hart hickman
SMARTER ENVIRONMENTAL SOLUTIONS

Via Email

August 31, 2022

North Carolina Department of Environmental Quality
Division of Waste Management – Brownfields Program
1646 Mail Service Center
Raleigh, North Carolina 27699-1646

Attn: Ms. Sharon Eckard, PG

Re: Revised Brownfields Assessment Work Plan
Chapel Hill Police Department
828 Martin Luther King Jr. Blvd
Chapel Hill, Orange County, North Carolina
Brownfields Project No. 23022-19-068
H&H Job No. TCH-009

Dear Sharon:

1.0 Introduction

On behalf of the Town of Chapel Hill (Town), Hart & Hickman, P.C. (H&H) has prepared this Work Plan to conduct Brownfields assessment activities at the Chapel Hill Police Department Brownfields property (Brownfields Project No. 23022-19068) located at 828 Martin Luther King Jr. Boulevard in Chapel Hill, Orange County, North Carolina (subject Site or Site). The Site is comprised of one parcel of land that is approximately 10.24 acres in size and is developed with a two-story approximately 35,000 square foot (sq ft) building located in the north-central portion of the Site. The building and associated parking areas are currently used for police department operations by the Town. A Site location map is provided as Figure 1, and the Site and surrounding area are shown in Figure 2.

The Town is currently evaluating potential mixed-used redevelopment that may include a new Municipal Services Center, residential housing, and/or retail. As part of the evaluation process, the Town applied for entry into the North Carolina Department of Environmental Quality (DEQ)

Brownfields Program, and received eligibility (Brownfields Project No. 23022-19-068) via a Letter of Eligibility dated October 1, 2019.

A brief summary of prior environmental assessment activities conducted at the Site is provided in Section 2.0 below.

2.0 Site Background

Previous assessment activities indicated that the Site was initially used as a borrow pit from the late 1950s to early 1960s, and then was used as a fill site by a previous owner for construction debris and coal combustion products (CCPs) from the mid-1960s to the mid-1970s. In the early 1980s, the Town acquired the property and constructed the current police department building. The Site consists of an upper level where the borrow pit was located which is now occupied by the police department building and parking areas, and a lower level adjacent to Bolin Creek where the Bolin Creek Trail is located. The upper and lower levels are separated by a steep embankment. The Site layout and area of CCPs are depicted on Figure 2.

Assessment activities were conducted at the Site from 2013 to 2020 to investigate potential environmental impacts associated with historical placement of structural fill containing CCPs. The investigation activities included the collection and laboratory analysis of CCPs, groundwater, soil, sediment, and surface water samples. Based on assessment activities, the primary compounds of concern (COCs) detected in CCPs, shallow soil, and drainage pathway soil are certain metals. Results of analysis of samples of CCPs indicate that arsenic, barium, manganese, mercury, and selenium were detected above soil background levels and the DEQ Preliminary Soil Remediation Goals (PSRGs). The most prevalent compound detected above soil background levels and PSRGs in CCPs is arsenic.

In addition to COCs being identified in CCPs and soil, COCs have been detected in perched groundwater zones within the fill material. However, groundwater assessment activities identified limited to no impacts in the underlying unconfined aquifer downgradient of the fill area. Assessment activities also identified no significant impacts to stream sediment or surface water in

Bolin Creek. Additional background information and the methods and results of previous assessment activities are provided in the following documents:

- *Phase I & Limited Phase II Environmental Site Assessment*, Falcon Engineering, Inc., July 18, 2013;
- *Phase II Remedial Investigation Report*, H&H, January 26, 2017;
- *Results of Data Gap Sampling Report*, H&H, May 23, 2019; and
- *Results of Post-Data Gap Assessment Report*, H&H, December 1, 2020.

In 2020, interim remedial measures (IRMs) were implemented, which included excavation and off-Site disposal of soil and exposed CCPs along Bolin Creek Trail, stabilization and cover of exposed CCPs along the embankment between the upper and lower portions of the Site, and temporary measures to address stormwater and erosion control in the area of the embankment. Specifically, approximately 1,004 tons of soil/CCPs at the base of the embankment and along Bolin Creek were excavated and transported off-Site for disposal. In addition, super silt fencing and hydroseed were placed along the embankment, and a new stormwater diversion channel was installed along portions of the top of the embankment to minimize the potential for future erosion of soil/CCPs on the embankment. The interim measures are documented in an *Interim Remedial Measures Report* prepared by H&H dated April 19, 2021.

Risk assessment activities performed after IRMs concluded that the Bolin Creek Trail is safe for users. Under present conditions, CCP fill material at the Site is covered by at least 2 ft of soil cover, with the exception of localized areas in the upper level with 1 to 2 ft of soil cover and localized areas of exposed CCPs along the embankment where IRMs were implemented (see Figure 2). Based on potential future redevelopment scenarios, the Town requested that H&H perform additional risk assessment activities to evaluate further measures recommended to address CCPs at the Site. The risk assessment recommended implementation of permanent measures to address exposed CCPs along the embankment, potentially addressing isolated areas of soil impacts if the Site is used for residential purposes, and managing CCPs through the implementation of land use restrictions (LURs) and/or a DEQ-approved Environmental Management Plan (EMP), which

can all be implemented as part of Site redevelopment. Details associated with the risk assessment activities are provided in a *Risk Assessment Report* dated October 7, 2021.

On March 30, 2022, H&H participated in a virtual meeting with the DEQ Brownfields Program and Town personnel to discuss potential data gaps and the scope of Brownfields assessment activities needed to address potential data gaps. On June 22, 2022, H&H participated in an additional virtual meeting with the DEQ Brownfields Program to further discuss proposed Brownfields assessment activities. The June 22nd meeting resulted in an email from DEQ requesting assessment of groundwater, soil, and vapor intrusion. To address DEQ's request for assessment at the Site, H&H submitted a Brownfields Assessment Work Plan (Work Plan) dated July 21, 2022. Following review of the Work Plan, DEQ provided comments in an email dated August 18, 2022. This Revised Work Plan has been prepared to address those comments, the details of which are included in the following sections.

3.0 Brownfields Assessment Activities

The proposed Brownfields assessment activities will be performed in general accordance with the DEQ Inactive Hazardous Sites Branch (IHSB) *Guidelines for Assessment and Cleanup* (Guidelines) dated July 2021, the DEQ Division of Waste Management (DWM) *Vapor Intrusion Guidance* dated March 2018, Brownfield's *Vapor Intrusion Assessment Work Plan & Report Checklist* dated July 2021, and the most recent versions of the U.S. EPA Region IV Laboratory Services and Applied Science Division (LSASD) *Field Branches Quality System and Technical Procedures* guidance.

Prior to conducting field activities, H&H will contact North Carolina 811 One-Call, the public utility locator service, to mark subsurface utilities at the Site. H&H will also contract a private utility locator to identify and mark locations of sub-grade utilities in the vicinity of the proposed assessment activities at the Site that may not be marked by the public locator.

3.1 Receptor Survey

H&H will perform a Brownfields receptor survey in accordance with DEQ Brownfields Section guidance. The receptor survey will use the Brownfields Property Receptor Survey Form and will include information about land use in the Site area including zoning. H&H will also conduct a field search for water supply wells, basements, utility manways and chases, storm sewers, other underground utilities, drains, and surface water within a 1,500 ft radius of the Brownfields property boundaries.

3.2 Soil Assessment Activities

H&H proposes to advance one soil boring to evaluate subsurface conditions in the vicinity of a diesel fuel aboveground storage tank (AST). The AST is associated with an emergency generator located in the northern portion of the Site. Additionally, three shallow soil borings will be advanced in the proposed stormwater pond area located in the eastern portion of the site. The approximate location of the proposed soil borings are shown on Figures 3 and 4.

H&H will use a decontaminated stainless steel hand auger to advance the borings to a depth of approximately 5 feet below ground surface (ft bgs). The soil borings will be logged for lithological description and field screened for indication of potential impacts by observation for staining, unusual odors, the presence of CCPs, and the presence of volatile organic vapors using a calibrated photoionization detector (PID). One sample will be collected from each soil boring at a depth interval interpreted most likely to be impacted based on field observations and PID readings. If evidence of impacts are not observed, surficial soil samples (approximately 0-2 ft bgs) will be collected.

The soil samples will be placed in dedicated laboratory-supplied sample containers, labeled with the sample identification, date, and requested analysis, and placed in a laboratory-supplied cooler with ice. The soil samples will then be submitted to Pace Analytical (Pace), a North Carolina certified laboratory, under standard chain of custody protocols for analysis of volatile organic compounds (VOCs) by EPA Method 8260 and semi-VOCs (SVOCs) by EPA Method 8270. Based

upon previous analytical data, the soil samples will also be analyzed for the Site-specific COCs: arsenic, barium, beryllium, cadmium, total chromium, cobalt, copper, manganese, nickel, selenium, thallium, and vanadium by EPA Method 6020, hexavalent chromium by EPA Method 7199, mercury by EPA 7471, and strontium by EPA Method 6010. Proposed laboratory analyses are also provided in Table 1. Information pertaining to Pace's certifications and accreditations is provided in Appendix A.

Following sampling activities, the soil borings will be properly abandoned and the surfaces will be repaired similar to pre-sampling conditions. Additionally, the soil sample locations will be recorded using a hand-held GPS unit.

3.3 Groundwater Assessment Activities

H&H proposes to sample all existing monitoring wells, which include an upgradient well (MW-5), wells installed in perched water in the fill (MW-1, MW-1A, MW-8 and MW-9), wells downgradient and cross-gradient of the fill area (MW-3A, MW-4A, MW-6, and MW-7), and a well in bedrock below the fill (MW-11D). The locations of the existing monitoring wells are depicted on Figures 3 and 4.

Prior to groundwater sampling, H&H will open the monitoring wells to allow for water level equilibration. Following equilibration, water levels will be collected from monitoring wells for the generation of a potentiometric surface map. H&H will collect groundwater samples using low flow/low stress purging techniques using a peristaltic pump and disposable polyethylene tubing or a bladder pump if the depth to water is below 30 ft bgs. The intake point of the pump tubing will be placed approximately in the mid-portion of the screened interval of the well and groundwater will be removed at a rate no greater than 200 milliliters per minute. H&H will use a water quality meter to measure pH, temperature, dissolved oxygen, oxidation reduction potential, turbidity, and specific conductivity at 3 to 5-minute intervals during purging. Purging will be considered complete when water quality parameters stabilize (i.e., pH ± 0.1 SU, conductivity varies no more than 5%, and turbidity is less than 10 NTUs). If turbidity cannot be reduced to less than 10 NTUs, a filtered and unfiltered sample will be collected for analysis of metals.

Once groundwater parameters stabilize, a groundwater sample from each monitoring well will be collected directly from the pump tubing into laboratory-supplied sample containers except that samples for VOC analysis that are collected with a peristaltic pump will be collected using the "soda straw" method to minimize volatile loss through the peristaltic pump head. Specifically, for the soda straw method, the sample tubing will be disconnected from the outflow side of the pump head, the tubing will be removed from the well, and then the sample containers will be filled by reversing the flow direction of the peristaltic pump. The sample containers will be labeled with the sample identification, date, and requested analysis, and then placed in a laboratory-supplied cooler and iced. The samples will be delivered to Pace under standard chain of custody protocols for analysis of VOCs by EPA Method 8260 (including low level 1,4-dioxane via Selected Ion Monitoring [SIM]), SVOCs by EPA Method 8270, hexavalent chromium by EPA Method 7199, strontium by EPA Method 6010, and an additional inorganics analytes list determined by DEQ (DEQ Analyte List). The DEQ Analyte List with analytical methods is provided in Appendix B and was derived from Duke Energy's monitoring plan for an industrial landfill at the Marshall Steam Station facility in Catawba County, North Carolina that is permitted to receive CCPs as well as other materials. Note that H&H proposes to omit calcium, iron, lead, magnesium, and silver from the proposed DEQ Analyte List. These analytes are not considered COCs because groundwater samples were previously collected for analysis of these metals and they were not detected above standards as documented in previous reports. Additionally, after the initial assessment activities at the Site, DEQ IHSB provided concurrence with the omission of these analytes for further assessment activities that are documented in the January 2017 *Phase II Remedial Investigation Report*. However, at the request of the DEQ Brownfields Program following their review of the July 2022 Work Plan, antimony, boron, molybdenum, thallium, vanadium, and zinc have been added to the proposed DEQ Analyte List .

Table 1 summarizes the proposed groundwater samples and associated analyses. Information pertaining to Pace's certifications and accreditations is provided in Appendix A.

3.4 Vapor Intrusion Assessment Activities

H&H proposes to conduct sub-slab soil vapor and exterior soil gas assessment activities to evaluate the potential for structural vapor intrusion into current and potential future Site structures. The approximate locations of the proposed sub-slab soil vapor samples (2) and the exterior soil gas samples (7) are shown on Figures 3 and 4, and are described below:

- Two sub-slab vapor samples will be collected from the western and eastern portions of the existing police building;
- One soil gas sample will be collected in the footprint of a conceptual office building; and
- Six soil gas samples will be collected in the footprint of a conceptual multi-family residential building with an integrated parking garage.

H&H proposes to install each sub-slab vapor point by utilizing a hammer drill and 5/8-inch diameter drill bit to advance the boring through the concrete slab. Following concrete borehole advancement, loose concrete cuttings will be removed from the boring using a bottlebrush and vacuum with a high-efficiency particulate air (HEPA) filter. A Cox-Colvin Vapor Pin™ (vapor pin) assembly (brass sampling point and silicone sleeve) will be seated in the borehole using an installation/extraction tool and hammer. The vapor pins will be connected at the surface with ¼-inch new and dedicated Teflon® tubing and installed as temporary sub-slab vapor points. Sample points will be allowed at least 2 hours following installation to equilibrate prior to sampling.

H&H will install each exterior soil gas point to a depth of approximately 5.5 ft bgs using a hand auger. The soil gas points will each be installed with a 6-inch long 0.010-inch slot stainless steel screen set at the base of the boring connected to the surface with ¼-inch new and dedicated Teflon® tubing. The annular space will be filled with filter sand followed by a bentonite seal to prevent short-circuiting of air from the surface. The soil gas points will be installed as temporary points and will be allowed to equilibrate for a minimum of 48 hours after installation and prior to sample collection described below.

Prior to sample collection, a Landtec Gem 5000® or equivalent device will be connected to the sample Teflon® tubing and field measurements of static and differential pressure readings will be collected from each sampling point. After pressure readings are collected, a "shut-in" test will be conducted on the sampling train and helium leak checks will be conducted at each sampling point. The purpose of the shut-in test and helium leak check described below are to ensure that short circuiting with ambient air does not occur during sampling. A description of the shut-in test and helium leak testing procedures is provided below.

The shut-in test will be conducted by connecting the flow regulator with the vacuum gauge to the Summa® canister and sealing the flow regulator with the laboratory provided brass cap. Once the sampling train is "closed", the sample valve on the Summa® canister will be opened and the reading on the vacuum gauge will be recorded. The Summa® canister sample valve will then be closed, and the vacuum gauge will be observed to ensure no vacuum loss occurs. If the vacuum reading remains the same, the shut-in test will be considered successful. If vacuum loss occurs, the flow regulator and/or brass cap will be reseated, and the shut-in test will be repeated until the vacuum reading remains stable.

Following a successful shut-in test, a leak check will be conducted by constructing a shroud around the sample train at each sampling point and flooding the air with helium gas. Helium concentrations inside the shroud will be measured using a calibrated helium gas detector and maintained at concentrations of approximately 15% to 30% for the duration of the leak check. Using a syringe and three-way valve, the Teflon® sample tubing will be purged using the Landtec Gem 5000® (or equivalent device) while concurrently collecting field measurements of pressure, oxygen, carbon dioxide, and methane (percent by volume and percent lower explosive limit). Following collection of these measurements, a sample will be collected from the sample tubing outside the shroud into a Tedlar bag and analyzed using the helium gas detector to ensure that helium concentrations are less than 10% of the helium concentrations measure within the shroud.

After completion of the helium leak check, mercury vapor samples will be collected using an in-line laboratory-provided sorbent tube sampler. An air sampling pump and a flow meter will be used to collect the sample through the sample train at a constant rate of approximately 200

milliliters per minute over a laboratory-specified timeframe to achieve the suitable laboratory method detection limits. Due to the potential presence of background mercury in air, one field blank will be prepared during the sampling event. The field blank will be prepared by opening the sample media (sorbent tube) in an exterior field location and sealing it without collection of gas through the media.

Following sample collection for mercury analysis, the sample media will be shipped under standard chain-of-custody protocols to EMSL Analytical, Inc. (EMSL) for analysis of elemental mercury by National Institute for Occupational Safety and Health (NIOSH) Method 6009. The sample will be collected over a period of time and at a flow rate for the laboratory to achieve a minimum reporting limit for mercury below the July 2022 DEQ Residential Sub-Slab and Exterior Soil Gas Screening Level (SGSL) of 2.1 micrograms per cubic meter ($\mu g/m^3$).

Following mercury sampling, samples for VOC analysis will be collected from the sampling point using individually-certified 1-liter or 3-liter stainless steel Summa® canisters connected to an air-flow regulator calibrated by the laboratory for collection of a sample at a rate of approximately 100 milliliters per minute. To conduct the sampling, the intake valve on the Summa® canister will be fully opened to begin collection of the sample and vacuum readings on the Summa® canister will be recorded prior to and following the sampling period to ensure adequate sample volume was collected. A vacuum will be maintained within the canisters at the conclusion of the sampling event, and vacuum measurements which include pre- and post-sampling, and sample collection time durations will be recorded on the chain-of-custody. Canisters that have lost greater than 10% of their vacuum as determined by comparing the vacuum recorded by the laboratory prior to shipment and the vacuum recorded in the field during the leak test procedures will not be used for sampling. In addition, a vacuum of five to seven inches of mercury will be maintained on the sample canisters until the conclusion of the sampling event.

After sample collection, the intake valve will be closed, and the regulator will be disconnected from the sample canister. The canisters will be placed in laboratory supplied shipping containers, properly labeled, and shipped under standard chain-of-custody protocols to SGS North America Inc. – Dayton (SGS) for analysis of VOCs by EPA Method TO-15. Table 1 summarizes the proposed sub-slab

vapor and soil gas and associated analyses. Information pertaining to EMSL's certifications and accreditations for mercury and SGS's certifications and accreditations for TO-15 in New Jersey (North Carolina does not provide TO-15 certifications) is provided in Appendix A.

After completion of the soil vapor VOC sample collection, H&H will cap the points for a minimum of least four hours prior to collection of a final round of methane, carbon dioxide, oxygen, and pressure measurements. A total of three pressure and two gas measurements will be collected per sample location. The interpreted stabilized/peak concentration of methane (percent by volume, percent lower explosive level, and parts per million) for each sampling point, field notes, and instrument logs will be provided in the Brownfields Assessment Report (discussed further in Section 3.7).

Upon completion of vapor intrusion assessment activities, sub-slab vapor and soil gas monitoring point locations will be recorded in the field using a hand-held GPS unit, and then properly abandoned. Surfaces will be repaired to generally match pre-sampling conditions.

3.5 Quality Assurance/Quality Control Samples

Non-dedicated equipment and tools will be decontaminated prior to use at each boring or sampling location or following exposure to soil, soil gas, sub-slab gas, and/or groundwater samples. Decontamination of non-dedicated equipment will follow U.S. EPA Region IV guidance (LSASDPROC-205-R4) and will consist of wiping the equipment clean, a water-rinse of the equipment, washing the equipment in water and detergent (i.e., Liquinox® or Luminox®), and a final rinse with water. The process will be repeated for grossly contaminated non-dedicated equipment.

For quality assurance and quality control purposes (QA/QC), and to evaluate the reproducibility of the sample results, H&H will collect the following: 1) one duplicate soil sample; 2) one duplicate groundwater sample; and 3) one duplicate soil gas or sub-slab gas sample for VOCs. The duplicate samples will be submitted for the same laboratory analysis as their respective parent samples. For the duplicate soil gas/sub-slab gas sample, H&H will utilize a laboratory supplied

"T-sampler" which allows for collection of two samples from the same location simultaneously. Per laboratory standard operating procedures, a vacuum of approximately five inches of mercury will be maintained within all canisters at the conclusion of the sampling event. In addition, one laboratory-provided trip blank sample will be included for every cooler/shipment containing groundwater samples for VOC analysis.

Laboratory QA/QC procedures will be employed to ensure appropriate sample handling and analysis and to aid in the review and validation of the analytical data. QA/QC procedures will be conducted in accordance with the method protocols and will include regular equipment maintenance, equipment calibrations, and adherence to specific sample custody and data management procedures. Samples will be analyzed in conjunction with appropriate blanks, laboratory duplicates, continuing calibration standards, surrogate standards, and matrix spiking standards in accordance with approved methodologies to monitor both instrument and analyst performance. Laboratory reporting limits for each analyte will be at or below appropriate screening criteria, where possible. Additionally, H&H will request that the laboratory include estimated concentrations for compounds that are detected at levels above the laboratory method detection limit, but below the laboratory reporting limit (i.e., J flags).

The laboratory analytical data report and QA package for each group of samples submitted to and analyzed by the subcontracted laboratory will be provided in an appendix to the final report. Laboratory QA data consistent with Level II documentation will be requested for this project. A copy of the completed chain-of-custody record and shipping receipt will be appended to the corresponding laboratory analytical report included with the final report.

3.6 Investigation Derived Waste (IDW)

Investigation derived waste (IDW) generated during the assessment activities will be thin spread on-Site. However, if significant impacts are suspected (i.e., high PID readings, free-product, etc.), the soil cuttings and generated groundwater will be containerized in 55-gallon drums and staged on-Site pending analytical results of composite IDW samples.

3.7 Reporting

Following completion of the assessment activities and receipt of the analytical data, H&H will document our findings in a Brownfields Assessment Report. The report will include a description of the sampling activities, figures (with graphic scale and north arrow) depicting sample locations and the non-perched groundwater potentiometric surface, tabulated sample data (reported to the method detection limit and compared to applicable regulatory screening levels and standard), soil boring logs (including for soil gas monitoring points), laboratory analytical data, a discussion of the data in comparison to applicable regulatory screening levels and standards with notes where the detection limit exceeds the regulatory screening level or standards (if applicable), risk calculations if warranted based upon the analytical data, IDW manifests (if applicable), and conclusions and recommendations concerning our activities. The report will be sealed by a North Carolina Professional Engineer (PE) or Licensed Geologist (LG) and the firm PE/LG numbers will be provided.

Please contact us if you have any questions or require additional information.

Sincerely,

Hart & Hickman, PC

#C-1269 Engineering
#C-245 Geology

8/31/22

Justin Ballard, PG
Project Manager
NC Professional Geologist #2257

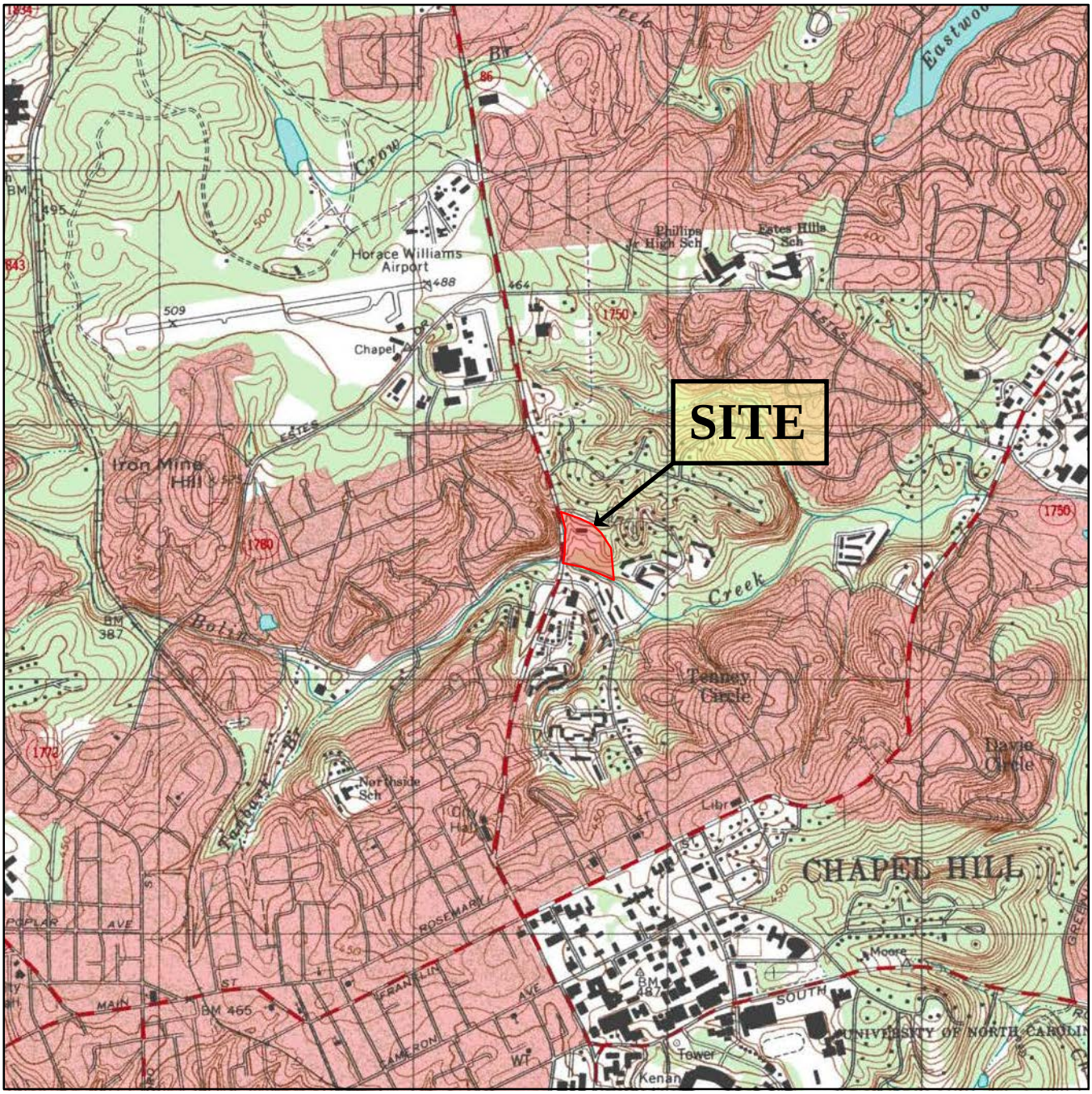
Steve Hart, PG
Principal

Attachments

Table 1
Proposed Sampling Plan
Chapel Hill Police Department
828 Martin Luther King Jr. Blvd
Chapel Hill, North Carolina
H&H Job No. TCH-009

Sample ID	Sample Depth (ft bgs)	Sample Objective	Analyses								
			VOCs			SVOCs	Site-Specific COCs[1]	Modified DEQ Analyte List[2]	Hexavalent Chromium and Strontium	Mercury	Pressure, Oxygen, Carbon Dioxide, and Methane[3]
			EPA 8260D	1,4-Dioxane EPA 8260D (SIM)	EPA TO-15	EPA 8270E	EPA 6010/6020/7199/7471	See Appendix B	EPA 7199/6010	NIOSH 6009	Field Screening
Soil Samples											
HH-12	TBD	Adjacent to diesel AST for emergency generator	X			X	X				
HH-13	TBD	Within disturbance area of proposed stormwater pond	X			X	X				
HH-14	TBD	Within disturbance area of proposed stormwater pond	X			X	X				
HH-15	TBD	Within disturbance area of proposed stormwater pond	X			X	X				
Field Duplicate	TBD	QA/QC	X			X	X				
Groundwater Samples											
MW-1	30-40	Perched groundwater within fill material	X	X		X		X	X		
MW-1A	25-40		X	X		X		X	X		
MW-8	29.5-44.5		X	X		X		X	X		
MW-9	30-45		X	X		X		X	X		
MW-3A	1-16	Downgradient/cross-gradient of fill area	X	X		X		X	X		
MW-4A	4-19		X	X		X		X	X		
MW-6	7.5 - 17.5		X	X		X		X	X		
MW-7	59.5 - 69.5		X	X		X		X	X		
MW-5	17.5-27.5	Background	X	X		X		X	X		
MW-11D	46-56	Unconfined aquifer beneath fill material	X	X		X		X	X		
Field Duplicate	TBD	QA/QC	X	X		X		X	X		
Trip Blank	N/A	QA/QC	X	X							
Soil Gas and Sub-Slab Vapor Samples											
SG-1	~5.5	Within the proposed office space footprint			X					X	X
SG-2	~5.5	Within the proposed multi-family residential building footprint			X					X	X
SG-3	~5.5				X					X	X
SG-4	~5.5				X					X	X
SG-5	~5.5				X					X	X
SG-6	~5.5				X					X	X
SG-7	~5.5				X					X	X
SSG-1	~0.5	Within the current police department building			X					X	X
SSG-2	~0.5				X					X	X
Field Duplicate	TBD	QA/QC			X					X	X
TOTAL SOIL, GROUNDWATER, SOIL GAS, SUB-SLAB VAPOR, AND QA/QC SAMPLES			**17**	**12**	**10**	**16**	**5**	**11**	**11**	**10**	**10**

Notes:
1. Constituents of Concern (COCs): arsenic, barium, beryllium, cadmium, hexavalent and total chromium, cobalt, copper, manganese, mercury, nickel, selenium, strontium, thallium, and vanadium.
2. Modified DEQ Analyte List provided in Attachment B of the Work Plan. The proposed analyte list does not include calcium, iron, lead, magnesium, or silver.
3. Field screening will be completed using a Landtec GEM 5000 or equivalent device.
VOCs = volatile organic compounds; SVOCs = semi-volatile organic compounds; QA/QC = quality assurance/quality control; ft bgs = feet below ground surface; TBD = to be determined; SIM = Selected Ion Monitoring



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U.S.G.S. QUADRANGLE MAP

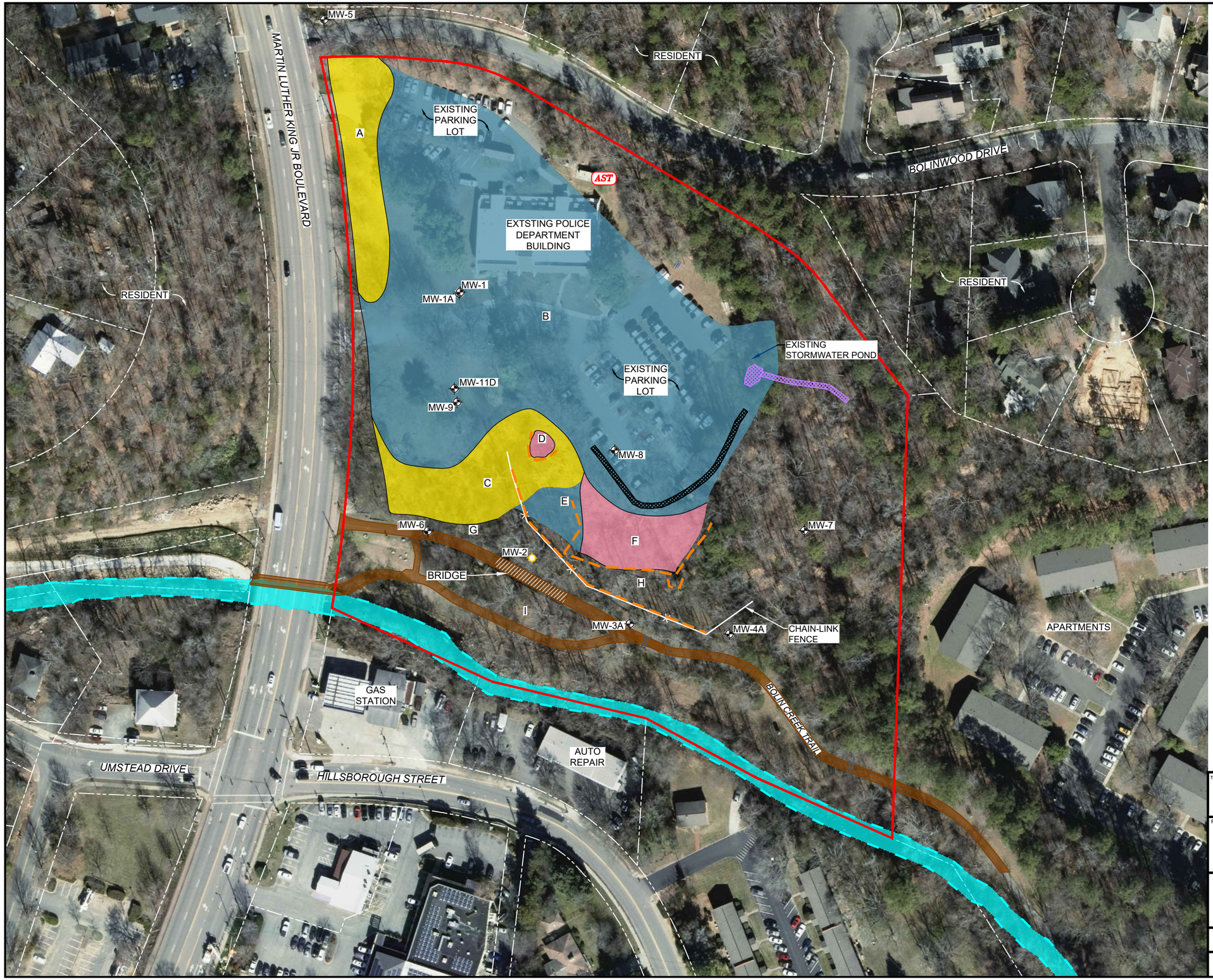
CHAPEL HILL, NORTH CAROLINA, 2002

QUADRANGLE
7.5 MINUTE SERIES (TOPOGRAPHIC)

TITLE	**SITE LOCATION MAP**
PROJECT	TOWN OF CHAPEL HILL 828 MARTIN LUTHER KING JR. BOULEVARD CHAPEL HILL, NORTH CAROLINA

hart hickman
SMARTER ENVIRONMENTAL SOLUTIONS
2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)
License # C-1269 / #C-245 Geology

DATE:	9-10-21	REVISION NO:	0
JOB NO:	TCH-009	FIGURE NO:	1



LEGEND

- BROWNFIELDS PROPERTY BOUNDARY
- BOLIN CREEK
- TEMPORARY MONITORING WELL LOCATION (FALCON ENGINEERING)
- MONITORING WELL LOCATION
- STORMWATER CULVERT
- APPROXIMATE DIESEL AST LOCATION
- BOLIN CREEK TRAIL
- EXISTING SILT FENCE
- STORM DIVERSION CHANNEL
- STORM OUTFALL CHANNEL
- CCP UNDER > 2 FT COVER
- CCP UNDER < 2 FT COVER
- CCP EXPOSED AT GROUND SURFACE
- [A] CCP AREA DESIGNATION

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APPROXIMATE
0 115 230
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TITLE

SITE MAP

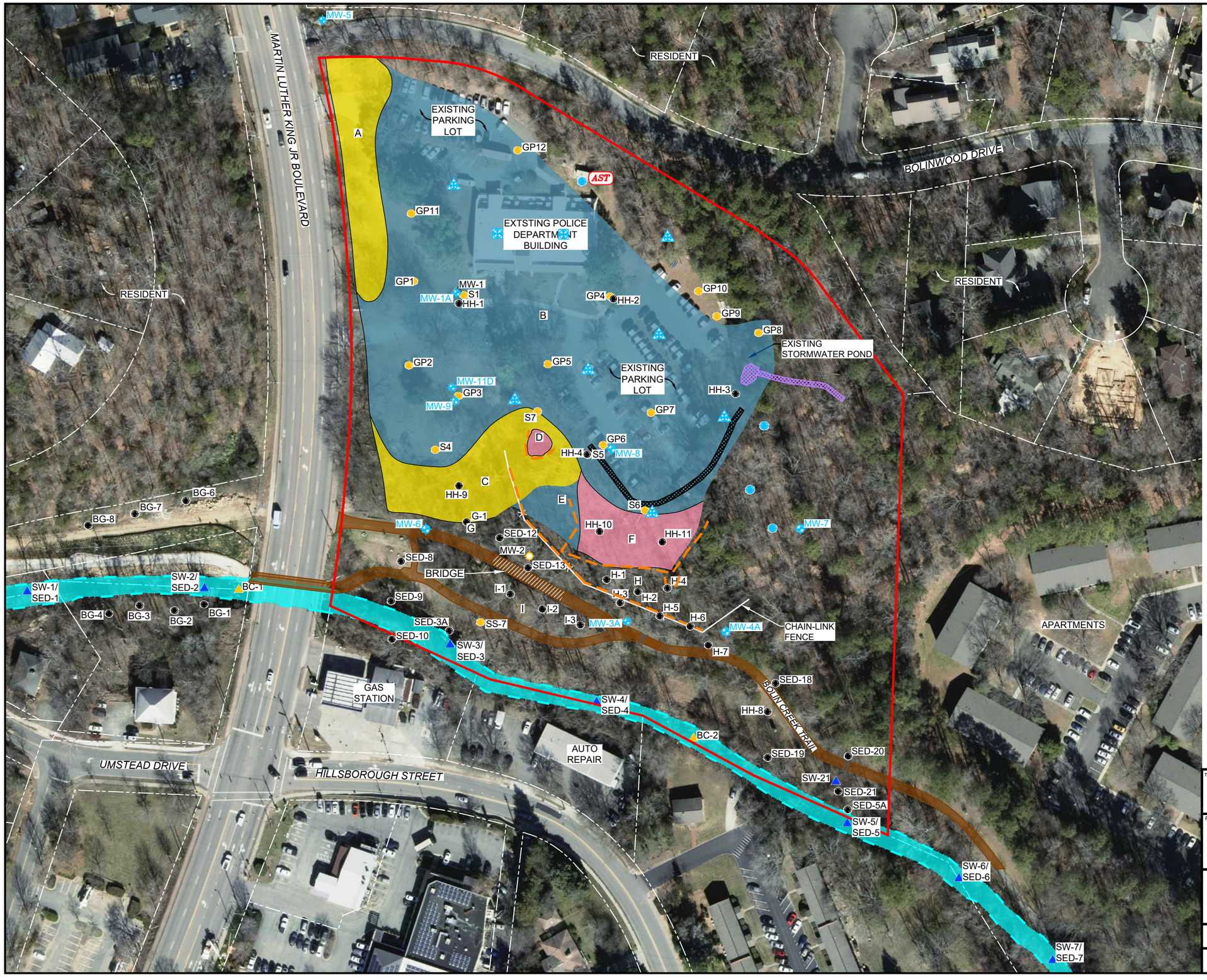
PROJECT

TOWN OF CHAPEL HILL
828 MARTIN LUTHER KING JR. BOULEVARD
CHAPEL HILL, NORTH CAROLINA

hart hickman
SMARTER ENVIRONMENTAL SOLUTIONS
3921 Sunset Ridge Road, Suite 301
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)
License # C-1269 / #C-245 Geology

DATE: 6-28-22	REVISION NO. 0
JOB NO. TCH-009	FIGURE NO. 2

S:\AAA-Master Projects\Town of Chapel Hill (TCH)\TCH-009 - Police Station - Remedial Services\Risk Assessment\Figures\Figures_20220411.dwg, FIG 2.PRO, 7/5/2022 3:28:02 PM, shaynes



LEGEND

- BROWNFIELDS PROPERTY BOUNDARY
- BOLIN CREEK
- TEMPORARY MONITORING WELL LOCATION (FALCON ENGINEERING)
- SOIL BORING LOCATION (FALCON ENGINEERING)
- SURFACE WATER SAMPLE LOCATION (FALCON ENGINEERING)
- MONITORING WELL LOCATION (H&H)
- SOIL SAMPLE LOCATION (H&H)
- DRAINAGE PATHWAY, SURFACE WATER/SEDIMENT SAMPLE LOCATION (H&H)
- STORMWATER CULVERT
- AST — APPROXIMATE DIESEL AST LOCATION
- BOLIN CREEK TRAIL
- EXISTING SILT FENCE
- STORM DIVERSION CHANNEL
- STORM OUTFALL CHANNEL
- CCP UNDER > 2 FT COVER
- CCP UNDER < 2 FT COVER
- CCP EXPOSED AT GROUND SURFACE
- A — CCP AREA DESIGNATION
- PROPOSED SOIL GAS SAMPLE LOCATION
- PROPOSED SUB-SLAB GAS SAMPLE LOCATION
- PROPOSED GROUNDWATER SAMPLE LOCATION
- PROPOSED SOIL BORING LOCATION

N

APPROXIMATE
0 115 230
SCALE IN FEET

TITLE
EXISTING SITE CONDITIONS AND PROPOSED SAMPLE LOCATION MAP

PROJECT
TOWN OF CHAPEL HILL
828 MARTIN LUTHER KING JR. BOULEVARD
CHAPEL HILL, NORTH CAROLINA

hart hickman
SMARTER ENVIRONMENTAL SOLUTIONS
3921 Sunset Ridge Road, Suite 301
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)
License # C-1269 / #C-245 Geology

DATE: 4-11-22	REVISION NO. 0
JOB NO. TCH-009	FIGURE NO. 3

S:\AAA-Master Projects\Town of Chapel Hill (TCH)\TCH-009 - Police Station - Remedial Services\Risk Assessment\Figures\Figures_20220411.dwg, FIG 3.PRO, 8/18/2022 11:08:33 AM, shaynes

LEGEND

- BROWNFIELDS PROPERTY BOUNDARY
- BOLIN CREEK
- MONITORING WELL LOCATION
- STORMWATER CULVERT
- APPROXIMATE DIESEL AST LOCATION
- BOLIN CREEK TRAIL
- EXISTING SILT FENCE
- STORM DIVERSION CHANNEL
- STORM OUTFALL CHANNEL
- CCP AREA DESIGNATION
- CONCEPTUAL OFFICE SPACE
- CONCEPTUAL MULTI-FAMILY RESIDENTIAL
- CONCEPTUAL PARKING GARAGE
- PROPOSED SOIL GAS SAMPLE LOCATION
- PROPOSED SUB-SLAB GAS SAMPLE LOCATION
- PROPOSED GROUNDWATER SAMPLE LOCATION
- PROPOSED SOIL BORING LOCATION

N

APPROXIMATE
0 115 230
SCALE IN FEET

TITLE
CONCEPTUAL REVELOPMENT AND SAMPLE LOCATION MAP

PROJECT
TOWN OF CHAPEL HILL
828 MARTIN LUTHER KING JR. BOULEVARD
CHAPEL HILL, NORTH CAROLINA

hart hickman
SMARTER ENVIRONMENTAL SOLUTIONS
3921 Sunset Ridge Road, Suite 301
Raleigh, North Carolina 27607
919-847-4241(p) 919-847-4261(f)
License # C-1269 / #C-245 Geology

DATE: 6-28-22	REVISION NO. 0
JOB NO. TCH-009	FIGURE NO. 4

S:\AAA-Master Projects\Town of Chapel Hill (TCH)\TCH-009 - Police Station - Remedial Services\Risk Assessment\Figures\Figures_20220411.dwg, FIG 4.PRO, 8/18/2022 11:07:38 AM, shaynes

Appendix A

Laboratory Certifications and Accreditations

ROY COOPER
Governor
ELIZABETH S. BISER
Secretary
S. DANIEL SMITH
Director

NORTH CAROLINA
Environmental Quality

MEMORANDUM

DATE: December 17, 2021

TO: Certified Laboratories

FROM: Todd Crawford, Laboratory Certification Branch Program Supervisor

SUBJECT: 2022 North Carolina Wastewater/Groundwater Laboratory Certification Renewal

The Department of Environmental Quality, in accordance with the provisions of NC G.S. 143-215-.3 (a) (10), 15 NCAC 2H .0800, is pleased to renew Certification for your laboratory to perform specified environmental analyses.

Enclosed is an updated Certificate and Certified Parameters Listing (CPL) describing the scope of your accreditation. **Please review the CPL carefully to ensure that your laboratory is certified for all parameter methods required to properly meet your Certification needs. It is also recommended that you verify the scope of accreditation of any contract or subcontract labs at least annually to ensure they maintain certification with our program for the appropriate parameters.**

Contact us at 919-733-3908 if you have questions or need additional information.

Attachment
cc: Master File

North Carolina Department of Environmental Quality | Division of Water Resources | Chem Lab
4405 Reedy Creek Road | 1623 Mail Service Center | Raleigh, North Carolina 27699-1623
919.733.3908

STATE OF NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY

DIVISION OF WATER RESOURCES
LABORATORY CERTIFICATION BRANCH

In accordance with the provisions of N.C.G.S. 143-215.3 (a) (1), 143-215.3 (a)(10) and NCAC 2H.0800:

2022

Pace Analytical Services LLC - Asheville NC

Is hereby certified to perform environmental analysis as listed on Attachment I and report monitoring data to DEQ for compliance with NPDES effluent, surface water, groundwater, and pretreatment regulations.

By reference 15A NCAC 2H .0800 is made a part of this certificate.

This certificate does not guarantee validity of data generated, but indicates the methodology, equipment, quality control procedures, records, and proficiency of the laboratory have been examined and found to be acceptable.

This certificate shall be valid until 12/31/2022

Certificate No. 40

Todd Crawford

Todd Crawford

North Carolina Wastewater/Groundwater Laboratory Certification

Certified Parameters Listing

Lab Name: Pace Analytical Services LLC - Asheville NC
Address: 2225 Riverside Drive
Asheville, NC 28804-

Certificate Number: 40
Effective Date: 1/1/2022
Expiration Date: 12/31/2022
Date of Last Amendment: 12/15/2021

The above named laboratory, having duly met the requirements of 15A NCAC 2H.0800, is hereby certified for the measurement of the parameters listed below.

CERTIFIED PARAMETERS

INORGANIC

ALKALINITY
- SM 2320 B-2011 (Aqueous)

BACTERIA - COLIFORM FECAL
- IDEXX Colilert ®18 (MPN) (Aqueous)
- SM 9222 D-2015 (MF) (Aqueous)

BOD
- SM 5210 B-2016 (Aqueous)

BROMIDE
- EPA 300.0, Rev. 2.1, 1993 (Aqueous)
- SW-846 9056 A (Aqueous)

CBOD
- SM 5210 B-2016 (Aqueous)

CHLORIDE
- SM 4500 Cl^- E-2011 (Aqueous)
- EPA 300.0, Rev. 2.1, 1993 (Aqueous)
- SW-846 9056 A (Aqueous)

CHLORINE, TOTAL RESIDUAL
- SM 4500 Cl G-2011 (Aqueous)

COD
- SM 5220 D-2011 (Aqueous)

CONDUCTIVITY
- EPA 120.1, Rev. 1982 (Aqueous)

CYANIDE
- SM 4500 CN^- E-2016 (Total) (Aqueous)
- SM 4500 CN^- G-2016 (SM 4500 CN^- E-2016) (Amenable) (Aqueous)
- Lachat 10-204-00-1-X, Rev. 2.2, 2005 (SW-846 9012B) (Total) (Aqueous)
- Lachat 10-204-00-1-X, Rev. 2.2, 2005 (SW-846 9012B) (Total) (Non-Aqueous)
- Lachat 10-204-00-1-X, Rev. 2.2, 2005 (Total) (Aqueous)
- SW-846 9012 B (Amenable) (Aqueous)
- SW-846 9012 B (Amenable) (Non-Aqueous)

DISSOLVED OXYGEN
- SM 4500 O G-2016 (Aqueous)

FLASH POINT
- SW-846 1010 B (D8175-18) (Aqueous)

FLUORIDE
- EPA 300.0, Rev. 2.1, 1993 (Aqueous)
- SW-846 9056 A (Aqueous)

HARDNESS TOTAL - METALS
- SM 2340 B-2011 (Ca EPA 200.7, Rev. 4.4, 1994 + Mg EPA 200.7, Rev. 4.4, 1994) (Aqueous)

INORGANIC PHENOLS
- EPA 420.4, Rev. 1.0, 1993 (Aqueous)

NITROGEN, AMMONIA
- EPA 350.1, Rev. 2.0, 1993 (Aqueous)

NITROGEN, NITRATE
- (NO3 + NO2 EPA 353.2, Rev. 2.0, 1993) - (NO2 EPA 353.2, Rev. 2.0, 1993) (Aqueous)
- (NO3 + NO2 SW-846 9056 A) - (NO2 SW-846 9056 A) (Aqueous)
- EPA 300.0, Rev. 2.1, 1993 (Aqueous)

NITROGEN, NITRITE
- EPA 353.2, Rev. 2.0, 1993 (Aqueous)
- EPA 300.0, Rev. 2.1, 1993 (Aqueous)
- SW-846 9056 A (Aqueous)

NITROGEN, NO3 + NO2
- EPA 353.2, Rev. 2.0, 1993 (Aqueous)

NITROGEN, TOTAL KJELDAHL
- EPA 351.2, Rev. 2.0, 1993 (Aqueous)

ORGANIC CARBON, TOTAL
- SM 5310 B-2014 (Combustion) (Aqueous)
- SW-846 9060 A (Combustion) (Aqueous)

PAINT FILTER LIQUIDS
- SW-846 9095B

pH
- SM 4500 H+B-2011 (Aqueous)
- SW-846 9040 C (Aqueous)
- SW-846 9045 D (Non-Aqueous)

PHOSPHATE, ORTHO
- SM 4500 P E-2011 (Aqueous)

PHOSPHORUS, TOTAL

This certification requires maintance of an acceptable quality assurance program, use of approved methodology, and satisfactory performance on evaluation samples. Laboratories are subject to civil penalties and/or decertification for infractions as set forth in 15A NCAC 2H.0807.

North Carolina Wastewater/Groundwater Laboratory Certification

Certified Parameters Listing

Lab Name: Pace Analytical Services LLC - Asheville NC
Address: 2225 Riverside Drive
Asheville, NC 28804-

Certificate Number: 40
Effective Date: 1/1/2022
Expiration Date: 12/31/2022
Date of Last Amendment: 12/15/2021

The above named laboratory, having duly met the requirements of 15A NCAC 2H.0800, is hereby certified for the measurement of the parameters listed below.

CERTIFIED PARAMETERS

EPA 365.1, Rev. 2.0, 1993 (Aqueous)
RESIDUE, DISSOLVED 180 C
SM 2540 C-2015 (Aqueous)
RESIDUE, SETTLEABLE
SM 2540 F-2015 (Aqueous)
RESIDUE, SUSPENDED
SM 2540 D-2015 (Aqueous)
RESIDUE, TOTAL
SM 2540 B-2015 (Aqueous)
SILICA - METALS
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
SULFATE
EPA 300.0, Rev. 2.1, 1993 (Aqueous)
SW-846 9056 A (Aqueous)
SULFIDE
SM 4500 S^{2-} D-2011 (Aqueous)
TEMPERATURE
SM 2550 B-2010 (Aqueous)
TURBIDITY
EPA 180.1, Rev. 2.0, 1993 (Aqueous)
SM 2130 B-2011 (Aqueous)
VECTOR ATTRACTION REDUCTION: OPTION 1
Reduction in Volatile Solids
VECTOR ATTRACTION REDUCTION: OPTION 2
Anaerobic Batch Digestion

METAL

ALUMINUM
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
SW-846 6020 B (Aqueous)
ANTIMONY
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
SW-846 6020 B (Aqueous)
ARSENIC
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
SW-846 6020 B (Aqueous)
BARIUM
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
SW-846 6020 B (Aqueous)
BERYLLIUM
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
SW-846 6020 B (Aqueous)
BORON
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
SW-846 6020 B (Aqueous)
CADMIUM
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)

This certification requires maintance of an acceptable quality assurance program, use of approved methodology, and satisfactory performance on evaluation samples. Laboratories are subject to civil penalties and/or decertification for infractions as set forth in 15A NCAC 2H.0807.

North Carolina Wastewater/Groundwater Laboratory Certification

Certified Parameters Listing

Lab Name: Pace Analytical Services LLC - Asheville NC
Address: 2225 Riverside Drive
Asheville, NC 28804-

Certificate Number: 40
Effective Date: 1/1/2022
Expiration Date: 12/31/2022
Date of Last Amendment: 12/15/2021

The above named laboratory, having duly met the requirements of 15A NCAC 2H.0800, is hereby certified for the measurement of the parameters listed below.

CERTIFIED PARAMETERS

EPA 200.8, Rev. 5.4, 1994 (Aqueous)
SW-846 6020 B (Aqueous)
CALCIUM
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
SW-846 6020 B (Aqueous)
CHROMIUM HEXAVALENT
SM 3500-Cr-B-2011 (Aqueous)
SW-846 7196 A (Aqueous)
SW-846 7196 A (Non-Aqueous)
EPA 218.6, Rev. 3.3, 1994 (Aqueous)
EPA 218.7, Rev. 1.0, 2011 [NCAC .02L Variance] (Aqueous)
CHROMIUM TOTAL
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
SW-846 6020 B (Aqueous)
COBALT
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
SW-846 6020 B (Aqueous)
COPPER
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
SW-846 6020 B (Aqueous)
IRON
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
SW-846 6020 B (Aqueous)
LEAD
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
SW-846 6020 B (Aqueous)
LITHIUM
SW-846 6020 B (Aqueous)
MAGNESIUM
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
SW-846 6020 B (Aqueous)
MANGANESE
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
SW-846 6020 B (Aqueous)
MERCURY
EPA 245.1, Rev. 3.0, 1994 (Aqueous)
SW-846 7470 A (Aqueous)
SW-846 7471 B (Non-Aqueous)
EPA 1631 E (Aqueous)
MOLYBDENUM
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)

This certification requires maintance of an acceptable quality assurance program, use of approved methodology, and satisfactory performance on evaluation samples. Laboratories are subject to civil penalties and/or decertification for infractions as set forth in 15A NCAC 2H.0807.

North Carolina Wastewater/Groundwater Laboratory Certification

Certified Parameters Listing

Lab Name: Pace Analytical Services LLC - Asheville NC
Address: 2225 Riverside Drive
Asheville, NC 28804-

Certificate Number: 40
Effective Date: 1/1/2022
Expiration Date: 12/31/2022
Date of Last Amendment: 12/15/2021

The above named laboratory, having duly met the requirements of 15A NCAC 2H.0800, is hereby certified for the measurement of the parameters listed below.

CERTIFIED PARAMETERS

SW-846 6020 B (Aqueous)
NICKEL
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
SW-846 6020 B (Aqueous)
POTASSIUM
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
SW-846 6020 B (Aqueous)
SELENIUM
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
SW-846 6020 B (Aqueous)
SILVER
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
SW-846 6020 B (Aqueous)
SODIUM
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
SW-846 6020 B (Aqueous)
STRONTIUM
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
SW-846 6020 B (Aqueous)
THALLIUM
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
SW-846 6020 B (Aqueous)
TIN
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
SW-846 6020 B (Aqueous)
TITANIUM
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
SW-846 6020 B (Aqueous)
VANADIUM
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
SW-846 6020 B (Aqueous)
ZINC
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
SW-846 6020 B (Aqueous)

This certification requires maintance of an acceptable quality assurance program, use of approved methodology, and satisfactory performance on evaluation samples. Laboratories are subject to civil penalties and/or decertification for infractions as set forth in 15A NCAC 2H.0807.

STATE OF NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY

DIVISION OF WATER RESOURCES
LABORATORY CERTIFICATION BRANCH

In accordance with the provisions of N.C.G.S. 143-215.3 (a) (1), 143-215.3 (a)(10) and NCAC 2H.0800:

2022

Pace Analytical Services LLC - Huntersville NC

Is hereby certified to perform environmental analysis as listed on Attachment I and report monitoring data to DEQ for compliance with NPDES effluent, surface water, groundwater, and pretreatment regulations.

By reference 15A NCAC 2H .0800 is made a part of this certificate.

This certificate does not guarantee validity of data generated, but indicates the methodology, equipment, quality control procedures, records, and proficiency of the laboratory have been examined and found to be acceptable.

This certificate shall be valid until 12/31/2022

Certificate No. 12

Todd Crawford

Todd Crawford

North Carolina Wastewater/Groundwater Laboratory Certification

Certified Parameters Listing

Lab Name: Pace Analytical Services LLC - Huntersville NC
Address: 9800 Kincey Avenue, Suite 100
Huntersville, NC 28078-

Certificate Number: 12
Effective Date: 1/1/2022
Expiration Date: 12/31/2022
Date of Last Amendment: 9/2/2021

The above named laboratory, having duly met the requirements of 15A NCAC 2H.0800, is hereby certified for the measurement of the parameters listed below.

CERTIFIED PARAMETERS

INORGANIC

BACTERIA - COLIFORM FECAL
- SM 9222 D-2015 (MF) (Aqueous)

OIL & GREASE
- EPA 1664 Rev. B (Aqueous)
- SW-846 9071 B (Non-Aqueous)

ORGANIC

1,2, DIBROMOETHANE (EDB)
- EPA 504.1 (Includes DBCP & TCP) (Aqueous)
- SW-846 8011 (Includes DBCP) (Aqueous)

BASE NEUTRAL/ACID, ORGANICS
- EPA 625.1 (Aqueous)
- SW-846 8270 E (Aqueous)
- SW-846 8270 E (Non-Aqueous)

EXTRACTABLE PETROLEUM HYDROCARBONS
- MADEP, December 2019, Rev. 2.1 (Aqueous)
- MADEP, December 2019, Rev. 2.1 (Non-Aqueous)

PESTICIDES, ORGANOCHLORINE
- EPA 608.3 (Aqueous)
- SW-846 8081 B (Aqueous)
- SW-846 8081 B (Non-Aqueous)

POLYCHLORINATED BIPHENYLS (PCBs)
- EPA 608.3 (Aqueous)
- SW-846 8082 A (Aqueous)
- SW-846 8082 A (Non-Aqueous)
- SW-846 8082 A (Oil)

PURGEABLE, ORGANICS
- EPA 624.1 (Aqueous)
- SM 6200 B-2011 (Aqueous)
- SW-846 8260 D (Aqueous)
- SW-846 8260 D (Non-Aqueous)

TPH DIESEL RANGE, ORGANICS
- SW-846 8015 C (Aqueous)
- SW-846 8015 C (Non-Aqueous)

TPH GASOLINE RANGE, ORGANICS
- SW-846 8015 C (Aqueous)
- SW-846 8015 C (Non-Aqueous)

VOLATILE PETROLEUM HYDROCARBONS
- MADEP, Feb 2018, Rev. 2.1 (Aqueous)
- MADEP, Feb 2018, Rev. 2.1 (Non-Aqueous)

This certification requires maintance of an acceptable quality assurance program, use of approved methodology, and satisfactory performance on evaluation samples. Laboratories are subject to civil penalties and/or decertification for infractions as set forth in 15A NCAC 2H.0807.

STATE OF NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY

DIVISION OF WATER RESOURCES
LABORATORY CERTIFICATION BRANCH

In accordance with the provisions of N.C.G.S. 143-215.3 (a) (1), 143-215.3 (a)(10) and NCAC 2H.0800:

2022

Pace National Center for Testing & Innovation

Is hereby certified to perform environmental analysis as listed on Attachment I and report monitoring data to DEQ for compliance with NPDES effluent, surface water, groundwater, and pretreatment regulations.

By reference 15A NCAC 2H .0800 is made a part of this certificate.

This certificate does not guarantee validity of data generated, but indicates the methodology, equipment, quality control procedures, records, and proficiency of the laboratory have been examined and found to be acceptable.

This certificate shall be valid until 12/31/2022

Certificate No. 375

Todd Crawford

Todd Crawford

North Carolina Wastewater/Groundwater Laboratory Certification

Certified Parameters Listing

Lab Name: Pace National Center for Testing & Innovation
Address: 12065 Lebanon Road
Mt. Juliet, TN 37122-

Certificate Number: 375
Effective Date: 1/1/2022
Expiration Date: 12/31/2022
Date of Last Amendment: 10/27/2021

The above named laboratory, having duly met the requirements of 15A NCAC 2H.0800, is hereby certified for the measurement of the parameters listed below.

CERTIFIED PARAMETERS

INORGANIC

ALKALINITY
- EPA 310.2, Rev. 1974 (Aqueous)
- SM 2320 B-2011 (Aqueous)

BACTERIA - COLIFORM FECAL
- EPA 1681 (2006) (MPN) (Biosolids)
- SM 9221 E-2014 (MPN) (Aqueous)
- SM 9222 D-2015 (MF) (Biosolids)

BOD
- SM 5210 B-2016 (Aqueous)

BROMIDE
- EPA 300.0, Rev. 2.1, 1993 (Aqueous)
- SM 4110 B-2011 (Aqueous)
- SW-846 9056 A (Aqueous)
- SW-846 9056 A (Non-Aqueous)

CBOD
- SM 5210 B-2016 (Aqueous)

CHLORIDE
- SM 4110 B-2011 (Aqueous)
- EPA 300.0, Rev. 2.1, 1993 (Aqueous)
- EPA 300.0, Rev. 2.1, 1993 (Non-Aqueous)
- SW-846 9056 A (Aqueous)
- SW-846 9056 A (Non-Aqueous)

COD
- SM 5220 D-2011 (Aqueous)
- EPA 410.4, Rev. 2.0, 1993 (Aqueous)

COLOR, PC
- SM 2120 B-2011 (PtCo) (Aqueous)

CONDUCTIVITY
- EPA 120.1, Rev. 1982 (Aqueous)
- SM 2510 B-2011 (Aqueous)
- SW-846 9050 A (Aqueous)

CYANIDE
- SM 4500 CN^- E-2016 (Total) (Aqueous)
- EPA 335.4, Rev. 1.0, 1993 (Total) (Aqueous)
- SW-846 9012 B (Total) (Aqueous)
- SW-846 9012 B (Total) (Non-Aqueous)

FLASH POINT
- SW-846 1010 B (D8175-18) (Aqueous)

FLUORIDE
- EPA 300.0, Rev. 2.1, 1993 (Aqueous)
- EPA 300.0, Rev. 2.1, 1993 (Non-Aqueous)
- SM 4110 B-2011(Aqueous)
- SW-846 9056 A (Aqueous)
- SW-846 9056 A (Non-Aqueous)

HARDNESS TOTAL - METALS
- SM 2340 B-2011 (Ca EPA 200.7, Rev. 4.4, 1994 + Mg EPA 200.7, Rev. 4.4, 1994) (Aqueous)

HARDNESS TOTAL - WET CHEM
- EPA 130.1, 1971 (Aqueous)

INORGANIC PHENOLS
- EPA 420.4, Rev. 1.0, 1993 (Aqueous)
- SW-846 9066 (Aqueous)

MBAS
- SM 5540 C-2011 (Aqueous)

NITROGEN, AMMONIA
- EPA 350.1, Rev. 2.0, 1993 (Aqueous)
- SM 4500 NH3 G-2011 (Aqueous)

NITROGEN, NITRATE
- EPA 300.0, Rev. 2.1, 1993 (Aqueous)
- EPA 300.0, Rev. 2.1, 1993 (Non-Aqueous)
- SM 4110 B-2011 (Aqueous)
- SW-846 9056 A (Aqueous)
- SW-846 9056 A (Non-Aqueous)

NITROGEN, NITRITE
- EPA 300.0, Rev. 2.1, 1993 (Aqueous)
- EPA 300.0, Rev. 2.1, 1993 (Non-Aqueous)
- SM 4110 B-2011 (Aqueous)
- SW-846 9056 A (Aqueous)

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North Carolina Wastewater/Groundwater Laboratory Certification

Certified Parameters Listing

Lab Name: Pace National Center for Testing & Innovation
Address: 12065 Lebanon Road
Mt. Juliet, TN 37122-

Certificate Number: 375
Effective Date: 1/1/2022
Expiration Date: 12/31/2022
Date of Last Amendment: 10/27/2021

The above named laboratory, having duly met the requirements of 15A NCAC 2H.0800, is hereby certified for the measurement of the parameters listed below.

CERTIFIED PARAMETERS

SW-846 9056 A (Non-Aqueous)
NITROGEN, NO3 + NO2
SM 4500 NO_3^- F-2016 (Aqueous)
EPA 353.2, Rev. 2.0, 1993 (Aqueous)
EPA 300.0, Rev. 2.1, 1993 (Aqueous)
EPA 300.0, Rev. 2.1, 1993 (Non-Aqueous)
SM 4110 B-2011 (Aqueous)
SW-846 9056 A (Aqueous)
SW-846 9056 A (Non-Aqueous)
NITROGEN, TOTAL KJELDAHL
EPA 351.2, Rev. 2.0, 1993 (Aqueous)
OIL & GREASE
EPA 1664 Rev. B (Aqueous)
SW-846 9071 B (Non-Aqueous)
ORGANIC CARBON, TOTAL
SM 5310 B-2014 (Combustion) (Aqueous)
SW-846 9060 A (Combustion) (Aqueous)
SW-846 9060 A (Heated Persulfate) (Aqueous)
SW-846 9060 A (UV Oxidation) (Aqueous)
PAINT FILTER LIQUIDS
SW-846 9095B
pH
SM 4500 H+B-2011 (Aqueous)
SW-846 9040 C (Aqueous)
SW-846 9045 D (Non-Aqueous)
PHOSPHATE, ORTHO
SM 4500 P E-2011 (Aqueous)
PHOSPHORUS, TOTAL
SM 4500 P E-2011 (Aqueous)
EPA 365.1, Rev. 2.0, 1993 (Aqueous)
RESIDUE, DISSOLVED 180 C
SM 2540 C-2015 (Aqueous)
RESIDUE, SUSPENDED
SM 2540 D-2015 (Aqueous)
RESIDUE, TOTAL
SM 2540 B-2015 (Aqueous)
SILICA - METALS
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
SULFATE
EPA 300.0, Rev. 2.1, 1993 (Aqueous)
EPA 300.0, Rev. 2.1, 1993 (Non-Aqueous)
SM 4110 B-2011 (Aqueous)
SW-846 9056 A (Aqueous)
SW-846 9056 A (Non-Aqueous)
SULFIDE
SM 4500 S^{2-} D-2011 (Aqueous)
SULFITE
SM 4500 SO_3^{2-} B-2011 (Aqueous)
TURBIDITY
EPA 180.1, Rev. 2.0, 1993 (Aqueous)
SM 2130 B-2011 (Aqueous)
METAL
ALUMINUM
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
SW-846 6020 B (Aqueous)
SW-846 6020 B (Non-Aqueous)
ANTIMONY
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)

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CERTIFIED PARAMETERS

EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)
SW-846 6020 B (Aqueous)
SW-846 6020 B (Non-Aqueous)

ARSENIC
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)
SW-846 6020 B (Aqueous)
SW-846 6020 B (Non-Aqueous)

BARIUM
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)
SW-846 6020 B (Aqueous)
SW-846 6020 B (Non-Aqueous)

BERYLLIUM
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)
SW-846 6020 B (Aqueous)
SW-846 6020 B (Non-Aqueous)

BORON
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
SW-846 6020 B (Aqueous)
SW-846 6020 B (Non-Aqueous)

CADMIUM
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)
SW-846 6020 B (Aqueous)
SW-846 6020 B (Non-Aqueous)

CALCIUM
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)
SW-846 6020 B (Aqueous)
SW-846 6020 B (Non-Aqueous)

CHROMIUM HEXAVALENT
SM 3500-Cr-B-2011 (Aqueous)
SW-846 7196 A (Aqueous)
SW-846 7196 A (Non-Aqueous)
EPA 218.6, Rev. 3.3, 1994 (Aqueous)
SM 3500-Cr-C-2011 (Aqueous)
SW-846 7199 (Aqueous)
SW-846 7199 (Non-Aqueous)

CHROMIUM TOTAL
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)

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North Carolina Wastewater/Groundwater Laboratory Certification

Certified Parameters Listing

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CERTIFIED PARAMETERS

EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)
SW-846 6020 B (Aqueous)
SW-846 6020 B (Non-Aqueous)

COBALT
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)
SW-846 6020 B (Aqueous)
SW-846 6020 B (Non-Aqueous)

COPPER
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)
SW-846 6020 B (Aqueous)
SW-846 6020 B (Non-Aqueous)

IRON
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)
SW-846 6020 B (Aqueous)
SW-846 6020 B (Non-Aqueous)

LEAD
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)
SW-846 6020 B (Aqueous)
SW-846 6020 B (Non-Aqueous)

LITHIUM
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)

MAGNESIUM
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
SW-846 6020 B (Aqueous)
SW-846 6020 B (Non-Aqueous)

MANGANESE
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)
SW-846 6020 B (Aqueous)
SW-846 6020 B (Non-Aqueous)

MERCURY
EPA 245.1, Rev. 3.0, 1994 (Aqueous)
SW-846 7470 A (Aqueous)
SW-846 7470 A (Non-Aqueous)
SW-846 7471 B (Non-Aqueous)

MOLYBDENUM

This certification requires maintance of an acceptable quality assurance program, use of approved methodology, and satisfactory performance on evaluation samples. Laboratories are subject to civil penalties and/or decertification for infractions as set forth in 15A NCAC 2H.0807.

North Carolina Wastewater/Groundwater Laboratory Certification

Certified Parameters Listing

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Mt. Juliet, TN 37122-

Certificate Number: 375
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Date of Last Amendment: 10/27/2021

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CERTIFIED PARAMETERS

EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)
SW-846 6020 B (Aqueous)
SW-846 6020 B (Non-Aqueous)

NICKEL
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)
SW-846 6020 B (Aqueous)
SW-846 6020 B (Non-Aqueous)

POTASSIUM
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
SW-846 6020 B (Aqueous)
SW-846 6020 B (Non-Aqueous)

SELENIUM
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)
SW-846 6020 B (Aqueous)
SW-846 6020 B (Non-Aqueous)

SILVER
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)
SW-846 6020 B (Aqueous)
SW-846 6020 B (Non-Aqueous)

SODIUM
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
SW-846 6020 B (Aqueous)
SW-846 6020 B (Non-Aqueous)

THALLIUM
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)
SW-846 6020 B (Aqueous)
SW-846 6020 B (Non-Aqueous)

TIN
EPA 200.7, Rev. 4.4, 1994 (Aqueous)
EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
SW-846 6010 D (Aqueous)
SW-846 6010 D (Non-Aqueous)
EPA 200.8, Rev. 5.4, 1994 (Aqueous)
SW-846 6020 B (Aqueous)
SW-846 6020 B (Non-Aqueous)

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North Carolina Wastewater/Groundwater Laboratory Certification

Certified Parameters Listing

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Mt. Juliet, TN 37122-

Certificate Number: 375
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Expiration Date: 12/31/2022
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CERTIFIED PARAMETERS

TITANIUM
- EPA 200.7, Rev. 4.4, 1994 (Aqueous)
- EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
- SW-846 6010 D (Aqueous)
- SW-846 6010 D (Non-Aqueous)
- EPA 200.8, Rev. 5.4, 1994 (Aqueous)
- SW-846 6020 B (Aqueous)
- SW-846 6020 B (Non-Aqueous)

VANADIUM
- EPA 200.7, Rev. 4.4, 1994 (Aqueous)
- EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
- SW-846 6010 D (Aqueous)
- SW-846 6010 D (Non-Aqueous)
- EPA 200.8, Rev. 5.4, 1994 (Aqueous)
- EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)
- SW-846 6020 B (Aqueous)
- SW-846 6020 B (Non-Aqueous)

ZINC
- EPA 200.7, Rev. 4.4, 1994 (Aqueous)
- EPA 200.7, Rev. 4.4, 1994 (Non-Aqueous)
- SW-846 6010 D (Aqueous)
- SW-846 6010 D (Non-Aqueous)
- EPA 200.8, Rev. 5.4, 1994 (Aqueous)
- EPA 200.8, Rev. 5.4, 1994 (Non-Aqueous)
- SW-846 6020 B (Aqueous)
- SW-846 6020 B (Non-Aqueous)

ORGANIC

1,2, DIBROMOETHANE (EDB)
- EPA 504.1 (Includes DBCP & TCP) (Aqueous)
- SW-846 8011 (Includes DBCP) (Aqueous)

BASE NEUTRAL/ACID, ORGANICS
- EPA 625.1 (Aqueous)
- SW-846 8270 E (Aqueous)
- SW-846 8270 E (Non-Aqueous)

CHLORINATED ACID HERBICIDES
- SW-846 8151 A (Aqueous)
- SW-846 8151 A (Non-Aqueous)
- SW-846 8321 B (Aqueous)
- SW-846 8321 B (Non-Aqueous)

EXTRACTABLE PETROLEUM HYDROCARBONS
- MADEP, December 2019, Rev. 2.1 (Aqueous)
- MADEP, December 2019, Rev. 2.1 (Non-Aqueous)

NITROAROMATICS & NITRAMINES
- SW-846 8330 A (Aqueous)
- SW-846 8330 A (Non-Aqueous)

PESTICIDES, ORGANOCHLORINE
- EPA 608.3 (Aqueous)
- SW-846 8081 B (Aqueous)
- SW-846 8081 B (Non-Aqueous)

PESTICIDES, ORGANOPHOSPHORUS
- SW-846 8141 B (Aqueous)
- SW-846 8141 B (Non-Aqueous)

POLYCHLORINATED BIPHENYLS (PCBs)
- EPA 608.3 (Aqueous)
- SW-846 8082 A (Aqueous)
- SW-846 8082 A (Non-Aqueous)

POLYNUCLEAR AROMATIC HYDROCARBONS
- EPA 610 (Aqueous)
- SW-846 8310 (Aqueous)
- SW-846 8310 (Non-Aqueous)

PURGEABLE, AROMATICS
- EPA 602 (Aqueous)
- SW-846 8021 B (Aqueous)
- SW-846 8021 B (Non-Aqueous)

PURGEABLE, ORGANICS
- EPA 624.1 (Aqueous)
- SM 6200 B-2011 (Aqueous)
- SW-846 8260 D (Aqueous)

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North Carolina Wastewater/Groundwater Laboratory Certification

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CERTIFIED PARAMETERS

SW-846 8260 D (Non-Aqueous)
TOTAL ORGANIC HALIDES
SW-846 9020 B (Aqueous)
TPH DIESEL RANGE, ORGANICS
SW-846 8015 C (Aqueous)
SW-846 8015 C (Non-Aqueous)
TPH GASOLINE RANGE, ORGANICS
SW-846 8015 C (Aqueous)
SW-846 8015 C (Non-Aqueous)
VOLATILE PETROLEUM HYDROCARBONS
MADEP, Feb 2018, Rev. 2.1 (Aqueous)
MADEP, Feb 2018, Rev. 2.1 (Non-Aqueous)

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State of New Jersey

Department of Environmental Protection

Certifies That

SGS NORTH AMERICA INC. - DAYTON

Laboratory Certification ID # 12129

is hereby approved as a

Nationally Accredited Environmental Laboratory

to perform the analyses as indicated on the Annual Certified Parameter List which must accompany this certificate to be valid

having duly met the requirements of the

Regulations Governing the Certification of Laboratories and Environmental Measurements N.J.A.C. 7:18 et. seq.

and

having been found compliant with the 2016 TNI Standard approved by the

The NELAC Institute

Expires June 30, 2022

Michele M. Potter
Manager

NJDEP is a NELAP Recognized Accreditation Body

This certificate is to be conspicuously displayed at the laboratory with the annual certified parameter list in a location on the premises visible to the public. Consumers are urged to verify the laboratory's current accreditation status with the State of NJ, NELAP.

New Jersey Department of Environment Protection
Environmental Laboratory Certification Program

Annual Certified Parameter List and Current Status

Effective as of 5/17/2022 until 6/30/2022

Laboratory Name: SGS NORTH AMERICA INC. - DAYTON Laboratory Number: 12129 Activity ID: NLC 210014
2235 RT 130
DAYTON NJ 08810

Category: AE04 --Organics Analysis

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	AE04.17900	Acetaldehyde	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.17950	Acetone	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.18000	Acetonitrile	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.18050	Acetophenone	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.18100	Acrolein	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.18150	Acrylamide	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.18200	Acrylic acid	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.18250	Acrylonitrile	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.18300	Allyl chloride	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.18400	Benzene	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.18450	Benzyl chloride	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.18500	Bis (2-chloroethyl) ether	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.18550	Bis (chloromethyl) ether	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.18600	Bromodichloromethane	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.18650	Bromoform	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.18700	Bromomethane	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.18750	Butadiene (1,3-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.18800	Butadiene (2-chloro-1,3-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.18850	Butylbenzene (n-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.18900	Carbon disulfide	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.18950	Carbon oxysulfide (Carbonyl sulfide)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.19000	Carbon tetrachloride	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.19050	Catechol	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.19100	Chloroacetic acid	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.19150	Chlorobenzene	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.19200	Chloroethane	GC/MS, Canisters	EPA TO-15	NJ

New Jersey Department of Environment Protection
Environmental Laboratory Certification Program

Annual Certified Parameter List and Current Status

Effective as of 5/17/2022 until 6/30/2022

Laboratory Name: SGS NORTH AMERICA INC. - DAYTON Laboratory Number: 12129 Activity ID: NLC 210014
2235 RT 130
DAYTON NJ 08810

Category: AE04 --Organics Analysis

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	AE04.19250	Chloroform	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.19300	Chloromethane	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.19350	Chloromethyl methyl ether	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.19400	Chlorotoluene (2-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.19450	Cresols/Cresylic acid	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.19500	Cyclohexane	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.19550	Diazomethane	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.19600	Dibromo-3-chloropropane (1,2-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.19650	Dibromochloromethane	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.19700	Dibromoethane (1,2-) (EDB)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.19750	Dichlorobenzene (1,2-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.19800	Dichlorobenzene (1,3-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.19850	Dichlorobenzene (1,4-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.19900	Dichlorodifluoromethane	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.19950	Dichloroethane (1,1-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.20000	Dichloroethane (1,2-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.20050	Dichloroethene (1,1-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.20100	Dichloroethene (cis-1,2-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.20150	Dichloroethene (trans-1,2-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.20200	Dichlorofluoromethane	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.20250	Dichloropropane (1,2-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.20300	Dichloropropene (cis-1,3-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.20350	Dichloropropene (trans-1,3-)	GC/MS, Canisters	EPA TO-15	NJ

New Jersey Department of Environment Protection
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Laboratory Name: SGS NORTH AMERICA INC. - DAYTON Laboratory Number: 12129 Activity ID: NLC 210014
2235 RT 130
DAYTON NJ 08810

Category: AE04 --Organics Analysis

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	AE04.20400	Dichlorotetrafluoroethane (1,2-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.20450	Diethyl sulfate	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.20500	Dimethyl formamide (N, N-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.20600	Dimethyl sulfate	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.20700	Dimethylcarbamoyl chloride	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.20750	Dioxane (1,4-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.20800	Epichlorohydrin	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.20850	Epoxybutane (1,2-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.20900	Ethanol	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.20950	Ethyl acetate	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.21000	Ethyl acrylate	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.21100	Ethylbenzene	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.21250	Ethyltoluene (4-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.21400	Heptane (n-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.21450	Hexachlorobutadiene (1,3-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.21500	Hexachloroethane	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.21550	Hexane (n-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.21600	Hexanone (2-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.21650	Isophorone	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.21700	Isopropanol	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.21750	Isopropylbenzene	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.21850	Methyl ethyl ketone (MEK)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.21900	Methyl iodide	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.21950	Methyl isobutyl ketone (MIBK)	GC/MS, Canisters	EPA TO-15	NJ

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Laboratory Name: SGS NORTH AMERICA INC. - DAYTON Laboratory Number: 12129 Activity ID: NLC 210014
2235 RT 130
DAYTON NJ 08810

Category: AE04 --Organics Analysis

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	AE04.22000	Methyl isocyanate	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.22050	Methyl methacrylate	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.22100	Methyl tert-butyl ether	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.22150	Methylene chlorice (Dichloromethane)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.22250	Methylphenol (2-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.22300	Naphthalene	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.22350	Nitrobenzene	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.22400	Nitropropane (2-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.22450	N-Nitrosodimethylamine	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.22500	N-Nitrosomorpholine	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.22550	N-Nitroso-N-methylurea	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.22600	Phenol	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.22650	Phosgene	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.22700	Propane sultone (1,3-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.22750	Propiolactone (beta-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.22800	Propionaldehyde	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.22850	Propylbenzene (n-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.22950	Propylene	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.23000	Propylene oxide	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.23100	Sec-butylbenzene	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.23150	Styrene	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.23200	Styrene oxide	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.23250	Tert-butyl alcohol	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.23350	Tetrachloroethane (1,1,2,2-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.23400	Tetrachloroethene	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.23450	Tetrahydrofuran	GC/MS, Canisters	EPA TO-15	NJ

New Jersey Department of Environment Protection
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Laboratory Name: SGS NORTH AMERICA INC. - DAYTON Laboratory Number: 12129 Activity ID: NLC 210014
2235 RT 130
DAYTON NJ 08810

Category: AE04 --Organics Analysis

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	AE04.23500	Toluene	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.23550	Trichloro (1,1,2-) trifluoroethane (1,2,2-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.23600	Trichlorobenzene (1,2,4-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.23650	Trichloroethane (1,1,1-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.23700	Trichloroethane (1,1,2-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.23750	Trichloroethene	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.23800	Trichlorofluoromethane	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.23900	Trifluorochloroethene (HCFC-1113)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.23950	Trifluoro (1,1,2-) dichloroethane (1,2-) (HCFC-123a)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.24000	Trifluoromethane	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.24050	Trimethylbenzene (1,2,4-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.24100	Trimethylbenzene (1,3,5-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.24150	Trimethylpentane (2,2,4-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.24200	Vinyl acetate	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.24250	Vinyl bromide	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.24300	Vinyl chloride	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.24350	Xylene (m-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.24400	Xylene (o-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.24450	Xylene (p-)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.24500	Xylenes (total)	GC/MS, Canisters	EPA TO-15	NJ
Certified	Yes	AE04.31700	Benzene	GC, FID and/or ECD, Cryogenic Preconcentration	EPA TO-3	NJ
Certified	Yes	AE04.31900	Ethylbenzene	GC, FID and/or ECD, Cryogenic Preconcentration	EPA TO-3	NJ
Certified	Yes	AE04.31950	Isopropylbenzene	GC, FID and/or ECD, Cryogenic Preconcentration	EPA TO-3	NJ
Certified	Yes	AE04.32000	Methane	GC, FID and/or ECD, Cryogenic Preconcentration	EPA TO-3	NJ

New Jersey Department of Environment Protection
Environmental Laboratory Certification Program

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Laboratory Name: SGS NORTH AMERICA INC. - DAYTON Laboratory Number: 12129 Activity ID: NLC 210014
2235 RT 130
DAYTON NJ 08810

Category: AE04 --Organics Analysis

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	AE04.32050	Methyl tert-butyl ether	GC, FID and/or ECD, Cryogenic Preconcentration	EPA TO-3	NJ
Certified	Yes	AE04.32100	Tert-butyl alcohol	GC, FID and/or ECD, Cryogenic Preconcentration	EPA TO-3	NJ
Certified	Yes	AE04.32200	Toluene	GC, FID and/or ECD, Cryogenic Preconcentration	EPA TO-3	NJ
Certified	Yes	AE04.32350	Xylenes (total)	GC, FID and/or ECD, Cryogenic Preconcentration	EPA TO-3	NJ

Category: DW03 --Inorganic Parameters

Status	Eligible to Report NJ Data	Code	Parameter	Technique	Approved Methods	Primary State
Certified	Yes	DW03.00050	Alkalinity	Electrometric Titration	SM 2320 B	NJ
Certified	Yes	DW03.00300	Ammonia	Automated Phenate	SM 4500 NH3 H	NJ
Certified	Yes	DW03.01800	Chloride	Ion Chromatography	EPA 300.0	NJ
Certified	Yes	DW03.02550	Color	Platinum-Cobalt	SM 2120 B	NJ
Certified	Yes	DW03.02700	Conductivity	Conductance	SM 2510 B	NJ
Certified	Yes	DW03.03150	Cyanide	Spectrophotometric, Distill, Semi Automated	EPA 335.4	NJ
Certified	Yes	DW03.03750	Fluoride	Ion Chromatography	EPA 300.0	NJ
Certified	Yes	DW03.03950	Foaming agents	Methylene Blue	SM 5540 C	NJ
Certified	Yes	DW03.04000	Nitrate	Automated Cadmium Reduction	EPA 353.2	NJ
Certified	Yes	DW03.05800	Nitrite	Spectrophotometric	SM 4500-NO2 B	NJ
Certified	Yes	DW03.05950	Orthophosphate	Colorimetric	SM 4500-P E	NJ
Certified	Yes	DW03.06600	Residue - nonfilterable (TSS)	Gravimetric, 103-105 Deg C, Post Washing - mining	SM 2540 D	NJ
Certified	Yes	DW03.06900	Sulfate	Ion Chromatography	EPA 300.0	NJ
Certified	Yes	DW03.07150	Total dissolved solids (TDS)	Gravimetric At 180	SM 2540 C	NJ
Certified	Yes	DW03.07250	Total hardness	Titrimetric, EDTA	SM 2340 C	NJ

AIHA Laboratory Accreditation Programs, LLC

acknowledges that

EMSL Analytical, Inc.

10801 Southern Loop Blvd., Pineville, NC 28134

Laboratory ID: LAP-192283

along with all premises from which key activities are performed, as listed above, has fulfilled the requirements of the AIHA Laboratory Accreditation Programs (AIHA-LAP), LLC accreditation to the ISO/IEC 17025:2017 international standard, General Requirements for the Competence of Testing and Calibration Laboratories in the following:

LABORATORY ACCREDITATION PROGRAMS

☑	**INDUSTRIAL HYGIENE**	Accreditation Expires: September 01, 2022
☑	**ENVIRONMENTAL LEAD**	Accreditation Expires: September 01, 2022
☑	**ENVIRONMENTAL MICROBIOLOGY**	Accreditation Expires: September 01, 2022
☐	**FOOD**	Accreditation Expires:
☐	**UNIQUE SCOPES**	Accreditation Expires:

Specific Field(s) of Testing (FoT)/Method(s) within each Accreditation Program for which the above named laboratory maintains accreditation is outlined on the attached Scope of Accreditation. Continued accreditation is contingent upon successful on-going compliance with ISO/IEC 17025:2017 and AIHA-LAP, LLC requirements. This certificate is not valid without the attached Scope of Accreditation. Please review the AIHA-LAP, LLC website (www.aihaaccreditedlabs.org) for the most current Scope.

Cheryl O Morton
Managing Director, AIHA Laboratory Accreditation Programs, LLC

Revision19: 09/01/2020

Date Issued: 09/01/2020

AIHA Laboratory Accreditation Programs, LLC

SCOPE OF ACCREDITATION

EMSL Analytical, Inc.
10801 Southern Loop Blvd., Pineville, NC 28134

Laboratory ID: LAP-192283
Issue Date: 08/31/2020

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

Industrial Hygiene Laboratory Accreditation Program (IHLAP)

Initial Accreditation Date: 10/01/2014

IHLAP Scope Category	Field of Testing (FOT)	Technology sub-type/Detector	Published Reference Method/Title of In-house Method	Component, parameter or characteristic tested
Asbestos/Fiber Microscopy Core	Phase Contrast Microscopy (PCM)	-	NIOSH 7400	Asbestos/Fibers
Chromatography Core	GC/MS	-	EPA TO-15	Volatile Organic Compounds
Chromatography Core	Gas Chromatography	GC/ECD	NIOSH 5503	Polychlorinated biphenyls
Chromatography Core	Gas Chromatography	GC/FID	NIOSH 1003 Modified	Halogenated Hydrocarbons
Chromatography Core	Gas Chromatography	GC/FID	NIOSH 1500	Hydrocarbons
Chromatography Core	Gas Chromatography	GC/FID	NIOSH 1501	Aromatic Hydrocarbons
Chromatography Core	Ion Chromatography (IC)	-	NIOSH 7903	Inorganic Acids
Chromatography Core	Ion Chromatography (IC)	-	OSHA ID-165SG	Inorganic Acids
Chromatography Core	Liquid Chromatography	HPLC/UV	NIOSH 2016	Formaldehyde
Chromatography Core	Liquid Chromatography	HPLC/UV	NIOSH 5506	PAHs
Chromatography Core	Liquid Chromatography	HPLC/UV	OSHA 42	Isocyanates
Chromatography Core	Liquid Chromatography	HPLC/UV	OSHA 47	Isocyanates
Miscellaneous Core	Gravimetric	-	NIOSH 0500	Total Dust
Miscellaneous Core	Gravimetric	-	NIOSH 0600	Respirable Dust
Miscellaneous Core	Gravimetric	-	NIOSH 5000	Carbon Black
Spectrometry Core	Atomic Absorption	CVAA	NIOSH 6009	Mercury
Spectrometry Core	Atomic Absorption	FAA	NIOSH 7082	Lead
Spectrometry Core	Inductively-Coupled Plasma	ICP/AES	NIOSH 7300	Metals

IHLAP Scope Category	Field of Testing (FOT)	Technology sub-type/Detector	Published Reference Method/Title of In-house Method	Component, parameter or characteristic tested
Spectrometry Core	Inductively-Coupled Plasma	ICP/AES	NIOSH 7303	Metals
Spectrometry Core	Infrared	-	NIOSH 7602	Silica

A complete listing of currently accredited IHLAP laboratories is available on the AIHA-LAP, LLC website at: *http://www.aihaaccreditedlabs.org*

Appendix B

DEQ Analyte List

Constituent	Analytical Method
In Situ Parameters	
pH	Water Quality Meter
Specific Conductance	Water Quality Meter
Temperature	Water Quality Meter
Dissolved Oxygen	Water Quality Meter
Oxidation Reduction Potential (Eh)	Water Quality Meter
Turbidity	Turbidity Meter
Laboratory Analyses	
Antimony	EPA 200.8 / SW 6020B
Arsenic	EPA 200.8 / SW 6020B
Barium	EPA 200.7 / SW 6010D
Beryllium	EPA 200.8 / SW 6020B
Boron	EPA 200.7 / SW 6010D
Cadmium	EPA 200.8 / SW 6020B
Chloride	EPA 300.0 / EPA 9056A
Chromium	EPA 200.8 / SW 6020B
Cobalt	EPA 200.8 / SW 6020B
Copper	EPA 200.8 / SW 6020B
Fluoride	EPA 300.0 / EPA 9056A
Lithium	EPA 200.7 / SW 6020B
Manganese	EPA 200.7 / SW 6010D
Mercury	EPA 245.1 / SW 7470A
Molybdenum	EPA 200.8 / SW 6020B
Nickel	EPA 200.8 / SW 6020B
Nitrate	EPA 300.0 / EPA 9056A
Selenium	EPA 200.8 / SW 6020B
Sulfate	EPA 300.0 / EPA 9056A
Total Dissolved Solids (TDS)	SM 2540C / EPA 160.1 / ASTM D5907
Thallium	EPA 200.8 / SW 6020B
Vanadium	EPA 200.8 / SW 6020B
Zinc	EPA 200.7 / SW 6010D

Notes:

1. DEQ Analyte List derived from Duke Energy's *Table 1 – Summary of Constituents and Analytical Methods, Environmental Controls Monitoring Plan, Industrial Landfill No. 1 (1812-INDUS), Marshall Steam Station, Catawba County, North Carolina*.