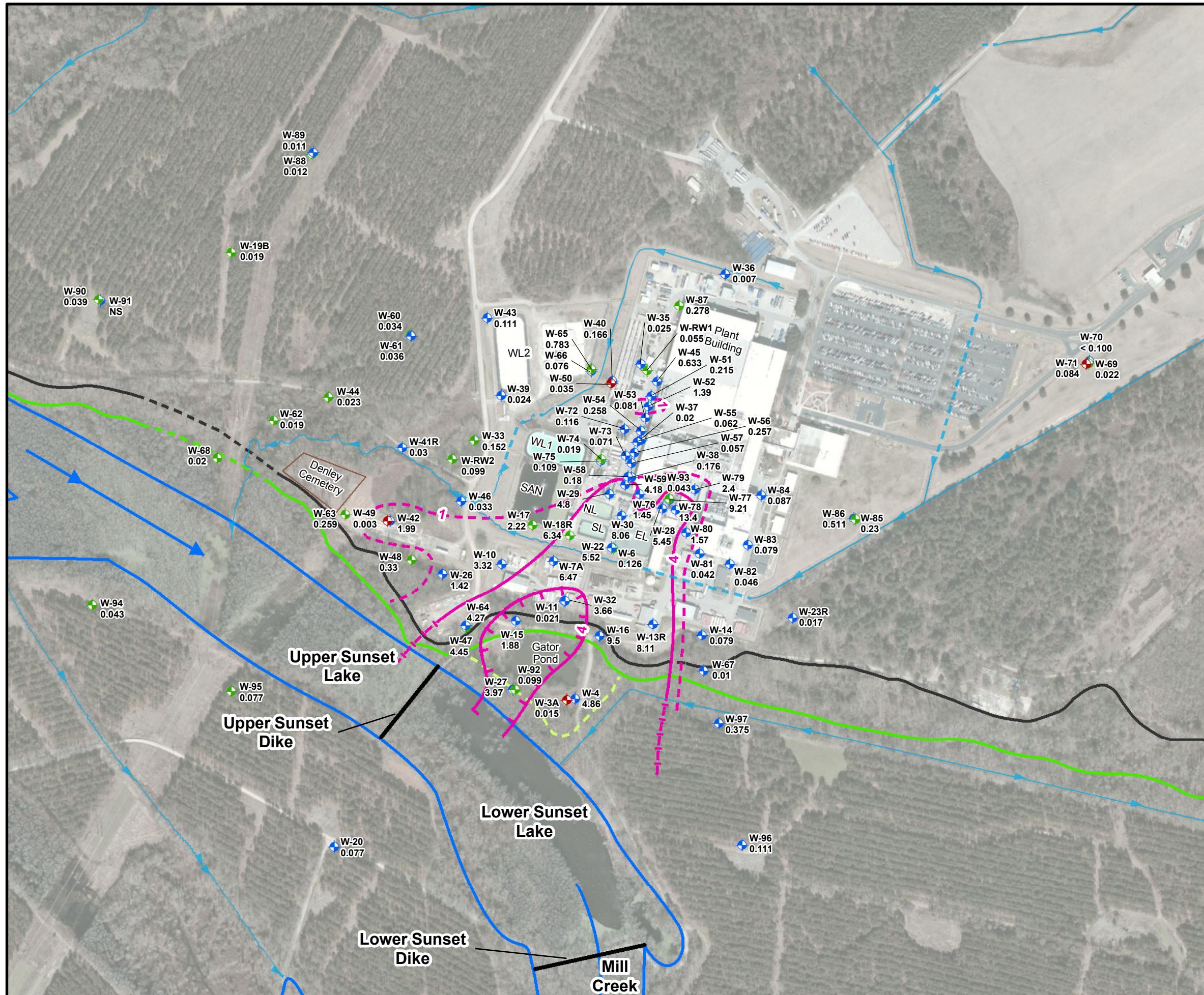
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### Extent of Nitrate in Groundwater April 2020

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY  
HOPKINS, SOUTH CAROLINA

PROJECT NO. 60595649	PREPARED BY: LJG	DATE: August 2020	FIGURE 18
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### Legend

- Surficial Aquifer - Upper Zone Monitoring Well
- Surficial Aquifer - Lower Zone Monitoring Well
- Black Mingo Aquifer Monitoring Well
- Ditch
- - - Culvert
- Dike Location
- Mill Creek Flow Direction
- Mill Creek
- Top of Bluff
- - - Inferred Top of Bluff
- Bottom of Bluff
- - - Inferred Bottom of Bluff
- - - Secondary Bluff Area
- Fluoride Isoconcentration Contour (mg/L)
- - - Fluoride Isoconcentration Contour at a Concentration Less Than the Maximum Contaminant Level (mg/L)
- - - Fluoride Inferred Isoconcentration Contour (mg/L)
- - - Fluoride Isoconcentration Depression (mg/L)

13.4 Fluoride Concentration in mg/L

NS Not Sampled

EL East Lagoon

NL North Lagoon

SL South Lagoon

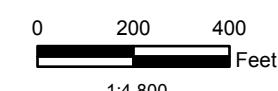
SAN Sanitary Lagoon

WL1 West Lagoon 1

WL2 West Lagoon 2

Note:

Based upon data collected in October 2019



Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

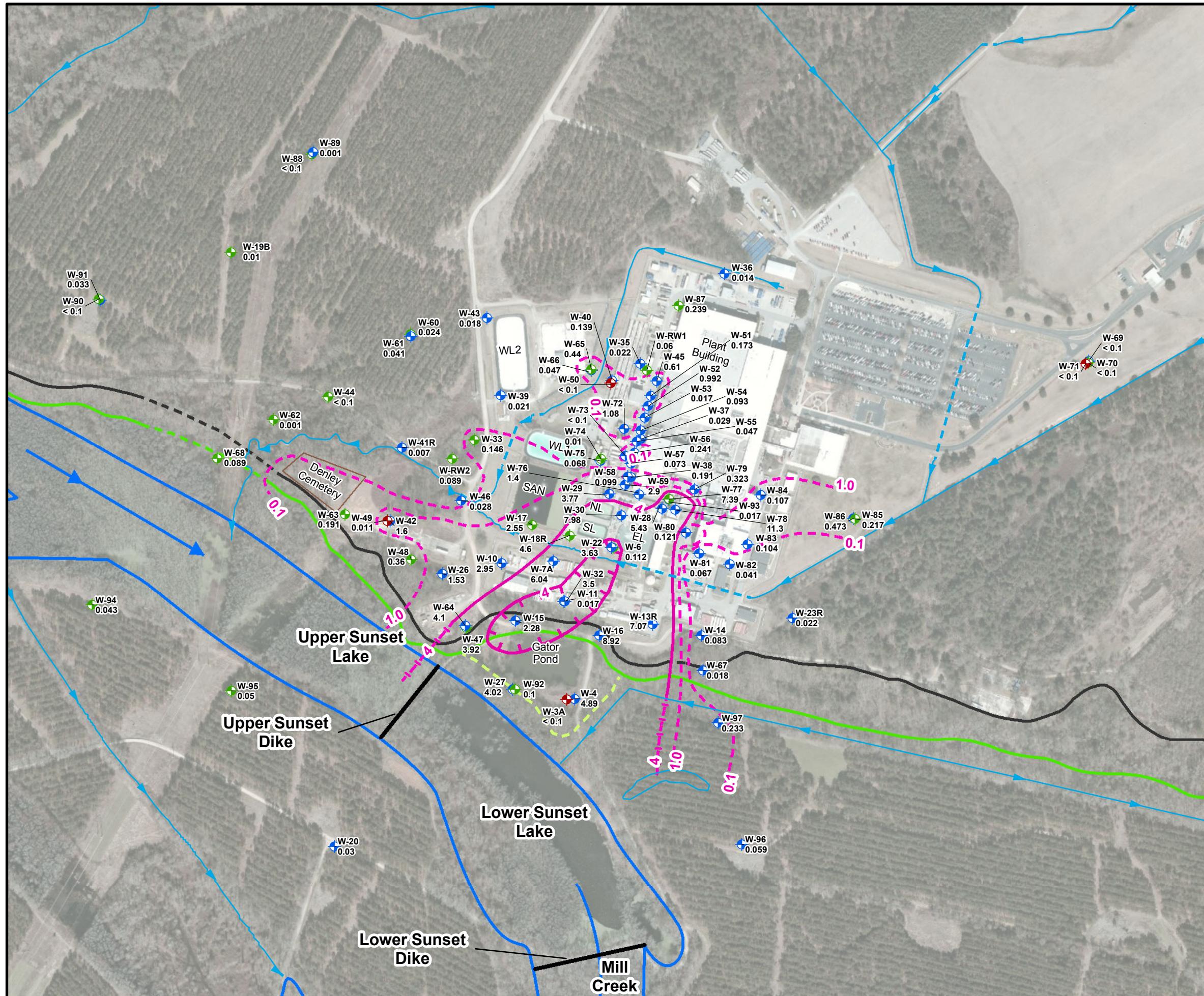
**AECOM**

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### Extent of Fluoride in Groundwater October 2019

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY  
HOPKINS, SOUTH CAROLINA

PROJECT NO. 60595649	PREPARED BY: LJG	DATE: August 2020	FIGURE 19
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### Legend

- Surficial Aquifer - Upper Zone Monitoring Well
- Surficial Aquifer - Lower Zone Monitoring Well
- Black Mingo Aquifer Monitoring Well
- Ditch
- - - Culvert
- Dike Location
- Mill Creek Flow Direction
- Mill Creek
- Top of Bluff
- - - Inferred Top of Bluff
- Bottom of Bluff
- - - Inferred Bottom of Bluff
- - - Secondary Bluff Area
- Fluoride Isoconcentration Contour (mg/L)
- - - Fluoride Inferred Isoconcentration Contour (mg/L)
- - - Fluoride Isoconcentration Contour at a concentration less than the Maximum Contaminant Level (mg/L)
- Fluoride Isoconcentration Depression (mg/L)
- 13.4 Fluoride Concentration in mg/L
- NS Not Sampled
- EL East Lagoon
- NL North Lagoon
- SL South Lagoon
- SAN Sanitary Lagoon
- WL1 West Lagoon 1
- WL2 West Lagoon 2

Note:

Based upon data collected in April 2020

0 200 400  
Feet  
1:4,800

Map Projection: NAD 1983, South Carolina State Plane,  
FIPS 3900, Feet

NAD: North American Datum 1983

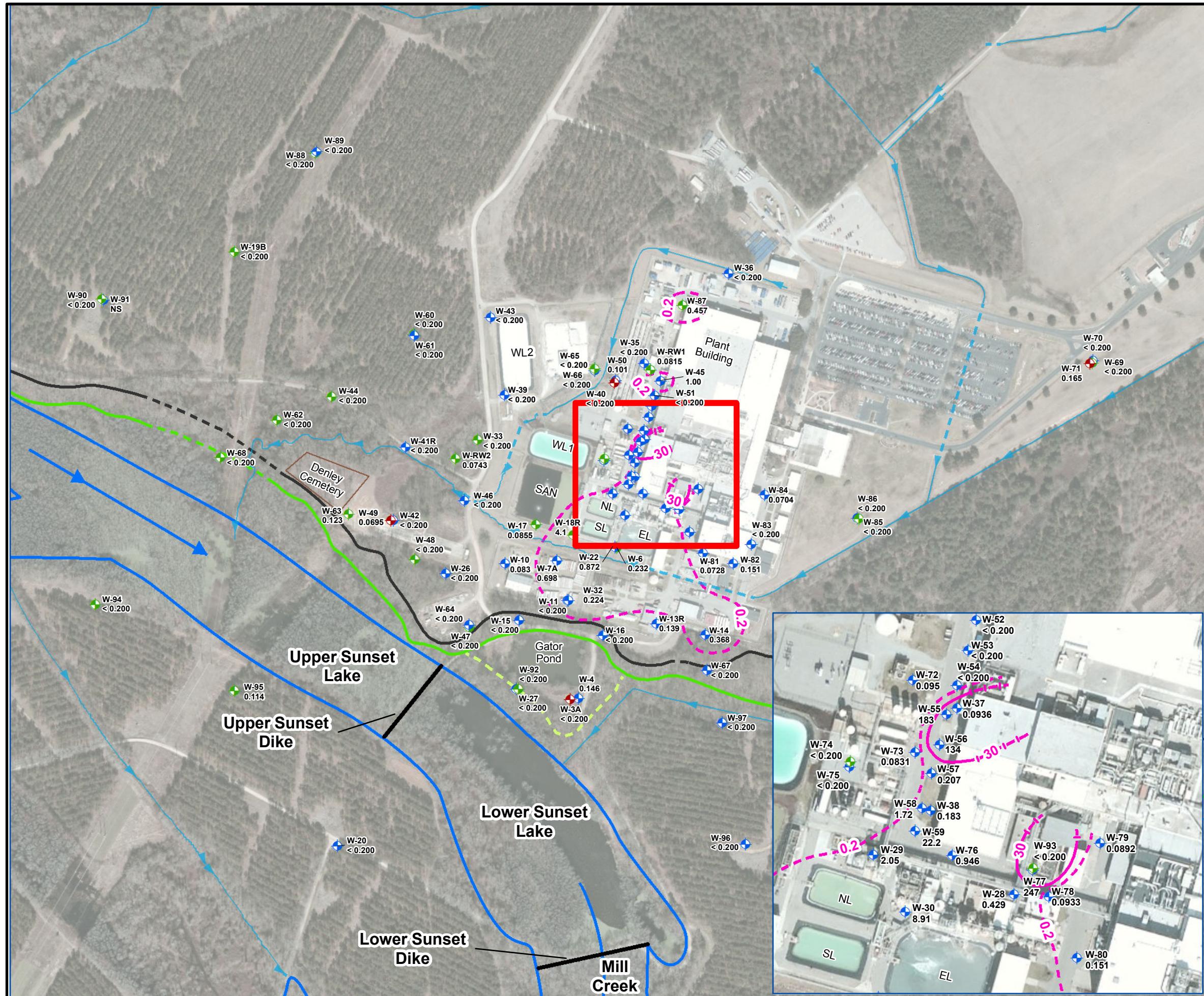
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### Extent of Fluoride in Groundwater April 2020

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY  
HOPKINS, SOUTH CAROLINA

PROJECT NO. 60595649	PREPARED BY: CCS	DATE: August 2020	FIGURE 20
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### Legend

- Surficial Aquifer - Upper Zone Monitoring Well
- Surficial Aquifer - Lower Zone Monitoring Well
- Black Mingo Aquifer Monitoring Well
- Ditch
- Culvert
- Dike Location
- Mill Creek Flow Direction
- Mill Creek
- Top of Bluff
- Inferred Top of Bluff
- Bottom of Bluff
- Inferred Bottom of Bluff
- Secondary Bluff Area
- Uranium Isoconcentration Contour ( $\mu\text{g/L}$ )
- Uranium Inferred Isoconcentration Contour ( $\mu\text{g/L}$ )
- Uranium Isoconcentration Contour at or Above the Minimum Detectable Concentration ( $\mu\text{g/L}$ )

247 Total Uranium in  $\mu\text{g/L}$

NS Not Sampled

EL East Lagoon

NL North Lagoon

SL South Lagoon

SAN Sanitary Lagoon

WL1 West Lagoon 1

WL2 West Lagoon 2



Note:

Based upon data collected in October 2019

0 200 400  
1:4,800  
Feet

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet  
Datum: North American 1983

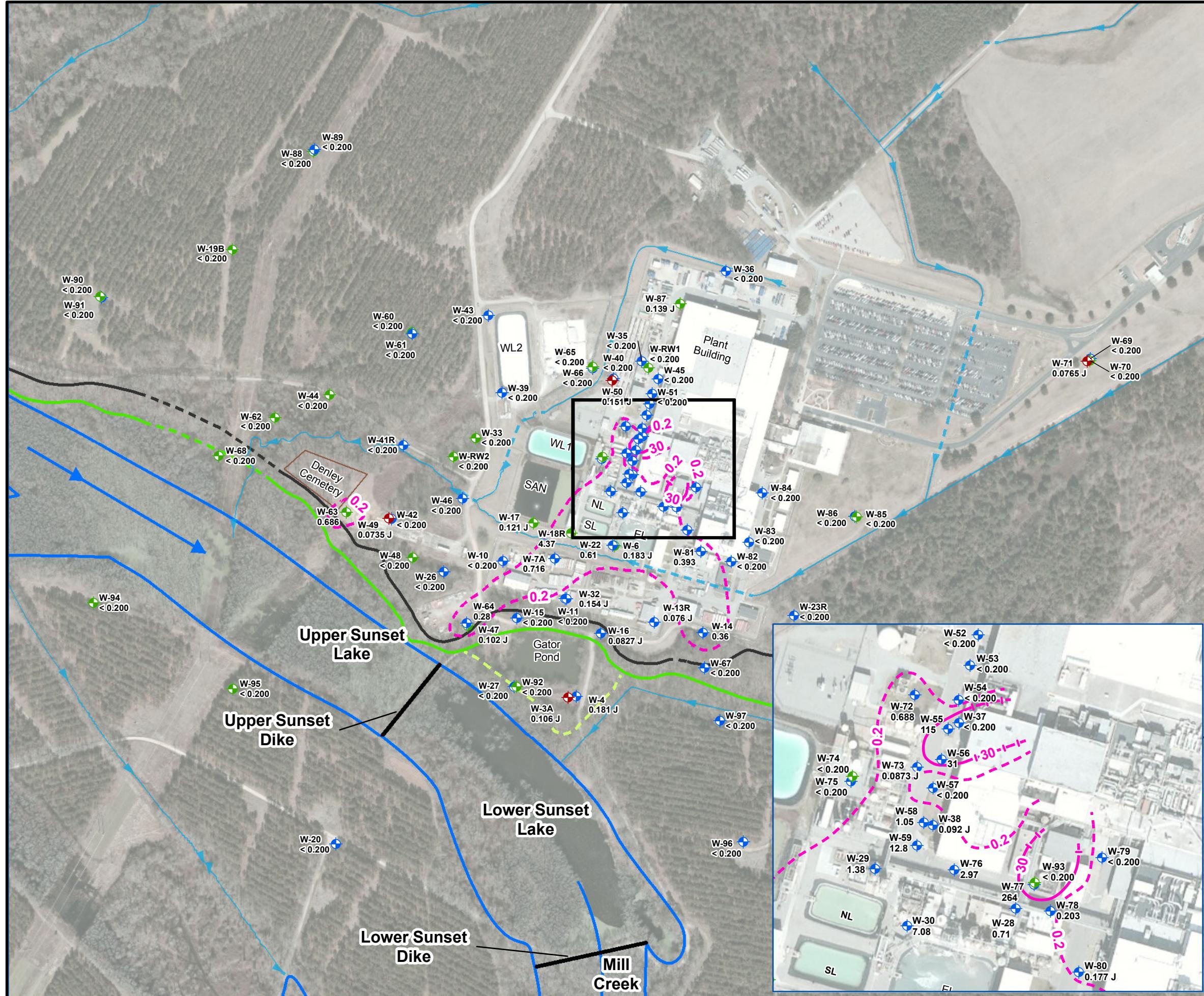
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### Extent of Uranium in Groundwater October 2019

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY  
HOPKINS, SOUTH CAROLINA

PROJECT NO. 60595649 PREPARED BY: L.J.G. DATE: June 2020 FIGURE 21



## Legend

- Surficial Aquifer - Upper Zone Monitoring Well
  - Surficial Aquifer - Lower Zone Monitoring Well
  - Black Mingo Aquifer Monitoring Well
  - Ditch
  - - - Culvert
  - Dike Location
  - Mill Creek Flow Direction
  - Mill Creek
  - Top of Bluff
  - - - Inferred Top of Bluff
  - Bottom of Bluff
  - - - Inferred Bottom of Bluff
  - - - Secondary Bluff Area
  - Uranium Isoconcentration Contour ( $\mu\text{g/L}$ )
  - - - Uranium Inferred Isoconcentration Contour ( $\mu\text{g/L}$ )
  - - - Uranium Isoconcentration Contour at or Above the Minimum Detectable Concentration ( $\mu\text{g/L}$ )

264 Total Uranium in  $\mu\text{g/L}$

NS Not Sampled

EL East Lagoon

NL North Lagoon

SL South Lagoon

SAN Sanitary Lagoon

WL1 West Lagoon 1

WL2 West Lagoon 2

Note

Based upon data collected in April 2020.



0      200      400  
Feet

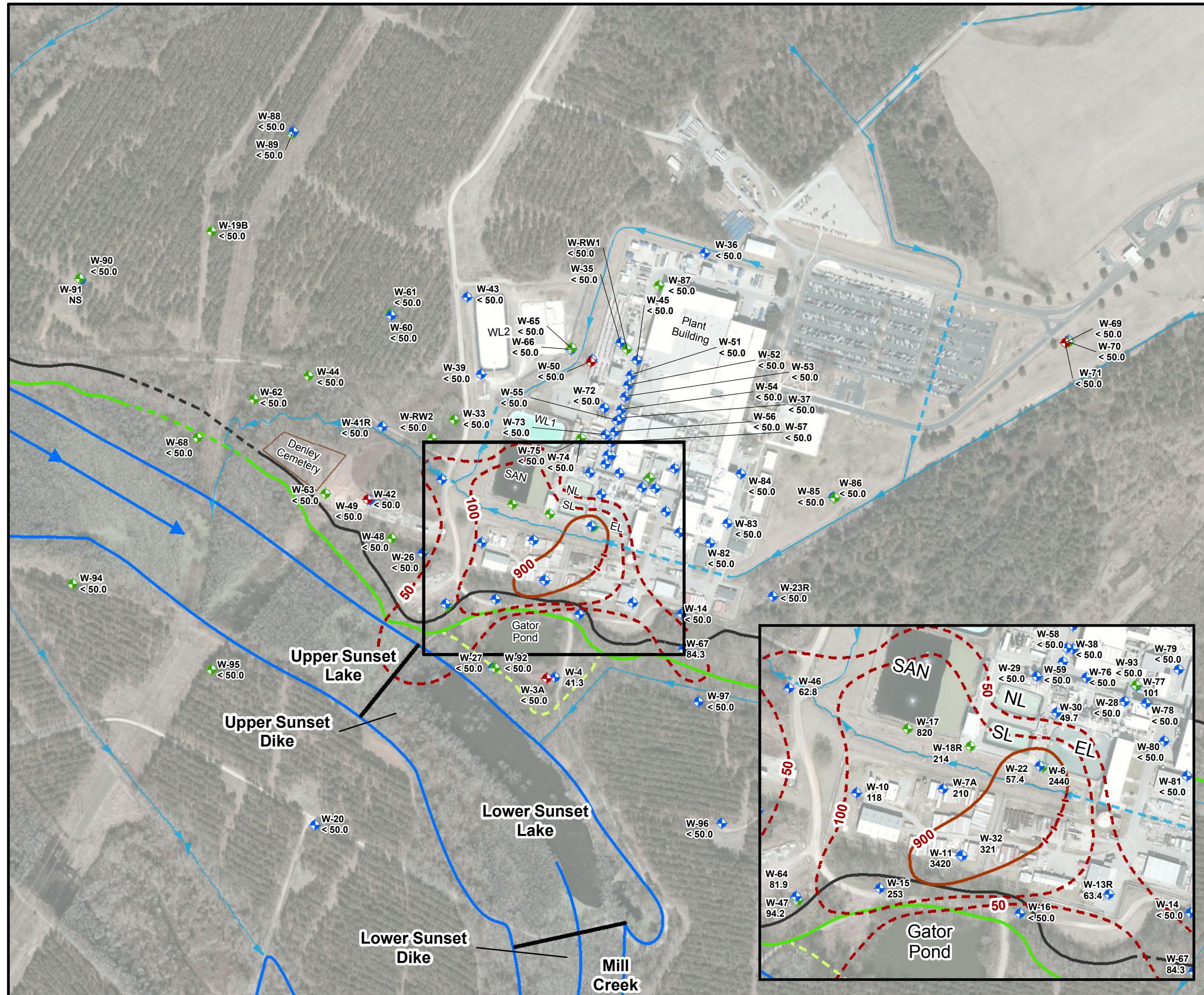
Datum: North American 1983

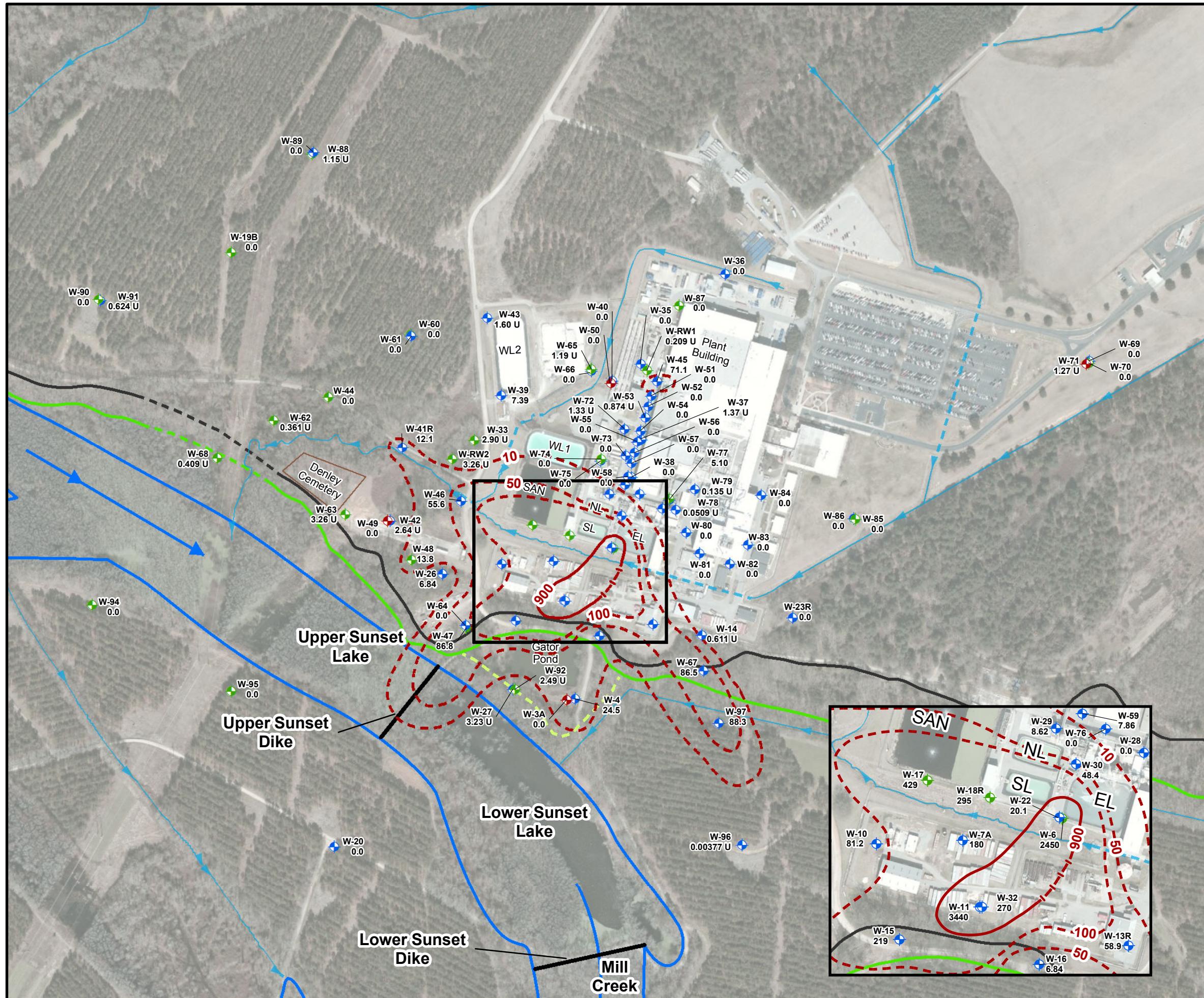
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## **Extent of Uranium in Groundwater in April 2020**

**WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY  
HOPKINS, SOUTH CAROLINA**

PROJECT NO. PREPARED BY: DATE:  
60595649 CCS August 2020 FIGURE 22





### Legend

- Surficial Aquifer - Upper Zone Monitoring Well
- Surficial Aquifer - Lower Zone Monitoring Well
- Black Mingo Aquifer Monitoring Well
- Ditch
- Culvert
- Dike Location
- Mill Creek Flow Direction
- Mill Creek
- Top of Bluff
- Inferred Top of Bluff
- Bottom of Bluff
- Inferred Bottom of Bluff
- Secondary Bluff Area
- Tc-99 Isoconcentration Contour (pCi/L)
- Tc-99 Inferred Isoconcentration Contour (pCi/L)
- Tc-99 Isoconcentration Contour at or Above the Minimum Detectable Concentration (pCi/L)

270 Techneum-99 Concentration in pCi/L

NS Not Sampled

EL East Lagoon

NL North Lagoon

SL South Lagoon

SAN Sanitary Lagoon

WL1 West Lagoon 1

WL2 West Lagoon 2



### Note:

Based upon data collected in April 2020

0 200 400 Feet

1:4,800

Map Projection: NAD 1983, South Carolina State Plane, FIPS 3900, Feet

Datum: North American 1983

**AECOM**

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### Extent of Techneum-99 in Groundwater April 2020

WESTINGHOUSE COLUMBIA FUEL FABRICATION FACILITY  
HOPKINS, SOUTH CAROLINA

PROJECT NO. 60595649	PREPARED BY: CCS	DATE: August 2020
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**FIGURE 24**

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## Appendix A – Groundwater Sample Collections Records

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## Appendix B – Laboratory Analytical Reports

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## Appendix C – Historical Groundwater Monitoring Data

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Table C-1

Summary of Historical Groundwater Analytical Results (2015-2020)

Westinghouse Columbia Fuel Fabrication Facility

Hopkins, South Carolina

AECOM Project No. 60595649

		Carbon Disulfide ug/L	Chloroform ug/L	cis-1,2-Dichloroethene ug/L	Ethylbenzene ug/L	Tetrachloroethene ug/L	Trichloroethene ug/L	Vinyl Chloride ug/L	1,1'-Biphenyl ug/L	2-Methylnaphthalene ug/L	Acenaphthene ug/L	Carbazole ug/L	Fluorene ug/L	Naphthalene ug/L	Phenanthrene ug/L	Fluoride mg/L	Ammonia NH3(N) mg/L	Nitrate NO3 mg/L	Gross Alpha pCi/L	Isotopic Uranium 233/234 pCi/L	Isotopic Uranium 235/236 pCi/L	Isotopic Uranium 238 (HASL300) pCi/L	Isotopic Uranium 234 ug/L	Isotopic Uranium 235 ug/L	Isotopic Uranium 238 ug/L	Total Uranium ug/L	Gross Beta pCi/L	Tc-99 pCi/L	Tritium pCi/L
MCL/Action Level		70	700	5	5	2									4	10	15 *							30	50 *	900	20,000		
Well	Date																												
W-RW1	04/16/19	< 1.0	< 1.0	< 1.0	< 1.0	1.3	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	0.04	0.0397	2.5	0.934 U	-0.0778 U	0.0695 U	-0.158 U	< 0.0500	< 0.0700	< 0.200	< 0.200	5.56	-0.108 U	NA
	10/03/19	< 1.0	< 1.0	< 1.0	< 1.0	1.4	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	0.055	0.0129	2.1	2.51 U	0.126 U	0.139 U	0.169 U	< 0.050	< 0.070	0.0815 J	0.0815 J	3.98	1.40 U	NA
	04/15/20	< 1.0	< 1.0	< 1.0	< 1.0	1.7	< 1.0	< 1.0	< 4.0	< 0.8	< 0.8	< 4.0	< 0.8	< 0.8	< 0.80	0.06	0.0196	2	1.01 U	0.195 U	0.0329 U	-0.00701 U	< 0.0500	< 0.0700	< 0.200	< 0.200	1.65 U	0.209 U	NA
W-RW2	01/12/15	< 1.0	< 1.0	< 1.0	110	6.3	< 2.0	< 5.1	< 5.1	< 5.1	< 5.1	< 5.1	< 5.1	< 5.1	< 5.1	< 0.50	< 1.00	30	1.15 U	NA	NA	NA	NA	NA	NA	NA	11.5	22.9 U	21.2 U
	04/09/15	< 1.0	< 1.0	< 1.0	< 1.0	140	12	< 1.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 0.50	< 1.00	19	-0.764 U	NA	NA	NA	NA	NA	NA	NA	6.31	-53.1 U	57.8 U
	07/10/15	< 1.0	< 1.0	< 1.0	< 1.0	120	8.9	< 1.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 0.50	< 1.00	21	-0.827 U	NA	NA	NA	NA	NA	NA	NA	6.58	-17.6 U	-110 U
	10/09/15	< 1.0	< 1.0	< 1.0	< 1.0	160	8.1	< 1.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 0.50	< 1.00	25	1.17 U	NA	NA	NA	NA	NA	NA	NA	10.8	84.8 U	-93.6 U
	01/20/16	< 1.0	< 1.0	< 1.0	< 1.0	81	7.3	< 1.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 0.50	< 1.00	19	-1.04 U	NA	NA	NA	NA	NA	NA	NA	6.31	NA	-74.1 U
	04/18/16	< 1.0	< 1.0	< 1.0	< 1.0	150	12	< 1.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 0.50	< 1.00	19	0.835 U	NA	NA	NA	NA	NA	NA	NA	6.49	NA	216 U
	07/05/16	< 1.0	< 1.0	< 1.0	< 1.0	160	9	< 2.0	< 5.4	< 5.4	< 5.4	< 5.4	< 5.4	< 5.4	< 5.4	< 0.50	< 1.00	23	2.35 U	NA	NA	NA	NA	NA	NA	NA	8.32	NA	104 U
	10/06/16	< 1.0	< 1.0	< 1.0	< 1.0	140	8.2	< 2.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	< 0.50	< 1.00	24	2.68	NA	NA	NA	NA	NA	NA	NA	7.07	NA	-118 U
	01/10/17	< 1.0	< 1.0	< 1.0	< 1.0	170	11	< 2.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	< 0.50	< 1.00	20	2.79 U	NA	NA	NA	NA	NA	NA	NA	6.56	NA	-94.2 U
	04/03/17	< 1.0	< 1.0	< 1.0	< 1.0	150	10	< 2.0	< 8.0	< 1.6	< 1.6	< 8.0	< 1.6	< 1.6	< 1.6	< 0.50	< 1.00	19	4.09 U	NA	NA	NA	NA	NA	NA	NA	7.10	NA	124 U
	07/06/17	< 1.0	< 1.0	< 1.0	< 1.0	140	11	< 2.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	< 0.50	< 1.00	19	3.13	NA	NA	NA	NA	NA	NA	NA	10.4	NA	212 U
	10/12/17	< 1.0	< 1.0	< 1.0	< 1.0	120	7.9	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	< 0.50	< 1.00	20	4.36 U	NA	NA	NA	NA	NA	NA	NA	10.8	NA	179 U
	01/09/18	< 1.0	< 1.0	< 1.0	< 1.0	160	9.8	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	< 0.50	< 1.00	20	2.21 U	NA	NA	NA	NA	NA	NA	NA	8.87	NA	40.7 U
	04/10/18	< 1.0	< 1.0	< 1.0	< 1.0	170	9.7	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	< 0.50	< 1.00	20	5.65	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	07/10/18	< 1.0	< 1.0	< 1.0	< 1.0	170	5.6	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	< 0.50	< 1.00	14	7.92	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10/16/18	< 1.0	< 1.0	< 1.0	< 1.0	190	7	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	< 0.50	< 1.00	14	3.35 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	01/22/19	< 1.0	< 1.0	< 1.0	< 1.0	150	12	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	< 0.50	< 1.00	14	3.77 U	0.323	0.366	0.495	< 0.01	< 0.01	0.079 J	0.079 J	9.11	< 40	< 40
	10																												

Table C-1

Summary of Historical Groundwater Analytical Results (2015-2020)

Westinghouse Columbia Fuel Fabrication Facility

Hopkins, South Carolina

AECOM Project No. 60595649

		VOCs							SVOCs							Inorganics			Radionuclides											
		Carbon Disulfide ug/L	Chloroform ug/L	cis-1,2-Dichloroethene ug/L	Ethylbenzene ug/L	Tetrachloroethene ug/L	Trichloroethene ug/L	Vinyl Chloride ug/L	1,1'-Biphenyl ug/L	2-Methylnaphthalene ug/L	Acenaphthene ug/L	Carbazole ug/L	Fluorene ug/L	Naphthalene ug/L	Phenanthrene ug/L	Fluoride mg/L	Ammonia NH3(N) mg/L	Nitrate NO3 mg/L	Gross Alpha pCi/L	Isotopic Uranium 233/234 pCi/L	Isotopic Uranium 235/236 pCi/L	Isotopic Uranium 238 (HASL300) pCi/L	Isotopic Uranium 234 ug/L	Isotopic Uranium 235 ug/L	Total Uranium ug/L	Gross Beta pCi/L	Tc-99 pCi/L	Tritium pCi/L		
MCL/Action Level		70	700	5	5	2									4	10	15 *						30	50 *	900	20,000				
Well	Date																													
W-6	11/05/18	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 2.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	0.058	6.16	14	8.41	1.00	0.0392 U	0.311 U	< 0.0500	0.011 J	0.409	0.42	765	861	NA	
	01/15/19	< 1.0	< 1.0	1.9	< 1.0	10	1.8	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	0.136	60.5	150	34.6	0.397	0.153 U	0.327	< 0.0500	< 0.0700	0.2	0.2	1620	2370	NA	
	10/07/19	< 1.0	< 1.0	2.8	< 1.0	16	2.5	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	0.126	134	210	9.09	0.372	0.0443 U	0.153 U	< 0.050	< 0.070	0.232	0.232	1370	2440	NA	
	04/07/20	< 1.0	< 1.0	2.7	< 1.0	19	2.7	< 1.0	< 4.0	< 0.8	< 0.8	< 4.0	< 0.8	< 0.8	< 0.80	0.112	58	190	37.6	0.0213 U	0 U	0.0977 U	< 0.0500	< 0.0700	0.183 J	0.183 J	1260	2450	NA	
W-7A	07/08/16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.30	58.50	350	0.285 U	NA	NA	NA	NA	NA	NA	NA	149	378	-121 U	
	10/11/16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.40	59.4	310	2.24 U	NA	NA	NA	NA	NA	NA	NA	123	254	-28.9 U	
	01/17/17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.06	56.8	360	15.4	0.289 U	0.246 U	-0.0394 U	NA	NA	NA	NA	125	NA	219 U	
	04/06/17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.55	55.9	230	4.22 U	NA	NA	NA	NA	NA	NA	NA	262	NA	42.4 U	
	07/10/17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.80	55.7	290	19.8	1.78	0.257 U	0.828	NA	NA	NA	NA	NA	150	185	-109 U
	10/12/17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.65	61.3	360	9.10	NA	NA	NA	NA	NA	NA	NA	131	209	-240 U	
	01/08/18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.15	65.7	300	9.24	NA	NA	NA	NA	NA	NA	NA	141	211	210 U	
	04/16/18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.25	60.7	310	7.71	NA	NA	NA	NA	NA	NA	NA	124	212	-29.7 U	
	07/01/18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.27	61	300	7.88	NA	NA	NA	NA	NA	NA	NA	110	139	NA	
	10/19/18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.86	65	370	3.38 U	NA	NA	NA	< 0.0500	< 0.0700	0.691	0.691	110	175	-24.3 U	
	01/14/19	< 1.0	< 1.0	< 1.0	< 1.0	1.7	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	6.6	62.5	350	6.28 U	0.559	0.207 U	0.558	< 0.0500	< 0.0700	0.719	0.719	123	160	99.7 U	
	06/04/19	< 1.0	< 1.0	< 1.0	< 1.0	2.1	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	6.49	65.5	350	14.5	0.378	0.0157 U	0.0818 U	< 0.0500	< 0.0700	0.812	0.812	142	176	205 U	
	10/09/19	< 1.0	< 1.0	< 1.0	< 1.0	1.9	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	6.47	48.5	390	6.35	0.409	0.0909 U	0.259	< 0.050	< 0.070	0.698	0.698	114	210	-16.9 U	
	04/10/20	< 1.0	< 1.0	< 1.0	< 1.0	1.6	< 1.0	< 1.0	< 4.0	< 0.8	< 0.8	< 4.0	< 0.8	< 0.8	< 0.80	6.04	44.6	330	1.99 U	0.240	-0.0195 U	0.219	< 0.0500	< 0.0700	0.716	0.716	54.0	180	115 U	
W-10	01/19/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.65	2.40	75	3.75	NA	NA	NA	NA	NA	NA	NA	88.3	149 U	50.6 U	
	04/13/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.70	4.40	66	1.66 U	NA	NA	NA	NA	NA	NA	NA	88.8	-59.8 U	115 U	
	07/13/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.96	8.59	85	7.68	NA	NA	NA	NA	NA	NA	NA	150	172 U	-269 U	
	10/12/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.70	4.60	52	3.57 U	NA	NA	NA	NA	NA	NA	NA	52.0	94.5 U	16.0 U	
	01/14/16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.98	7.90	64	0.0550 U	NA	NA	NA	NA	NA	NA	NA	94.1	36.9 U	-130 U	
	04/19/16																													

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Westinghouse Columbia Fuel Fabrication Facility

Hopkins, South Carolina

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		VOCs							SVOCs							Inorganics			Radionuclides										
		Carbon Disulfide ug/L	Chloroform ug/L	cis-1,2-Dichloroethene ug/L	Ethylbenzene ug/L	Tetrachloroethene ug/L	Trichloroethene ug/L	Vinyl Chloride ug/L	1,1'-Biphenyl ug/L	2-Methylnaphthalene ug/L	Acenaphthene ug/L	Carbazole ug/L	Fluorene ug/L	Naphthalene ug/L	Phenanthrene ug/L	Fluoride mg/L	Ammonia NH3(N) mg/L	Nitrate NO3 mg/L	Gross Alpha pCi/L	Isotopic Uranium 233/234 pCi/L	Isotopic Uranium 235/236 pCi/L	Isotopic Uranium 238 (HASL300) pCi/L	Isotopic Uranium 234 ug/L	Isotopic Uranium 235 ug/L	Total Uranium ug/L	Gross Beta pCi/L	Tc-99 pCi/L	Tritium pCi/L	
MCL/Action Level		70	700	5	5	2									4	10	15 *						30	50 *	900	20,000			
Well	Date																												
W-17	01/20/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.02	5.89	13	1.87	NA	NA	NA	NA	NA	NA	NA	470	734	50.2 U	
	04/14/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.749 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	511	789	31.0 U	
	04/17/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.66	3.72	17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	07/15/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.98	6.14	12	1.38 U	NA	NA	NA	NA	NA	NA	NA	477	663	-44.3 U	
	10/13/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.93	6.81	13	0.447 U	NA	NA	NA	NA	NA	NA	NA	462	848	-77.4 U	
	01/21/16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.78	5.62	15	10.2	NA	NA	NA	NA	NA	NA	NA	592	780	-145 U	
	04/21/16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.52	4.39	NA	0.514 U	NA	NA	NA	NA	NA	NA	NA	396	1410	-73.7 U	
	07/12/16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.62	5.01	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	10/13/16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.47	4.55	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	01/13/17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.60	5.13	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	04/07/17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	14.70	4.35	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	07/11/17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.52	4.79	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	10/02/17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.56	4.79	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	01/15/18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.44	4.54	18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	04/20/18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.55	5.35	16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	07/12/18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.7	5.01	14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	10/25/18	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	4.02	12.9	4.5	-1.66 U	NA	NA	NA	< 0.0500	< 0.0700	0.157 J	0.157 J	254	348	NA	
	01/25/19	< 1.0	< 1.0	< 1.0	< 1.0	1.7	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	2.44	5.58	12	0.705 U	0.121 U	0.146 U	0.107 U	< 0.0500	< 0.0700	0.0939 J	0.0939 J	308	476	NA	
	10/21/19	< 1.0	< 1.0	< 1.0	< 1.0	4.3	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	2.22	5.79	16	2.86 U	0.209 U	0.0726 U	0.0507 U	< 0.050	< 0.070	0.0855 J	0.0855 J	538	820	NA	
	04/20/20	< 1.0	< 1.0	< 1.0	< 1.0	2	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	2.55	8.97	13	15.5	0.249 U	0 U	-0.0261 U	< 0.0500	< 0.0700	0.121 J	0.121 J	210	429	NA	
W-18R	07/08/16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.40	122.00	890.00	2.62 U	NA	NA	NA	NA	NA	NA	NA	228	551	212 U	
	10/21/16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.55 U	2.76	0.301	2.34	NA	NA	NA	NA	NA	157	314	-15.7 U			
	10/24/16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.53	135	1100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	01/16/17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.30	117	940	21.4	3.45	0.139 U	2.57	NA	NA	NA	207	NA	27.3 U		
	04/06/17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.60	113	720	1.50 U	5.17	0.328 U	2.46	NA	NA	NA	153	NA	-125 U		
	07/10/17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.70	132	980	21.2	3.78	0.438 U	3.09	NA	NA	NA	191	355	-206 U		
	01/08/18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.2	127	900	18.9	4.20	0.446	2.24								

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		Carbon Disulfide ug/L	Chloroform ug/L	cis-1,2-Dichloroethene ug/L	Ethylbenzene ug/L	Tetrachloroethene ug/L	Trichloroethene ug/L	Vinyl Chloride ug/L	1,1'-Biphenyl ug/L	2-Methylnaphthalene ug/L	Acenaphthene ug/L	Carbazole ug/L	Fluorene ug/L	Naphthalene ug/L	Phenanthrene ug/L	Fluoride mg/L	Ammonia NH3(N) mg/L	Nitrate NO3 mg/L	Gross Alpha pCi/L	Isotopic Uranium 233/234 pCi/L	Isotopic Uranium 235/236 pCi/L	Isotopic Uranium 238 (HASL300) pCi/L	Isotopic Uranium 234 ug/L	Isotopic Uranium 235 ug/L	Total Uranium ug/L	Gross Beta pCi/L	Tc-99 pCi/L	Tritium pCi/L	
MCL/Action Level		70	700	5	5	2									4	10	15 *						30	50 *	900	20,000			
Well	Date																												
W-26	01/12/15	< 1.0	< 1.0	1.1	< 1.0	< 1.0	< 1.0	< 2.0	< 5.2	< 5.2	< 5.2	< 5.2	< 5.2	< 5.2	1.83	< 1.00	2.9	-0.189 U	NA	NA	NA	NA	NA	NA	11.6	-39.8 U	4.07 U		
	04/09/15	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	1.60	< 1.00	2.9	0.569 U	NA	NA	NA	NA	NA	NA	-0.492 U	38.7 U	18.6 U		
	07/10/15	< 1.0	< 1.0	1	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	1.82	< 1.00	2.7	1.12 U	NA	NA	NA	NA	NA	NA	12.5	-14.9 U	-108 U		
	10/09/15	< 1.0	< 1.0	1.8	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	1.76	< 1.00	2.7	1.03 U	NA	NA	NA	NA	NA	NA	7.90	83.8 U	-115 U		
	01/20/16	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	1.52	< 1.00	3	-1.44 U	NA	NA	NA	NA	NA	NA	12.5	NA	-29.4 U		
	04/18/16	< 1.0	< 1.0	1.6	< 1.0	< 1.0	< 1.0	< 1.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	1.44	< 1.00	2.8	-0.0962 U	NA	NA	NA	NA	NA	NA	8.00	NA	-16.2 U		
	07/05/16	< 1.0	< 1.0	2.8	< 1.0	< 1.0	< 1.0	< 2.0	< 5.3	< 5.3	< 5.3	< 5.3	< 5.3	< 5.3	1.58	< 1.00	2.7	0.234 U	NA	NA	NA	NA	NA	NA	7.29	NA	-52.5 U		
	10/06/16	< 1.0	< 1.0	2.5	< 1.0	< 1.0	< 1.0	< 2.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	1.60	< 1.00	3.3	-1.63 U	NA	NA	NA	NA	NA	NA	5.66	NA	-161 U		
	01/10/17	< 1.0	< 1.0	3.5	< 1.0	< 1.0	< 1.0	< 2.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	1.53	< 1.00	3.3	2.70 U	NA	NA	NA	NA	NA	NA	9.84	NA	15.0 U		
	04/03/17	< 1.0	< 1.0	1.7	< 1.0	< 1.0	< 1.0	< 2.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	1.41	< 1.00	3.1	1.07 U	NA	NA	NA	NA	NA	NA	8.46	NA	-98.1 U		
	07/06/17	< 1.0	< 1.0	1.7	< 1.0	< 1.0	< 1.0	< 2.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	1.57	< 1.00	3.4	1.92 U	NA	NA	NA	NA	NA	NA	11.7	NA	-193 U		
	10/13/17	< 1.0	< 1.0	4.1	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	1.57	< 1.00	3	9.17	NA	NA	NA	NA	NA	NA	16.4	NA	-353 U		
	01/09/18	< 1.0	< 1.0	2.8	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	1.61	< 1.00	2.9	4.13	NA	NA	NA	NA	NA	NA	15.6	NA	64.4 U		
	04/10/18	< 1.0	< 1.0	1.8	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	1.71	< 1.00	3.6	4.12 U	NA	NA	NA	NA	NA	NA	12.7	NA	-11.4 U		
	07/10/18	< 1.0	< 1.0	1.6	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	1.64	0.964	3.6	1.19 U	NA	NA	NA	NA	NA	NA	6.87	NA	12.7 U		
	10/16/18	< 1.0	< 1.0	1.1	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	1.63	1.24	3.5	1.81 U	NA	NA	NA	NA	< 0.0500	< 0.0700	0.0947 J	0.0947 J	12.5	NA	-30.6 U
	01/24/19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	1.59	1.53	3.3	0.261 U	0.123 U	0.0886 U	0.0636 U	< 0.0500	< 0.0700	< 0.200	< 0.200	13.4	19.0 U	116 U	
	10/14/19	< 1.0	< 1.0	3.7	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	1.42	1.75	3.2	0.697 U	0.0497 U	0.0344 U	0.0381 U	< 0.050	< 0.070	< 0.200	< 0.200	12.5	-19.6 U	38.6 U	
	04/16/20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	1.53	1.54	2.5	0.249 U	0.0815 U	-0.0104 U	0.0450 U	< 0.0500	< 0.0700	< 0.200	< 0.200	9.39	6.84	-29.4 U	
W-27	01/21/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.20	6.41	< 0.02	4.42 U	NA	NA	NA	NA	NA	NA	10.8	63.0 U	432 U		
	04/16/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.15	7.59	< 0.02	3.42 U	NA	NA	NA	NA	NA	NA	16.1	16.9 U	-152 U		
	07/16/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.05	7.88	< 0.02	2.43 U	NA	NA	NA	NA	NA	NA	5				

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		VOCs							SVOCs							Inorganics			Radionuclides										
		Carbon Disulfide ug/L	Chloroform ug/L	cis-1,2-Dichloroethene ug/L	Ethylbenzene ug/L	Tetrachloroethene ug/L	Trichloroethene ug/L	Vinyl Chloride ug/L	1,1'-Biphenyl ug/L	2-Methylnaphthalene ug/L	Acenaphthene ug/L	Carbazole ug/L	Fluorene ug/L	Naphthalene ug/L	Phenanthrene ug/L	Fluoride mg/L	Ammonia NH3(N) mg/L	Nitrate NO3 mg/L	Gross Alpha pCi/L	Isotopic Uranium 233/234 pCi/L	Isotopic Uranium 235/236 pCi/L	Isotopic Uranium 238 (HASL300) pCi/L	Isotopic Uranium 234 ug/L	Isotopic Uranium 235 ug/L	Isotopic Uranium 238 ug/L	Total Uranium ug/L	Gross Beta pCi/L	Tc-99 pCi/L	Tritium pCi/L
MCL/Action Level				70	700	5	5	2								4	10	15 *							30	50 *	900	20,000	
Well	Date																												
W-30	01/19/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	11.30	1.32	78	22.4	NA	NA	NA	NA	NA	NA	NA	33.9	54.4 U	21.6 U	
	04/13/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10.80	<1.00	42	23.7	NA	NA	NA	NA	NA	NA	NA	35.6	4.93 U	-258 U	
	07/13/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.65	1.29	69	12.2	NA	NA	NA	NA	NA	NA	NA	21.7	-16.9 U	-24.4 U	
	10/12/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10.70	1.40	130	12.9	NA	NA	NA	NA	NA	NA	NA	21.4	14.8 U	-75.5 U	
	01/14/16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.15	<1.00	71	27.8	17.3	0.787	5.61	NA	NA	NA	NA	NA	41.3	NA	129 U
	04/19/16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.85	<1.00	44	39.7	19.8	1.46	6.80	NA	NA	NA	NA	NA	41.8	NA	-225 U
	07/08/16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.65	<1.00	44	33.5	20.4	1.40	8.12	NA	NA	NA	NA	NA	40.1	NA	31.9 U
	10/11/16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	10/21/16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.88	<1.00	34	44.6	22.9	1.82	7.12	NA	NA	NA	NA	NA	36.2	NA	-132 U
	10/24/16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	36	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	01/16/17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.45	<1.00	34	58.2	20.2	1.03	6.09	NA	NA	NA	NA	NA	28.3	NA	55.8 U
	04/06/17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.70	1.25	81	35.6	18.3	1.17	5.04	NA	NA	NA	NA	NA	32.3	NA	-139 U
	07/10/17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.75	1.44	85	59.6	31.7	2.48	7.62	NA	NA	NA	NA	NA	38.5	NA	-70.7 U
	10/12/17	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	8.4	1.5	72	46.1	27.4	1.76	6.85	NA	NA	NA	NA	NA	38.7	NA	7.83 U
	01/08/18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.7	1.62	49	54.4	28.8	3.09	10.9	NA	NA	NA	NA	NA	52.6	45.4	365 U
	04/16/18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.5	2.13	68	60.0	34.4	2.49	10.2	NA	NA	NA	NA	NA	44.8	NA	-89.6 U
	07/13/18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.82	1.95	70	35.0	22.2	1.36	7.02	NA	NA	NA	NA	NA	35.5	NA	89.8 U
	10/23/18	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	8.94	1.49	47	23.7	15.0	0.509	4.40	< 0.0500	0.298	12.4	12.7	26.5	NA	38.6 U	
	01/15/19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	9.06	0.956	45	38.6	29.3	2.83	10.1	< 0.0500	0.533	22.4	22.9	30.8	32.6 U	-199 U	
	10/07/19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	8.06	1.83	120	7.57	11.5	0.914	3.31	< 0.050	0.199	8.71	8.91	20.8	49.7	443 U	
	04/13/20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	7.98	0.932	120	14.2	8.43	0.236	2.55	< 0.0500	0.173	6.91	7.08	33.9	48.4	-133 U	
W-32	01/19/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.55	54.40	150	6.63	NA	NA	NA	NA	NA	NA	NA	240	351	NA	
	01/29/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-35.3 U		
	04/13/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.00	48.00	160	3.52	NA	NA	NA	NA	NA	NA	NA	200	277	-25.1 U	
	07/13/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.66	75.10	190	8.08	NA	NA	NA	NA	NA	NA	NA	196	390	-46.7 U	
	10/12/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.11	14.00	78	8.56	NA	NA	NA	NA	NA	NA	NA	114	251	-2.02 U	
	01/14/16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.31	51.40	190	6.22	NA	NA	NA	NA	NA						

Table C-1

Summary of Historical Groundwater Analytical Results (2015-2020)

Westinghouse Columbia Fuel Fabrication Facility

Hopkins, South Carolina

AECOM Project No. 60595649

		VOCs										SVOCs				Inorganics			Radionuclides									
		Carbon Disulfide ug/L	Chloroform ug/L	cis-1,2-Dichloroethene ug/L	Ethylbenzene ug/L	Tetrachloroethene ug/L	Trichloroethene ug/L	Vinyl Chloride ug/L	1,1'-Biphenyl ug/L	2-Methylnaphthalene ug/L	Acenaphthene ug/L	Carbazole ug/L	Fluorene ug/L	Naphthalene ug/L	Phenanthrene ug/L	Fluoride mg/L	Ammonia NH3(N) mg/L	Nitrate NO3 mg/L	Gross Alpha pCi/L	Isotopic Uranium 233/234 pCi/L	Isotopic Uranium 235/236 pCi/L	Isotopic Uranium 238 (HASL300) pCi/L	Isotopic Uranium 234 ug/L	Isotopic Uranium 235 ug/L	Total Uranium ug/L	Gross Beta pCi/L	Tc-99 pCi/L	Tritium pCi/L
MCL/Action Level		70	700	5	5	2									4	10	15 *					30	50 *	900	20,000			
Well	Date																											
W-33	01/20/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.50	<1.00	7.9	1.86 U	NA	NA	NA	NA	NA	NA	2.83 U	95.3 U	109 U	
	04/14/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-0.314	U	NA	NA	NA	NA	NA	NA	NA	NA	2.00 U	53.6 U	-186 U	
	04/16/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.50	<1.00	6.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	07/10/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.50	<1.00	7.5	1.99 U	NA	NA	NA	NA	NA	NA	NA	5.26	-9.39 U	38.6 U
	10/09/15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.50	<1.00	6.7	1.15 U	NA	NA	NA	NA	NA	NA	NA	11.2	102 U	-91.0 U
	01/18/16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.50	<1.00	7.3	1.01 U	NA	NA	NA	NA	NA	NA	NA	16.1	NA	270 U
	04/18/16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.50	<1.00	9	2.51 U	NA	NA	NA	NA	NA	NA	NA	8.36	NA	-172 U
	07/05/16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.50	<1.00	12	2.00 U	NA	NA	NA	NA	NA	NA	NA	5.01	NA	362 U
	10/13/16	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.50	<1.00	16	10.2	NA	NA	NA	NA	NA	NA	NA	20.8	NA	-189 U
	01/11/17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00	<1.00	9.9	28.8	0.524	0.175 U	0.965	NA	NA	NA	NA	22.1	NA	189 U
	04/03/17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.50	<1.00	10	10.6	NA	NA	NA	NA	NA	NA	NA	36.3	NA	-98.4 U
	07/11/17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.50	<1.00	12	15.0	0.891	0.205 U	0.749	NA	NA	NA	NA	15.3	NA	143 U
	10/12/17	< 5.0	< 5.0	< 5.0	< 5.0	560	77	< 5.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	<0.50	<1.00	11	9.80	NA	NA	NA	NA	NA	NA	NA	11.4	NA	-191 U
	01/12/18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.50	<1.00	10	9.88	NA	NA	NA	NA	NA	NA	NA	13.5	NA	198 U
	04/17/18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.50	<1.00	9.7	6.11	NA	NA	NA	NA	NA	NA	NA	11.1	NA	23.1 U
	07/10/18	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.166	<1.00	11	6.90	NA	NA	NA	NA	NA	NA	NA	13.6	NA	77.0 U
	10/16/18	< 1.0	< 1.0	2	< 1.0	190	17	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.187	0.0112	10	-0.0946 U	NA	NA	NA	< 0.0500	< 0.0700	< 0.200	< 0.200	5.22	NA	211 U
	01/22/19	< 1.0	< 1.0	< 1.0	< 1.0	140	18	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.193	0.054	10	0.847 U	0.190 U	-0.0251 U	0.106 U	< 0.0500	< 0.0700	< 0.200	< 0.200	2.55 U	3.72 U	-174 U
	10/17/19	< 1.0	< 1.0	1.0	< 1.0	300	38	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.152	0.0134	13	2.89 U	0.102 U	0.0445 U	0.0274 U	< 0.050	< 0.070	< 0.200	< 0.200	7.78	-44.2 U	
	04/16/20	< 5.0	< 5.0	< 5.0	< 5.0	270	33	< 5.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.146	0.0194	8.2	2.26 U	-0.0495 U	0.0619 U	0.206 U	< 0.0500	< 0.0700	< 0.200	< 0.200	5.00	2.90 U	65.3 U
W-35	11/01/18	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 2.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.026	0.0147	5.5	0.190 U	0.299 U	0.0951 U	0.115 U	< 0.0500	< 0.0700	< 0.200	< 0.200	3.28 U	-1.89 U	NA	
	01/22/19	< 1.0	< 1.0	< 1.0	< 1.0	2.1	< 1.0	< 1.0	< 4.0	< 0.80	< 4.0	< 0.80	< 0.80	0.007	0.0449	4.2	0.901 U	0.175 U	0.0897 U	0.489	< 0.0500	< 0.0700	< 0.200	< 0.200	1.33 U	-24.6 U	NA	
	10/02/19	< 1.0	< 1.0	< 1.0	< 1.0	2.6	< 1.0	< 1.0	< 4.0	< 0.80	< 4.0	< 0.80	< 0.80	0.025	0.0075	3.2	0.793 U	0.304	0.0450 U	0.109	< 0.050	< 0.070	< 0.200	< 0.200	3.54 U	21.7 U	NA	
	04/21/20	< 1.0	< 1.0	< 1.0	< 1.0	2.5	< 1.0	< 1.0	< 4.0	< 0.80	< 4.0	< 0.80	< 0.80	0.022	0.0186	3.3	0.263 U	0.123 U	0.0570 U	0.00288 U	< 0.0500	< 0.						

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**Westinghouse Columbia Fuel Fabrication Facility**  
**Hopkins, South Carolina**  
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Westinghouse Columbia Fuel Fabrication Facility

Hopkins, South Carolina

AECOM Project No. 60595649

		VOCs							SVOCs							Inorganics			Radionuclides									
		Carbon Disulfide ug/L	Chloroform ug/L	cis-1,2-Dichloroethene ug/L	Ethylbenzene ug/L	Tetrachloroethene ug/L	Trichloroethene ug/L	Vinyl Chloride ug/L	1,1'-Biphenyl ug/L	2-Methylnaphthalene ug/L	Acenaphthene ug/L	Carbazole ug/L	Fluorene ug/L	Naphthalene ug/L	Phenanthrene ug/L	Fluoride mg/L	Ammonia NH3(N) mg/L	Nitrate NO3 mg/L	Gross Alpha pCi/L	Isotopic Uranium 233/234 pCi/L	Isotopic Uranium 235/236 pCi/L	Isotopic Uranium 238 (HASL300) pCi/L	Isotopic Uranium 234 ug/L	Isotopic Uranium 235 ug/L	Total Uranium ug/L	Gross Beta pCi/L	Tc-99 pCi/L	Tritium pCi/L
MCL/Action Level		70	700	5	5	2									4	10	15 *						30	50 *	900	20,000		
Well		Date																										
W-40	11/29/18	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 2.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.124	0.0203	4.6	6.93	0.0255 U	0.0314 U	0.0588 U	< 0.0500	< 0.0700	< 0.200	< 0.200	5.20	11.9 U	NA
	01/24/19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.164	0.0552	2.6	3.21	0.519	0.301 U	0.409	< 0.0500	< 0.0700	0.142 J	0.142 J	3.45 U	-29.3 U	NA
	10/15/19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.166	0.0203	4.3	0.796 U	0.0131 U	0.0454 U	0.129 U	< 0.050	< 0.070	< 0.200	< 0.200	3.44 U	-9.52 U	NA
	04/16/20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.139	0.0158	2.4	1.22 U	0.154 U	0.0534 U	0.104 U	< 0.0500	< 0.0700	< 0.200	< 0.200	4.19	-1.41 U	NA
W-41R	01/12/15	< 1.0	< 1.0	1.2	< 1.0	190	37	< 2.0	< 5.1	< 5.1	< 5.1	< 5.1	< 5.1	< 5.1	< 0.50	< 1.00	56	4.02 U	NA	NA	NA	NA	NA	NA	NA	22.0	33.9 U	-91.2 U
	04/09/15	< 1.0	< 1.0	< 1.0	< 1.0	130	21	< 1.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 0.50	< 1.00	51	-0.0761 U	NA	NA	NA	NA	NA	NA	NA	17.6	62.2 U	-18.6 U
	07/10/15	< 1.0	< 1.0	< 1.0	< 1.0	140	21	< 1.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 0.50	< 1.00	54	6.77	NA	NA	NA	NA	NA	NA	NA	22.2	13.7 U	-119 U
	10/09/15	< 1.0	< 1.0	< 1.0	< 1.0	88	9.6	< 1.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 0.50	< 1.00	34	1.70 U	NA	NA	NA	NA	NA	NA	NA	13.0	86.5 U	-175 U
	01/20/16	< 1.0	< 1.0	< 1.0	< 1.0	53	4	< 1.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 0.50	< 1.00	61	-0.192 U	NA	NA	NA	NA	NA	NA	NA	19.7	NA	308 U
	04/18/16	< 1.0	< 1.0	< 1.0	< 1.0	84	6.8	< 1.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 0.50	< 1.00	80	4.02 U	NA	NA	NA	NA	NA	NA	NA	25.7	NA	-370 U
	07/05/16	< 1.0	< 1.0	< 1.0	< 1.0	150	14	< 2.0	< 6.0	< 6.0	< 6.0	< 6.0	< 6.0	< 6.0	< 0.50	< 1.00	66	4.01 U	NA	NA	NA	NA	NA	NA	NA	24.6	NA	179 U
	10/06/16	< 1.0	< 1.0	< 1.0	< 1.0	150	18	< 2.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.50	< 1.00	75	16.4	0.450	0.0853 U	0.105 U	NA	NA	NA	NA	27.1	NA	-267 U
	01/10/17	< 1.0	< 1.0	< 1.0	< 1.0	180	21	< 2.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.00	< 1.00	64	12.6	NA	NA	NA	NA	NA	NA	NA	24.1	NA	-26.6 U
	04/03/17	< 1.0	< 1.0	< 1.0	< 1.0	190	16	< 2.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.50	< 1.00	62	7.57	NA	NA	NA	NA	NA	NA	NA	25.7	NA	55.5 U
	07/06/17	< 1.0	< 1.0	< 1.0	< 1.0	160	8.8	< 2.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.50	< 1.00	63	6.07	NA	NA	NA	NA	NA	NA	NA	20.0	NA	122 U
	10/12/17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.50	< 1.00	NA	12.6	NA	NA	NA	NA	NA	NA	NA	23.5	NA	-228 U
	01/09/18	< 5.0	< 5.0	< 5.0	< 5.0	220	19	< 5.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.50	< 1.00	65	9.26	NA	NA	NA	NA	NA	NA	NA	19.7	NA	85.3 U
	04/10/18	< 5.0	< 5.0	< 5.0	< 5.0	260	24	< 5.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.50	< 1.00	76	2.42 U	NA	NA	NA	NA	NA	NA	NA	16.4	NA	2.61 U
	07/10/18	< 5.0	< 5.0	< 5.0	< 5.0	300	24	< 5.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.50	< 1.00	67	12.4	NA	NA	NA	NA	NA	NA	NA	14.2	NA	473 U
	10/17/18	< 5.0	< 5.0	< 5.0	< 5.0	310	23	< 5.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.41	0.033	55	-0.201 U	NA	NA	NA	< 0.0500	< 0.0700	< 0.200	< 0.200	12.1	NA	-0.957 U
	01/23/19	< 1.0	< 1.0	5	< 1.0	200	6.9	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.056	0.0777</td												

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		VOCs							SVOCs							Inorganics			Radionuclides									
		Carbon Disulfide ug/L	Chloroform ug/L	cis-1,2-Dichloroethene ug/L	Ethylbenzene ug/L	Tetrachloroethene ug/L	Trichloroethene ug/L	Vinyl Chloride ug/L	1,1'-Biphenyl ug/L	2-Methylnaphthalene ug/L	Acenaphthene ug/L	Carbazole ug/L	Fluorene ug/L	Naphthalene ug/L	Phenanthrene ug/L	Fluoride mg/L	Ammonia NH3(N) mg/L	Nitrate NO3 mg/L	Gross Alpha pCi/L	Isotopic Uranium 233/234 pCi/L	Isotopic Uranium 235/236 pCi/L	Isotopic Uranium 238 (HASL300) pCi/L	Isotopic Uranium 234 ug/L	Isotopic Uranium 235 ug/L	Total Uranium ug/L	Gross Beta pCi/L	Tc-99 pCi/L	Tritium pCi/L
MCL/Action Level		70	700	5	5	2									4	10	15 *						30	50 *	900	20,000		
Well	Date																											
W-48	01/12/15	< 1.0	< 1.0	5.4	< 1.0	140	4	< 2.0	< 5.1	< 5.1	< 5.1	< 5.1	< 5.1	< 5.1	< 0.50	< 1.00	2.3	1.64 U	NA	NA	NA	NA	NA	NA	7.15	62.3 U	-48.7 U	
	04/09/15	< 1.0	< 1.0	7.4	< 1.0	170	5.5	< 1.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 0.50	< 1.00	3.2	2.44 U	NA	NA	NA	NA	NA	NA	11.4	-40.5 U	-20.3 U	
	07/10/15	< 1.0	< 1.0	6.1	< 1.0	170	7.7	< 1.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 0.50	< 1.00	3.4	1.91 U	NA	NA	NA	NA	NA	NA	6.43	-5.77 U	96.5 U	
	10/09/15	< 1.0	< 1.0	6.4	< 1.0	190	8.2	< 1.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 0.50	< 1.00	3.6	0.312 U	NA	NA	NA	NA	NA	NA	7.29	74.1 U	-116 U	
	01/20/16	< 1.0	< 1.0	4.8	< 1.0	190	6.5	< 1.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 0.50	< 1.00	3.8	-2.25 U	NA	NA	NA	NA	NA	NA	8.90	95.0 U	98.8 U	
	04/18/16	< 1.0	< 1.0	4.2	< 1.0	220	7.3	< 1.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 0.50	< 1.00	4.7	0.463 U	NA	NA	NA	NA	NA	NA	9.55	NA	-386 U	
	07/05/16	< 5.0	< 5.0	< 5.0	< 5.0	220	7	< 10	< 5.3	< 5.3	< 5.3	< 5.3	< 5.3	< 5.3	< 0.50	< 1.00	4.1	-0.109 U	NA	NA	NA	NA	NA	NA	10.9	NA	-203 U	
	10/06/16	< 1.0	< 1.0	3.4	< 1.0	160	5.7	< 2.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.50	< 1.00	4.4	-1.32 U	NA	NA	NA	NA	NA	NA	6.53	NA	-133 U	
	01/10/17	< 1.0	< 1.0	4.3	< 1.0	100	8.7	< 2.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.50	< 1.00	4.7	1.09 U	NA	NA	NA	NA	NA	NA	4.15 U	NA	15.1 U	
	04/03/17	< 1.0	< 1.0	4.1	< 1.0	180	8.2	< 2.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.50	< 1.00	4.5	1.00 U	NA	NA	NA	NA	NA	NA	15.6	NA	-154 U	
	07/06/17	< 1.0	< 1.0	3.7	< 1.0	160	7.7	< 2.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.50	< 1.00	4.7	-0.101 U	NA	NA	NA	NA	NA	NA	8.47	NA	142 U	
	10/13/17	< 1.0	< 1.0	3.3	< 1.0	170	7.9	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.50	< 1.00	4	0.497 U	NA	NA	NA	NA	NA	NA	6.79	NA	221 U	
	01/09/18	< 1.0	< 1.0	3.5	< 1.0	170	8.8	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.50	< 1.00	4.6	2.12 U	NA	NA	NA	NA	NA	NA	28.3	NA	-33.9 U	
	04/10/18	< 1.0	< 1.0	4.3	< 1.0	150	7.4	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.50	< 1.00	5	0.0511 U	NA	NA	NA	NA	NA	NA	4.88	NA	-87.1 U	
	07/10/18	< 1.0	< 1.0	3.2	< 1.0	170	6.4	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.389	0.178	4.6	2.93 U	NA	NA	NA	NA	NA	NA	16.1	NA	260 U	
	10/25/18	< 1.0	< 1.0	2.2	< 1.0	150	4.9	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.529	0.0322	5.3	0.639 U	NA	NA	NA	< 0.0500	< 0.0700	0.0922 J	0.0922 J	14.8	NA	-50.0 U
	01/24/19	< 1.0	< 1.0	2.1	< 1.0	180	5.1	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.341	0.0678	5	3.90	0.294	0.425	0.194 U	< 0.0500	< 0.0700	< 0.200	< 0.200	15.7	-8.89 U	-303 U
	10/21/19	< 1.0	< 1.0	2.1	< 1.0	200	4.9	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.33	0.0446	5.3	0.460 U	0.0449 U	0.106 U	0.0109 U	< 0.050	< 0.070	< 0.200	< 0.200	9.32	13.1 U	87.4 U
	04/21/20	< 1.0	< 1.0	< 1.0	< 1.0	1	1.2	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.36	0.0347	5.1	-1.16 U	0.00192 U	-0.0102 U	0.00138 U	< 0.0500	< 0.0700	< 0.200	< 0.200	7.20	13.8	-23.7 U
W-49	12/13/18	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.011	0.0235	< 0.02	3.26 U	0.314 U	0.0196 U	0.198 U	< 0.0500	< 0.0700	0.104 J	0.104 J	0.727 U	27.2 U	NA	
	01/29/19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	0.003	0.0152	< 0.02	3.87	0.354 U	0.171 U	0.199 U	< 0.0500	<					

Table C-1

Summary of Historical Groundwater Analytical Results (2015-2020)

Westinghouse Columbia Fuel Fabrication Facility

Hopkins, South Carolina

AECOM Project No. 60595649

		VOCs							SVOCs							Inorganics			Radionuclides									
		Carbon Disulfide ug/L	Chloroform ug/L	cis-1,2-Dichloroethene ug/L	Ethylbenzene ug/L	Tetrachloroethene ug/L	Trichloroethene ug/L	Vinyl Chloride ug/L	1,1'-Biphenyl ug/L	2-Methylnaphthalene ug/L	Acenaphthene ug/L	Carbazole ug/L	Fluorene ug/L	Naphthalene ug/L	Phenanthrene ug/L	Fluoride mg/L	Ammonia NH3(N) mg/L	Nitrate NO3 mg/L	Gross Alpha pCi/L	Isotopic Uranium 233/234 pCi/L	Isotopic Uranium 235/236 pCi/L	Isotopic Uranium 238 (HASL300) pCi/L	Isotopic Uranium 235 ug/L	Isotopic Uranium 238 ug/L	Total Uranium ug/L	Gross Beta pCi/L	Tc-99 pCi/L	Tritium pCi/L
MCL/Action Level		70	700	5	5	2									4	10	15 *						30	50 *	900	20,000		
Well	Date																											
W-53	09/24/18	< 1.0	< 1.0	33	< 1.0	2	< 1.0	2.1	NA	NA	NA	NA	NA	NA	NA	2.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10/09/18	NA	NA	NA	NA	NA	NA	NA	< 4.0	4.4	1.1	< 4.0	1.8	< 0.80	1.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10/28/18	< 5.0	< 5.0	19	< 5.0	< 5.0	< 5.0	< 2.0	< 4.0	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	0.262	0.0611	0.67	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	01/26/19	< 1.0	< 1.0	46	< 1.0	4.6	< 1.0	2.1	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.069	0.0412	0.063	0.101 U	0.376	0.175 U	0.112 U	< 0.0500	< 0.0700	< 0.200	< 0.200	0.0470 U	17.5 U	NA
	10/03/19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	4.0	< 0.80	< 0.80	4.4	1.0	< 0.80	5.2	0.081	0.0397	0.57	1.61 U	0.0359 U	-0.0157 U	-0.0614 U	< 0.050	< 0.070	< 0.200	< 0.200	1.72 U	-35.1 U	NA
	04/09/20	< 1.0	< 1.0	5.4	< 1.0	1.3	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	4	0.017	0.108	0.033	-0.727 U	-0.0556 U	0.0382 U	-0.0627 U	< 0.0500	< 0.0700	< 0.200	< 0.200	3.20 U	0.874 U
W-54	09/24/18	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NA	NA	NA	NA	NA	NA	NA	NA	2.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10/08/18	NA	NA	NA	NA	NA	NA	NA	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	10/28/18	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 2.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.264	0.0198	2.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	01/26/19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.153	0.0083	3	-0.0908 U	0.779	0.286	0.405	< 0.0500	< 0.0700	< 0.200	< 0.200	3.58 U	6.19 U	NA
	10/04/19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.258	0.0037	2.8	1.55 U	0.0685 U	-0.0666 U	0.0126 U	< 0.050	< 0.070	< 0.200	< 0.200	1.96 U	-19.6 U	NA
	04/09/20	< 1.0	< 1.0	1.9	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.093	0.0156	1.7	0.275 U	-0.141 U	0.0287 U	-0.0479 U	< 0.0500	< 0.0700	< 0.200	< 0.200	1.60 U	-0.513 U	NA
W-55	09/24/18	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NA	NA	NA	NA	NA	NA	NA	NA	5.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10/08/18	NA	NA	NA	NA	NA	NA	NA	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	10/27/18	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 2.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.06	0.0342	3.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	01/26/19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.065	0.0059	3.5	466	283	19.1	69.4	0.0459 J	5.6	172	178	84.0	-1.08 U	NA
	10/04/19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.062	0.0108	3.7	438	290	16.3	60.5	0.052	5.79	177	183	77.3	-11.9 U	NA
	04/08/20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.047	0.026	2	271	197	9.43	39.4	0.032 J	3.77	112	115	52.9	-1.04 U	NA
W-56	09/25/18	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	NA	NA	NA	NA	NA	NA	NA	NA	6.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	10/08/18	NA	NA	NA	NA	NA	NA	NA	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	10/27/18	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 2.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.135	0.0213	6.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
	01/26/19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.152	0.0078	4.1											

**Table C-1**  
**Summary of Historical Groundwater Analytical Results (2015-2020)**  
**Westinghouse Columbia Fuel Fabrication Facility**  
**Hopkins, South Carolina**  
**AECOM Project No. 60595649**

		VOCs							SVOCs							Inorganics			Radionuclides									
		Carbon Disulfide ug/L	Chloroform ug/L	cis-1,2-Dichloroethene ug/L	Ethylbenzene ug/L	Tetrachloroethene ug/L	Trichloroethene ug/L	Vinyl Chloride ug/L	1,1'-Biphenyl ug/L	2-Methylnaphthalene ug/L	Acenaphthene ug/L	Carbazole ug/L	Fluorene ug/L	Naphthalene ug/L	Phenanthrene ug/L	Fluoride mg/L	Ammonia NH3(N) mg/L	Nitrate NO3 mg/L	Gross Alpha pCi/L	Isotopic Uranium 233/234 pCi/L	Isotopic Uranium 235/236 (HASL300) pCi/L	Isotopic Uranium 234 ug/L	Isotopic Uranium 235 ug/L	Total Uranium ug/L	Gross Beta pCi/L	Tc-99 pCi/L	Tritium pCi/L	
MCL/Action Level		70	700	5	5	2									4	10	15 *					30	50 *	900	20,000			
Well		Date																										
W-60	10/30/18	9.4	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 2.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.016	0.017	0.11	0.958 U	0.250 U	0 U	0.0591 U	< 0.0500	< 0.0700	< 0.200	< 0.200	0.923 U	-23.4 U	NA
	01/17/19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.007	0.0798	0.02	0.432 U	0.409	0.290	0.452	< 0.0500	< 0.0700	< 0.200	< 0.200	-0.201 U	-11.1 U	NA
	10/17/19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.034	0.0251	0.035	0.200 U	0.0248 U	0.0418 U	0.00356 U	< 0.050	< 0.070	< 0.200	< 0.200	1.38 U	-7.75 U	NA
	04/10/20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.024	0.128	< 0.02	0.543 U	-0.0712 U	-0.00912 U	-0.0148 U	< 0.0500	< 0.0700	< 0.200	< 0.200	3.08 U	-1.89 U	NA
W-61	10/30/18	< 5.0	5.2	< 5.0	< 5.0	< 5.0	< 5.0	< 2.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.086	0.0206	0.051	3.28 U	0.282 U	0.130 U	0.0335 U	< 0.0500	< 0.0700	< 0.200	< 0.200	3.82	-13.4 U	NA
	01/17/19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.075	0.0408	0.48	-0.996 U	0.557	0.359	0.365	< 0.0500	< 0.0700	< 0.200	< 0.200	5.01	2.09 U	NA
	10/17/19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.036	0.0274	2.5	1.31 U	-0.0719 U	0.0596 U	0.0254 U	< 0.050	< 0.070	< 0.200	< 0.200	0.862 U	-16.1 U	NA
	04/10/20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.041	0.055	1.4	0.373 U	0.0228 U	-0.0101 U	0.00788 U	< 0.0500	< 0.0700	< 0.200	< 0.200	6.86	-0.660 U	NA
W-62	11/01/18	< 1.0	< 1.0	< 1.0	48	1.9	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.02	0.0177	3.6	2.51 U	0.138 U	0.288 U	0.00169 U	< 0.0500	< 0.0700	0.0843 J	0.0843 J	2.26 U	-15.2 U	NA	
	01/18/19	< 1.0	< 1.0	< 1.0	51	1.9	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.01	0.0375	3.9	2.98 U	0.237 U	0.283 U	0.205 U	< 0.0500	< 0.0700	0.0831 J	0.0831 J	3.27 U	-6.16 U	NA	
	10/22/19	< 1.0	< 1.0	< 1.0	42	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.019	0.0162	4.0	-0.106 U	0.0178 U	0.0998 U	0.142 U	< 0.050	< 0.070	< 0.200	< 0.200	4.85	-17.3 U	NA	
	04/17/20	< 1.0	< 1.0	< 1.0	45	1	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.001	0.0127	4.3	1.40 U	0.0392 U	-0.0123 U	-0.0199 U	< 0.0500	< 0.0700	< 0.200	< 0.200	-2.46 U	0.361 U	NA	
W-63	10/31/18	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 2.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.474	0.0647	0.86	1.97 U	0.755	0.0837 U	0.669	< 0.0500	< 0.0700	1.02	1.02	5.84	16.3 U	NA	
	01/17/19	< 1.0	< 1.0	< 1.0	1.4	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.502	0.0632	0.16	3.49 U	0.669	0.148 U	1.02	< 0.0500	< 0.0700	0.891	0.891	2.48 U	-9.77 U	NA	
	10/21/19	< 1.0	< 1.0	< 1.0	1.0	1.1	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.259	0.023	0.34	1.22 U	0.266 U	0.0677 U	0.264 U	< 0.050	< 0.070	0.123 J	0.123 J	3.32 U	-21.0 U	NA	
	04/21/20	< 1.0	< 1.0	1.9	160	4.9	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.191	0.0674	0.43	2.89 U	0.613	0.0539 U	0.323	< 0.0500	< 0.0700	0.686	0.686	9.10	3.26 U	NA	
W-64	11/01/18	< 1.0	< 1.0	< 1.0	1.5	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	3.26	20.7	49	1.91 U	0.176 U	0.0677 U	0.0908 U	< 0.0500	< 0.0700	0.14 J	0.14 J	76.3	74.7	NA	
	01/18/19	< 1.0	< 1.0	< 1.0	1.8	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	4.32	21.9	61	3.89 U	0.516	0.261	0.211	< 0.0500	< 0.0700	< 0.200	< 0.200	88.5	118	NA	
	10/17/19	< 1.0	< 1.0	< 1.0	1.3	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	4.27	16	42	4.11 U	0.0871 U	0.0256 U	0.0239 U	< 0.050</							

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**Westinghouse Columbia Fuel Fabrication Facility**  
**Hopkins, South Carolina**  
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		VOCs							SVOCs							Inorganics			Radionuclides										
		Carbon Disulfide ug/L	Chloroform ug/L	cis-1,2-Dichloroethene ug/L	Ethylbenzene ug/L	Tetrachloroethylene ug/L	Trichloroethylene ug/L	Vinyl Chloride ug/L	1,1'-Biphenyl ug/L	2-Methylnaphthalene ug/L	Acenaphthene ug/L	Carbazole ug/L	Fluorene ug/L	Naphthalene ug/L	Phenanthrene ug/L	Fluoride mg/L	Ammonia NH3(N) mg/L	Nitrate NO3 mg/L	Gross Alpha pCi/L	Isotopic Uranium 233/234 pCi/L	Isotopic Uranium 235/236 pCi/L	Isotopic Uranium 238 (HASL300) pCi/L	Isotopic Uranium 238 ug/L	Isotopic Uranium 235 ug/L	Total Uranium ug/L	Gross Beta pCi/L	Tc-99 pCi/L	Tritium pCi/L	
MCL/Action Level			70	700	5	5	2								4		10	15 *						30	50 *	900	20,000		
Well	Date																												
W-73	10/04/19	< 1.0	< 1.0	1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	0.071	0.0167	2.0	0.241 U	-0.00420 U	0.0655 U	0.121 U	< 0.050	< 0.070	0.0831 J	0.0831 J	1.85 U	-23.0 U	NA	
	04/03/20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	< 0.1	0.0383	1.4	-2.20 U	0.155 U	0.0780 U	-0.0258 U	< 0.0500	< 0.0700	0.0873 J	0.0873 J	2.27 U	-1.62 U	NA	
W-74	10/09/19	< 1.0	< 1.0	1.9	< 1.0	19	4.5	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	0.019	0.159	4.9	-0.595 U	0.111 U	0.00238 U	0.0963 U	< 0.050	< 0.070	< 0.200	< 0.200	1.29 U	11.5 U	NA
	04/08/20	< 1.0	< 1.0	1.6	< 1.0	19	4.2	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	0.01	0.0129	5.4	-0.164 U	-0.0540 U	-0.0593 U	-0.00979 U	< 0.0500	< 0.0700	< 0.200	< 0.200	2.38 U	-1.38 U	NA
W-75	10/09/19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	0.109	0.391	0.063	2.10 U	0.0135 U	0.0780 U	0.00143 U	< 0.050	< 0.070	< 0.200	< 0.200	3.89 U	-15.8 U	NA	
	04/08/20	< 1.0	< 1.0	< 1.0	< 1.0	1	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	0.068	0.268	1.6	1.80 U	-0.0429 U	-0.0219 U	0.00834 U	< 0.0500	< 0.0700	< 0.200	< 0.200	3.68	-1.17 U	NA
W-76	10/05/19	< 1.0	< 1.0	< 1.0	< 1.0	63	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	1.45	0.0154	9.8	2.77 U	1.60	-0.0126 U	0.354	< 0.050	0.0308 J	0.915	0.946	6.88	-14.6 U	NA	
	04/14/20	< 1.0	< 1.0	< 1.0	< 1.0	44	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	1.4	0.0163	8.7	12.7	4.92	0.196	0.830	< 0.0500	0.0999	2.87	2.97	4.56 U	-0.741 U	NA	
W-77	10/06/19	< 1.0	11	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	9.21	7.11	12	865	511	26.0	81.0	0.089	10.1	237	247	111	101	NA	
	04/14/20	< 1.0	11	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	7.39	17	20	399	591	28.5	88.7	0.104	11.2	253	264	41.7	5.10	NA	
W-78	10/05/19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	13.4	0.0271	3.5	-0.146 U	0.0921 U	0.0466 U	0.105 U	< 0.050	< 0.070	0.0933 J	0.0933 J	4.12 U	-6.50 U	NA	
	04/14/20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	11.3	0.0286	4.4	1.82 U	0.0631 U	0.0946 U	0.0207 U	< 0.0500	< 0.0700	0.203	0.203	2.97 U	0.0509 U	NA	
W-79	10/07/19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	2.4	0.0146	4.0	2.99 U	0.0539 U	-0.0112 U	0.115 U	< 0.050	< 0.070	0.0892 J	0.0892 J	5.90	3.52 U	NA	
	04/13/20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.323	0.0099	5.1	0.312 U	-0.0423 U	-0.00965 U	0.0449 U	< 0.0500	< 0.0700	< 0.200	< 0.200	5.06	0.135 U	NA	
W-80	10/06/19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	1.57	0.0927	8.3	1.30 U	0.154 U	0.0254 U	0.0695 U	< 0.050	< 0.070	0.151 J	0.151 J	7.29	2.56 U	NA	
	04/14/20	< 1.0	2.3	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.121	0.0158	16	3.43	0.167 U	0.0226 U	0.106 U	< 0.0500	< 0.0700	0.177 J	0.177 J	9.42	-1.32 U	NA	
W-81	10/08/19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.042	0.0762	3.1	-0.177 U	0.00840 U	-0.0482 U	0.112 U	< 0.050	< 0.070	0.0728 J	0.0728 J	1.23 U	-11.9 U	NA	
	04/14/20	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.067	0.381	1.4	5.29	0.349	0.0590 U	0.150 U	< 0.0500	< 0.0700	0.393	0.393	8.64	-0.0743 U	NA	
W-82	10/08/19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	0.046	0.0275	0.99	1.37 U	0.0453 U	0 U	0.140 U	< 0.050	< 0.070	0.151 J	0.151 J				

**Table C-1**  
**Summary of Historical Groundwater Analytical Results (2015-2020)**  
**Westinghouse Columbia Fuel Fabrication Facility**  
**Hopkins, South Carolina**  
**AECOM Project No. 60595649**

		VOCs												SVOCs												Inorganics												Radionuclides											
		Carbon Disulfide ug/L	Chloroform ug/L	cis-1,2-Dichloroethene ug/L	Ethylbenzene ug/L	Tetrachloroethene ug/L	Trichloroethene ug/L	Vinyl Chloride ug/L	1,1'-Biphenyl ug/L	2-Methylnaphthalene ug/L	Acenaphthene ug/L	Carbazole ug/L	Fluorene ug/L	Naphthalene ug/L	Phenanthrene ug/L	Fluoride mg/L	Ammonia NH3(N) mg/L	Nitrate NO3 mg/L	Gross Alpha pCi/L	Isotopic Uranium 233/234 pCi/L	Isotopic Uranium 235/236 pCi/L	Isotopic Uranium 238 (HASL300) pCi/L	Isotopic Uranium 234 ug/L	Isotopic Uranium 235 ug/L	Total Uranium ug/L	Gross Beta pCi/L	Tc-99 pCi/L	Tritium pCi/L																					
MCL/Action Level		70	700	5	5	2									4	10	15 *							30	50 *	900	20,000																						
Well	Date																																																
W-96	10/11/19	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	0.111	0.228	0.054	2.51 U	0.0695 U	0.108 U	0.0719 U	< 0.050	< 0.070	< 0.200	< 0.200	4.36	-1.25 U	NA																				
	04/24/20	< 1.0	< 1.0	< 1.0	< 1.0	1.2	< 1.0	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	0.059	0.165	< 0.02	0.667 U	0.0173 U	-0.000182 U	0.110 U	< 0.0500	< 0.0700	< 0.200	< 0.200	3.11 U	0.00377 U	NA																				
W-97	10/11/19	< 1.0	< 1.0	< 1.0	< 1.0	4.3	1.2	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	0.375	4.89	3.4	0.168 U	0.106 U	0.0403 U	0.0495 U	< 0.050	< 0.070	< 0.200	< 0.200	11.0	10.3 U	NA																				
	04/24/20	< 1.0	< 1.0	< 1.0	< 1.0	9.8	2	< 1.0	< 4.0	< 0.80	< 0.80	< 4.0	< 0.80	< 0.80	< 0.80	0.233	2.32	6	6.24	0.0625 U	0.00869 U	-0.0452 U	< 0.0500	< 0.0700	< 0.200	< 0.200	53.8	88.3	NA																				

Notes:

ug/L - Micrograms per liter

mg/L - Milligrams per liter

pCi/L - Picocuries per liter

MCL - Maximum Contaminant Level

\* - site specific action level

Tc-99 - Technetium-99

NA - Not analyzed

U - Analyte was not detected above the minimum detectable level, concentration, or activity

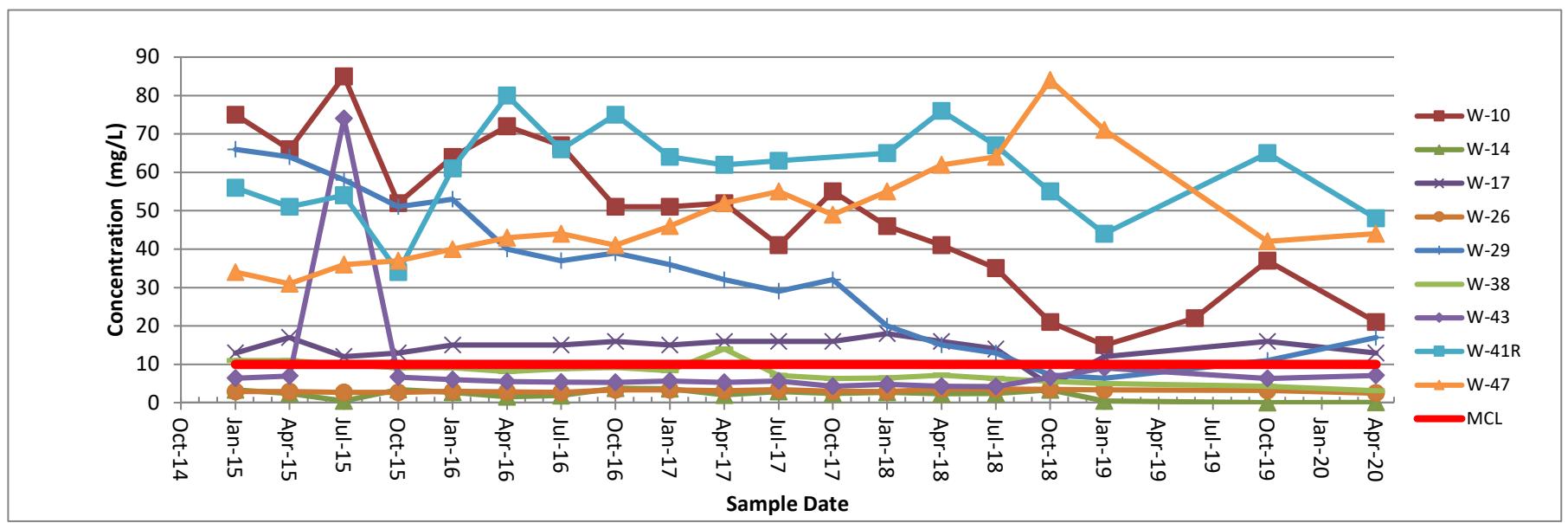
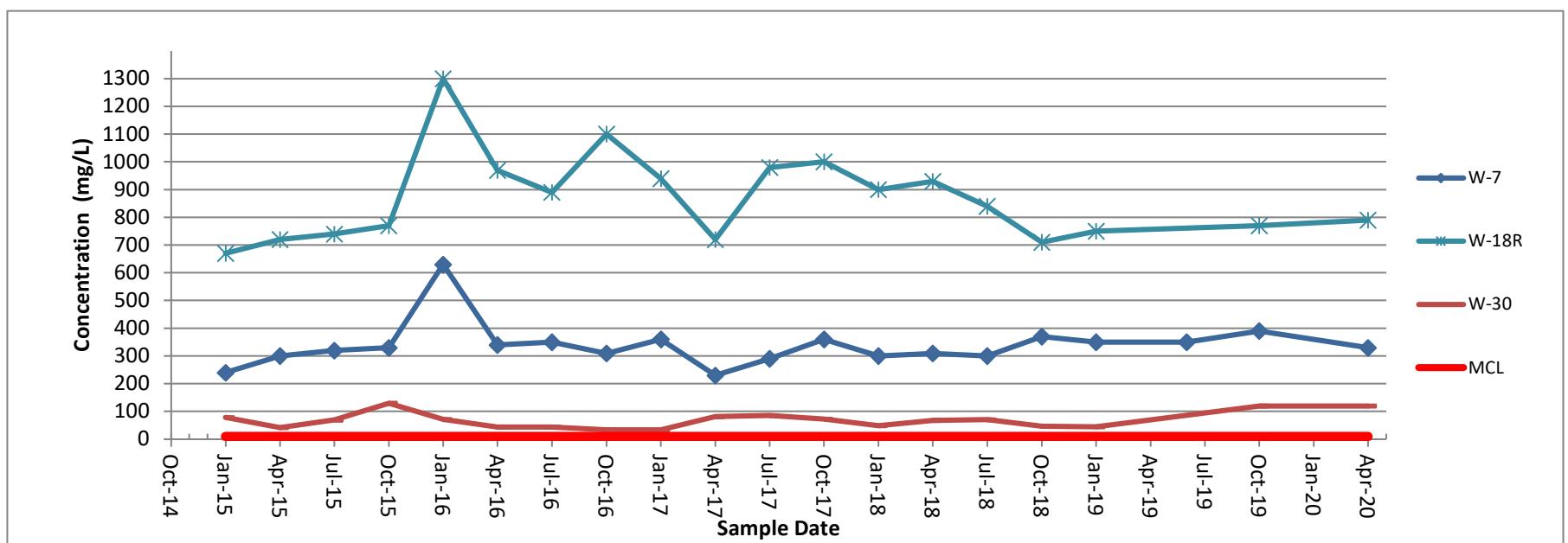
J - Estimated result is less than the practical quantitation limit and greater than the method detection limit

---

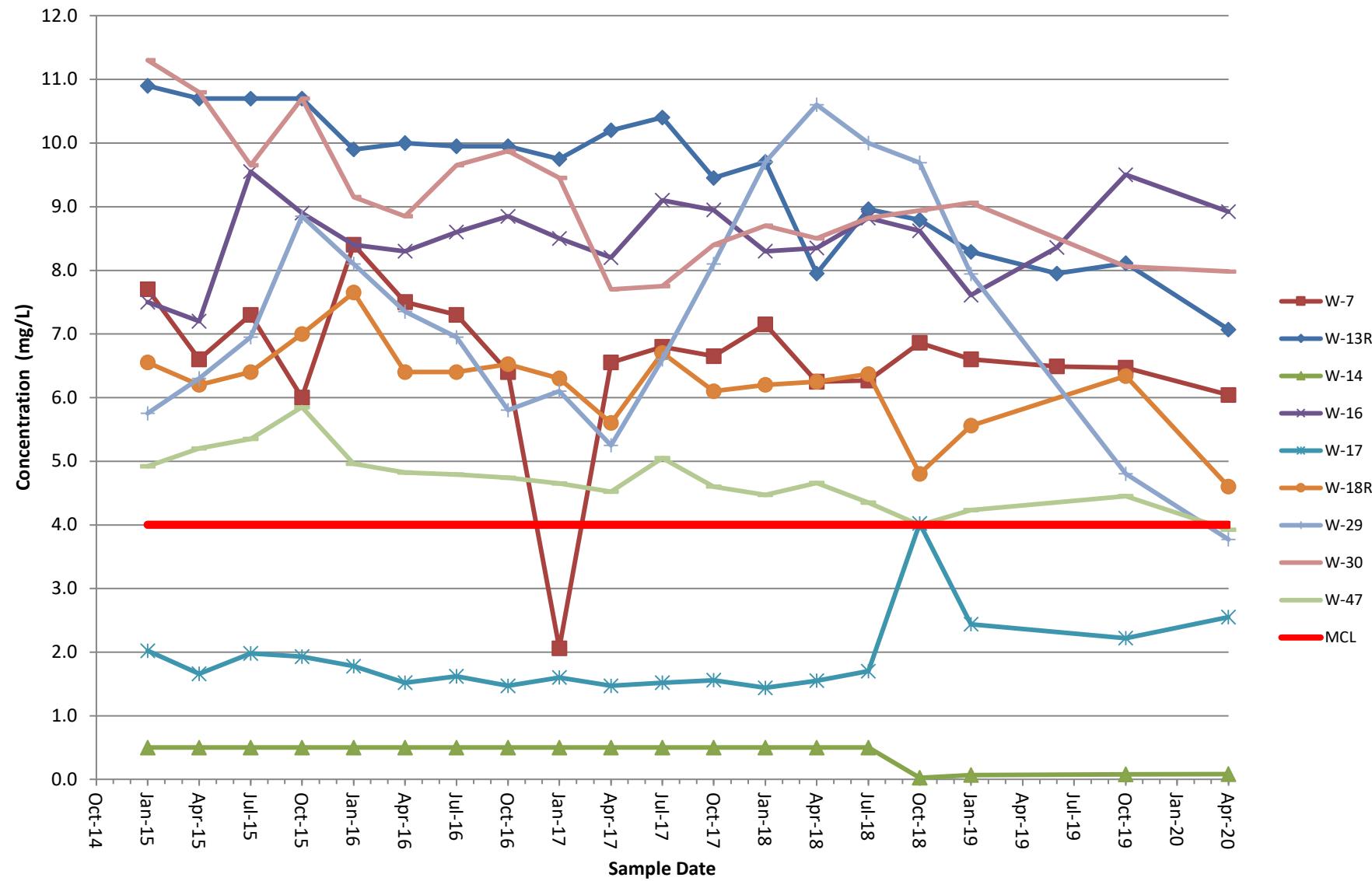
## Appendix D – Trend Plots

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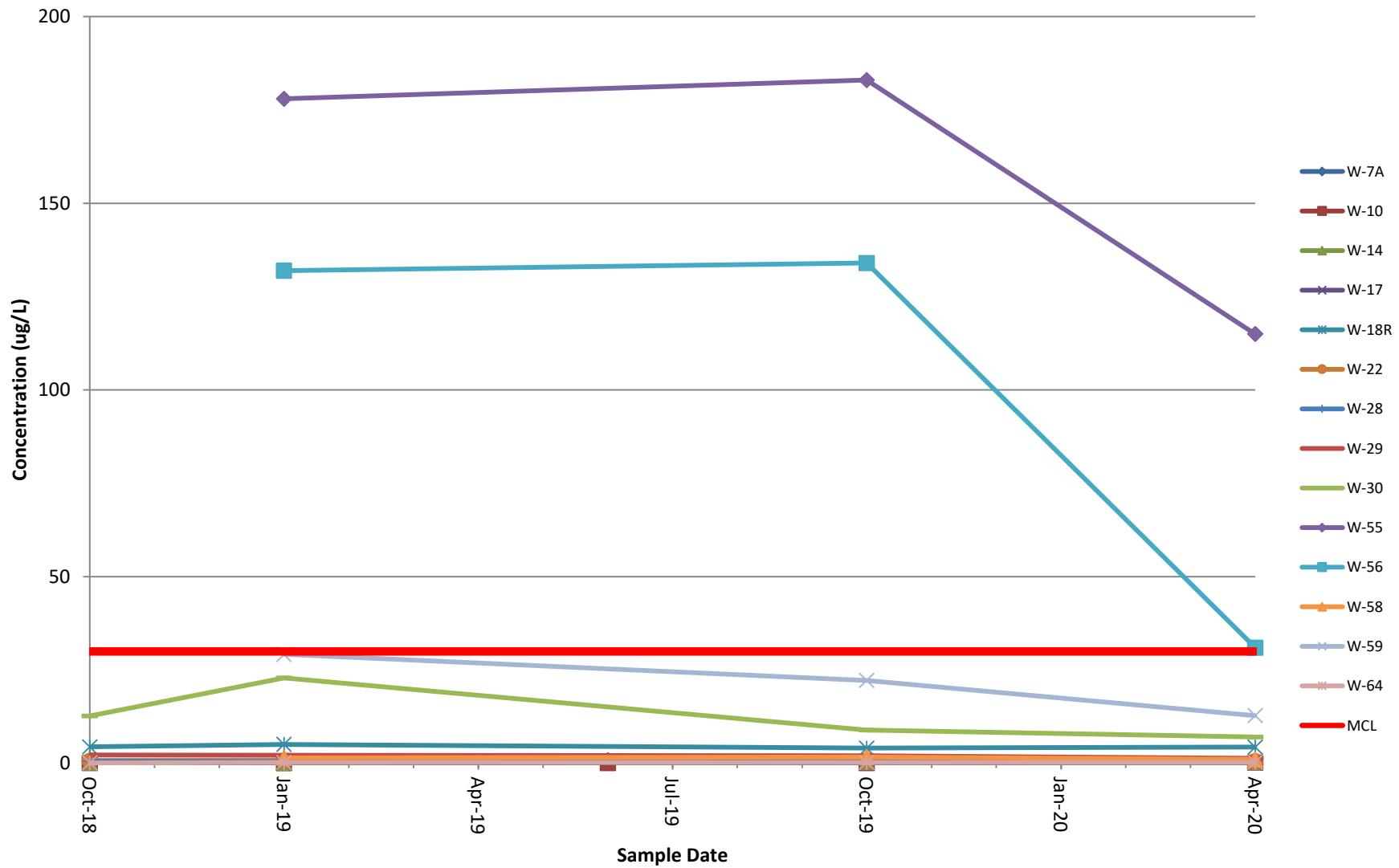
**Figure D1 - Nitrate Concentration Trends**



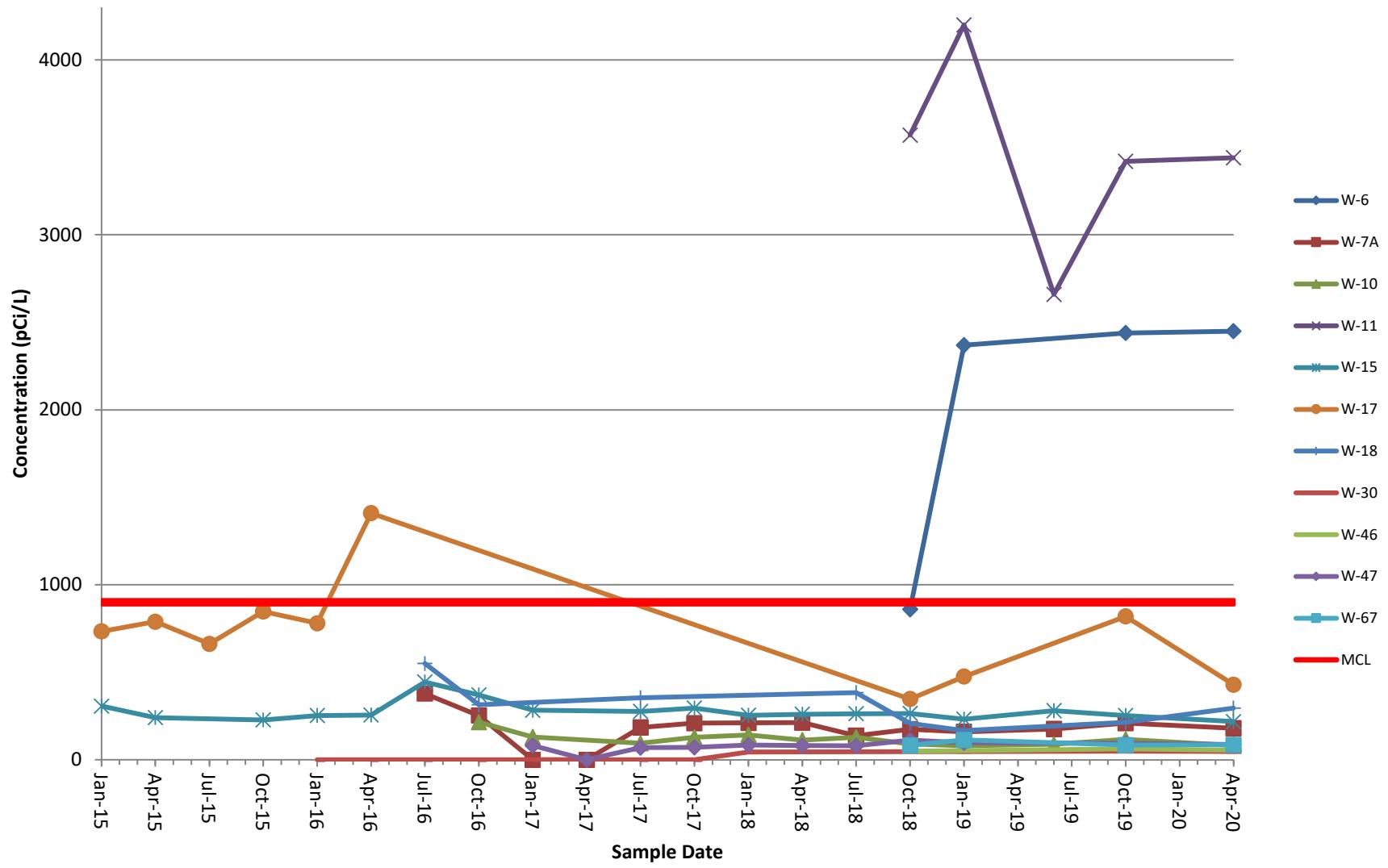
## Figure D2- Fluoride Concentration Trends



### Figure D3- Uranium Concentration Trends



## Figure D4- Technetium-99 Concentration Trends



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## Appendix E – DHEC Correspondence

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**From:** [Joyner, Diana P](#)  
**To:** [Amick, Byron](#)  
**Subject:** RE: NPDES Permit Groundwater Sampling Request-Spring 2020  
**Date:** Friday, February 28, 2020 12:04:41 PM  
**Attachments:** [image002.png](#)

---

Thank you Byron.

Diana

**Diana P. Joyner**

[joynerdp@westinghouse.com](mailto:joynerdp@westinghouse.com)  
803.647.1920 (office) | 803.497.7062 (mobile)

---

**From:** Amick, Byron <AMICKBM@dhec.sc.gov>  
**Sent:** Thursday, February 27, 2020 2:56 PM  
**To:** Joyner, Diana P <joynerdp@westinghouse.com>; Leypoldt, Dustin <leypold@dhec.sc.gov>; Moores, Carolyn T. <mooresct@dhec.sc.gov>; Rippy, Crystal <RIPPYCD@dhec.sc.gov>  
**Cc:** Hindman, Melanie <Hindmamh@dhec.sc.gov>; Johnson, Sonya C. <JOHNSOSC@dhec.sc.gov>; Jones, Samuel M. <jonessm1@dhec.sc.gov>; Parr, Nancy B. <parrnb@westinghouse.com>; Crews, Randy E <crewsre@westinghouse.com>; Logsdon, Cynthia J. <logsdocj@westinghouse.com>; Grant, Jeremy <jeremy.grant@aecom.com>  
**Subject:** RE: NPDES Permit Groundwater Sampling Request-Spring 2020

**[External Email]**

After consulting with the Department's Groundwater Protection and Agricultural Permitting Section, we hereby approve of your request to move the upcoming round of groundwater sampling requirements in the current NPDES Permit (SC0001848) from December, January or February to April, May and June of this year to match the requirements of the Consent Agreement.

I apologized for the delay in responding.

**Byron M. Amick**

Environmental Engineering Associate  
Water Facilities Permitting Division  
**S.C. Dept. of Health & Environmental Control**  
Office: (803) 898-4236  
Connect: [www.scdhec.gov](http://www.scdhec.gov) [[scdhec.gov](#)] [Facebook](#) [[facebook.com](#)] [Twitter](#) [[twitter.com](#)]



---

**From:** Joyner, Diana P [<mailto:joynerdp@westinghouse.com>]  
**Sent:** Wednesday, January 29, 2020 2:10 PM  
**To:** Amick, Byron <[AMICKBM@dhec.sc.gov](mailto:AMICKBM@dhec.sc.gov)>; Leypoldt, Dustin <[leypold@dhec.sc.gov](mailto:leypold@dhec.sc.gov)>; Moores, Carolyn T. <[mooresct@dhec.sc.gov](mailto:mooresct@dhec.sc.gov)>  
**Cc:** Hindman, Melanie <[Hindmamh@dhec.sc.gov](mailto:Hindmamh@dhec.sc.gov)>; Johnson, Sonya C. <[JOHNSOSC@dhec.sc.gov](mailto:JOHNSOSC@dhec.sc.gov)>; Jones, Samuel M. <[jonessm1@dhec.sc.gov](mailto:jonessm1@dhec.sc.gov)>; Parr, Nancy B. <[parrnb@westinghouse.com](mailto:parrnb@westinghouse.com)>; Crews, Randy E <[crewsre@westinghouse.com](mailto:crewsre@westinghouse.com)>; [logsdocj@westinghouse.com](mailto:logsdocj@westinghouse.com); Grant, Jeremy <[jeremy.grant@aecom.com](mailto:jeremy.grant@aecom.com)>  
**Subject:** NPDES Permit Groundwater Sampling Request-Spring 2020  
**Importance:** High

\*\*\* Caution. This is an EXTERNAL email. DO NOT open attachments or click links from unknown senders or unexpected email. \*\*\*

Carolyn, Dustin and Byron-

Per my in-person conversation with Byron on January 9<sup>th</sup>, 2020, the Westinghouse site is seeking concurrence with the department on pending groundwater well sample collection for the first semi-annual cycle in 2020. This request is similar to the one you approved on August 26, 2019.

Current Sampling Commitments: Existing Permit, Draft Permit, Consent Agreement

- Per the site's **existing permit** Part III, Section C, measurement frequency shall be semi-annual.  
*Samples shall be taken in the winter months of December, January or February, and in the summer months of June, July or August and the results shall be included in the annual report submitted to DHEC by September 28th of the same year. The annual report must reference Site ID #00456.*
- Per the current **draft permit**, Part III Section C b. measurement frequency shall be semiannual according to the table below:
  - a. The permittee shall follow the Groundwater Sampling Period and Reporting Deadline in the table below for the coordinating Measurement Frequency indicated in the table (in paragraph a) above:

Measurement Frequency	Groundwater Sampling Period	Reporting Deadline
Semi-Annually	April 1 <sup>st</sup> – June 30 <sup>st</sup>	July 28 <sup>th</sup>
	October 1 <sup>st</sup> – December 31 <sup>st</sup>	January 28 <sup>th</sup>

- Per the site's **consent agreement RI Work Plan timeline**, the existing 20 NPDES wells, 41 other site wells (not currently NPDES permit wells), and newly installed RI Work Plan wells (29) for a total of 90 wells were last sampled in October 2019. The results of this sampling campaign were shared with department representatives from two bureaus on January 9, 2020. The audience included Byron Amick, Dusty Leypold, and Carolyn Moores from the NPDES and Groundwater divisions. The formal report will be submitted to the department no later than February 28, 2020.

The time frames for the above listed commitments are not aligned and in their present state would require the site to conduct 2 separate groundwater sampling campaigns over a 4-6 month period. As Westinghouse transitions from an annual to a semi-annual reporting frequency, we do not feel two site-wide campaigns in such a short time frame would be beneficial.

Westinghouse would like to propose that the current permit requirement to collect samples in the winter months of December, January, or February be stayed so that sampling can be conducted in accordance with the timeline of the draft permit (i.e. April, May and June). If approved, Westinghouse intends to schedule the sampling for April of 2020.

The Department's consideration of this request is most appreciated.

Diana

**Diana P. Joyner**

Principal Environmental Engineer  
Westinghouse Electric Company, LLC  
Columbia Fuel Fabrication Facility  
[joynerdp@westinghouse.com](mailto:joynerdp@westinghouse.com)  
803.647.1920 (office) | 803.497.7062 (mobile)

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**From:** [Joyner, Diana P](#)  
**To:** [Moores, Carolyn T.](#)  
**Subject:** RE: Westinghouse Groundwater Monitoring Report and E-Permitting Platform  
**Date:** Friday, August 14, 2020 11:43:09 AM  
**Attachments:** [image003.png](#)

---

Thank you Carolyn.

I am in agreement with your summary of our conversation yesterday regarding ePermitting and the annual Groundwater report for Westinghouse.

Looking forward to hearing from you further when you have more information.

Diana

**Diana P. Joyner**

Principal Environmental Engineer  
Westinghouse Electric Company, LLC  
Columbia Fuel Fabrication Facility  
[joynerdp@westinghouse.com](mailto:joynerdp@westinghouse.com)  
803.647.1920 (office) | 803.497.7062 (mobile)

---

**From:** Moores, Carolyn T. <[mooresct@dhec.sc.gov](mailto:mooresct@dhec.sc.gov)>  
**Sent:** Friday, August 14, 2020 11:13 AM  
**To:** Joyner, Diana P <[joynerdp@westinghouse.com](mailto:joynerdp@westinghouse.com)>  
**Subject:** Re: Westinghouse Groundwater Monitoring Report and E-Permitting Platform

[External Email]

Good morning,

Per our conversation yesterday, I wanted to let you know I am checking on the schedule status that is in epermitting for Westinghouse. Your concerns were that the 'renewed' permit schedule was entered into epermitting while your facility is still officially operating under the 'old' permit schedules. The schedule in epermitting should reflect the conditions of the current permit and then be changed to reflect the renewed permit when it goes into effect. I will investigate this issue and get back with you soon, hopefully next week.

Submitting the Groundwater Data via ePermitting is acceptable and preferable. As we discussed in our telephone conversation, this is a transition phase and as I understand at this point in time, the Bureau of Water can still accept hard copies or PDF's but the Bureau is trying hard to get everyone on board with the ePermitting system as soon as possible.

I will be checking into the status of the formats that can be accepted in the epermitting drag and drop submission box. This is known to be useful for dropping lab data sheets in pdf format to support the groundwater monitoring report submissions. We are hoping it can also be useful for dropping a spreadsheet-style data file that could accommodate the need for high volume well and analyte sample reporting, such as an excel or comma delineated format. I will also get back to you on that, but it may not be as quickly as next week. It is understood that when the file drop of that sort becomes available, that Westinghouse would then load the groundwater data from this year into the epermitting database.

Will be in touch on these issues,

Carolyn Moores

---

**From:** Joyner, Diana P <[joynerdp@westinghouse.com](mailto:joynerdp@westinghouse.com)>  
**Sent:** Wednesday, August 12, 2020 3:43 PM  
**To:** Moores, Carolyn T. <[mooresct@dhec.sc.gov](mailto:mooresct@dhec.sc.gov)>  
**Subject:** RE: Westinghouse Groundwater Monitoring Report and E-Permitting Platform

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Sounds great. Talk to you then!

Diana

---

**From:** Moores, Carolyn T. <[mooresct@dhec.sc.gov](mailto:mooresct@dhec.sc.gov)>  
**Sent:** Wednesday, August 12, 2020 3:39 PM  
**To:** Joyner, Diana P <[joynerdp@westinghouse.com](mailto:joynerdp@westinghouse.com)>  
**Subject:** Re: Westinghouse Groundwater Monitoring Report and E-Permitting Platform

[External Email]

Diane,

Let's shoot for the early window, I can give you a call in the morning. I must caution you that I am no expert in epermitting but I will do my best to help or find answers or people who can answer your questions.

Carolyn

---

**From:** Joyner, Diana P <[joynerdp@westinghouse.com](mailto:joynerdp@westinghouse.com)>  
**Sent:** Wednesday, August 12, 2020 3:33 PM  
**To:** Moores, Carolyn T. <[mooresct@dhec.sc.gov](mailto:mooresct@dhec.sc.gov)>  
**Subject:** RE: Westinghouse Groundwater Monitoring Report and E-Permitting Platform

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That would be great Carolyn. I'm free from 8-9:30 and then again at 11:30.

Looking forward to hearing from you.

Diana

---

**From:** Moores, Carolyn T. <[mooresct@dhec.sc.gov](mailto:mooresct@dhec.sc.gov)>  
**Sent:** Wednesday, August 12, 2020 3:11 PM  
**To:** Joyner, Diana P <[joynerdp@westinghouse.com](mailto:joynerdp@westinghouse.com)>  
**Subject:** Re: Westinghouse Groundwater Monitoring Report and E-Permitting Platform

[External Email]

Diana,

I was in meetings this morning when I received this email and am currently still in meetings. Perhaps we can try tomorrow?

Carolyn

---

**From:** Joyner, Diana P <[joynerdp@westinghouse.com](mailto:joynerdp@westinghouse.com)>  
**Sent:** Wednesday, August 12, 2020 10:53 AM  
**To:** Moores, Carolyn T. <[mooresct@dhec.sc.gov](mailto:mooresct@dhec.sc.gov)>  
**Cc:** Leypoldt, Dustin <[leypold@dhec.sc.gov](mailto:leypold@dhec.sc.gov)>; Parr, Nancy B. <[parrnb@westinghouse.com](mailto:parrnb@westinghouse.com)>; Williams, Charles J.

<williacj@dhec.sc.gov>

**Subject:** RE: Westinghouse Groundwater Monitoring Report and E-Permitting Platform

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Carolyn-

Could we please have a follow-up discussion later today about the correspondence below?

I have a fairly open schedule for the remainder of the day except between 3-4 pm.

My contact number is 803.497.7062.

I look forward to hearing from you.

Thanks,

Diana

---

**From:** Moores, Carolyn T. <[mooresct@dhec.sc.gov](mailto:mooresct@dhec.sc.gov)>

**Sent:** Wednesday, June 24, 2020 11:35 AM

**To:** Joyner, Diana P <[joynerdp@westinghouse.com](mailto:joynerdp@westinghouse.com)>

**Cc:** Leypoldt, Dustin <[leypoldd@dhec.sc.gov](mailto:leypoldd@dhec.sc.gov)>; Parr, Nancy B. <[parrnb@westinghouse.com](mailto:parrnb@westinghouse.com)>; Williams, Charles J.

<[williacj@dhec.sc.gov](mailto:williacj@dhec.sc.gov)>

**Subject:** Re: Westinghouse Groundwater Monitoring Report and E-Permitting Platform

[External Email]

Diana,

Thank you for reaching out to us with your questions on our new online platform, ePermitting. Do not worry about the overdue status showing in ePermitting right now. When you electronically submit sample results into the system, it will be corrected.

We will be sending a letter out soon with more information about the system. However, in the interim, the groundwater samples that were due January 28, 2020 will need to be submitted electronically. Training for navigating and using the ePermitting website is available on the Department website at [www.scdhec.gov/ePermitting/training](http://www.scdhec.gov/ePermitting/training).

To complete GMRs the following information will be required in addition to entering the sample analysis results:

1. Lab sheets in pdf format
2. Monitoring well elevation within 0.01 ft msl in order to report water table elevation
3. Location of all monitoring wells

I checked your groundwater monitoring schedules in ePermitting, and it appears they are showing up correctly according to the working permit. The working permit is for semi-annual submissions due January 28 and July 28. As you know, the January 28 submission is showing as overdue (this will be corrected when you submit electronically) and the July 28 submission is shown in the right panel in the "Upcoming" column. Currently, you will not have access to submit the midyear sample until 30 days prior, which is stated with the schedule information.

As far as the upcoming permit renewal, it is my understanding that this will also be semi-annual, although the dates have been adjusted to accommodate the remedial investigation requirements to avoid duplicating work. The schedules in ePermitting will be adjusted when the new permit takes effect.

If you have any more questions, feel free to contact me and we can work through this transition to online submissions.

Thank you,

Carolyn Moores

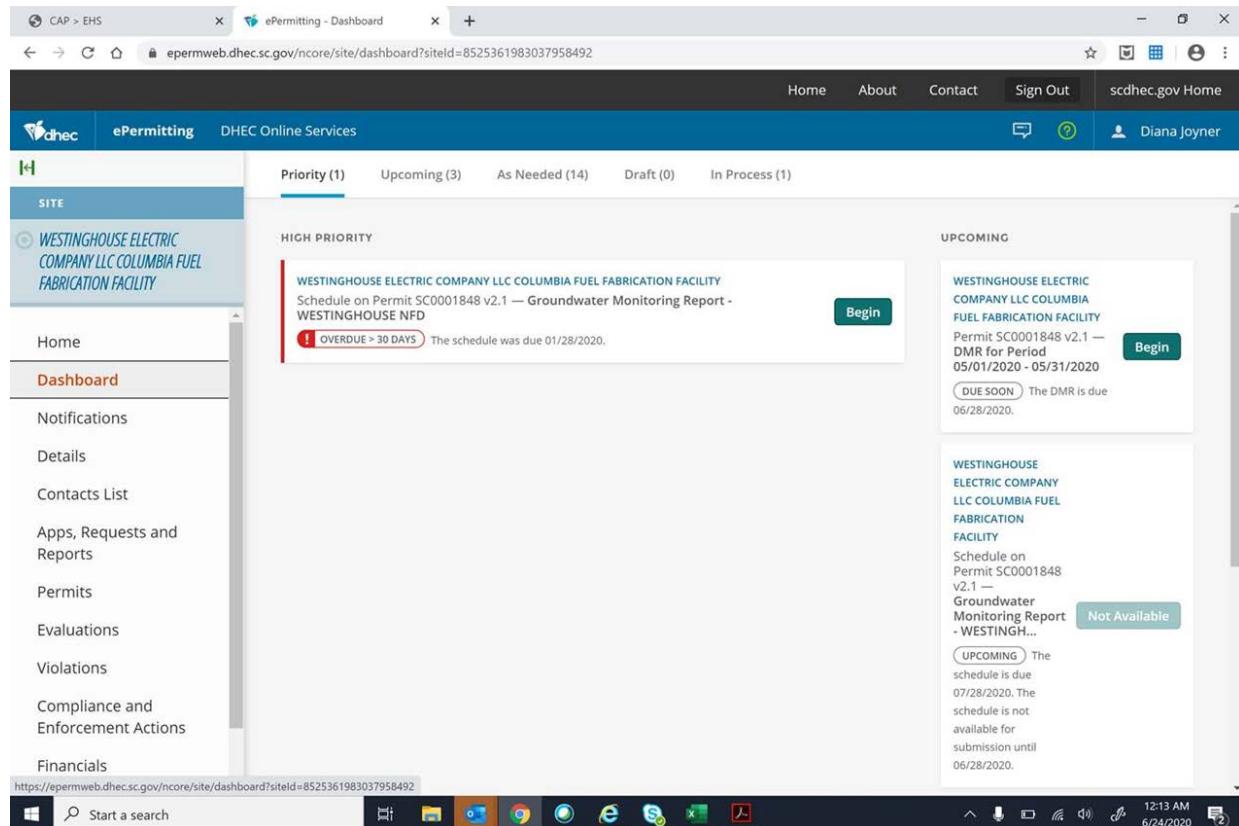
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**From:** Joyner, Diana P <[joynerdp@westinghouse.com](mailto:joynerdp@westinghouse.com)>  
**Sent:** Wednesday, June 24, 2020 12:25 AM  
**To:** Moores, Carolyn T. <[mooresct@dhec.sc.gov](mailto:mooresct@dhec.sc.gov)>; Leypoldt, Dustin <[leypold@dhec.sc.gov](mailto:leypold@dhec.sc.gov)>  
**Cc:** Amick, Byron <[AMICKBM@dhec.sc.gov](mailto:AMICKBM@dhec.sc.gov)>; Parr, Nancy B. <[parrnb@westinghouse.com](mailto:parrnb@westinghouse.com)>;  
[logsdockj@westinghouse.com](mailto:logsdockj@westinghouse.com) <[logsdockj@westinghouse.com](mailto:logsdockj@westinghouse.com)>  
**Subject:** Westinghouse Groundwater Monitoring Report and E-Permitting Platform

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Carolyn and Dustin-

Hello. I hope that this email finds you both well. I wanted to reach out to you both regarding my site's groundwater monitoring report as it relates to the e-permitting program.

Westinghouse recently received the documentation from DHEC to initiate the e-permitting program for our site. I was recently established as an administrator and began exploring the e-permitting platform. While navigating through our files, I noticed that we have an overdue groundwater report in our dashboard. In addition, we have an upcoming GMR due July 28, 2020. Please see the screenshot below.



I understand from a separate discussion with Byron Amick that this "overdue" alert may be a global issue that the department is working on. I wanted to confirm this information and see if there is anything Westinghouse needs to do in the interim while the global issue is being resolved. Secondly, I wanted to ask that you check the frequency of our current reporting requirement in the e-permitting system. It appears that our draft permit criteria was entered for the

GMR due dates (semi-annual) as opposed to our existing permit criteria (annual).

I look forward to hearing from you.

Thanks,  
Diana

**Diana P. Joyner**

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Columbia Fuel Fabrication Facility  
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