BEFORE THE PUBLIC SERVICE COMMISSION
OF MARYLAND

IN THE MATTER OF THE APPLICATION OF	*	
CP CRANE, LLC FOR A CERTIFICATE OF	*	
PUBLIC CONVENIENCE AND NECESSITY	*	**Case No. 9482**
AUTHORIZING THE MODIFICATION OF THE	*	
CHARLES P. CRANE GENERATING STATION IN	*	
BALTIMORE COUNTY, MARYLAND	*	
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DIRECT TESTIMONY OF THOMAS O. PRITCHER

ON BEHALF OF

CP CRANE, LLC

June 12, 2018

Direct Testimony of Thomas O. Pritcher

INTRODUCTION AND PURPOSE OF TESTIMONY

Q. WHAT IS YOUR NAME AND BUSINESS ADDRESS?

A. My name is Thomas O. Pritcher. My business address is 7208 Falls of Neuse Road, Suite 102, Raleigh, NC 27615.

Q. WHAT IS YOUR CURRENT EMPLOYER AND POSITION?

A. I am a Vice President and the Air Quality Service Line Leader for Environmental Consulting & Technology, Inc.

Q. PLEASE DESCRIBE YOUR EDUCATION AND PROFESSIONAL BACKGROUND AND EXPERIENCE.

A. I hold a Bachelor of Science (Agricultural Engineering) degree from Clemson University. I am a registered professional engineer in the State of North Carolina, the State of South Carolina, the State of Michigan and the State of Mississippi. I have spent 25 years in the field of environmental consulting with an emphasis on air quality issues related to electrical generating facilities and managing the overall environmental permitting process of electrical generating facilities. A statement of my professional qualifications is attached to my direct testimony at Exhibit TOP-1.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION?

A. No.

Q. ARE YOU FAMILIAR WITH THE STANDARDS AND RELATED LAWS AND REGULATIONS PERTAINING TO AIR RELATED ISSUES APPLICABLE TO THE CRANE STATION REPOWERING PROJECT AND DOES THE PROJECT MEET SUCH REQUIREMENTS BASED ON THE AIR APPLICATION?

A. Yes.

Q. PLEASE PROVIDE AN OVERVIEW OF THE REPOWERING PROJECT.

A. CP Crane proposes to modify the Charles P. Crane Generating Station ("Crane Station") by retiring its existing coal-fired units and adding three GE LM6000 combustion turbines ("CTs") and a black start generator (the "Repowering Project" or the "Project"). The proposed GE LM6000 CTs will be configured for simple-cycle operation and fired primarily with pipeline natural gas, which will be backed up by ultra-low-sulfur diesel ("ULSD"). The CTs are expected to serve as peaking units and operate at an annual capacity factor of up to 30 percent. The design of the LM6000 CTs will allow them to start up and reach full load in 10 minutes or less and shut down quickly multiple times per day if circumstances warrant.

Each of the CTs will have a nominal generating capacity of 48 MW and the Project's total nominal generating capacity will be approximately 146 MW. The electricity generated by the proposed LM6000 CTs and an existing Frame 5 CT will be transmitted to the power grid via a new 115-kilovolt (kV) substation. The new substation will connect to the two existing BG&E 115 kV electrical transmission circuits present at Crane Station substation and will allow for the use of either transmission circuit for improved reliability.

Q. PLEASE COMMENT ON THE AIR EMISSIONS CONTROLS SELECTED FOR THE REPOWERING PROJECT.

A. The design of the Repowering Project incorporates state-of-the-art technology at every step. The use of low-sulfur fuels, along with highly efficient combustion, will limit PM/PM_{10}/$PM_{2.5}$ emissions from the proposed CTs and the black start generator. The CTs will also utilize water injection to reduce NO_x emissions. SO_2 and H_2SO_4 emissions will be controlled by use of pipeline-quality natural gas containing no more than 0.5 grain per

100 standard cubic feet (annual average) and ULSD fuel having a sulfur content of no more than 0.0015 percent by weight.

Q. HOW WOULD POST-PROJECT EMISSIONS FROM CRANE GENERATING STATION COMPARE TO THE EXISTING HISTORICAL BASELINE?

A. The post-construction emissions from Crane Station will be significantly lower than the existing historical baseline emissions. The Repowering Project will be considered a minor source with respect to new source review ("NSR") permitting requirements at Title 26, Subtitle 11, Chapter 17 of the Code of Maryland Regulations ("COMAR"). The Repowering Project does not result in a significant net emission increase of any NSR pollutant and is not subject to prevention of significant deterioration ("PSD") or nonattainment new source review ("NNSR") applicability.

The primary sources of air emissions associated with the proposed modification of Crane Station are three GE LM6000 CTs and a black-start generator. The potential to emit of the three proposed CTs and the proposed black-start generator were calculated using proposed annual operation restrictions, worst-case short-term emission rates, and startup and shutdown emissions for the CTs. The emissions increases calculated for the proposed units were then compared to the pollutant-specific "significant emissions rate" or "SER." Emissions increases for NO_x, CO, PM_{10}, $PM_{2.5}$, and GHG (CO_2e) are above their respective SER so a netting analysis is required. For all other pollutants, the emissions increase is not significant, therefore, NSR is not applicable.

For an existing electric utility steam generating unit, baseline actual emissions are determined by the average rate, in tons per year, at which the unit actually emitted the pollutant during any consecutive 24-month period selected within the 5-year period

immediately preceding the date on which a complete application was submitted. Here, baseline actual emission are based on the worst-case 24-month average annual emissions during the 5-year look-back period.

A net emissions analysis is the sum of the emission increases and decreases from the Project, and any other increases and decreases at the entire facility that are contemporaneous and creditable during the contemporaneous period. There have been no permitting actions at Crane Station during the contemporaneous period. Appendix C, Table 3.7 of the Environmental Review Document ("ERD") shows that the Repowering Project does not result in a significant net emissions increase of any NSR pollutant. In fact, the Repowering Project will result in a net emissions decrease for each NSR pollutant. Because the net emissions change from the Repowering Project for each NSR pollutant are less than applicable major source thresholds, Crane Station will not trigger federal NSR requirements for any regulated pollutant under either PSD or NNSR permitting programs. At the state level, the Repowering Project is a minor source of air emissions subject to Maryland Department of the Environment's ("MDE") permit-to-construct.

Q. TURNING TO THE OPERATION OF THE FACILITY, PLEASE PROVIDE A SUMMARY OF REGULATORY APPLICABILITY AND AN OVERVIEW OF THE AIR QUALITY IMPACT ANALYSES.

A. The Repowering Project does not result in a significant net emissions increase of any NSR pollutant and is not subject to PSD or NNSR applicability. A complete review of other federal and state air quality regulations that govern permitting and operation of the Repowering Project is contained in the Air Construction Permit Application, Appendix C of the Environmental Review Document.

As requested by MDE, an air quality impact modeling, facility-only National Ambient Air Quality Standards ("NAAQS") analysis was performed in support of the CPCN and minor source permit-to-construction applications. A sitewide modeling analysis for criteria pollutants was performed to demonstrate that the Project and remaining existing sources will comply with NAAQS. Specifically, the NAAQS modeling analysis consists of the existing sources remaining in operation, the proposed new emissions sources, and a representative, agency-approved ambient background concentration. NAAQS analysis was performed for NO_x, CO, PM_{10}, $PM_{2.5}$, SO_2, and lead. An air quality impact analysis is not required for VOCs or GHGs, as EPA has not established NAAQS for these pollutants.

Pollutant emissions were modeled using the AERMOD model, an EPA-approved refined dispersion model for evaluating impacts of stationary sources. The dispersion modeling for the proposed sources and remaining existing sources was conducted in a manner that used worst-case operating scenarios in an effort to predict the highest impact for each pollutant and averaging period. Maximum predicted impacts from the worst-case scenarios were analyzed for comparison to federal NAAQS. The maximum modeled ambient air impacts from post-Project emissions from Crane Station, when combined with a representative background concentration, are less than applicable NAAQS for all pollutants. *See* ERD, Appendix C, Table 6.1.

Q. PLEASE SUMMARIZE THE RESULTS OF THE AIR PERMITTING REGULATORY REVIEW PROVIDED IN THE ENVIRONMENTAL REVIEW DOCUMENT.

A. The modification to Crane Station will significantly reduce emissions of air pollutants from the power plant. The Repowering Project's estimated maximum annual emissions are indicated to be much less than actual emissions from the existing coal-fired units.

Q. PLEASE DESCRIBE ANY OTHER AIR QUALITY-RELATED IMPACTS FROM THE PROJECT.

A. Other air quality-related impacts will be minimal. The Project's construction and operations will generate little if any additional growth in population or industrial/commercial activity, therefore resulting air quality-related impacts will be minimal. No visibility impairment at the local level is expected due to the types and quantities of emissions projected from the facility sources.

Q. DOES THIS CONCLUDE YOUR TESTIMONY ON AIR QUALITY IMPACTS?

A. Yes.

Exhibit TOP-1

Exhibit TOP-1

THOMAS O. PRITCHER, P.E.
Vice President/Senior Principal Engineer

Education
B.S., Agricultural Engineering—Clemson University, 1992

Registrations
Professional Engineer, Michigan, No. 6201063613
Professional Engineer, Mississippi, No. 15915
Professional Engineer, North Carolina, No. 025453
Professional Engineer, South Carolina, No. 2212

AREAS OF SPECIALIZATION

Air Quality Permitting, Title V Operating Permits, Modeling, Air Emission Inventories, Visibility Studies, Air Quality Compliance Audits, Surface Hydrology, Sediment Transport Modeling, Water Quality Modeling, Stormwater Protection, Stormwater Management Design, Accidental Release Prevention, Natural Resources Engineering, Hydrology

Mr. Pritcher has experience in air quality permitting and air dispersion modeling for multiple industrial sectors throughout the United States. He has supported development/air quality permitting for approximately 45 power plants in 12 states covering EPA Regions 2 through 7, giving him a broad understanding of the various agencies' posture and policies on key air permitting issues such as BACT, including GHG BACT, air dispersion modeling, and startup/shutdown emissions and modeling. Mr. Pritcher has addressed the new NO_2 and SO_2 one-hour standards and the $PM_{2.5}$ standards for projects in Mississippi, Georgia, Virginia, South Carolina, North Carolina, Pennsylvania, New Jersey, Kansas, and Texas, including assisting agencies in establishing NO_2 one-hour and $PM_{2.5}$ modeling procedures through the modeling protocol process and review of proposed guidance documents. As a result, Mr. Pritcher has developed a strong working relationship with the various agencies and has a solid understanding of the key air quality permitting/air dispersion modeling policies and procedures.

Phase Manager; Air Quality Permitting Support Services, CP Crane, LLC—Provided air quality permitting and air dispersion modeling support for the proposed repowering of the C.P. Crane facility in Baltimore County, Maryland. The proposed project includes the installation of simple-cycle combustion turbines and the shutdown of existing coal fired units. Air quality support activities included a new source review (NSR) netting analysis, emission calculations, air dispersion modeling, preparation support for the CPCN, a summary of the emission reduction credits certification process, and a meeting with the regulatory agencies.

Phase Manager; Air Quality Permitting Support Services, Pentech America LLC—SteelCo Florida is proposing a steel mill near Tampa, Florida. Prior to the permitting phase, ECT provided environmental and engineering support for the initial phase of the project termed by SteelCo the "FEED Engineering" phase. Support included assistance in the preparation of engineering documents and questionnaires to be sent to prospective equipment vendors and engineering procurement contractors.

Senior Principal Engineer; Due Diligence Support, Bechtel Development Company, Inc.—Provided air quality due diligence support to Bechtel in its consideration of investing in Oak Meadow Energy, a project being developed by Advanced Power. The proposed combined-cycle (CC) combustion turbine project is approximately 25 miles south of Chicago, Illinois.

Project Manager; Air Dispersion Modeling Services, Confidential Power Client—Conducted an air dispersion modeling feasibility assessment based on a proposed combustion turbine facility in Bryan County, Oklahoma. The modeling consisted of a Class II area significant impact level (SIL) analysis, and a facility impact analysis plus 15 kilometers (km) consisting of a prevention of significant deterioration (PSD) increment and National Ambient Air Quality Standards (NAAQS) analysis. The project's goal was to address the feasibility or likelihood of successful permitting at the site from a Class II area air dispersion modeling perspective. [17-0376]

Project Manager; Air Quality Permitting Support Services, Confidential Power Client—Provided air quality permitting support to the STAR® system, which is a patented technology developed by SEFA to process feedstock (of any carbon content) like flyash (wet or dry) along with other ingredient materials into a variety of commercial products. The project was permitted at the H.F. Lee Station in Wayne County, North Carolina. Air quality support activities included toxic air pollutant modeling analyses, preparation of a draft compliance assurance monitoring (CAM) plan and preparation of an air permit construction permit application package for submittal to the North Carolina Department of Environmental Quality (NC DEQ).

Phase Manager; Air Dispersion Modeling Services, Armstrong Energy Center, LLC—Conducted an air dispersion modeling feasibility assessment based on a CC combustion turbine facility to be located near South Buffalo, Pennsylvania. The modeling consisted of a Class II area SIL analysis, and a facility impact analysis plus 10 km consisting of a PSD increment and NAAQS analysis. The project's goal was to address the feasibility or likelihood of successful permitting at the site from a Class II area air dispersion modeling perspective.

Project Manager; Air Quality Permitting Support Services, Confidential Power Client—Provided air quality permitting support to the STAR® system, which is a patented technology developed by SEFA to process feedstock (of any carbon content) like flyash (wet or dry) along with other ingredient materials into a variety of commercial products. The project was permitted at the Buck Station in Rowan County, North Carolina. Air quality support activities included a PSD netting analysis, preparation of a NOx reasonably available control technology (RACT) analysis, NO_2 one-hour and SO_2 one-hour modeling analyses, toxic air pollutant modeling analyses, preparation of a draft CAM plan and preparation of an air permit construction permit application package for submittal to NC DEQ.

Project Manager; Air Quality Permitting Support Services, Confidential Power Client—Provided air quality permitting support for a combustion turbine (CT) facility near Danville, Virginia. Duties included providing senior oversight of the air dispersion modeling analyses (Class I and Class II areas) performed in support of the PSD application, coordinating/preparing the air permit application for submission to the review agency, and providing post-submittal support during negotiations with the Virginia Department of Environmental Quality (VADEQ). The application was submitted in two volumes for the permitting of two proposed turbine manufacturer options for the simple-cycle unit: General Electric and Siemens.

Phase Manager; Air Quality Permitting Support Services, Center Point Energy Center, LLC—Provided air quality permitting support for the repowering of a cogeneration facility near Hopewell, Virginia. Duties included providing senior oversight of the preparation of PSD baseline emissions and proposed PSD avoidance limits, coordinating/preparing the air permit application for submission to the review agency, and providing post-submittal support during draft permit negotiations with VADEQ.

Project Manager; Air Quality Permitting Support Services, C4GT, LLC—Provided air quality permitting support for a 2x1 CC facility in Charles City County, Virginia. Duties included providing senior oversight of the air dispersion modeling analyses (Class I and Class II Areas) performed in support of the PSD application, coordinating/preparing the air permit application for submission to the review agency, and providing post-submittal support during negotiations with the VADEQ. The application was submitted in two volumes for the permitting of two proposed turbine manufacturer options: General Electric and Siemens.

Project Manager; Air Quality Services, Confidential Power Client—Provided air quality permitting support for the Cleveland County CT facility in Cleveland County, North Carolina. Permitting support included emission calculations review, air dispersion modeling support and agency interaction for the modification of permit conditions that restriction daily and annual fuel oil usage.

Project Manager; Air Dispersion Modeling Services, Commercial Metals Company (CMC)—Provided air dispersion modeling support for the NSR permitting of an increase in annual production capacity at the CMC Steel mill in Cayce, South Carolina.

Project Manager; Air Quality Services, Confidential Power Client—Responsible for air quality permitting and air dispersion modeling for a proposed CT facility in Lyon County, Kansas. Duties included providing senior oversight of the air dispersion modeling analyses performed in support of the PSD application and coordinating/preparing the air permit application.

Phase Manager; Environmental Permitting Support Services, Hill Top Energy Center, LLC—Provided environmental permitting support for a 1x1 CC facility in Greene County, Pennsylvania. Duties included providing senior oversight of the air dispersion modeling analyses (Class I and Class II Areas) performed in support of the nonattainment new source review (NNSR)/PSD application, coordinating/ preparing the air permit application for submission to the review agency, and providing post-submittal support during draft permit negotiations with the Pennsylvania Department of Environmental Protection.

Project Manager; Air Quality Services, Confidential Power Client—Conducted an air dispersion modeling feasibility assessment based a proposed CT facility in Lyon County, Kansas. The modeling consisted of a Class II area SIL analysis, a PSD increment analysis and a NAAQS analysis. The project's goal was to address the feasibility or likelihood of successful permitting at the site from a Class II Area air dispersion modeling perspective.

Project Manager; General Consulting Services, The SEFA Group—Provided general consulting services, including permit modifications at the SEFA McMeekin and Winyah facilities in South Carolina, regulatory review support, and general compliance support.

Project Manager; Air Quality Permitting/Modeling Services, The SEFA Group—The STAR® system is a patented technology developed by SEFA to process feedstock (of any carbon content) like flyash (wet or dry) along with other ingredient materials into a variety of commercial products. The Winyah STAR® facility was permitted on land leased from

Santee Cooper at the Winyah Generating Station in Lexington County, South Carolina. Sources of fly ash permitted for use include dry ash, pond ash, and landfill ash. Provided support for the separate source determination, the nonhazardous secondary materials determination, air quality permitting, air dispersion modeling, and Federal Aviation Administration (FAA) filings.

Phase Manager; Environmental Permitting Support Services, Calpine—Provided environmental permitting support for a 1x1 CC facility in Salem County, New Jersey. Duties included providing senior oversight of the air dispersion modeling analyses (Class I and Class II areas) performed in support of the NNSR/PSD application, coordinating/preparing the air permit application for submission to the review agency, and providing post-submittal support during draft permit negotiations with New Jersey Department of Environmental Protection.

Project Manager, Air Dispersion Modeling Services, New South Lumber—Provided air dispersion modeling support for the proposed facility modification of New South's Darlington, South Carolina facility. Provided support and senior review for the project's key tasks, including dispersion modeling and preparation of permit application support document for the proposed continuous kiln drying operations.

Project Manager; Air Dispersion Modeling Services, CMC—Conducted an air dispersion modeling feasibility assessment based an increase in annual production capacity at the CMC steel mill in Cayce, South Carolina. The modeling consisted of a Class II area SIL analysis, a PSD increment analysis and a NAAQS analysis. The project's goal was to address the feasibility or likelihood of successful permitting at the site from a Class II Area air dispersion modeling perspective.

Project Manager; Air Quality Services, Confidential Power Client—Conducted an air dispersion modeling feasibility assessment based on adding a new two-on-one natural dual fuel-fired (natural gas and ultra-low sulfur fuel oil) CC unit at an existing power generation facility in Cleveland County, North Carolina. The modeling consisted of a Class II area SIL analysis, and a facility impact analysis plus 10 km consisting of a PSD increment and NAAQS analysis. The project's goal was to address the feasibility or likelihood of successful permitting at the site from a Class II Area air dispersion modeling perspective.

Project Manager; Air Quality Services, Confidential Power Client—Provided air quality permitting and air dispersion modeling for a CT modification project in Rowan County, North Carolina. Duties included providing senior oversight of the air dispersion modeling analyses (Class I and Class II Areas) performed in support of the NNSR/PSD application, coordinating/preparing the air permit application for submission to the review agency.

Project Manager; Air Quality Services, Confidential Power Client—Responsible for air quality permitting and air dispersion modeling for a 920-MW simple-cycle CT facility in Jackson County, Texas. Duties included providing senior oversight of the air dispersion modeling analyses performed in support of the PSD application, coordinating/preparing the air permit application for submission to the review agency, guiding the project through the public participation process, and providing post-submittal support during draft permit negotiations with the Texas Commission on Environmental Quality (TCEQ).

Phase Manager; Environmental Permitting Support Services, Navasota Energy—Provided environmental permitting support for a 550-MW simple-cycle CT facility in Grayson County, Texas. Duties included providing senior oversight of the air dispersion modeling analyses performed in support of the PSD application, senior review of the PSD and greenhouse gas (GHG) permit applications for submission to the review agency, guiding the project through the public participation process, and providing post-submittal support during draft permit negotiations with the TCEQ.

Phase Manager; Environmental Permitting Support Services, Navasota Energy—Provided environmental permitting support for a 550-MW simple-cycle CT facility in Guadalupe County, Texas. Duties included providing senior oversight of the air dispersion modeling analyses performed in support of the PSD application, senior review of the PSD and GHG permit applications for submission to the review agency, guiding the project through the public participation process, and providing post-submittal support during draft permit negotiations with the TCEQ. Led the cultural resources studies performed by Horizon Environmental Services.

Phase Manager; Environmental Permitting Support Services, Navasota Energy—Provided environmental permitting support for a 550-MW simple-cycle CT facility in Wilson County, Texas. Duties included providing senior oversight of the air dispersion modeling analyses performed in support of the PSD application, senior review of the PSD and GHG permit applications for submission to the review agency, guiding the project through the public participation process, and providing post-submittal support during draft permit negotiations with the TCEQ. Led the cultural resources studies performed by Horizon Environmental Services.

Project Manager, PSD Permit Modification for Proposed Facility Expansion, New South Lumber—Prepared a PSD permit application addendum for New South's Camden, South Carolina, facility. Provided support and senior review for the project's key tasks, including dispersion modeling and preparation of permit application support document for the proposed continuous kiln drying operations.

Project Manager; Title V Permit Renewal Modeling, South Carolina Electric & Gas Company—Provided air dispersion modeling support for Title V permit renewal applications for

three facilities located in South Carolina—McMeekin Station, Urquhart Station, and Canadys Station. Modeling was performed to demonstrate compliance with South Carolina Regulation 61-62.5 Standard No. 2 and No. Standard 7.

Project Manager; Air Quality Services, Confidential Power Client—Responsible for air quality permitting and air dispersion modeling for the 950-MW CC CT Lee Station facility in Wayne County, North Carolina. Duties included providing senior oversight of the air dispersion modeling analyses performed in support of the application, preparation of PSD baseline emissions and proposed PSD avoidance limits, coordinating/ preparing the air permit application for submission to the review agency, and providing post-submittal support during draft permit negotiations with North Carolina Division of Air Quality (NC DAQ).

Project Manager; Air Quality Services, Confidential Power Client—Responsible for air quality permitting and air dispersion modeling for the 620-MW CC/CT Sutton Station facility in New Hanover County, North Carolina. Duties included providing senior oversight of the air dispersion modeling analyses performed in support of the application, preparation of PSD baseline emissions and proposed PSD avoidance limits, coordinating/preparing the air permit application for submission to the review agency, and providing post-submittal support during draft permit negotiations with NC DAQ.

Project Manager; Air Quality and Engineering Services, The SEFA Group—Provided air quality and engineering support services as SEFA investigated an opportunity to further protect human health, safety, and the environment by processing fly ash collected from ash ponds and or structural fills. SEFA proposed a research and development project that involved processing pond ash and landfill ash from South Carolina Electric & Gas's (SCE&G) Wateree Steam Station at the STAR facility to evaluate two principles: (1) to verify wet ash can be processed without the use of supplemental fuel; and (2) more importantly, to validate the thermal processing will restore the pozzalonic reactivity of the ash. ECT provided support in gaining agency approval for the proposed project.

Project Manager; Air Quality Services, Confidential Power Client—Conducted an air dispersion modeling feasibility assessment based on adding four new dual fuel-fired (natural gas and ultra-low sulfur fuel oil) CTs at an existing power generation facility in Jackson County, Georgia. The modeling consisted of a Class II area SIL analysis, and a facility impact analysis consisting of a PSD increment and NAAQS analysis. The project's goal was to address the feasibility or likelihood of successful permitting at the site from a Class II Area air dispersion modeling perspective.

Project Manager; Air Quality Services, Confidential Power Client—Conducted an air dispersion modeling feasibility assessment based on adding a new two-on-one natural gas-fired CC unit at an existing power generation facility located in Rowan County, North Carolina. The modeling consisted of a Class II area SIL analysis, and a facility impact analysis consisting of a PSD increment and NAAQS analysis. The project's goal was to address the feasibility or likelihood of successful permitting at the site from a Class II Area air dispersion modeling perspective.

Project Manager; Air Quality Services, Confidential Power Client—Conducted an air dispersion modeling feasibility assessment based on adding either four new dual fuel-fired (natural gas and ultra-low sulfur fuel oil) CTs or one new dual fuel-fired CC unit at an existing power generation facility located in Upson County, Georgia. The modeling consisted of a Class II area SIL analysis, and a facility impact analysis consisting of a PSD increment and NAAQS analysis. The project's goal was to address the feasibility or likelihood of successful permitting at the site from a Class II Area air dispersion modeling perspective.

Project Manager; New Source Permitting, S.T. Wooten Corporation—Provided engineering and permitting support for North Carolina air toxic modeling and permitting for a new hot mixed asphalt facility in Hertford County, North Carolina.

Project Manager; New Source Permitting, Barnhill Contracting Company—Provided engineering and permitting support for North Carolina air toxic modeling and permitting for new hot mixed asphalt facilities in Craven and Lenoir counties, in North Carolina.

Project Manager; New Source Permitting, Bellini Enterprises—Provided engineering and permitting support for North Carolina air toxic modeling and permitting for a new hot mixed asphalt facility in Henderson County, North Carolina.

Project Manager; Air Quality Services, Balch & Bingham—Provided support for the preparation of direct and rebuttal testimony and the cross-examination of other witnesses and of general hearing and defense strategy related to the Kemper County integrated gasification combined-cycle (IGCC) PSD permit.

Project Director; Air Quality Services; BMW Manufacturing Co.—Responsible for the air quality permitting and air dispersion modeling support provided for the various modifications/expansions at the BMW Manufacturing Plant in Greer, South Carolina. Duties included providing senior oversight of the air dispersion modeling analyses (Class I and Class II), review with the modeling reports prepared for submission to the review agency and lead contact for the agency during permit modification process.

Project Manager; Air Quality Permitting/Modeling, South Carolina Electric & Gas Company—Provided air quality permitting and air dispersion modeling for a CC power plant in Jasper County, South Carolina. Duties included performing the air dispersion modeling analyses (Class I and Class II areas) in support of the PSD application, preparing the air dispersion

modeling protocols, coordinating/preparing the PSD application for submission to the review agency, and providing post-submittal support during draft permit negotiations with South Carolina Department of Health and Environmental Control, EPA Region 4, and U.S. Fish and Wildlife Service.

Air Lead; Casotte Landing Natural Gas Import Terminal, Chevron Global Gas—Responsible for providing National Environmental Policy Act (NEPA), air quality permitting, and air dispersion modeling support for Casotte Landing Natural Gas Import Terminal in Pascagoula, Mississippi. The terminal was designed to receive up to 170 shipments of liquefied natural gas (LNG) per year, store it in three 160,000 cubic meter (one million barrel) storage tanks, regasify it via a closed-loop system circulating water with the Pascagoula Refinery's cooling towers, and send the regasified LNG (i.e., natural gas) out through up to five nearby existing natural gas pipelines. The lead agency was the Federal Energy Regulatory Commission (FERC).

Air Discipline Team Member; NEPA Air Dispersion Modeling Support, Compass Port Terminal—Served as senior reviewer of dispersion modeling performed to demonstrate the project stationary and project-related mobile source air emissions would not cause or contribute to any violations of the NAAQS on the mainland for compliance with the NEPA. Compass Port was designed as a LNG receiving, LNG storage, LNG regasification, and natural gas transmission facility, located on the U.S. Gulf of Mexico, approximately 11 miles (18 km) south of Dauphin Island, Alabama.

Air Discipline Team Member; NEPA Air Dispersion Modeling Support, Beacon Port Terminal—Served as senior reviewer of dispersion modeling performed to demonstrate the project stationary and project-related mobile source air emissions would not cause or contribute to any violations of the NAAQS on the mainland for compliance with the NEPA. Beacon Port was designed as a LNG receiving, storage, regasification, and natural gas transmission facility, located on the Gulf of Mexico, approximately 56 miles south of Johnson's Bayou, Louisiana.

Project Manager; Air Quality Services, South Carolina Electric & Gas—Led the preparation of the construction permit application for the replacement of combustion units at the Bushy Park LNG facility. Duties included oversight and review of the preparation of the emission calculations, application forms, and overall air permit application package for submission to the review agency.

Lead Engineer; Title V Permit Application, Wells Aluminum Corporation—Provided engineering and permitting support for the preparation of the Title V operating permit application for an aluminum extrusion/paint line facility in Belton, South Carolina. Conducted source identification, emissions inventory, air dispersion modeling, and regulatory analysis; developed recording, recordkeeping, and reporting compliance plans; and prepared the permit application forms, flow diagrams, and site plan.

Air Discipline Team Member; Title V Permit Application, The Reynolds Company—Provided engineering and permitting support for preparation of the Title V operating permit application for The Reynolds Company's textile chemical facility in Greenville, South Carolina. Also conducted source identification, emissions inventory, air dispersion modeling, and regulatory analysis; developed recording, recordkeeping, and reporting compliance plans; and prepared the permit application forms, flow diagrams, and site plan.

Lead Engineer; Title V Permitting/Air Dispersion Modeling, McKechnie Plastic Components—Provided engineering and permitting support for the preparation of the Title V operating permit application for McKechnie's plastic injection molding/paint line facility in Easley, South Carolina. Also conducted source identification, emissions inventory, air dispersion modeling, and regulatory analysis; developed recording, recordkeeping, and reporting compliance plans; and prepared permit application forms, flow diagrams, and site plan.

Air Discipline Team Member; Title V Permitting/Air Dispersion Modeling, Ethox Chemicals—Provided engineering and permitting support for preparation of the Title V operating permit application for Ethox Chemicals' textile chemical facility in Greenville, South Carolina. Also conducted source identification, emissions inventory, air dispersion modeling, and regulatory analysis; developed recording, recordkeeping, and reporting compliance plans; and prepared the permit application forms, flow diagrams, and site plan.

Lead Engineer; Title V Permitting/Air Dispersion Modeling, Grace Construction Products—Provided engineering and permitting support for preparation of a Title V operating permit application for Grace Construction Products' Vermiculite Processing Mill in Enoree, South Carolina; and prepared a Conditional Major Permit Application for Grace Construction Products' Vermiculite Expanding Plant, also in Enoree. Conducted source identification, emissions inventory, air dispersion modeling, and regulatory analysis; developed recording, recordkeeping, and reporting compliance plans; and prepared the permit application forms, flow diagrams, and site plan.

Task Manager; Air Quality Services, Dominion—Completed air quality permitting and air dispersion modeling for a 1010-MW CC facility in Warren County, Virginia. Duties included providing senior oversight of the air dispersion modeling analyses (Class I and Class II areas) performed in support of the PSD application, coordinating/preparing the air permit application for submission to the review agency, and assisting with post-submittal support during the draft permit negotiations with the VADEQ.

Task Manager; Air Quality Services, Confidential Power Client—Duties included performing the air dispersion modeling analyses (Class I and Class II areas) in support of the

PSD application for a CC merchant power plant in Wythe County, Virginia. Prepared the air dispersion modeling protocols; coordinated/prepared the PSD application for submission to the review agency; and provided post-submittal support during draft permit negotiations with VADEQ, EPA Region 3, and the U.S. Forest Service. Also provided support for submittal packages to the Virginia State Corporation Commission.

Air Discipline Team Member; Air Quality Services, Matrix Power Development Company—Provided air dispersion modeling support for a simple-cycle merchant power plant (peaking facility) in Prince William County, Virginia. Duties included preparation of an air dispersion modeling protocol, conducting the air dispersion modeling analyses performed in support of a minor source application, and preparing an air dispersion modeling report for submission to the review agency.

Project Manager; Air Quality Services, Confidential Power Client—Provided air quality permitting and air dispersion modeling for a 620-MW CC/CT expansion facility in Rowan County, North Carolina. Duties included providing senior oversight of the air dispersion modeling analyses (Class I and Class II areas) performed in support of the NNSR/PSD application, coordinating/preparing the air permit application for submission to the review agency, and providing post-submittal support during draft permit negotiations with NC DAQ.

Project Manager; Air Quality Services, Confidential Power Client—Responsible for air quality permitting and air dispersion modeling for a 1020-MW simple-cycle CT facility in Cleveland County, North Carolina. Duties included providing senior oversight of the air dispersion modeling analyses (Class I and Class II Areas) performed in support of the PSD application, coordinating/preparing the air permit application for submission to the review agency, and providing post-submittal support during draft permit negotiations with NC DAQ.

Project Manager; Air Quality Services, Confidential Power Client—Responsible for air quality permitting and air dispersion modeling for the 620-MW CC/CT Richmond County Station facility in North Carolina. Duties included providing senior oversight of the air dispersion modeling analyses (Class I and Class II areas) performed in support of the PSD application, coordinating/preparing the air permit application for submission to the review agency, and providing post-submittal support during draft permit negotiations with NC DAQ.

Air Discipline Team Member; Air Quality Services, Confidential Power Client—Provided air quality permitting and air dispersion modeling support and agency interaction support for a proposed 800 MW coal-fired power plant expansion in Cliffside, North Carolina.

Project Manager; Air Quality Services, North Carolina Electric Membership Corporation (NCEMC)—Responsible for the air quality permitting and air dispersion modeling for a 285 MW simple-cycle power plant in Richmond County, North Carolina. Duties included performing a cumulative impact analysis using AERMOD in support of the air permit application, negotiation of the air dispersion modeling protocol, coordinating/preparing the air permit application for submission to the review agency, and providing post-submittal support during draft permit negotiations with NC DAQ.

Project Manager; Air Quality Services, NCEMC—Responsible for the air quality permitting and air dispersion modeling for a 340 MW simple-cycle power plant in Anson County, North Carolina. Duties included performing a cumulative impact analysis using AERMOD in support of the air permit application, negotiation of the air dispersion modeling protocol, coordinating/preparing the air permit application for submission to the review agency, and providing post-submittal support during draft permit negotiations with NC DAQ.

Project Manager; Air Quality Services, NCEMC—Responsible for the air quality permitting and air dispersion modeling for a 340 MW simple-cycle power plant in Person County and another in Wake County, North Carolina. His duties included performing a significant impact analysis using ISCST3 in support of the air permit applications, negotiation of the air dispersion modeling protocols, coordinating/preparing the air permit applications for submission to the review agency, and providing post-submittal support during draft permit negotiations with NC DAQ.

Project Manager; Air Quality Services, Confidential Power Client—Responsible for the air quality permitting and air dispersion modeling for the addition of a 170 MW simple-cycle power unit to the Lee Station in Wayne County, North Carolina. Duties included providing senior oversight of the air dispersion modeling analyses (Class I and Class II areas) performed in support of the PSD application, preparing the air dispersion modeling protocols, senior review of the PSD application, and providing post-submittal support during draft permit negotiations.

Project Manager; Air Quality Services, Confidential Power Client—Responsible for the air quality permitting and air dispersion modeling for the addition of a 160 MW simple-cycle power facility in Buncombe County, North Carolina. Duties included providing senior oversight of the air dispersion modeling analyses (Class II areas using CALPUFF) performed in support of the air quality permit application, senior review of the air permit application, and providing post-submittal support.

Deputy Project Manager; Air Quality Services, CP&L (a Confidential Power Client Company)—Responsible for the air quality permitting and air dispersion modeling for a 2000-MW CT facility in Richmond County, North Carolina. Duties

included providing senior oversight of the air dispersion modeling analyses (Class I and Class II areas) performed in support of the PSD application, preparing the air dispersion modeling protocols, senior review of the PSD application, and providing post-submittal support during draft permit negotiations.

Task Manager; Air Quality Services, Confidential Power Client—Provided air quality permitting and air dispersion modeling for a 680-MW simple-cycle CT expansion facility in Jackson County, Georgia. Provided senior oversight of the air dispersion modeling analyses (Class I and Class II areas) performed in support of the PSD application, prepared the air dispersion modeling protocols, and conducted a senior review of the PSD application.

Project Manager; Air Quality Services, Confidential Power Client—Responsible for the air quality permitting and air dispersion modeling support provided for the permitting process of equipment to support new nuclear units in Burke County, Georgia. Duties included providing senior oversight of the preparation of the Class I and Class II air dispersion modeling protocols, the air dispersion modeling analyses (Class I and Class II areas) performed in support of the PSD application, assisting with the preparation of the air permit application for submission to the review agency, and assisting with post-submittal support during the draft permit negotiations with the Georgia Environmental Protection Department.

Project Manager; Air Dispersion Modeling, Confidential Power Client—Responsible for the feasibility assessment of permitting either an 800 MW or 1600 MW coal-fired power plant at two locations in Georgia. Managed the air dispersion modeling analysis to address the permitting feasibility in terms of each proposed project's impacts on PSD increment, regional haze, and acidic deposition at the nearby PSD Class I areas. Class I areas assessed included numerous wilderness areas and Great Smoky Mountain National Park. CALPUFF was used to estimate modeled impacts for one year because of emissions from each proposed site on their respective set of Class I areas within 300 km. The modeling was conducted in a manner that would be required for a PSD permit application.

Task Manager; Title V Permitting, International Paper—Provided permitting support for the preparation of a Title V operating permit application for International Paper's flexographic printing operations in Griffin, Georgia. Responsibilities included source identification, regulatory analysis, development of CAM plan, review and preparation of permit application forms, and development of support calculations/data to accompany the permit application forms. Client communications included plant personnel, corporate environmental personnel, and the regulatory agency.

Task Manager; Enron, Air Permitting and Modeling, Enron—Responsible for the air quality permitting and air dispersion modeling for a simple-cycle merchant power plant (peaking facility) in near Athens, Georgia. Duties included coordinating/preparing the state construction permit application for submission to the review agency.

Task Manager; Air Quality Permitting, Enron North America—Completed the air quality permitting for simple-cycle merchant power plants (peaking facilities) in Sulphur and Killona, Louisiana. Duties included coordinating/preparing the state construction permit applications, the Title V permit applications, and the environmental assessment statements ("IT" questions) for submission to the review agency.

Task Manager; Air Permitting and Modeling, NRG Energy—Responsible for the air quality permitting and air dispersion modeling for an existing power generating facility in New Roads, Louisiana. The expansion included two simple-cycle CTs. Duties included performing the air dispersion modeling analyses performed in support of the PSD application; preparing the air dispersion modeling protocol; coordinating/preparing the PSD application, Title V application for submission, and the environmental assessment statement ("IT" questions) to the review agency; and providing post-submittal support, which included preparing the draft PSD permit, Title V permit and Basis for Decision documents, using templates provide by the Louisiana Department of Environmental Quality.

Air Discipline Team Member; Air Permitting and Modeling, Texas Offshore Port System—Served as technical support and lead modeler for air quality permitting and air dispersion modeling for an offshore deep-water port in Freeport, Texas. Duties included preparing the air dispersion modeling protocol, overseeing and performing the air dispersion modeling analyses (Offshore and Onshore Class I and Class II) performed in support of the PSD application, and assisting with the preparation of the PSD application for submission to the review agency.

Task Manager; Air Permitting and Modeling, Confidential Power Client—Responsible for the air quality permitting and air dispersion modeling for a CC merchant power plant in southwestern Mississippi. Duties included performing the air dispersion modeling analyses in support of the PSD application, preparing the air dispersion modeling protocol, and coordinating/preparing the PSD application for submission to the review agency.

Task Manager; Air Permitting and Modeling, Confidential Power Client—Responsible for the air quality permitting and air dispersion modeling for a simple-cycle merchant power plants (peaking facilities) in Enterprise and Southaven, Mississippi; and CC facilities in Attala and Jackson, Mississippi. Duties included performing the air dispersion modeling analyses performed in support of the PSD applications, preparing the air dispersion modeling protocols, coordinating/preparing the PSD applications for submission to the review agency, and providing post-submittal support during draft permit negotiations.

Project Manager; Air Permitting and Modeling, Confidential Power Client—Responsible for air quality permitting and air dispersion modeling for a 600-MW IGCC power generation facility in Kemper County, Mississippi. Duties included providing senior oversight of the Class I and Class II air dispersion modeling protocols, the air dispersion modeling analyses (Class I and Class II Areas) performed in support of the PSD application, providing senior review for the preparation of the air permit application for submission to the review agency, and providing post-submittal support during the draft permit negotiations with the Mississippi Department of Environmental Quality (MDEQ).

Team Member; Compliance Maintenance Plan, Wells Aluminum Corporation—Aided the client in the setup and operation of a plan to insure the continued compliance with air quality regulations at its aluminum extrusion plant in Belton, South Carolina. The core of this plan involved the operation of volatile organic compound (VOC) and hazardous air pollutant (HAP) emissions tracking software.

Air Discipline Team Member; Air Compliance Audit, SMI Steel—Conducted in-depth air quality compliance audit as a part of a multimedia environmental compliance audit of a major steel mill in Cayce, South Carolina. Significant findings were determined and presented to plant and corporate management along with value-added recommendations for improvements.

Air Discipline Team Member; Air Compliance Audit, Reichhold Chemicals—Conducted in-depth air quality compliance audit as a part of a multimedia environmental compliance audit of major chemical facility in Pensacola, Florida. Significant findings were determined and presented to plant and corporate management along with best management practices for improved compliance tracking and documentation.

Project Manager; Environmental Management Support Services, MacDermid Graphic Arts—Responsible for support services that included updating the facility's emissions tracking spreadsheets and insignificant activity list to incorporate plant modifications at the facility in Morristown, Tennessee. Tasks included incorporating additional emission sources, modifications to existing emission sources and insignificant activities, which were not included in the revised Title V application.

Project Manager; New Source Permitting/Permit Modification, Zeon Chemicals LP—Responsible for the air quality permitting of a proposed expansion at Zeon Chemical's facility in Hattiesburg, Mississippi. His duties include working with Zeon Chemicals and project team to develop an air quality permitting strategy that meets the project's goals, coordinating/senior reviewing the air permit application package for submission to the review agency, providing post-submittal support during draft permit negotiations with MDEQ, and providing project management related activities.

Project Manager; New Source Permitting/Permit Modification, International Paper—Responsible for the preparation of a minor source permit application for International Paper's Griffin, Georgia, facility. Responsibilities included regulatory analysis, emission inventories and review and preparation of permit application forms for the proposed installation of a "stacked" flexographic printing press.

Project Manager; New Source Permitting/Permit Modification, International Paper—Responsible for the preparation of minor source permit applications for International Paper's facilities in Griffin, Georgia, and Monticello, Arkansas. Responsibilities included regulatory analysis, emission inventories and review and preparation of permit application forms for the proposed installation of flexographic printing presses and the modification of existing flexographic printing presses.

Task Manager; Permit Application for Facility Modifications, Polyfibron Technologies, Inc.—Prepared a state construction permit application for Polyfibron Technologies' facility in Morristown, Tennessee. Responsibilities included regulatory analysis, emission inventories and review and preparation of permit application forms for the proposed modifications to the facility's graphic arts (printing blankets) manufacturing operations.

Air Discipline Team Member; New Source Permitting/Permit Modification/Modeling, Hot Mixed Asphalt (HMA) Industry—Provided engineering and permitting support for North Carolina air toxic modeling and permitting for individual HMA producers. Client communications included plant personnel, corporate engineering, outside attorneys, and the regulatory agency.

Air Discipline Team Member; New Source Permitting/Permit Modification/Modeling, HMA Industry—Provided engineering and permitting support for South Carolina Standard No. 2 and Standard No. 8 modeling and permitting for individual HMA producers. Client communications included plant personnel, corporate engineering, and the regulatory agency.

Task Manager; New Source Permitting/Permit Modification/Modeling, PPG Industries, Inc.—Provided permitting support for modification of existing sources and permitting of new sources at PPG's two North Carolina fiberglass manufacturing facilities. Responsibilities included regulatory analysis, emission inventories, air toxics modeling, and preparation of permit applications forms.

Air Discipline Team Member; New Source Permitting/Air Toxics Modeling, Carolina Classic Boats—Provided engineering and permitting support for the preparation of the major source construction and operating permit for a fiberglass boat manufacturing facility in Edenton, North Carolina. Additional duties included preparing a modeling protocol, developing modeling input, running SCREEN3 and ISCST3 air

dispersion models and preparing a modeling report in support of the permit application as required under North Carolina's air toxics program.

Air Discipline Team Member; Air Compliance Audit, Owens Corning—Conducted in-depth air compliance audit as a part of an overall environmental health and safety audit of major fiberglass facility in Anderson, South Carolina. Significant findings were determined and presented to plant and corporate management along with value-added recommendations for improvements.

Air Discipline Team Member; Compliance Maintenance Plan, McKechnie Plastic Components—Aided the client in the setup and operation of a plan to ensure the continued compliance with air quality regulations at its plastic injection molding plant in Easley, South Carolina. The core of this plan involved operation of VOC and HAP emissions tracking software.

Air Discipline Team Member; SARA Title III - Section 313 Reporting, ECOFLO, Inc.—Assisted in the preparation of the Form Rs by completing the air release calculations for the facility in Greensboro, North Carolina. Provided senior review of the submittal package (Form Rs and supporting documentation). Also responsible for project management.

Engineer; SARA Title III - Section 313 Reporting, United American Energy—Responsible for completing SARA Title III Section 313 reporting, which included performing threshold calculations and release calculations, and preparing Form Rs for the electricity generating facility in Clarksville, Virginia. Also responsible for project management.

Project Manager; Toxic Chemical Release Inventory, McKechnie Plastic Components—Supervised preparation of Section 313 report (Form R) packages for the plastic injection molding facility in Easley, South Carolina.

Project Manager; Toxic Chemical Release Inventory, The Reynolds Company—Supervised preparation of the Section 313 report (Form R) packages for the textile chemical production facility in Greenville, South Carolina.

Task Manager; Risk Management Program (RMP) Plan, Weyerhaeuser—Provided consulting and engineering support for the preparation of the RMP for Weyerhaeuser's Flint River Operations in Oglethorpe, Georgia. Responsibilities included conducting the offsite consequences analysis, preparing the RMP plan's executive summary, reviewing the facility's five-year accident history, summarizing the facility's prevention program and emergency response program, and preparing the RMP SUBMIT package. RMP addressed accidental releases of chlorine dioxide and chlorine.

Task Manager; RMP Support, Weyerhaeuser—Provided RMP support by conducting a refined hazard assessment for chlorine dioxide at Weyerhaeuser's Plymouth, North Carolina facility. Due to administrative controls, the facility was exempt from submitting a RMP plan under 112(r) of the amended Clean Air Act. However, Weyerhaeuser chose to model accidental releases of chlorine dioxide for emergency planning purposes and for compliance with the General Duty clause of Section 112(r).

Team Member; Summary of Accident Prevention and Risk Management Regulations, Ethox Chemicals—Provided the client, a textile chemical manufacturer in Greenville, South Carolina, with a summary of the regulations and the generic steps to achieving compliance with the 112(r) regulations.

Air Discipline Team Member; Power Plant Upgrade and Modifications, The Ohio State University (OSU)—With its increasing enrollment and expansion, OSU is proposing to upgrade the current steam supply system at its McCracken Power Plant in Columbus, Ohio, to meet campus demand and improve energy efficiency. Plans include the removal of four existing boilers, installation of four new natural gas/No. 2 fuel oil fired boilers, and installation of two emergency generators. Provided air dispersion modeling support for the project. Duties included conducting the air dispersion modeling analyses performed in support of the construction application and supporting the preparation of the permit application for submission to the review agency.

Air Discipline Team Member; Air Dispersion Modeling, Confidential Power Client—Provided air dispersion modeling support for simple-cycle merchant power plants (peaking facilities) in Berrien County, Michigan, and Knox County, Indiana. Duties included conducting the air dispersion modeling analyses performed in support of the PSD applications and supporting the preparation of the PSD permit applications for submission to the review agencies.

Air Discipline Team Member; Air Toxic Modeling, The Standard Products Company—Assisted in the preparation of a state construction permit application for the Goldsboro, North Carolina, facility by conducting an air dispersion modeling analysis for North Carolina toxic air pollutants and preparing a modeling report for submission to North Carolina's Division of Air Quality.

Air Discipline Team Member; Air Toxic Modeling, Molded Fiber Glass Company—Assisted in the preparation of a state construction permit application for the Morganton, North Carolina, facility by conducting an air dispersion modeling analysis for North Carolina toxic air pollutants and preparing a modeling report for submission to North Carolina's Division of Air Quality.

Air Discipline Team Member; PSD Application, Confidential Power Client—Performed screening and refined modeling to assess ground-level impacts on simple terrain in support of PSD application for a power generating facility (CC) in Hidalgo, Texas. The modeling was performed with the SCREEN3 and ISCST3 models. Also responsible for the

preparation of the air dispersion modeling protocol and air dispersion modeling report for submission for agency review.

Air Discipline Team Member; Air Dispersion Modeling, Lockheed Martin Aircraft Center—Aided in the preparation of the Title V operating permit application for the Greenville, South Carolina, facility by conducting an air dispersion modeling analysis and preparing facility site plans. This facility required evaluation of more than 25 toxic air pollutants being emitted from 30 or more sources (including fugitive sources).

Air Discipline Team Member; Air Dispersion Modeling, Schlumberger Industries—Aided in the preparation of the Title V operating permit application for the manufacturing facility in West Union, South Carolina, by conducting an air dispersion modeling analysis and preparing facility site plans. This facility required evaluation of more than 15 toxic air pollutants being emitted from 40 or more sources (including fugitive sources).

Project Manager; Title V Resubmittal, MacDermid Graphic Arts—Responsible for support services that included updating the Morristown, Tennessee, facility's original Title V permit application to incorporate plant modifications and a corporate name change since the original Title V application had been submitted. Tasks included incorporating additional emission sources, modifications to existing emission sources and insignificant activities, which were not included in the original Title V application, reviewing and updating state and federal regulations, and updating Tennessee Title V forms to reflect the changes to the application.

In addition to the revised Title V application, a mass balance recovery efficiency (MBRE) protocol. The MBRE protocol was required by the state to ensure that the facility is complying with the production, control efficiency and emission limitations set forth in each of the facility's permits. The protocol needed to demonstrate that reasonable procedures are in place to facilitate accurate recordkeeping, mass balance calculations and emissions calculations.

Team Member; Stormwater Sampling Training, Lippert Components—Prepared a stormwater sampling plan notebook that was designed to explain in a practical manner, the EPA protocol for sampling stormwater. In addition to the notebook, onsite training of Harrisburg, North Carolina, facility personnel was conducted, and a stormwater sampling instruction video was provided for the facility's use.

Team Member; Stormwater Pollution Prevention Plan (SWPPP), The Standard Products Company—Prepared SWPPPs for two facilities located in Goldsboro, North Carolina. Responsibilities included facility inspection, development of applicable recommendation list, and preparation of SWPPP.

Team Member; SWPPP, Bosch Braking Systems—Prepared SWPPP for Bosch's facility located in Sumter, South Carolina. Responsibilities included facility inspection, development of applicable recommendation list, and preparation of SWPPP.

Team Member; SWPPP, Union Camp—Prepared SWPPP for Union Camp's Converting Innovation Center in Franklin, Virginia. Responsibilities included facility inspection, development of applicable recommendation list, and preparation of SWPPP.

Team Member; Stormwater Management Plans, Numerous Subdivisions—Developed stormwater management plans for review and approval by regulatory authorities before implementation during the construction of the River Oaks, The Arbors, and Asheton Springs, and Cottage Hill subdivisions in Greenville, South Carolina. The plans included the design of erosion and sediment control measures and an adverse impact study on downstream channels and structures.

Team Member; Stormwater Management Plan, Schlumberger Industries—Developed a stormwater management plan for review and approval by regulatory authorities before implementation during the construction of the plant expansion in West Union, South Carolina. The plan included the design of erosion and sediment control measures, design of a stormwater detention facility, and an adverse impact study on downstream channels and structures.

CERTIFICATE OF SERVICE

I, hereby certify that on this 12th day of June, 2018, copies of the foregoing Direct Testimony of Thomas Pritcher were served on all parties on the attached list via first class mail.

Diana M. Krevor

PRELIMINARY SERVICE LIST - CASE NO. 9482

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