

4.0 TECHNICAL ABILITY

The project team assembled for this development brings together national and international recirculating aquaculture systems (RAS) farm capabilities, combined with local civil engineering expertise. The assembled project team is highly qualified with extensive experience in developing, permitting, constructing, managing, and operating large scale developments projects, including land-based fish farms. The project has been under the supervision of Nordic's senior project and technical staff.

4.1 Applicant's Prior Experience

Nordic Aquafarms, based in Norway, is one of the world's largest investors and developers of land-based seafood production. We are dedicated to the highest environmental and quality standards in the industry, and already have development of three facilities in Europe behind us (Maximus, Sashimi Royal and Fredrikstad Seafoods). Our company has grown rapidly since its establishment in 2014 with a total of 54 employees at the time this application is filed. In 2017, we established a new subsidiary in the US, Nordic Aquafarms Inc., to pursue expansion in the US. The Belfast project is the company's fourth expansion step, with a fifth location in progress in Eureka, California.

Nordic Aquafarms has assembled significant experience and technical skill the design, development and operation of RAS. We have experienced commercial executives, experienced production leaders, and have a highly specialized internal engineering practice.

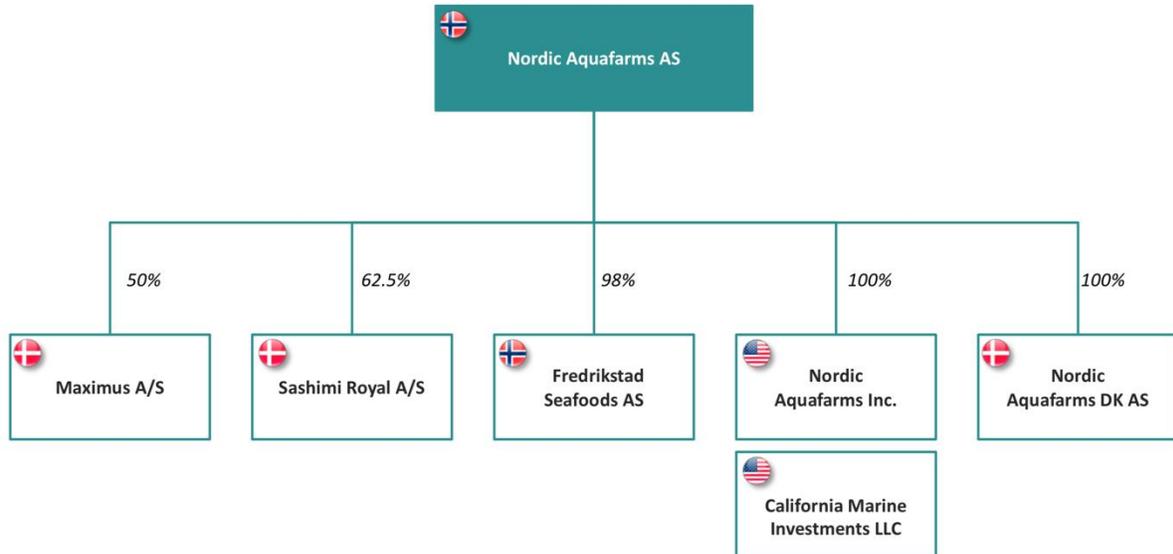
Nordic Aquafarms has the largest and strongest in-house engineering department in the land-based fish farming sector. Nordic Aquafarms has 14 full time engineers on staff, with the main design hub in Nordic Aquafarms DK, Denmark. The core civil team sits in Norway, with further expansions in the US team. Technical RAS design capabilities were expanded in 2018 with hires of six senior Inter Aqua Advance staff who had previously worked on our projects as consultants. Inter Aqua Advance has been a pioneer in RAS with delivery of designs and facilities to major seafood players all over the world for over 20 years. Inter Aqua built the first salmon smolt recirculating aquaculture system in the world for Scottish Seafarms, and the first salmon grow-out RAS design concept for Marine Harvest Canada. Our senior staff have several decades of working knowledge and experience in the industry and are viewed as experts in their field. Ivar Warren Hansen has 32 years of experience in aquaculture and has been involved with 45 separate RAS systems. Our most experienced engineers have delivered projects to international leaders in the segment such as Cooke, Grieg, Leroy Seafood, and Mowi amongst others.

In civil engineering and construction, Nordic Aquafarms has several experienced profiles. The engineering Director in Norway, Ketil Fjeld, has 30 years of project management experience from large commercial projects. We also have experienced construction designers. In Denmark we have Claus Rom with a long executive career in the construction industry. Civil capabilities are under expansion in the US (see below).

Our production and operations staff have decades of experience working in the industry, while making important contributions in pushing the industry to where it is today. As the Production Manager for Kuterra, Cathal Dineen helped bring commercial land-based aquaculture to North America. Cathal has been working for the last two years to successfully open Norway's largest land-based Salmon grow out facility in Fredrikstad for Nordic Aquafarms. He has over 20 year's experience with RAS production management and will be filling the position as production Director in Belfast. Site manager for Fredrikstad, Roger Fredriksen, has over 30 year's experience in Norway with farming several species, although he has worked primarily with large-scale commercial production of salmon.

Nordic Aquafarms currently operates the world's largest land-based Yellowtail Kingfish farm in Hanstholm, Denmark. Yellowtail are among the most demanding fish to raise. Nordic Aquafarms has been successfully producing 4 kg fish at this 1,200 mt farm for the European market in the past year with high praise from customers for several years, supported by the vertically integrated marine hatchery Maximus that holds approx. 90 brood stock. The facility received certifications from the Aquaculture Stewardship Council (ASC) in 2018. Sashimi Royal has never had any major incidents or issues with disease since the brood stock fish arrived three years ago.

The current legal structure of Nordic Aquafarms is as follows:



The company owns a number of patents and has a patent pending application for its new generation of RAS facility designs.

Nordic Aquafarms draws a vast amount of experience and operating knowledge from its Norwegian roots. Norway is a world leader in Salmon production, aquaculture technology, and research. Denmark has also developed a strong technical expertise in RAS through several world-class design vendors. Nordic Aquafarms has a foot in each of these markets and has now extended this to the US where we are also developing relations with many expert partners.

The company has systematically built its US executive team since 2018:

1. Nordic Aquafarms Inc President Erik Heim has overseen all company projects and has extensive experience in bringing together the various disciplines in project planning and execution.
2. Ed Cotter Nordic Aquafarms US project director has delivered 10 major projects totaling \$750m in value in his 12-year career with Gilbane, a respected leader in construction management. He had various construction management experience before this.
3. Cathal Dinneen is production director for the Maine facility with over 20 years of experience in RAS farming with numerous species. Dinneen has a long track-record of working with Salmon in RAS, including start-up of the first North-American land-based salmon facility Kuterra.

4. Marianne Naess is an experienced international executive from large companies such as Aker Solutions, McKesson, and others. She has experience from large construction, market development, and strategic organizational development. She is commercial director.
5. Nordic Aquafarms CTO David Noyes has worked for multiple land-based aquaculture companies and research groups such as the University of Maine Aquaculture Research Institute and the USDA ARS National Cold Water Marine Aquaculture Center in Maine, both are viewed as National experts on aquaculture.
6. Brenda Chandler is an experienced financial profile with a long track-record from the semi-conductor industry and complex projects, and is our CFO in the US.

The Nordic Aquafarms Inc organization will be scaled up further with expert resources upon permit clarifications, while working in concert with the Nordic organization. 2

.2 External Project Team Experience

External consultants were selected based on their extensive experience and local expertise in their respective fields. The permitting phase has included contributions from the following vendors:

29.2.1 Ransom Consulting, Inc.

Ransom Consulting, Inc. (Ransom) has been retained to provide overall permitting and public participation services for local, state and federal permits, geotechnical engineering, storm water management analysis and design, environmental due diligence, hydrogeologic investigation, and coastal engineering services. Our staff includes professionals in civil, transportation, utility, stormwater, environmental, geotechnical, and coastal engineering, and we have been serving municipalities throughout New England for over 30 years.

Our services typically fall into the following major categories: civil/site engineering, municipal engineering/utility design services, geotechnical engineering, Brownfields redevelopment, environmental due-diligence and remediation services. Additionally, our Portland, Maine office has areas of specialty technical services that include storm water management analysis and design, civil/infrastructure design, geotechnical engineering, environmental permitting, public participation facilitation and local, state and federal permitting.

Providing civil, geotechnical, and environmental consulting and engineering services to municipal and private clients are all part of Ransom's core services, as such, these are areas in which our team members have exceptional expertise. We have worked collaboratively with diverse groups including municipal and state officials, regional planning and development commissions, developers, financial institutions, special interest groups, community groups, various review and approval agencies, as well as other consultants, engineers, architects, and construction experts. Ransom staff has provided professional engineering and environmental consulting services to municipalities throughout Maine and New England for many years. Some of the municipalities in Maine include Belfast, Bath, Eliot, Gardiner, Freeport, Camden, Rockland, Dover-Foxcroft, Kennebunk, Falmouth, Yarmouth, Brunswick, York, Portland, South Portland, and Cumberland for several years. This experience has served to build strong working relationships with federal, state, and local officials as well.

Our past clients include municipalities, utilities, large and small industrial companies, attorneys, real estate developers, hazardous waste contractors, and government agencies, among others. Our clients' satisfaction with our services has resulted in a large volume of repeat and referral business which has been a significant contribution to our sustained growth. Ransom has established a strong reputation in Maine and throughout New England by helping clients achieve project regulatory objectives.

29.2.2 SMRT Architects and Engineers

SMRT Architects and Engineers (SMRT's) roots go back to 1884, when John Calvin Stevens established his architectural design firm in Portland, Maine. Over the next 134 years, his one-man firm would evolve to become a multi-disciplinary industry leader with more than 100 employees. SMRT's integrated architectural and engineering practices support every project from the outset, bringing informed insight to ensure a facility functions dependably and efficiently and reflects its mission and culture.

Designing and engineering complex buildings for today's specialized technology industries requires both technical expertise and operations/facilities management experience. Our integrated and collaborative approach allows us to provide a full-responsibility model of project management. Given the high levels of coordination and oversight needed for the complexity of our clients' projects, SMRT's full-service team approach allows us to develop creative – yet practical – solutions to complex building problems.

While offering comprehensive services in-house, SMRT routinely partners with other consultants offering similar services. Our philosophy is simple: “structure a project in the way that is best for the client and the project's needs.” We value our partnering relationships, often with firms that others would consider competitors. A member of the US Green Building Council, SMRT considers sustainable design fundamental to our commitment to quality service. We practice “Green for a Reason,” where each sustainability element must fit our clients' operations, economic and schedule requirements. With Leadership in Energy and Environmental Design (LEED) certified professionals in every discipline, we develop each project using an integrated green planning program to ensure our clients fully understand their choices and implications.

We understand the importance of the functionality of a site design and the impacts on efficient operations while respecting the site attributes and natural environment surrounding the site. SMRT's landscape architects and consultant Civil Engineer, Andrew Johnston, are experienced in permitting a wide range of projects with the State of Maine Department of Environmental Protection (MEDEP) through Site Law (SLODA) and Natural Resources Protection Act (NRPA); Maine Department of Transportation (MEDOT), Army Corp of Engineers; and numerous local municipalities. Permitted projects range in size and complexity and include a new regional hospital, numerous medical office buildings and a cancer center in Scarborough. Our working relationships with state and local agencies and regulatory knowledge will ensure efficient communication among the team and to keep the project on schedule.

29.2.3 Cianbro Corporation

Cianbro Corporation (Cianbro) of Pittsfield, Maine, has been retained to provide the design and construction of the sea water access system, which includes saltwater intakes, pump station mechanical systems, and process water discharge.

Cianbro is a diversified full-service construction firm experienced in marine projects and the environmental considerations with water and wastewater treatment facilities. Since the company was formed in 1949, Cianbro has successfully performed both design-build and construction services for this type of work and many other construction projects of a waterborne nature. Cianbro specifically self-performs and subcontracts civil-structural, mechanical, piping and electrical construction tasks that this project will require.

Cianbro's key project team members have many years of combined expertise and experience in environmentally sensitive water and marine projects. Our management team is backed by a workforce of 1,500 craftspeople of all trades as well as a host of long standing subcontractor relationships to execute all aspects of this project. Cianbro's corporate support services include in house professional engineers to assist with temporary construction design, means and methods. Our local yards and facilities include shoreline deep water access for materials, tools and equipment to become waterborne for immediate and efficient deployment to the site.

Cianbro is the largest owner/operator in this region of the heavy construction equipment applicable for this type of work including cranes, barges, tugboats, dredges and clamming equipment, boats and sediment booms, compressors, welders and the applicable tooling. Cianbro has a long history of diving operations and underwater work. Cianbro is well equipped and staffed to efficiently work on water and land alike.

Cianbro's history of projects include bridges over coastal and inland waterways, hydro-electric facilities, wind projects and overland power lines to name a few. All these projects require extensive environmental and sediment controls and best management practices (BMPs). A broad variety of Cianbro supervisors and craftspeople have training and experience in applying the proper BMPs and controlling sediment during construction operations.

29.2.4 Woodard & Curran

Woodard & Curran (W&C) of Portland, Maine, has been retained to complete the design associated with the saltwater intake, pump station and process water discharge for the project. W&C is a national consulting engineering firm focused on water and the environment with expertise in civil, water and wastewater engineering, and the operations of water and wastewater treatment facilities. Since the company was formed in 1979, W&C has successfully designed, permitted and constructed projects for industrial, manufacturing, and municipal clients throughout the United States, and specifically within our home state of Maine. For this project, W&C's key project team members include Barry Sheff, PE (Principal in Charge), Jim Wilson, PE (Project Manager), and Technical Managers Jason Kreil, PE and Paul Porada, PE leading the pumping system and pipeline hydraulics designs respectively. The team has been selected based on specific expertise and experience with projects located adjacent to and within marine environments. Key team members have an average of 25 years of related professional experience in Maine and New England, including Ellsworth ME Wastewater Treatment Facility, Vinalhaven ME Wastewater System Design, Bucksport ME Water Filtration and Treatment Facility, St. Agatha ME Effluent Transmission System, Portland ME Rockland Avenue Outfall, Portland ME Preble Street Combined Sewer Outfall Alternatives Analysis, Portland ME Curtis Road and Franklin Street Pump Station Upgrades, MEDOT Ocean Gateway Multimodal Facility, Rockport ME Wastewater Discharge Licensing, McCain Foods Waste Discharge Licensing, Salem MA Canal Flood Mitigation Pump Station, and Lawrence MA Pump Station Upgrades among others.

29.2.5 Normandeau Associates, Inc.

Normandeau Associates, Inc. (Normandeau) has been retained to assist with natural resource assessments, environmental permitting, and related aspects of the project within the terrestrial and coastal zones, as well as within Belfast Bay. In business since 1970, Normandeau has been providing environmental consulting services for nearly 50 years, including natural resource surveys and permitting support for public and private sector clients throughout the Northeast and nationwide. We understand the issues unique to each state's regulatory programs in which we work and have broad understanding of state and federal permitting requirements. With offices in twelve states and nearly 200 staff, of which nearly 70 are positioned in the Northeast, our staff has the depth and breadth of highly-qualified technical leaders and field staff to provide the requested services. Normandeau's technical and regulatory staff and capabilities are well-known and respected by state and federal regulatory and resource agencies. For this assignment, Normandeau's Key Staff include Adele Fiorillo (PWS, NHCWS), Sarah Allen (PWS, NHCWS), Sarah Barnum (CWB), Ben Griffith, and Tyler Parent, supported by well-qualified field and laboratory staff, including Mike Taylor, Matt Balge, Joel Detty, and Hannah Proctor. Our Key Staff each have over 20 years of relevant experience in Maine and New England, including the Peirce Island Wastewater Treatment Facility (Portsmouth, NH), multiple tasks under our MEDOT MSA, town-wide wetland modeling for the Piscataqua Region Estuaries Partnership (Kittery, ME), long-term wetlands and biological resource monitoring throughout Maine including Waste Management's Crossroads facility, Maine Transit Authority, Great Bay Eelgrass Studies for the Great Bay Municipal Coalition and others, water quality and fisheries studies in various locations throughout coastal Maine, and shoreline characterizations for various towns in coastal Maine (Harpwell, Saco and Scarborough to name a few). Normandeau's regulatory and field efforts are supported by the latest in GIS, CAD, and GPS technologies. Our GIS mapping department has developed maps for wetland stream and river and watershed delineation, vernal pools and habitat mapping, soils mapping, vegetation classification, fish and turtle studies, as well as bathymetric maps, side-scan sonar images for substrate classification, acoustic Doppler current profiles, aquatic habitat maps, land use maps, natural resource maps, water resource maps, topographic maps, stream restoration maps, tax maps, environmentally sensitive areas and numerous other location maps utilizing field-collected GPS data, state GIS data, and high resolution remote sensing.

29.2.6 McDonald Morrissey Associates, LLC

McDonald Morrissey Associates, LLC (MMA) of Concord, New Hampshire has been retained to provide numerical modeling services to support the permit application associated with the proposed groundwater withdrawal system. MMA is nationally recognized for expertise in the analysis of complex groundwater flow systems for industrial and government clients. MMA principals share more than 100 years of experience in the conduct, management and technical oversight of a wide variety of groundwater projects. MMA's project experience includes groundwater resource development, wellhead and source-water protection area delineation, mine dewatering, contaminant transport evaluations, groundwater remediation assessment, plume allocation, and regional groundwater flow system analysis. For this project, MMA's key project team members include Michael Mobile, PhD, Charles Spalding, PG, and Daniel Morrissey, RPG.

29.2.7 Acentech, Incorporated

Acentech Incorporated (Acentech) headquartered in Cambridge, Massachusetts, with offices in Philadelphia, PA, Los Angeles, CA, and Charlottesville, VA has been retained to provide environmental noise consulting services associated with the design, construction, operation, and

maintenance of the Project. Acentech is among the largest, most experienced, and oldest acoustical consulting firms in North America with roots dating back to the late 1940's serving engineering, architectural, industrial, commercial, institutional, environmental, legal, education, and cultural clients throughout the United States and many countries overseas. For this Project, Acentech's project team members include James D. Barnes, PE, Alex Odom, and Eric Wood with an average of more than 30 years of related professional consulting experience serving industrial, commercial, and engineering clients. Representative consulting projects for clients in the State of Maine have included energy plants, manufacturing plants, oil pumping stations, gas compressor stations, transformer substations, paper mills, landfills, schools, office buildings, and entertainment and worship spaces.

29.2.8 Gridworks Energy Consulting LLC

GridWorks Energy Consulting LLC (GridWorks) has been retained to help Nordic Aquafarms create a sustainable energy infrastructure and ecosystem at its Belfast facility. GridWorks was formed in 2017 to help the world's electric grids and microgrids use Transactive Energy Management tools to increase their resilience and sustainability. Its principles bring extensive experience designing and building Transactive Energy systems at VCharge, a company that built and operated the largest Aggregated Transactive Load Asset in the world, doing real-time energy trading and delivering Ancillary Services to PJM (Pennsylvania), ISO-New England (Maine and Massachusetts), National Grid (UK) and EirGrid (Ireland). GridWorks is currently also working with another large industrial energy consumer in Maine and conducting a study for a European grid operator on delivering grid services with residential appliances. One of its principles (George Baker) also has deep experience permitting and financing renewables projects in Maine.

29.2.9 Steven Whipple

Steven Whipple is a licensed Professional Engineer and has worked as an environmental engineer in the field of air quality since 1993. Since 1995, after working for the State of Maine's Bureau of Air Quality, he has practiced as a consulting engineer for a variety of manufacturing, commercial, educational, health care, legal, and government agencies. Projects typically include permitting, regulatory compliance review, environmental impact mitigation, regulatory reporting, control technology analyses, air dispersion modeling analyses, green energy applicability and program implementation, and environmental operations and management.

29.2.10 Broadwater Environmental, LLC

Broadwater Environmental, LLC (Broadwater) is a small consulting firm in South Portland, Maine specializing in natural resource characterization and land use permitting. Ian Broadwater is the owner/operator and has over 32 years of experience in environmental consulting in New England. Broadwater provides services including wetland delineation surveys and characterization, vernal pool surveys, high intensity soil maps and subsurface wastewater disposal system designs. Mr. Broadwater also has completed numerous environmental permit applications, from simple to complex, for a variety of clients. Mr. Broadwater also has experience evaluating and designing river and wetland restorations, conducting environmental and geotechnical drilling oversight, and collecting environmental samples. Mr. Broadwater is a Certified Soil Scientist in Maine (SS305) and a Certified Wetland Scientist in New Hampshire (NHCWS No.162). Mr. Broadwater is also a Licensed Site Evaluator (SE230) in Maine.

29.2.11 Northeast Archaeology Research Center

The Northeast Archaeology Research Center (NE ARC) is a privately-owned corporation established in 2008 located in Farmington, Maine, in the foothills of the Western Maine Mountains. NE ARC is committed to historic preservation and provides a wide range of high quality and cost-effective cultural resource management consulting services to its clients. The principals and staff have over 30 years of consulting archaeology experience in northern New England, primarily in the States of Maine, New Hampshire and Vermont, and have completed several thousand cultural resource consulting studies during this time. These efforts are directed at cultural resource management studies for corporate, private, federal, state and municipal entities; these efforts being the direct result of historic preservation legislation as one compliance component of environmental studies.

The NE ARC co-Principal Investigators and Directors, Gemma Hudgell, Ph.D., and Robert N. Bartone, M.A., in addition to Sarah Loftus, Ph.D., Project Director/Historical Archaeologist are highly qualified with experience far exceeding the Secretary of the Interior's minimum professional qualifications for archaeology (Code of Federal Regulations, 36 CFR Part 61; Federal Register 48, 190:44738-44739). Robert Bartone, Sarah Loftus, and Gemma Hudgell, are qualified to perform all levels of cultural resource work in Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont, although our area of expertise is primarily in the northern New England states.

The NE ARC provides the full range of archaeological services from small-scale assessments to large-scale surveys, evaluations and data recovery. NE ARC has extensive experience with both prehistoric and historic archaeology at sites representing the full range of Native American human occupation in the Northeast from the Paleoindian period to the Contact period and historic occupation to the 20th century. 29

29.2.12 Maine Drilling & Blasting

Maine Drilling & Blasting has earned a reputation as one of the safest, most experienced rock blasting and drilling companies in the Northeast and Mid-Atlantic areas. During the past 50+ years, they've performed over two million controlled blasts for highways, site development, quarries, houses lots, utilities and marine work. They've drilled some of the most aesthetic presplit faces, helped plan and develop over 180 quarries, installed rock anchors over water, under stadium seating and 50 feet above highways, and mechanically broken hundreds of thousands of cubic yards of rock with hoe rams. Maine Drilling and Blasting has extensive experience in projects from wind farms to ski-slope development.

Recognized as an industry leader in drilling and rock blasting services for the construction and quarry markets, they also offer a variety of specialty services throughout the Northeastern United States including: Foundation Services, Hoe Ramming, Rock Anchors, Engineering, Public Relations, Pre-Blast Surveys, Packaged Explosive Distribution, Quarry Planning & Quarry Blasting, and Leading Industry Technology.

Resumes detailing the experience and qualifications of key Nordic and external consultant personnel are presented in **Appendix 29-A**.

29.3 Project Delivery Phase

An external Construction Manager (CM) is being retained for execution of the proposed construction project in Belfast. The CM will be bringing in a specialized execution team to ensure high-quality delivery of project designs and construction on the site. Nordic Aquafarms is in the final phase of a tender process for a CM with final selection in May 2019. We are currently completing the selection process among a group of CM's experienced in large-scale project management. The selected candidate will manage bids, daily coordination of construction, and reporting, under supervision of our Project director and an internal steering group consisting of the US executive team. The CM will be selected in May 2019 and will be involved in pre-construction preparations. Nordic will notify MEDEP when a project CM has been selected.

Final contractors will be chosen based on a tender process upon permit clarifications, with support from the chosen CM partner. A range of contractors will be involved in the civil work. Nordic Aquafarms DK and our international installation manager will be responsible for all RAS process installations and commissioning. Our production management and CTO will be responsible for final testing and preparations of the RAS systems.

Final engineering of the civil engineering for the facility will be conducted with retained engineer vendor partners from the permitting phase. This work will commence upon further clarifications about progress on issuance of permits.

APPENDIX 29-A

Resumes

EDWARD M. COTTER

Project Director

EXPERIENCE

Nordic Aquafarms, Inc.

Portland, ME
2018-Present

Project Director

- Responsible for engineering and construction related activities for US capital projects. Lead US engineering staff and outside vendors through planning, permitting, and construction phases.
- Establish project goals for schedule, budget, and quality and develop action plan for achieving such.
- Work with design and construction partners to establish a comprehensive commissioning and turn-over plan that will allow a smooth transition into operations and maintenance phases.

Gilbane Building Company

Glastonbury, CT
2006-Present

Project Manager

- University of Connecticut NextGen Capital Improvement Program. Leading team of engineers and superintendents for multiple projects from programming through closeout to meet project objectives while maintaining budget and schedule. Provide leadership for campus wide construction initiatives such as ongoing safety evaluations, campus logistical coordination, and utility framework programming support. Report to multiple Directors and Vice President of University Planning, Design, and Construction.
- Jackson Labs- Farmington, CT. Management and oversight of new campus construction for life science client establishing a new team in CT. Provided swing space renovation, move management, and management of 183,000 s.f. new building construction.
- Electric Boat- Groton, CT. Oversight and Quality Control of an \$85M upgrade to existing dry dock structures on campus. Maintain cost, schedule, and quality documentation for the US Navy certified structures to ensure certification was re-established at the completion of the project.

Ocean and Coastal Consultants, Inc.

Trumbull, CT
2004-2006

Project Structural Engineer

- Project Engineer for design, production of construction documents, and shop drawing review of various coastal installations.
- Member of Construction Document Committee, review of specifications and construction drawings for accuracy and adherence to company policies and guidelines prior to client delivery

EDUCATION

University of Rhode Island

Kingston, RI

- Completed Master's Level courses in structural engineering including Steel, Timber, and Foundation Design.

University of Rhode Island

Kingston, RI

- Bachelor's of Science, Ocean Engineering 2000

CERTIFICATES AND PROFESSIONAL REGISTRATIONS

- Engineer in Training (EIT), Rhode Island
- OSHA Confined Space Safety Entry Supervisor Program
- Member, Association of General Contractors
- OSHA certified 30-hour Construction Safety Certification
- OSHA HAZWOPER 40 hour training
- Certified Welding Inspectors Welding Fundamentals Seminar
- Member, CMAA
- Member, Construction Institute
- Associate Member, American Society of Civil Engineering

David Noyes

3940 Broadway
Kenduskeag, ME 04450
dsn@nordicaquafarms.com
1-207-949-2242

Education: B.S. Marine Biology University of Maine 2014

Professional Experience

October 2018-present *Chief technology officer, Nordic Aquafarms Inc. Portland, Maine.* Integrate needs of production team with technical solutions in engineering concepts. Coordinate communications with international team to provide innovation technical solutions for proprietary modular recirculating aquaculture system concept. Conduct community outreach and present technical concepts to the senior company leadership, academia, local community members, regional and industry stakeholders, local, state and federal regulators and legislators. Integrate academic research into coordinated goals that will benefit company and industry at large by steering grant work. Communicate with subsidiary companies to provide guidance and problem solving networking across multinational corporate structure. Developing food pantry initiative for large scale seafood donation to feed the needy across the regions where we operate through established connections and momentum from previous work in this area with previous fish farms I worked at.

November 2017-September 2018 *Laboratory assistant, National Cold Water Marine Aquaculture Center USDA Agricultural Research Services, Franklin Me.* Assist with ongoing work on atlantic salmon (*Salmo salar*), arctic char (*Salvelinus alpinus*), and sea lice (*Lepeophtheirus salmonis*). Perform aseptic laboratory techniques for various analysis, and on going genetic work with a focus on selective breeding. assist with animal care, and hatchery work, system maintenance and repair, and trouble shooting.

2003-Present: *Sergeant First Class: US Army*

Platoon sergeant, operations sergeant, petroleum manager, heavy equipment operator. Responsible for supervision of 30 individuals. Advise and provide planning for Platoon Leader. Responsible for engineering assets, logistical needs, payroll, and personnel. Supervise repair and services for Statewide electronic assets such as cryptographic communications, thermal vision, night vision, satellite communications, and mine detection equipment. Track, plan and coordinate Fueling needs for regional area of responsibility of Battalion and the units it supports. Personally responsible for \$3 million of equipment. Battalion test team member responsible for testing and licensing unit's soldiers. Provided convoy/base security. Deployed OIF II/Iraq, Operation Katrina, Operation Irene and served on Arizona/Mexican border. Request DD 214 for deployment dates and awards.

2006-Present: *Owner operator David Noyes Apartments: Kenduskeag Me.*

February 2016- November 2017 *Operations manager and systems lead, Acadia Harvest Incorporated, Franklin Me.* Managed four employees. Oversaw operation of multiple recirculating aquaculture systems for raising multiple species from hatchery stock to harvest size: Yellowtail (*Seriola lalandi*), black sea bass, sandworms, American oysters, macro and micro algae. Hand-built two RAS systems, one being a highly complex integrated multitrophic aquaculture recirculating system that incorporated four species. Redeveloped and implemented husbandry procedures, developed stocking and harvest plans, troubleshoot RAS systems, implemented mechanical failsafe and emergency procedures for systems, managed water chemistry and unique biological needs of various species, managed daily logistical needs to operate multiple systems in multiple buildings. Provide detailed tracking of inventory, growth rates, feed conversion ratios, and forecasting of needs, payroll, and prepared and conducted training of safety protocols. Conducted sales and marketing for greater New England and expanded into mid Atlantic area. Procured new suppliers for high volume items significantly reducing operating costs.

September 2015-February 2016 *Technician at Genetic Repository, Jackson Laboratory, Bar Harbor, ME.*
Performed fast paced animal care and genealogy logging for more than 27,000 mice in maximum barrier room.
Utilize aseptic husbandry techniques for more than 300 strains of mice with little to no immune function for local and international sales.

April 2015- September 2015 *Genotyper at Transgenic Genotyping Services, Jackson Laboratory Bar Harbor, ME.*
High throughput molecular biology department utilizing multiple PCR platforms. Responsible for tracking requests analyzing and optimizing protocols performing fast paced quality work with molecular biology skills and analytical software.

June 2011- April 2015: *Scientific research assistant at Aquacultural Research Institute: University of Maine Orono*
Aseptic laboratory techniques for RNA, DNA, bacterial, viral, parasite research, and care of live animals. Worked extensively with sea lice and Atlantic salmon from 40 grams to 1 kilogram in fresh and saltwater RAS to include smoltification in RAS. Responsible for supervising and training undergraduate lab technicians. Worked in both lab and field setting, independent and group efforts. Responsible for designing, building, troubleshooting and maintaining recirculating, and flow through aquaculture systems for finfish, crustaceans, gastropods and corals. Designed and built first sea lice hatchery in New England. Built five multipurpose reconfigurable biosecurity level 2 aquaculture systems for disease trails work. Responsible for validating, and optimizing assays and techniques. Responsible for collecting, cataloging, transcribing, and presenting data. Worked on clinical trials for Merck, Pfizer, and Fish Vet Group. Worked on projects for the USDA, and NOAA.

Aug 07- Sept 09; *Earthwork foreman/heavy equipment operator, Eastwood Contractors: Brewer, ME*
Responsible for residential and commercial projects to include foundation prep, septic system installation, storm water, sewer, and water main installation and tie in. read and interpreted blue prints, coordination with various city engineers and code enforcement officers as well as various General contractors to ensure work was completed both on time and to specification.

Jan 07 – July 07: *Blaster, Cianbro Construction Company: Pittsfield, ME*

Sept. 06 – Jan 07 *Builder, New To You Construction: Hampden, ME*

April 06-July 06 *Hardscape foreman/ Small equipment operator, Newland Nursery: Ellsworth, ME*

June 05-April 06 *Self-employed Carpenter/Sub-contractor*

Summer 2001 & Summer 2002 *Mover at Allen's Transfer and Storage: Augusta, ME*

Nov 00-May 02 *Retail/Customer Service at Niman's Big and Tall: Bangor, ME*

May 00- Sept 00 *Utility person/Machine operator at Irving Tanning: Hartland, ME*

Professional development: Advanced Leadership course for Engineers, Warrior leaders course, Petroleum specialist Course, Combat lifesaver, suicide first aid, Hazardous material handler and transportation course, ATEC 22ton crane pile driver course, Unit public affairs representative course.

Licences: (42) request DA form 5984-E for full list of licences.

IACUC and HAACP certified.

John V. Hessler

159 High St, Belfast, ME 04915

Phone: (207)922-7782

E-mail: jh@nordicaquafarms.com

Education

University of Maine (January 2008 – May 2011)

- B.S. Chemical Engineering – Summa Cum Laude

Georgia Institute of Technology (August 2011 – February 2016)

- Conducted graduate level research in the field of membrane separation technology

Experience

Project Engineer (February 2019 - Present)

Nordic Aquafarms (Belfast, Maine)

Assists the Project Director in the design, planning, development, and construction of a proposed land-based salmon farm to be located in Belfast, Maine. Key responsibilities involve communication with vendors and contractors, participation and recording of weekly engineering and coordination meetings, and oversight of daily tasks with the focus of achieving critical project milestones. This position requires a strong ability to communicate and address problems in collaboration with coworkers and vendors.

- Daily communication with team members and vendors, assist in direction and delegation of tasks
- Hosting of weekly meetings with multiple teams, driving project progress
- Involvement in the coordination and development of permit documents
- Facilitate coordination between engineering, design, and construction
- Develop deliverables schedules and assignments for completing major project goals

Project Manager (July 2018-November 2018)

Qualey Granite and Quartz (Veazie, Maine)

Built upon my experience in the stonework/construction industry along with substantial experience in personnel and project management. I oversaw day-to-day operations and set the schedule for templating, fabrication, and installation. Position responsibilities included scheduling, customer interaction and communication, overseeing of every aspect of the fabrication process, and quality control. The relatively small size of the company mandated that I be very hands on in moving each project along. I gained significant experience in management of personnel, with the aim of fostering an open and effective management and communication structure within the company.

- Held daily meetings with templating, fabrication, and installation crews to review current production and discuss any outstanding issues.
- Kept inventory records and placed orders to maintain and increase production.
- Communicated with customers and contractors on project status and goals.
- Designed countertop layouts for enhanced project visualization
- Regularly utilized critical thinking and problem solving skills to troubleshoot and resolve interruptions in production and installation.
- Regularly used Draftsight software to generate shop tickets to clearly guide the fabricators and installers.

CAD Draftsman and Designer (February 2016-July 2018)

Freshwater Stone and Brickwork (Orland, Maine)

Gained a unique array of skills working in the stone fabrication industry. Primary responsibility was to assemble the dimensional drawings and machine files for the manufacturing of interior stonework. Independently expanded responsibilities to include CNC programming and operation, customer interfacing and support, project management, data analysis, and site installation. The independent nature of the environment allowed for me to greatly expand my ability to work within AutoCAD for both 2D and 3D drafting and rendering.

- Self-taught to be proficient in AutoCAD LT and AutoCAD
- Trained in CAD/CAM software and CNC operation
- Experience with customer support and project management
- Introduced multiple systems for improvement of quality control and performance metrics within the fabrication division

Graduate Research (August 2011 – February 2016)

Georgia Institute of Technology (Atlanta, Georgia)

Worked in the field of energy and fuels by fabricating novel gas separation membrane materials. Research was highly independent, requiring ability to build and maintain your own laboratory equipment. Graduate level chemical engineering courses were required, and I also studied management within a technical and engineering environment.

- Required regular research updates to Dow Chemical
- Prepared posters and extensive written reports detailing project goals and results
- Gained significant experience in laboratory equipment maintenance and upkeep
- Assumed several significant duties within in the group, including maintaining and organizing laboratory inventory
- Required regular collaboration with fellow researchers and across different independent projects
- Designed own analytical tools within Microsoft Excel
- Independently constructed several custom pieces of equipment to improve performance and testing efficiency
- Served as a teaching assistant in an undergraduate process control course – duties involved regular office hours and project grading

Undergraduate Research (June 2010 – May 2011)
University Of Maine (Orono, Maine)

Collaborated with a graduate student in the setup and operation of a trickle bed reactor. Goals are to characterize the bed system and use this information to optimize operating conditions for various reactions.

- Constructed a custom-built chemical reactor
- Formulated mathematical models to simulate system behavior

Undergraduate Research (May 2009 – May 2011)
University Of Maine (Orono, Maine)

Worked as a member of the MixAlco research group, examined several means of forming and upgrading fuels derived from biomass. Personally headed one of the steps in the process pathway, concerning the formation of esters from mixed acid reagents.

- Project required regular research updates and detailed project presentations
- Used gas chromatography (GC) to analyze chemical products – gained substantial experience in GC maintenance and upkeep

Undergraduate Research (May 2008 – August 2008)
University Of Maine (Orono, Maine)

Designed and constructed a chemical vapor deposition system for Dr. Clayton Wheeler, professor, Chemical and Biological Engineering.

- Independently designed system according to list of specifications
- Custom-fabricated system, which required extensive use of hand tools, metal fabricating equipment, and welding

Skills

- Excellent oral and communication skills
- Able to independently and quickly learn new skills
- Proficient in Microsoft Office, Mathcad, Matlab, LabView
- Proficient in AutoCAD and similar drafting/modeling software
- Experience in CNC programming and operation
- Experience in writing in C++, HTML, JavaScript
- Experience working in a clean room for semiconductor fabrication
- Experience in machining and welding
- Knowledge of basic tools and hands-on work
- Skilled in carpentry and hand fabrication
- Experience in circuitry and electrical design
- Skilled in project management
- Skilled in team-based environments and personnel management
- Education and experience in process and quality control
- Ability to read and create blueprints and P&ID's

Carter S. Cyr

Nordic Aquafarms, Inc

159 High St., Belfast, ME 04915 cc@nordicaquafarms.com (207) 228-5622

EDUCATION

August 2014-April 2017

M.S. in Fisheries and Aquatic Sciences

University of Florida, Fort Pierce, Florida

Thesis title: Assessment of candidate marine species to diversify ornamental fish production in Florida: Evaluations of spawning, hyposaline tolerance and select larval production factors

September 2010-December 2013

B.S. in Marine Biology

Roger Williams University, Bristol, Rhode Island

PROFESSIONAL WORKING EXPERIENCES

June 2018-present *Production Manager*

Nordic Aquafarms, Inc,
Belfast, Maine

- Assist in various aspects of project development
- Participate in the formulation and development of permit application materials
- Help develop management plans for various aspects of farm operations
- Contribute to public outreach, education and engagement regarding a high-profile development project
- Participate in budgeting activities related to the design on a state-of-the-art RAS facility
- Engage vendors as part of the assessment and procurement of various goods and services

September 2016-present *Aquaculture Biologist II*

Institute of Food and Agricultural Sciences, Shellfish Extension Office,
University of Florida, Cedar Key, Florida

- Design and conduct industry oriented, applied shellfish research
- Deploy and maintain water quality monitoring devices and publish data on lab website
- Develop posters and PowerPoints for presentation of research to various audiences
- Present information on industry development, productivity and regulation
- Participate in and help coordinate outreach initiatives such as workshops and tours
- Collect and analyze data using statistical software (JMP)
- Provide husbandry for various species of shellfish seed, juveniles and broodstock
- Construct apparatus for cultivation of different shellfish species
- Maintain and update website and social media pages with lab activities and relevant events
- Give tours of research laboratories and shellfish production facilities to school groups
- Educate students about Florida's shellfish industry including history, basic techniques and regulation

August 2014-August 2016 *Graduate Research Assistant*

Indian River Research and Education Center, School of Forest Resources and Conservation,
University of Florida, Fort Pierce, Florida

- Designed and conducted research on the culture of various fish
- Maintained cultures of T-ISO and *Chaetoceros sp.* algae as well as calanoid copepods
- Constructed and maintained recirculating aquaculture systems
- Collected and analyzed data using statistical software (R)

-Diagnosed and treated brood animals for common diseases and parasites January
2014-August 2014 *Visiting Researcher/Hatchery Technician*

New England Aquarium, Bristol, Rhode Island

- Supervised and trained hatchery staff
- Maintained various copepod and microalgae stocks
- Designed and maintained aquaculture systems for larval, brood and juvenile fish

December 2012-August 2014, *Research Assistant*

Center for Economic and Environmental Development, Roger Williams University,
Bristol, Rhode Island

- Maintained various copepod and microalgae stocks
- Conducted experiments with *Parvocalanus sp.* copepods
- Assisted in a range of applied studies
- Provided general upkeep of broodstock
- Managed water treatment and drawing systems

June 2013-August 2013 *Fisheries Observer*

Massachusetts Division of Marine Fisheries, New Bedford, Massachusetts

- Conducted creel surveys throughout coastal Massachusetts
- Monitored recreational fishing pressure
- Collected catch and effort data

June 2012-August 2012 *Naturalist/Sales Associate*

First Chance Whale Watch, Kennebunkport, Maine

- Recorded and identified observations of a wide range of marine species
- Educated public on local ecosystems and species
- Held responsibility for the point of sale of various tour services

June 2010-August 2010 *Sales Associate*

Famous Footwear

- Actively engaged customers to initiate sales
- Identified products with the most potential for sale based on customer needs

April 2008-August 2008 *Food Services and Sales Associate*

Portland Sea Dogs, Portland, Maine

- Sold various food items to customers

VOLUNTEER WORK

April 2015 *Field Sampling Volunteer*

Baruch Institute of Coastal Ecology and Forest Science, Clemson University,
Georgetown, South Carolina

- Assisted in estuarine sampling including seins and plankton trawls

May 2013-August 2013 *Mammal and Sea Turtle Rescue and Rehabilitation Volunteer*

New England Aquarium, Quincy, Massachusetts

- Provided upkeep of a large-scale recirculating system for rehabilitating sea turtles
 - Assisted in routine health examinations of various species of sea turtles
- Responded to calls reporting stranded wildlife

COURSES

Extracurricular Coursework

Principles of Agribusiness Management

Survey of general management principles and those specific to agricultural and natural resource related businesses

Economic Issues, Food and You

Economic concepts as they relate to natural resource production

Courses for M. S. study (3.66 GPA)

Advanced Aquaculture

A review of pertinent processes in aquaculture production and management

Diseases of Warm Water Fishes

Diagnostic methodologies, treatments and management protocols for common diseases of finfish and shellfish

Fish and Aquatic Invertebrate Nutrition

Nutritional principles and diet formulation for fish and crustaceans in aquaculture

Biology of Fishes

Biological processes, taxonomy, diversity, physiology, reproduction and population dynamics with emphasis on developing skills for writing and interpreting scientific literature

Fish and Aquatic Invertebrate Histology

Instruction in histological sample preparation and interpretation for fish and marine invertebrates

Introduction to Aquaculture

Basic aquaculture principles including water quality, production technology and nutrition

Introduction to Applied Statistics

Concepts for understanding the application of statistics in agricultural and life sciences using R

Statistics

Training in statistical tools for hypothesis testing and linear models using R

Courses for B. S. study

Biostatistics

Review of applied methodologies and theoretical understanding of statistical principles and problem solving using JMP software

Marine Invertebrate Zoology and Lab

Training in classification, life history and ecology of aquatic invertebrates as well as introductory field sampling and data analysis

Marine Vertebrate Zoology and Lab

Surveys of evolution, physiology and behavior of marine fish, reptiles, birds and mammals and introduction to field sampling techniques

Genetics and Lab

Central concepts in genetics and training in the application of basic methods and assays

Biology I and Lab

Exploration of cell function, physiology and related chemistry including metabolic processes and organelle functions

Biology II and Lab

Principles of ecology, basic evolutionary mechanisms, diversity of life and population dynamics

Aquarium Systems and Design and Lab

Provision of technical knowledge and practical techniques for the design of aquarium systems on various scales with emphases of water quality maintenance and animal husbandry

Animal Nutrition

Introduction to digestive anatomy, physiology, nutrients, metabolic pathways, feeding standards and feed formulation for domestic animals

Phycology and Lab

Study of marine algae, related biology, identification, sampling and specimen preservation

Oceanography

Introduction to biological, chemical, geological and physical disciplines of ocean dynamics

Environmental Chemistry and Lab

Examination of anthropogenic impacts on ecosystems and the associated chemical mechanisms and pathways with emphases on water pollution, hazardous waste management and pesticides

Environmental Ethics

Introduction to environmental policy conception with respect to philosophies and social, political, legal, economic and aesthetic deliberations that influence them

Physics I&II and Labs

Calculus based physics including vectors, Newton's laws, periodic motion, torque, work and energy, impulse and momentum, elasticity, rotational motion and gravitation

Organic Chemistry and Lab

Theories of the common organic functional groups and training in laboratory applications

Calculus I&II and Labs

Single variable calculus and integration of algebraic and transcendental functions

Chemistry I&II and Labs

Development of concepts in chemical bonds, the structure of matter, gas laws, thermodynamics, electrochemistry, equilibrium and kinetics

RESEARCH EXPERIENCE Application of Triploidy to an Emergent Oyster Culture Industry on Florida's West Coast

- Compared the performance of diploid and triploid oysters grown under various conditions
- Provided diploid and triploid oyster seed to producers on Florida's Gulf Coast, monitoring growth and survival as well as culture techniques and conditions at the various sites **Hyposaline acclimation in *Trachinotus goodei***

- Identified appropriate acclimation times using stepwise acclimation procedures **Effects of acute low salinity exposure on *Trachinotus goodei***

- Evaluated survival following sustained immersion in a range of salinities

First feeding and larval development of *Paracanthurus hepatus*

- Designed several replicated experiments investigating the effects of physical culture parameters on early larval survival and growth

Larval rearing of *Trachinotus goodei*

- Defined culture methods and larval feeding regimes for palometa

Role of stocking density in the grow out of *Trachinotus goodei*

- Evaluated the role of biomass concentration on the growth and survival of palometa

Effects of temperature, salinity and aeration on hatch rate of *Paracanthurus hepatus*

- Executed trials evaluating conditions for incubating blue tang eggs

Larval culture of *Gnathanodon speciosus*

- Assisted in a study which defined culture methods for golden trevally

Meeting Presentations

- L. Sturmer, C. Cyr*, R. Markham, H. Yang (2017) Application of Triploidy to an Emergent Oyster Culture Industry on Florida's West Coast (poster; National Shellfisheries Association, Big Bend Science Symposium, Oyster South)
- C. Cyr*, I. Lee, and C. Ohs (2017) Assessment of candidate marine species to diversify ornamental fish production in Florida: Evaluations of spawning, hyposaline tolerance and select larval production factors (oral, thesis defense)
- C. Cyr*, B. Bourque, D. Cerino, P. Howell, A. Rhyne, S. Chamberlain, and J. Mitchell (2013) Effects of stocking density and culture volume on the population dynamics of *Parvocalanus sp.* copepods. Aquaculture America 2014, Milford Aquaculture Seminar (poster, Milford Aquaculture Seminar)

CATHAL DINNEEN

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BUSINESS OPERATIONS MANAGEMENT PROFILE

Results-driven, award-winning Business Management Executive, with extensive experience including operations, production management, organizational development, HR, business development and team building within diverse industries. Skilled in planning, coordinating and executing successful production programs, with a track record of improving operational stability, efficiency, and profitability. Exceptional relationship builder and negotiator, successfully presenting and selling strategic business plans and programs to executive-level decision makers. Collaborate with senior stakeholders to effectively prioritize activities and achieve defined objectives, translating business requirements into solutions to achieve corporate performance goals and targets. Broad expertise in aquaculture.

Organizational Management • Business Strategy Development • Production Management • Revenue Generation Program Management • Organizational Development • Performance Management • Regulatory Compliance Financial Management • Team Building/Leadership • Facility Management • Relationship Development

PROFESSIONAL EXPERIENCE

FREDRIKSTAD SEAFOOD'S (Nordic Aquafarms affiliated), Øraveien 2, Fredrikstad, Norway • 2017 – Present

Operations / Head of Production

- Collaborate in the development of some of the largest and most advanced RAS systems ever conceived in the 2000T RAS2020 systems and 33,000T D-tank modular concepts.
- Participate in the integration of innovative technologies to increase production and reduce operating costs.
- Maintain compliance with timeframe and budget parameters, while assisting design teams in resolving technical and operational issues jeopardizing project success.
- Optimize production and maximize net returns through continuous optimization of fish husbandry practices, operating parameters and equipment, with the objective of stable and efficient production
- Create models to determine a number of KPIs, monitor system performance and streamline production.
- Procure and develop operating protocols for equipment and develop SOPs, operations manual and program of continuous process improvement.

Key Achievements:

- Played instrumental role in getting these ground-breaking facilities off the ground and progressing to the next phase encompassing the maximization of biological, engineering and operational efficiencies.
- Streamlining operations by integrating advanced Quality Management software tools used to improve data collection, implement continuous risk assessment programs, synchronize training needs, centralize key documentation and consolidate compliance requirements for accreditation bodies and regulatory authorities.

NAMGIS CLOSED CONTAINMENT PROJECT, Vancouver Island, Canada • 2012 – 2016

Operations / General Manager

- Direct the development of a PR Aqua 470T RAS pilot scale project, designed to test the technical and economic feasibility of growing Atlantic salmon to 5kg market size in tanks on land.
- Set and implement plans and budgets for key areas consistent with the overall strategy and financial and other business objectives. Develop and manage supplier contracts for key services and supplies.
- Ensure production supports approved annual business plan with full accountability for quality standards, legal requirements and cost control.
- Defined biosecurity protocols and detailed health plan for the site which has some of the most stringent biosecurity protocols of any fish farm in the world.
- Handle diverse HR functions, recruitment, staff development, leadership, performance management, and health & safety. Developed a training program that was awarded \$30k funding in recognition of its efficacy.
- Monitor compliance with industry codes, governmental regulations and environmental standards.
- Serve as spokesperson and contact point with customers, stakeholders, potential investors, high profile visitors and media.
- Liaise with and compile reports for key organizations and funding institutions.

Key Achievements:

- Serve on the Business Development Committee, responsible for development of ancillary businesses such as a hatchery, reducing related operational capital costs more than \$250K.
- Worked closely with Seafood Watch, arguably the world's most influential arbiter of seafood sustainability, in

CATHAL DINNEEN

• Page 2 • dinneencathal@yahoo.ie

helping to establish a Monterey Bay green “Best Choice” ranking for land based fish farming of Atlantic salmon, a stamp of approval which has helped to positively influence consumers and the entire business supply chain.

ACHILL ISLAND TURBOT FARM, CO., Mayo, Ireland • 2010 – 2011

Operations / General Manager

- Oversaw all operations of new marine recirculation units for the production of 120T of Turbot, implementing protocols and standard operating procedures.
- Played a key role in designing the layout and organization of the new facilities, integration of systems and technology and ensuring deadlines were met.
- Recruiting, managed, trained and mentored employees, and increased business growth and revenue through cost reductions, maximizing growth of the fish and ensuring that all production targets were met.

Key Achievements:

- Received nomination for Irish Rural Enterprise Award (2011); named winner of “Start-up” category.

GLEN OAK FISHERIES, Co. Antrim, Ireland • 2004 – 2009

Operations / General Manager

- Directed day-to-day operations for first and second generation recirculated hatchery units.
- Evaluated and reviewed procedures and systems to optimize operations and productivity.
- Ensuring compliance with requirements of The Irish Quality Trout Standard, Tesco’s and the License and Local Authorities during regular internal checks and audits.
- Personally designed and developed a computer program to calculate O₂ consumption in raceways aligned in series.

Key Achievements:

- Successfully redeveloped infrastructure of the hatchery operation which resulted in a 75% increase in production from 200T to over 350T.
- Reduced costs and overheads through close monitoring and control and through introduction of cost reduction measures such as implementing modern techniques and systems.
- Gained recognition and positive feedback by meeting and achieving the new Eco-Standard for which Glen Oak Fisheries was selected as the Pilot Farm in Ireland.

SIMPLE SEAS LTD., Co. Kildare, Ireland • 1999 – 2004

Assistant Manager

- Played a pivotal role in helping to increase production by 35% by using extensive aquaculture knowledge.
- Received Naturlands’ Organic Accreditation by meeting all the required standards for an organic smolt farm.
- Implemented nutritional and health management practices, including measures for avoiding stressful or disease inducing environmental conditions in some of Europe’s largest tanks.

Key Achievements:

- Received promotion from trainee to assistant manager as result of exemplary performance.
- Completed multiple contract assignments at other fish farms, with responsibility for operations management, production optimization, employee supervision, financial management, health & safety, quality control, and regulatory compliance. Ensured adherence to specified performance deliverables.
- Contracted by one of the World’s largest feed producers, Skretting, to undertake a hygiene based risk assessment at Curraun Fisheries fish processing plant. Minimized occurrence of *Listeria Monocytogenes* by over 90%, avoiding major impact on sales and revenue.

FISKELDI, Atlantic Halibut Marine Farm, Iceland • 07/1998-11/1998

Aquaculture Technician

- Carried out growth trials to compare the %SGR, FCR, and Chemical Composition of Atlantic halibut, fed diets produced by different commercial feed companies.

Key Achievements:

- Identified the optimal diet for the farm to feed this newly cultured species, which dramatically improved performance and revenue.

CATHAL DINNEEN

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EDUCATION

MSc in Aquaculture, 1999 - University College, Cork, Ireland

BSc in Zoology, 1997 - University College, Cork, Ireland

AFFILIATIONS

Member - World Aquaculture Society, European Aquaculture Society and Aquaculture Association of Canada

TECHNICAL SKILLS

- Aquaculture Software Packages for fish growth modelling, feed purchase prognosis, production planning.
- Computer controlled environmental monitoring and alarm systems.
- Computer operated feeding and oxygen injection systems.

CURRICULUM VITAE

SIMON DECLAN DUNN

Address:

Genvej 4, Hvilsum

DK 9500 Hobro

Cell-phone: +45 2896 8100

Mail: simdunn@gmail.com

LinkedIn Profil: <http://dk.linkedin.com/pub/simon-d-dunn/3/393/ba4/>

Born: February 18th, 1974

Marital Status: Married

Children: 4 (2 at home)

PROFESSIONAL EXPERIENCE

2018-Present **Senior Engineer, RAS, Nordic Aquafarms DK ApS**

When Inter Aqua Advance went into bankruptcy in August 2018, I joined Nordic Aquafarms along with a select team from Inter Aqua to provide a full complement of the best resources for detailed design/drawing and other competences needed to continue our work with NAF.

Key responsibilities today are:

- Principal RAS design (Production tanks required from bioplans, RAS treatment processes and equipment specs for main items, oxygenation and degassing specs, sizing of MBBRs, flowrates, etc.), technical solution strategies both for RAS and intake/wastewater treatment and principal design thereof, budgeting, supplier benchmarking etc.
 - Technical & Operational improvements in ongoing NAF operations in Denmark and Norway
-

2014-2018 **Sales Manager, Inter Aqua Advance – IAA A/S**

Following restructuring of Inter Aqua Advance, I took over the daily responsibility for the sales department again.

Noteworthy achievements relevant to the purpose of the CV:

- **5.500 tons/year Salmon Growout RAS – Norway.** Principal RAS design, budgeting, quotation, strategies and negotiations with Nordic Aquafarms. Entered into exclusive cooperation agreement for the smolt RAS and one production module for market-size salmon.
 - **1.500 tons/year full marine Barramundi RAS – Oman.** All principal RAS Design, cost calculation and quotation work, negotiations and contractual exclusive agreements signed for a project in Oman for 1500 tons/year capacity of Barramundi (*lates calcarifer*) production from fry to 1.2kg harvest size, including >95% nutrient removal wastewater treatment system. Cooperation work with the client included total project budgets for financing approval by the governments of Oman and Qatar, product marketing strategies and interviews with key wholesalers and retailers in the UAE region. The project would have started up in October 2018 as financing and permits were all in place.
 - **2 x 5.000 tons/year African Catfish RAS modules – Russia.** All principal RAS Design, cost-calculation and quotation work, negotiations and contractual exclusive agreements signed for 10.000 tons capacity/year of African Catfish from Broodstock/Hatchery to market size of 1.2 kg in Russia.
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- **1.000 tons/year Arctic Charr RAS – Norway.** All overall RAS Design, cost calculation and quotation work and negotiations for 1000 tons/year capacity of Arctic Charr RAS project from hatchery to market size in Norway. Project is still seeking final investment capital but would have been won.
 - **9 million smolt/year Salmon Smolt RAS – Norway.** Overall RAS design, cost calculation and quotation work for formal tender to produce 4 mil 100g smolt + 5 mil 400g smolt from eyed eggs and up. Passed pre-selection phase (3 out of 6 vendors chosen) and were invited to discuss detailed design work to proceed into the next selection phase.
 - **3 million Post-Smolt/year RAS – Canada.** All overall RAS design, cost calculation and quotation work for 2 mil 200g smolt/year + 1 mil 775g smolt/year in Newfoundland. Project has begun construction.
 - **2 x 3 million Post-Smolt/year RAS – Norway.** Overall RAS design, Cost calculation and quotation work for 2 x 3 million post-smolt/year from 80g up to 900g. Permitting phase still ongoing.
 - **1.400 tons/year capacity European Seabass RAS – Ireland.** Principal RAS design, cost calculation, quotation and feasibility studies assistance for development of a 1400 tons/year growout RAS facility in Ireland from fry up to 400g market size. The project is now financed but looking for alternative RAS suppliers.
-

2011-2014 **Project Developer (Sales), Inter Aqua Advance A/S**

International project sales work of RAS projects and wastewater treatment

Overall RAS Design work, production plans, operational budgets & feasibility studies, Cost Calculation, Proposal/Quotation writing, marketing, sales & marketing strategy and responsible for the managing of international agents and cooperation partners.

2008-2011 **Managing Director (CEO), Createch Aqua ApS**

Following a successful trial period of two years in development of the wastewater sector, Createch Aqua was formally established as a sister-company to Inter Aqua Advance, which I headed with 15% ownership and 5% ownership in Inter Aqua Advance.

The former responsibilities as Area Sales Director carried over along with CEO and Board work.

Several successful MBBR projects were implemented, hereunder:

- Municipal wastewater treatment plant for 15.000 people new housing development projects (The Palm and Sharjah)
- Industrial effluent MBBR treatment plants for Danone and Volvic in France (Dairy and Beverages industries)
- Upgrade of an Oil&Gas effluent treatment system to MBBR Technology in Norway
- Several containerized MBBR treatment systems in Romania for slaughterhouses
- two Palm oil projects in Malaysia.

Due to the financial crisis in Europe, it was decided to rationalize our efforts and administrative work in 2011 and focus on our core business of Aquaculture projects. Createch Aqua was dissolved and I returned to the sales department of Inter Aqua Advance under the Sales Director.

2006-2008	<p>Area Sales Director, INTER AQUA Advance A/S (Wastewater & Aquaculture)</p> <ul style="list-style-type: none"> • With reference to the Chairman of the Board, I was charged with developing the wastewater industry as a new market segment for the company as well as upgrading/retrofitting existing older aquaculture systems to RAS. • Responsibilities included Strategy, Market Development, MBBR Design and sales, marketing and strategic cooperation agreement negotiations with key players in the wastewater industry. • Production manager for bio-media production in Germany - incl. Production planning, purchasing, materials- and product optimization and budgeting. Optimized packaging and achieve 36% higher capacity per truck/container.
<hr/>	
2004-2006	<p>Aquaculture Engineer, INTER AQUA Advance A/S</p> <ul style="list-style-type: none"> • Dimensioning/Design of RAS treatment for various projects (Tilapia, Catfish, Trout, Salmon, Kingfish). • Development of RAS model to rationalize work efforts in the preliminary design phase to predict water quality values. • Responsible for the production and new product development for bio-media to be used in MBBR technology in Germany.
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2003-2004	<p>Independent, AquaNome</p> <ul style="list-style-type: none"> • While searching for a new job, I started my own 1-man company and did 3D renditions of products for marketing and product development purposes.
<hr/>	
2003	<p>Reaserch Director, Aquaculture Systems Technologies, LLC New Orleans USA</p> <ul style="list-style-type: none"> • In charge of the R&D department • Product development and commercialization efforts via Small Business Innovation Research (SBIR) grants. Started up 3 projects, of which 2 now are commercial. • Responsibility for coordination and planning of tests and analyses with private and institutional partners in the product development phase. • Due to a family crisis, I was forced to move back to Denmark
<hr/>	
2001-2002	<p>Project Engineer, Cimbria Aquatec A/S</p> <ul style="list-style-type: none"> • Design, Cost Calculation, Production planning and CAPEX/OPEX budgets for 10,000 MT Cod RAS

EDUCATION

1994-2001	Civil Engineer (<i>M.Sc.Eng.</i>) Biotechnology & Aquaculture, <i>Aalborg University</i>
1990-1993	Mathematic Line, High-School, <i>Marselisborg Gymnasium, Aarhus</i>
1989-1990	Foreign Exchange Student (Senior) USA <i>Ben Davis High School, Indianapolis, Indiana</i>

TRUSTED & VOLUNTARY WORK

2008-2011	Non-member Board of Directors work under Createch Aqua ApS & INTER AQUA Advance A/S
2007-2009	Member of the Board of Directors, Aquacultural Engineering Society, for two consecutive terms. www.aesweb.org .
1999-2000	Manager of the Student Bar, Aalborg University (voluntary social work)
1990	Youth For Understanding (YFU) – voluntary work for Foreign Exchange Student program
1990-1992	Leader, Catholic Youth Club (KUK) in Aarhus

PREVIOUS MEMBERSHIPS & AFFILIATIONS

DANISH WASTEWATER ASSOCIATION

DANISH WATER TECHNOLOGIES GROUP

INNO-MT (INNOVATION NETWORK FOR ENVIRONMENTAL TECHNOLOGY)

With kind regards,

Simon Declan Dunn

Simon Bo Søgaard Kristensen

Cand.scient.techn/M.Sc. ME

Mob.: +45 30432930

E-mail privat: Simonbo99@gmail.comE-mail office: sk@nordicaquafarms.com

Address: Lyngbakken 22, 8660 Skanderborg

**Resume:**

I have the professional knowledge required to deliver a high quality and efficient execution of a project. Great experience in building Process Plants within Recirculated Aquaculture System (RAS), Hygienic plants and Biogas.

Experience with working as a Project Engineer within process technology from tendering to commissioning.

Work Experience

2018- Process Engineer, Nordic Aquafarms Denmark

Process Engineer with specific focus on intake water, Waste Water Treatment Plants, co-responsible for internal processes for RAS Plants, co-responsible for commissioning new Plants

2017- 2018 Process Engineer, Inter Aqua Advance IAA**Waste water treatment plant (WTPP)**

Task: I was the leading Engineer for a new WTPP to a RAS plant, which can clean the wastewater to a level that is compliant with the requirements from the Danish government. This includes making calculations, PID submissions to the customer, conducted test to prove that the calculations are correct, obtained offers on central parts of the plant.

Result: The plant is still in the Pre-Engineering phase and is expected to go to detailed design.

RAS Plant

Task: Implementation of PID diagram, dimensioning of pumps, cooling system, etc.

Result: PID is now a central part of the design phase at IAA, as well as a start-up tool for the head of design.

Module RAS Plant in Stakroge

Task: Optimize the Module RAS plant in Stakroge. Including dimensioning, control of construction site, and commissioning of a denitrification plant, new fish-out system, optimization of a fine filter.

Result: After the optimization the plant was able to deliver as expected and sold to third party.

RAS Plant in Bantry Ireland

Task: Project Manager/Process Engineer for developing the Plant

Result: The Plant is being built in Bantry Ireland

2016-2017 Consultant Process Engineer, Kirkholm A/S**Process Plant for the Chemical Industry**

Task: Project Management, Design, Selection of components, Tendering, Resource requirements.

The result: The plant is built and is now running.

Consultant Process Engineer, GEA Denmark

Task: Capacity upgrade of a Dairy Crème Plant, project engineer with the responsible for dimensioning pipes and pumps, selection of components, tender for tank supplier, approval of tank drawings, pipe fittings and PID diagrams. Responsible for ensuring that subcontractors deliver to the deadlines.

Result: GEA was satisfied with the work.

Different tenders on Process Plants

Task: To create the scope of the tender, timeline, resource requirements, selection of components, tender, meetings with customer, delegation of tasks.

2012-2016: Process Engineer, Aarhus University Department of Engineering**Process Engineer for constructing machines for Biorefinery Plants**

Task: Pilot scale plant for extraction of green protein. Building a pilot plant that are capable of performing the desired unit operations: grass pressing, sand filter, fermentation of green juices, separation of water and protein and protein drying.

Result: The green protein is now used for feeding picks in Denmark with very positive results.

Project Manager for a new Biorefinery Laboratory**Manager for a Hydrothermal Liquefaction Plant (HTL - converting biomass into crude oil)****Manager for an Emission Laboratory****Designed and built different Plants for scientists**

2. Generation Bioethanol Plant

New concept for Biogas Plant

Education

2010-2012: Cand.scient.techn in Biosystem Technology, Aarhus University

2008-2010: Mechanical Engineer, Aarhus University School of Engineering

2006-2007: Mechanical Engineer, Odense University School of Engineering

2004-2006: High School, Odense

2000-2004: Military Academy, Aalborg and deployed to Kosovo and Iraq

Language

Danish: Native

English: Fluent

German: Basic

Software

MS Office: Experienced

MS visio: Experienced

Autocad PID: Experienced

Inventor: Basic

Private

I am married to Betina and together we have three kids, Magnus 8, Oskar 6 and Vilja 3 years. In my spare time I like Trail running and Mountain biking, and during the winter, I am trainer for a crossfit team.



MIKKEL K. THOMSEN

CURRICULUM VITAE

+45 4047 1459 | mikkelt@hotmail.com | Rathlousgade 19, 8300 Odder

ABOUT ME

NAME: Mikkel K. Thomsen
BORN: July 23rd 1991
CIV. STATUS: Married
NATIONALITY: Danish

INTERESTS



MUSIC



COOKING



FAMILY



TRAVEL

IT SKILLS

INVENTOR (a.desk): ██████████
VAULT (a.desk): ██████████
OFFICE-PAKKEN: ██████████
WIN. SERVER: ██████□□□□
PHOTOSHOP: ██████□□□□
INDESIGN: ██████□□□□
AFTER-EFFECTS: ██████□□□□
FEM-DESIGN: ██████□□□□
PLAN RAMME: ██████□□□□
C5: ██████□□□□

EDUCATION

Civil Engineer (BSc.)
(Thesis in load bearing structures)
(2010-2014)
Aarhus Ingeniørhøjskole (IHA)

Studentereksamen
(2007-2010)
STX – Hjørring Gymnasium

Language

DANSK: Native language
ENGELSK: Fluent written/spoken
NORSK: Participates in
danish/norwegian
communications fluently.

Competences

Development and design of complete recirculating aquaculture systems

Development and design of complete recirculating aquaculture systems (RAS) from broodstock to slaughter. Amongst other things, this entails:

- Layout design and specification of optimal components in accordance with production plans and emission specifications.
- Helicopter perspective for several complex projects from start-up to commissioning including initiation, guidance, input and quality assessment of my employees' assignments.
- Dimensioning and design of structural designs in concrete and steel but specifically in working with the design of sheet metal.
- The hydraulic dimensioning of pumps, pipes and liquid filled components.
- Preparation of function, operation and service manuals in accordance with current legislation for all processes. This is used as documentation and with educational purposes in mind for the day to day operating staff.
- Preparation of documentation to civil services (permits etc.)
- Preparation of complete quality assessment systems for on-site work.

Sales

Client contact following the sales personnel's initial contact. Attendance and management of workshop meeting with clients with the focus of designing aquaculture systems in direct accordance to the clients' wishes and expectations.

Renderings of both stills and videos to sales presentations.

Personnel administration and leadership

Recruiting, salary negotiations, assignment plans and the administration of these. Fine tuning of the design department's performance as well as 1:1 personal and professional growth meetings.

Finance and purchase

Administration of purchase plans, requisitions etc. as well as negotiations with suppliers and sub-contractors in all sizes and types.

Project Management

Sub-contractor administration (both design and on site), attendance and government of on site client meetings and project time schedule management.

Communication and IT

Website design and maintenance, internal IT administration of internal systems including servers. Education in the use of IT systems, purchase of equipment etc.

EMPLOYMENT HISTORY

Sept. 2018-
Chief of RAS design / Danish Office Team Leader, Nordic Aquafarms DK ApS

NAF DK was founded in 2018 as a subsidiary company to Nordic Aquafarms A/S with the purpose of executing the detailed design of the company's global projects. Originally the team hired consisted of 6 former IAA employees but was quickly expanded to 8 employees myself included.

My foremost responsibility as chief of RAS design is to facilitate the complete detailed design of NAF's main projects by combining each of NAF DK employee's individual skillset. In further detail this includes (but is not limited to) the following:

- Leading the design process for the team to reach the common design goals and milestones
- Time table establishment for all design work as well as overseeing this
- Taking part in the engineering of the detailed design and quality assuring the team's work
- Budget calculation
- Vendor administration
- Day to day office administration and management of the 7 employees in NAF DK

MIKKEL K. THOMSEN

CURRICULUM VITAE

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EMPLOYMENT HISTORY

Jan. 2018-sept. 2018

Head of Design, Inter Aqua Advance – IAA A/S

In January 2018, I was officially promoted to Head of Design, a position I had already fulfilled in the year up to this. I was then officially integrated into the leadership team that I was already a working member of consisting of the Technical Manager, the Head Project Manager, the CEO and the CFO.

In addition to the responsibilities mentioned in the following sections, my focus was now to finely tune the development of the technical design that my department was responsible for. I did this by being as constructively and detailed involved with each employee as the individual had a need for, thereby elevating their individual skillset as well as a sense of personal responsibility and assignment “ownership” throughout the department.

Even though I was deeply involved with most technical designs, I was still able to “take a step back” and gain an overall perspective on the common objectives, which allowed me to see which traditional methods and technical solutions needed optimization.

2015-2018

Project Engineer, Inter Aqua Advance – IAA A/S

After one year as Structural Engineer, BSc, I was promoted to Project Engineer, which meant that I now referred directly to the CEO in stead of the Technical Manager. I started recruiting my own employees and thereby adding the leadership of the design department to my list of responsibilities.

My position as Project Engineer distinguishes itself from the position of Structural Engineer by focusing more on client contact as well as contact to external parties.

I supported our Project Managers with technical insight and I quickly became a key person to whom our mounting/installation crew, Project Managers, external advisors and suppliers contacted for technical clarification etc. Furthermore, I acquired the role of temporary Project Manager on site in instances where the Project Manager’s technical knowledge was inadequate to resolve a given problem or conflict.

Further responsibilities for the period entails:

- Concept development and optimization of technical designs in co-operation with the companies R&D manager.
- Technical quality assessment.
- Responsible for transferring the entire company to a new address.
- Negotiation and purchase of technical components and larger enterprises.
- Complete design of new design infrastructure and component library in Autodesk Inventor and Autodesk Vault.

2014-2015

Structural Engineer, Inter Aqua Advance – IAA A/S

As Structural Engineer I was a part of the Technical department with the Technical Manager as my direct supervisor. I was responsible for all 3D CAD and was introduced as a technical supporter to Project Managers and the installation and mounting crew.

2014 (3 mdr.)

Company intern, Inter Aqua Advance – IAA A/S

As a company intern, I recreated the previously lost CAD designs that had been corrupted by software changes performed by the previous designer. This led to me being hired full time after my internship had ended.

2012 (6 mdr.)

Company Intern, Ivar Lykke Kristensen (ILK)

As part of my education, I spend 6 months as a company intern, where I dimensioned structures in small houses and performed energy optimization as well.

EDUCATION

M.S. Geological Sciences, University of Southern California, 1990
B.A. Geology, minor in Media Studies, Carleton College, 1986

PROFESSIONAL REGISTRATIONS

- Professional Geologist, New Hampshire, 2002, #505; Pennsylvania 1995, PG-003213-G
- 40-hour OSHA Hazardous Waste Operations and Emergency Response Training, 8-hour Annual Refreshers
- 8-hour, OSHA 29 CFR 1910.120 Hazardous Waste Supervisor Health and Safety Course

GENERAL BACKGROUND

Elizabeth has over 30 years of experience in environmental consulting. She has managed environmental, permitting, and solid waste consulting services for multiple clients while balancing technical requirements, deadlines, budgets, regulations, and client service. She is highly skilled in developing field investigation programs; producing technical reports, studies, permit applications and proposals; and in communicating with clients, subcontractors, and regulators. Her technical specialties include: hydrogeological and contaminant investigations, remedial investigations/feasibility studies; subsurface investigations at dense non-aqueous phase liquid and other hazardous waste sites; groundwater system design, installation and sampling; geologic interpretation; design of remedial actions at petroleum and chlorinated solvent sites; proposal and budget preparation for Federal, State, municipal and private clients; landfill closures; community relations; and public participation.

REPRESENTATIVE PROJECT EXPERIENCE

- **MBTA/Fort Point Channel Transitway Alignment Permitting, Boston, Massachusetts.** Designed and managed implementation of drilling and sampling program to assess sediment quantity and quality within proposed transitway alignments. Conducted a review of treatment and disposal options for contaminated sediments as part of Environmental Impact Report/Statement (EIR/EIS). Assessed impacts of disposal and treatment options to environment. Collaborated with project team to prepare EIR/EIS and final state and federal permitting documents.
- **Boston Children's Museum Expansion, Boston, Massachusetts.** Responsible for the preparation of Massachusetts state permitting under environmental affairs, wetlands and waterways, and the historical commission for the expansion of the Boston Children's Museum. Project included the filing of Chapter 91, PNF, ENF, and NOI applications. Coordinated with project team members to assess potential project impacts and compliance with environmental regulations.
- **Major Petroleum Retailer, Maine and other New England States.** Principal in charge of all aspects of environmental work related to development, investigation and remediation projects for convenience retail locations located throughout Maine and other New England states. Work includes permitting and planning of new locations and site upgrades, compliance with UST regulations during upgrades, site operation and maintenance, and soil and groundwater investigation and remediation where applicable.
- **Seacoast, New Hampshire Former Manufacturing Facility, Soil and Groundwater Investigation and Remedial Design, Dover, New Hampshire.** Conducted detailed source zone soil and groundwater investigation of chlorinated solvents; prepared remedial action plan evaluating thermal remediation technologies and/or soil excavation of chlorinated solvent source zone; conducted groundwater modelling to assess effects of various source zone remedial alternatives; evaluated technical suitability and cost effectiveness; prepared remedial action plan and performance monitoring sampling and analysis plan; oversaw wetland restoration work; and prepared permits and site closure documents for NH DES submittal.

EDUCATION

B.S. in Civil Engineering, Worcester Polytechnic Institute, 1989

PROFESSIONAL REGISTRATIONS AND TRAINING

- › Professional Engineer: Maine, 7705
- › Maine Department of Transportation Local Project Administration Certification
- › 40-hour OSHA Hazardous Waste and Emergency Response Training, 8-hour Annual Refreshers
- › 8-hour, OSHA 29 CFR 1910.120 Hazardous Waste Supervisor Health and Safety Course
- › Multi-Agency Radiation Survey and Site Investigation

GENERAL BACKGROUND

Maureen's 30 years of civil and environmental design engineering experience includes site layout and grading, roadway layout and design, sewer and water line layout and design, construction administration and oversight, water and wastewater treatment process design, design of soil and groundwater remediation systems, treatability studies, field sampling. She has been involved in a variety of projects for many different clients including commercial and residential developers, the chemical and petrochemical industries, manufacturing facilities, the pulp and paper industries, municipalities, and several governmental agencies.

REPRESENTATIVE PROJECT EXPERIENCE

- › **AC Hotel Site Development, Portland Norwich Group, LLC, Portland, ME.** As the project manager and senior design engineer Maureen was responsible for the site development of the 6-story AC Hotel in Portland, ME. The project involved master planning for subsequent development on the site including designing and installing stormwater treatment and detention systems to account for future development; coordination with the City of Portland for traffic management; coordination with the Portland Water District during water main revitalization project; connection to the municipal sanitary and storm sewer systems; connection of water and gas service, coordination with the utility company and the City of Portland to provide a subsurface vault transformer beneath the city sidewalk, offsite improvements on city streets and sidewalks; design of environmental controls including a marker layer and cover system; design of a vapor mitigation system in compliance with the VRAP program of the MEDEP; coordination with the adjacent property owners to ensure operations during construction, and stormwater management. The project was further complicated by contaminated soils beneath the hotel requiring remediation, stormwater retention in subsurface structures beneath the driveway turnaround, zero setbacks along city streets with grade changes complicating ADA accessibility.
- › **Water Street Water Main Upgrade and Roadway Reconstruction, City of Gardiner, ME.** As the senior design engineer, Maureen was responsible for the reconstruction of portions of Water and Mechanic Streets, Main and River Avenues, and upgrade of water main and stormwater in the downtown of Gardiner, Maine. The project included repaving approximately 7,250 linear feet of an MDOT roadway; upgrade of approximately 1,650 linear feet of water main and installation of new water services; improvements to stormwater; approximately 1200 linear feet of paved sidewalk. The project included production of the design drawings and specifications and public presentation, as well as construction support services including bidding documents, evaluation of bids, and field observation and monitoring during construction.
- › **Highland Avenue Water Main Upgrade and Roadway Reconstruction, City of Gardiner, ME.** Maureen was responsible for the design of the reconstruction of Highland Avenue and upgrade of utilities. The project included repaving approximately 8,000 linear feet of an MDOT roadway by 3 different construction methods

(shim and overlay, mill and fill, and full depth recycling); upgrade of approximately 3,500 linear feet of water main; installation of new water services; rehabilitation or replacement of approximately 3,500 linear feet of sanitary sewer main and structures; replacement of sanitary service laterals; rehabilitation of approximately 2,400 linear feet of storm sewer and structures; and reconstruction of approximately 2,600 linear feet of paved sidewalk. The project included production of the design drawings and specifications and public presentation, as well as construction support services including bidding documents, evaluation of bids, and field observation and monitoring during construction.

- › **Long Beach Avenue Outfall Culvert Replacement, Town of York, York, ME.** Maureen was the senior design engineer responsible for the improvements to culverts discharging to Long Sands Beach. The project included replacing a 36-inch culvert and outfall structure with dual 36-inch culverts to a new concrete outfall structure with two wall-mounted tideflex tide check valves. The project also included replacement of a 24-inch culvert and headwall with a dual 24-inch HDPE culvert to a concrete outfall structure similar to the above mentioned culvert. In addition, a third outlet was upgraded to redirect flow from an outfall to the 36-inch dual system as well as allow installation of an inline tide check valve. In addition to securing State permits, developing design drawings, specifications, public presentation, bidding, Maureen was responsible for construction oversight and administration.
- › **Multi-Family Housing Development, Developers Collaborative, Gardiner, ME.** As the Project manager and senior design engineer, Maureen was responsible for 15 units of housing in three buildings in Gardiner, ME. The project included locating the three buildings on a very challenging site being developed as part of the Brownfield program. Ransom incorporated several cover systems installed as part of the site stabilization (rip rap slope stabilization, pavement, gravel) in the site design to minimize the disturbance of contaminated materials and maximize the reuse potential for the site. The project has received approval from the City of Gardiner Planning Board and is currently progressing with construction level contract documents.
- › **Twenty Thames Condominiums, EssexNorth Portland LLC, Portland, ME.** As the Project manager and senior design engineer Maureen was responsible for the site development of a 6-story residential condominium building. The building design includes first floor retail space and valet parking at ground level under the upper floors and 5 floors of high-end condominiums. The site is the second to be developed as part of a master plan for development on a VRAP site on the waterfront in Portland, ME. The project was further complicated by contaminated soils beneath the hotel requiring remediation, stormwater retention in subsurface structures beneath the driveway turnaround, zero setbacks along city streets with grade changes complicating ADA accessibility.

EDUCATION

B.S. in Environmental Science, University of Iowa, 2001

PROFESSIONAL REGISTRATIONS

- Certified Geologist, Maine, 2013
- 40-hour OSHA Hazardous Waste and Emergency Response Training, 8-hour Annual Refreshers
- 8-hour OSHA Hazardous Waste and Emergency Response Supervisor Training
- Maine Yankee Atomic Power Company Radiological Site Access Training

GENERAL BACKGROUND AND EXPERIENCE

Aaron Martin is a project manager at Ransom with over fifteen years of experience conducting environmental due diligence and hydrogeologic projects throughout New England and the Mid-Atlantic states.

Mr. Martin has experience in overburden and bedrock water supply source location, managing and coordinating hydrogeologic investigations, including various spring and borehole hydraulic and chemistry evaluations, developing conceptual site models, evaluating wellhead protection and feasibility studies, and performing trend and relational data analysis of hydrogeologic pumping tests.

Throughout his career, Aaron has maintained professional relationships with clients including private sector, local municipalities, and various governmental agencies.

REPRESENTATIVE ENVIRONMENTAL EXPERIENCE

- **Nestle Waters North America.** Conducted numerous clean water hydrogeologic investigations and aquifer monitoring programs for Nestle Waters North America at various locations throughout New England since 2005. Responsible for initial source identification, oversight of test well drilling, monitoring well installations, production borehole installations, water quality assessments, pumping tests, and managing aquifer monitoring programs.
- **Passamaquoddy Wild Blueberry Company.** Geologist responsible for hydrologic monitoring and dictating groundwater withdrawals for the Passamaquoddy's blueberry irrigation program near Columbia Falls, Maine since 2017 in accordance with their Tribal Ordinance. Managed test well drilling and aquifer pumping tests for new irrigation wells from 2011 to 2015.
- **Bridgton Water District.** Managed geophysical surveys, bedrock test well drilling, pumping tests, and water quality evaluations for siting a new water supply well for the Bridgton Water District in 2014 and additional investigations for the water district's Capacity Development Grant for potential future water supply wells in 2018 and 2019. Coordinated permitting with the Maine Drinking Water Program for final well approval of a new water supply well, including sustainable yield calculations, blending analysis, and a wellhead protection area delineation.
- **Maine Department of Transportation.** Managing geologist for installation of potential new water supply wells, including geophysical analysis, test well drilling, pumping tests, borehole hydraulic and chemistry evaluations, and feasibility studies of existing water line infrastructure for various Maine Department of Transportation properties.

EDUCATION

B.S. in Civil Engineering, University of New Hampshire, 2012

A.S. in Civil Technology, University of New Hampshire, 2002

PROFESSIONAL REGISTRATIONS

- Licensed Professional Engineer: Connecticut, Maine, New Hampshire, Rhode Island and Vermont
- 40-hour OSHA Hazardous Waste and Emergency Response Training, 8-hour Annual Refreshers

GENERAL BACKGROUND AND EXPERIENCE

Jay is a Project Engineer at Ransom with over 16 years of diverse geotechnical and environmental engineering consulting experience. Jay earned a Bachelor's of Science in Civil Engineering from the University of New Hampshire, is a member of the national engineering honor society Tau Beta Pi and is a licensed Professional Engineer in the States of Connecticut, Maine, New Hampshire, Rhode Island and Vermont.

Jay is the engineering lead for Ransom's geotechnical group and is responsible for managing geotechnical projects. Jay has conducted and managed several geotechnical evaluations throughout New England for a wide variety of geotechnical conditions (the soft clays of Maine, the shallow bedrock and deep rock cuts of Massachusetts, and the dense glacial till and sand deposits of New Hampshire).

Jay's strengths include design and implementation of geotechnical investigations for building construction, road construction, earth retaining structures, and utility corridors. He conducts analyses of foundation conditions for new construction and building additions, earthwork and deep foundation installation inspections, slope stability analyses and earth slope designs, pile driving inspections, design of pavement sections, and review of construction drawings and specifications. Jay is responsible for analyses of liquefaction-susceptible soils and can design excavation support and retaining walls. He has performed permeability and infiltration tests that are required for designing wastewater and stormwater systems.

REPRESENTATIVE ENVIRONMENTAL EXPERIENCE

- Engineering project planning, organizing, management, subcontractor management, and construction oversight and design submittal review.
- Geotechnical investigations and assessments for proposed redevelopment and utility corridor projects.
- Evaluation of subsurface and foundation conditions for new construction and redevelopment projects.
- Design, implementation, and monitoring of preload surcharge programs to consolidate soft glaciomarine clay prior to new construction.
- Design of soil and groundwater investigations and remedial action plans for hazardous waste and petroleum projects.
- Analysis of lateral and axial driven pile capacities and inspection of installations.



Education

Bachelor of Science
Wentworth Institute of Technology

Registration

Licensed Engineer
MA, NH, NY, ME, VT, NJ, CT, RI, CO, SD, PA

Affiliations

LEED Accredited Professional

Professional Organizations

AABC Commissioning Group (ACG) Certified
Commissioning Authority (CxA #310-631)

Bradley Hodges, PE, LEED AP, CxA

Principal-in-Charge, Process Piping, Fire Protection

Brad is a Senior Principal and Market Leader for Science, Technology and Industry at SMRT. Brad is a licensed fire protection engineer with more than 25 years of specialty fire protection and process plumbing design experience.

Relevant Experience

Charles Stark Draper Laboratory - Cambridge, MA

Principal-in-Charge, Project Manager, Process Piping and Fire Protection Engineer for the planning and design of a new silicon processing research laboratory at the Charles Stark Draper Laboratory in Technology Square. The renovation created 6,000 sf of ISO 4-7 cleanrooms on the 3rd floor of the existing, occupied multi-level facility. Project consolidated various second floor clean rooms into one contiguous program on the third floor. Hazardous gas storage was not relocated to the third floor due to maximum allowable quantity (MAQ) reductions that would have been realized while maintaining a B-occupancy.

GE Healthcare Digital X-Ray Detector Production Facility - North Greenbush, NY

Process Piping and Fire Protection Engineer for a \$75 Million, 230,000 sf LEED Gold clean manufacturing facility. Facility houses R&D and production of digital x-ray detector components for medical imaging and diagnostic equipment. Scope included hazardous gas and flammable liquid distribution from an HPM storage suite. Suite included spill containment, suppression flow capture, deflagration panels and aqueous film forming foam fire suppression.

Confidential Research Client - Northeastern United States

Principal-in-Charge and Project Manager for the planning, design, engineering, and construction administration for process equipment layout, equipment relocation, utility requirements, and connections in a new compound semiconductor manufacturing facility. Project also includes move logistics and vibration mitigation for sensitive equipment.

Woods Hole Oceanographic Institute – Woods Hole, MA

Commissioning services for a 26,600 s.f. Laboratory for Ocean Sensors and Observing Systems, which will house lab and office space for the Ocean Observatories Initiative (OOI). The facility will also provide laboratory and office space for Martha's Vineyard Coastal Observatory, the WHOI Ocean Bottom Seismometer Instrument Pool and the Environmental Sample Processor Lab (ESP). Commissioning scope includes HVAC systems, domestic hot water systems, electrical systems and life safety systems.

Cambrooke Foods Inc. - Ayer, Massachusetts

SMRT provided process piping design and construction oversight services for a specialty beverage line. Program areas included R&D, manufacturing, packaging, and a test kitchen. Systems included medium pressure steam, culinary steam, RO water, jacket cooling water, high temperature process waste collection and neutralization, and domestic plumbing.



Andrew Bradley, PE

Project Manager and Structural Engineer

Andrew Bradley leads the Structural Engineering Group at SMRT. He has more than 22 years of experience, twelve of which have been with SMRT. Andrew's expertise includes project management and development of technical specifications and drawings for a wide variety of structure types, including concrete flat slab frames, steel moment and braced frames, masonry and wood structures. Andrew is a member of the Structural Engineers Associations of Maine and New York, American Society of Civil Engineering, and the American Institute of Steel Construction (AISC)

Relevant Experience

L.L.Bean Corporate Headquarters - Freeport, ME

Structural Engineer and Project Manager for this 354,000 s.f. project that repurposes an existing warehouse to consolidate multiple campuses into one building. The existing building will be extensively renovated into a high-end office space that incorporates the ideologies of Activity Based Planning, WELL™, and LEED™ to improve employee satisfaction.

MaineGeneral Alford Center for Health - Augusta, ME

Structural Engineer for this new 640,000 s.f. hospital using building information modeling (BIM) and an integrated project delivery (IPD) process. The new facility consolidates all inpatient beds in the MaineGeneral system and provides outpatient services for the Greater Augusta community.

University of Maine, Alford Wind & Wave Ocean Engineering Laboratory - Orono, ME

Structural Engineer for an addition to UMaine's existing Advanced Structures and Composites Center building to support two R&D programs: the Alford Wind & Wave Ocean Engineering Laboratory and the Alford Advanced Manufacturing Lab for Thermoplastics. The project was a Fast-Track process, constructed through a Construction Manager at Risk method.

Gulf of Maine Research Institute Laboratory - Portland, ME

Senior Engineer for the design of a 44,000 s.f. research lab for marine research laboratories, a public education media laboratory and administrative offices. The structural design included use of two-way cast in place concrete structural slabs at grade, and steel-concrete composite elevated slabs designed to limit vibrational impacts on sensitive equipment.

Maine Molecular Quality Controls, Inc. - Scarborough, ME

Senior Engineer for Maine Molecular's new building. The project features cleanroom manufacturing space, R&D labs, quality control spaces and administrative offices — all designed for future expansion. Their work involves DNA, RNA and Plasmid in an FDA-validated, Class 100 cleanroom environment using BSL 2 hoods and laminar flow enclosures. Working closely with the owner's construction manager, the structure was designed with an insulated concrete form (ICF) system to create the foundation and bearing walls. This created a cost effective and highly efficient building envelope.

Education

University of Miami
Bachelor of Science Architectural Engineering

Registration

Licensed Engineer
ME, NY, CT, FL, MA, NH, NV, RI, CO, TX, MD, MI, PA,
VA, VT



Education

Master of Architecture
Syracuse University Graduate School of
Architecture

Bachelor of Arts, Biology
Hobart College

Registration

Licensed Architect
MA, ME, NY, MI, NH, NY, PA, CO, TX

Andrew Tyner, NCARB, LEED AP

Architect

Andrew Tyner is an associate principal and architect at SMRT. A skilled project manager, Andrew is detail oriented and conscientious; clients commend his hands-on approach that puts the client first and makes sure their needs are met. He is also skilled at working with building contractors.

Relevant Experience

MIT Lincoln Labs - Hanscom AFB, Massachusetts

Architectural Design for the planning, design, engineering, and construction administration for process equipment layout, equipment relocation, utility requirements, and connections in a large facility. Project also includes move logistics and vibration mitigation for sensitive equipment.

Maine Molecular Quality Controls, Inc. - Scarborough, ME

Project Manager for Maine Molecular's new building. The project features cleanroom manufacturing space, R&D labs, quality control spaces and administrative offices – all designed for future expansion. Their work involves DNA, RNA and Plasmid in an FDA-validated, Class 100 cleanroom environment using BSL 2 hoods and laminar flow enclosures. The building signals a milestone in this life science company's evolution from a start-up initially housed in a former shoe factory to a well-respected producer of high caliber, molecular quality controls products for inherited disease testing and pharmacogenetics.

Fujifilm Dimatix Building Expansion - Lebanon, NH

Project Manager for the master plan for this R&D and manufacturing facility, analyzing all aspects of the site, building and utilities for future expansion, manufacturing flow and operational efficiencies. SMRT provided the company with comprehensive analyses of existing conditions and a plan to accommodate future growth and product lines.

SIRTex - Wilmington, MA

Architectural Design for renovations and expansion for this leading manufacturer of liver cancer treatment products, including clean manufacturing, quarantine, testing, quality control and shipping and receiving. SMRT also provided cleanroom manufacturing design for previous expansion.

Regeneron Waste Neutralization Building - Rensselaer, NY

Architectural Design for the design of Regeneron's new waste neutralization building adjacent to the existing manufacturing building. The project included the design of 1,000 s.f. covered delivery of chemicals, 2,500 s.f. indoor conditioned space for industrial waste treatment equipment and chemicals, and 1,500 s.f. covered, unconditioned space for bulk storage of CIP chemicals.

Corning, Cell Stack Expansion Study - Corning, NY

Project Manager for the planning and detailed design for expansion of an ISO 8 post-molding assembly room. Scope included replacement of cleanroom HVAC equipment, and shuffling of adjacent research and support spaces to accommodate the expansion.



Katherine Everett, PE, LEED AP

Senior Mechanical and Energy Engineer

Kate Everett is a principal and director of operations at SMRT. She has more than 30 years' experience engineering complex, sustainable mechanical systems for science, technology, healthcare, education and government clients.

Relevant Experience

MaineGeneral Medical Center, Alford Center for Health – Augusta, ME

With the goal of re-shaping and improving healthcare delivery, SMRT led the design team for this 192-bed regional replacement hospital. The 640,000 s.f. inpatient facility was designed and built using integrated project delivery (IPD), a first for hospitals in the Northeast. Three major initiatives -- evidence-based, lean and sustainable design -- guided development and informed the building's program and layout, supporting efficiencies in energy consumption, staff utilization and the environment of care. The facility achieved LEED Gold for Healthcare certification.

Maine Molecular Quality Control – Research and Manufacturing Facility – Saco, ME

Mechanical Engineer for a new 15,000 s.f. office, research and manufacturing facility for MMQCI. MMQCI creates and manufactures quality control tests for genetic transmitted diseases such as cystic fibrosis. Their work involves DNA, RNA and Plasmid in an FDA validated, Class 100 clean room environment using BSLII hoods and laminar flow enclosures. Quality Assurance and Discovery/Research Development are outside the clean environment.

L.L.Bean Corporate Headquarters – Freeport, ME

Mechanical engineering services for this 354,000 s.f. project that repurposes an existing warehouse to consolidate multiple campuses into one building. The existing building will be extensively renovated into a high-end office space that incorporates the ideologies of Activity Based Planning, WELL™, and LEED™ to improve employee satisfaction.

VA Boston Healthcare System – Brockton, Jamaica Plain and West Roxbury, MA

Mechanical engineer for a risk mitigation study to identify single points of failure on multiple systems and to recommend steps to remediate the identified system vulnerabilities in the approximately 2.7 million s.f. of combined program space for all three VA facilities.

MaineHealth Professional Park – Scarborough, ME

Project Manager for a 30,000 s.f. tenant fit-up of Maine Medical Partners' new administrative space and a 40,000 s.f. analytical laboratories facility for NorDx Laboratory. The project involves a renovation and addition to convert a former retail center to office and diagnostic laboratory space and incorporated many energy efficient features including high efficiency condensing boilers.

Education

Union College

Bachelor of Science, Mechanical Engineering

Registration

Licensed Engineer

MA, ME, NH, CT, SC



William Heil, PE, LEED AP

Senior Electrical Engineer

Bill Heil leads SMRT's Electrical Engineering group. In his 30 years of practice, he has acquired experience in electrical engineering design for institutional, government, health care, educational, retail, and industrial clients. His expertise includes project management, technical drawings and specifications, due-diligence reports and power studies. He has been responsible for the design of normal and emergency power systems, lighting, fire alarm, security and tel/data systems. Bill has also completed many medium voltage (15-kV) power distribution upgrade projects, converting and extending 5kV and 15kV systems for military bases and multi-building campuses.

Education

Pennsylvania State University
Bachelor of Science Electrical Engineering

Registration

Licensed Engineer
ME, NH, MA, NY, RI, PA, DE, MD, VA, FL, CA, WI, MI,
OH, KS, MO, IL, VT

Affiliations

New England Healthcare Engineers Society
Illuminating Engineering Society of North America
Institute of Electrical and Electronic Engineers

Relevant Experience

NestleWaters North America Allentown Lines 18 & 19 - Allentown, PA

Electrical Engineer for the design of a complex multi-faceted project. Within an existing warehouse floor space, two processing lines were added, and the spring water tanker offloading area was reconfigured. A 25,000 s.f. building addition was added to increase the warehouse flooring area further, and office space was also expanded.

Pure Encapsulations Facility Expansion - Sudbury, MA

Electrical Engineer for planning and phased renovation of a 37,000 sf nutraceutical facility. Project scope included renovations and optimization of work flow, people flow, infrastructure and environment for a raw materials warehouse, processing suites, outgoing product staging, office and support spaces.

MaineGeneral Alford Center for Health - Augusta, ME

With the goal of re-shaping and improving healthcare delivery, SMRT led the design team for this 192-bed regional replacement hospital. The 640,000 s.f. inpatient facility was designed and built using integrated project delivery (IPD), a first for hospitals in the Northeast. Three major initiatives -- evidence-based, lean and sustainable design -- guided development and informed the building's program and layout, supporting efficiencies in energy consumption, staff utilization and the environment of care. The facility achieved LEED Gold for Healthcare certification.

Regeneron Waste Neutralization Bldg - Rensselaer, NY

Electrical Engineer for the design of Regeneron's new waste neutralization building adjacent to the existing manufacturing building. The project included the design of:

- 1,000 s.f. covered delivery of chemicals (Totes for waste treatment neutralization and bulk for CIP high-concentration chemicals)
- 2,500 s.f. indoor conditioned space for Industrial waste treatment equipment and chemicals
- 1,500 s.f. covered, unconditioned space for bulk storage of CIP chemicals
- Design challenges on the project included liquid containment for four (4) separate areas.



Mark G. Johnson, ASLA, CLARB, LEED AP

Landscape Architect

Mark Johnson has practiced landscape architecture for more than 25 years in New England and the Southeast with projects ranging as far away as the Middle East. Mark's collaborative abilities facilitate the provision of site planning and design services for educational, healthcare, municipal, institutional and commercial clients. His experience includes commissions ranging from the small-scale garden to the large-scale master plan; from project inception through regulatory permitting and construction.

Relevant Experience

MaineGeneral Medical Center, New Regional Hospital – Augusta, ME

Landscape Architect for this new 640,000 s.f. consolidated hospital using building information modeling (BIM) and an integrated project delivery (IPD) process. Services included early site selection studies, master planning, and design of the Harold Alfond Center for Cancer Care (on the same campus). Key to the design was orientation of the facility patient and public spaces to the natural stream setting at the core of the site. Extensive healing and contemplative garden spaces central to the buildings provide respite and rehabilitative opportunities for patients, visitors, and staff.

Mercy Hospital, Fore River Campus – Portland, ME

Landscape Architect for the master planning services for new replacement hospital on former Brownfield lands adjacent to the Fore River. Design included extensive hardscape incorporating donor recognition pavers, planting for the hospital and MOB, and development of public parkland.

Maine Veterans' Homes Strategic and Facilities Master Plan – Various Maine Locations

Landscape Architect for the master planning, infrastructure analysis, programming demographics, veteran service organizations outreach and design services for six existing campuses and a seventh new campus.

Lafayette Family Cancer Care Center – Brewer, ME

Landscape Architect for a new 130,000 s.f. facility that houses the CancerCare of Maine and Maine Institute for Human Genetics and Health. The facility provides an environment for both state-of-the-art research and cancer treatment and education that incorporates healing and evidence-based design features. Winner of the IIDA New England Region top design award.

MaineGeneral Medical Center, Harold Alfond Center for Cancer Care (LEED Silver) Augusta, ME

Landscape Architect for new freestanding 60,000 s.f. cancer care center. The facility is designed to provide care in a healing environment, balancing the functional, emotional and spiritual components of cancer care. Services included site planning and design, environmental permitting, and detailed garden design.

Education

Bachelor of Landscape Architecture
Virginia Polytechnic Institute

Registration

Registered Landscape Architect:
ME, NY

CLARB Certified
Landscape Architect

Education

M.S., Coastal Zone Management, University of Ulster, Coleraine, N. Ireland

B.S., Civil Engineering, Brighton Polytechnic University, Brighton, England

Registration

Professional Engineer:
ME, NH, MA, CT, NY, RI

Chartered Engineer, United Kingdom Engineering Council

Chartered Water and Environmental Manager,
United Kingdom Chartered Institution of Water and Environmental Management

Chartered Environmentalist, United Kingdom Society for the Environment

LEED Accredited Professional, USGBC

Maine DOT LPA Certification

Andrew Johnston, PE, LEED AP, CEng, CEnv, MCIWEM

Civil Engineer - Atlantic Resource Consultants

Andy has over 20 years' experience in site analysis, master planning, civil engineering design, permitting, and project management in the United States and the United Kingdom. He is adept at managing all stages of projects from concept to implementation. He has a proven record of accomplishment, both forming and managing teams of in-house staff and external consultants to ensure successful delivery of public and private projects across a wide range of market sectors. Recent work includes design, permitting and construction oversight for major resort, institutional, healthcare and athletic projects throughout New England.

Relevant Experience

Waldo County General Hospital Addition and Site Improvements- Belfast, Maine

Site/civil design and permitting for an emergency room addition and 40,000sf parking lot expansion at an existing medical center.

MaineGeneral Alford Center for Health - Augusta, Maine

Site/civil engineering and permitting for a new 640,000 s.f. regional hospital in Augusta, Maine, including infrastructure and utility extensions to the site.

Bangor International Airport Stormwater Improvements - Bangor, Maine

Design of stormwater improvements to treat residual deicing fluids and other airport related contaminants. Solutions included mechanical and wind-powered aeration, subsurface flow grave wetlands and bioretention.

Two Bridges County Jail - Wiscasset, Maine

Post-construction inspection, analysis and recommendation of solutions for settlement issues at a new jail facility.

MaineGeneral Thayer Center for Health - Waterville, Maine

Site/civil engineering and permitting for a major redevelopment of Thayer Hospital in Waterville, Maine, including reconfiguration and addition of parking, circulation and entries.

Maine Veterans' Homes New Skilled Nursing Facilities- Augusta & Scarborough, ME

Site analysis, site/civil engineering design and permitting for two new 150,000sf residential nursing care facilities.

Kennebec Valley Community College Classroom Building - Fairfield, Maine

Site/civil engineering design and permitting for a new classroom building, access, circulation, parking and utilities infrastructure at the KVCC Fairfield campus.



DAVID “RED” A. WEBSTER

*SENIOR PROJECT
MANAGER*

With Cianbro Since 1980

CERTIFICATIONS & TRAINING:

ASHE Healthcare Construction Certified
AGC Advanced Management Program
FMI Leadership Institute Leadership Maine Construction Management/Design-Build Seminar
Health Facility Planning, Design, and Construction
CIANBRO Nuts and Bolts Training for Managers
Supervisory Safety Workshop
Improving Construction Productivity Seminar
Lean Manufacturing Seminar
OSHA Steel Erection and Scaffold
Lockout/Tagout Procedure
Flash Protection
Mold and Water Intrusion in Buildings
Basic Electrical Safety
Interest Based Negotiating
ABC / AGC Project Management Training
OSHA 510 Construction
Outreach and Refresher
Hearing Conservation
Hazardous Material
Communication
Lead Awareness
Basic Cost Engineering
Welding I and II
Customer Service for Project Managers Seminar
CIANBRO Accident Prevention Process (CAPP) Observation
Training and Steering Committee
Managing Workplace Diversity
Bloodborne Pathogens
Fleet & Driving Safety
Basic Rigging
Authorized Rescue Person
Tower Climbing
Signal Person Qualified
Department of Transportation Card
Rigger - Level One

EDUCATION

Building Construction Technology, C.M.V.T.I., Auburn, ME

PROJECT RESPONSIBILITY

As Senior Project Manager, Red is the point of contact for the Project Team and is responsible for direct contact with the client. Red leads the Project Team in regards to the business aspects of the project to ensure all safety, customer, people, production, quality, financial, and company objectives are met and coordinates resources as needed. Red oversees overall project performance including safety, quality, production, motivation, and project morale and ensures the project's goals are met. It is Red's responsibility to establish and maintain a high level of project performance and professionalism amongst the entire Project Team. The attitude Red sets forth parallels the Cianbro Team's policies and reflects the professionalism of the entire Project Team and Cianbro.

EXPERIENCE

Red has 38 years of experience with Cianbro in various Markets including Power & Energy, Building, Industrial & Manufacturing, and Power & Energy. Red's strength is in managing complex projects and bringing out the best in the Cianbro Team. Red demonstrates his eagerness to be a team player with all affected stakeholders through his business, technical knowledge and strong communication skills. Red is a champion of schedule coordination and applies it to connecting all team players to the incremental weekly goals that support the larger project goal. Red has time and time again exhibited his unique ability to complete quality work on time, within or under budget, and most importantly safely. His sense of urgency and ability to do what is right allows Red and Cianbro to provide stakeholders with 100% satisfaction.

PROJECT EXPERIENCE

- Sappi – Misc. Electrical Work; Hinkly, ME
- Imerys talc – Genesis Project; Ludlow, VT
- Quantum – Passadumkeag Windfarm; Burlington, ME
- University of Maine – Volturnus; Orono / Castine, ME
- Iberdrola Renewables – Groton Wind Farm; Groton, NH
- AllEarth Renewables, Inc. – Georgia Mountain Wind Project; Milton, VT
- ECO Industries, LLC – Spruce Mountain Wind Project; Woodstock, ME
- Kennebec Ice Arena Demolition; Hallowell, ME
- The University of Maine – AEWG Testing Facility; Orono, ME
- Franklin Memorial Hospital; Farmington, ME
- Farmington Family Practice
- West Wing Code Repairs
- 1st and 2nd Floor Reconstruction
- Roof Reconstruction
- Roof Enclosure
- Eastern Maine Medical Center – New Inpatient Tower – Pre-Construction Services; Bangor, ME
- Affiliated Materiel Systems – Warehouse Expansion; Bangor, ME
- Maine Department of Transportation – St. Croix River Bridge; Calais, ME
- Penn National Gaming – Hollywood Slots at Bangor; Bangor, ME
- Penn National Gaming – Temporary Gaming Facility; Bangor, ME
- Eastern Maine Medical Center – Administrative Building; Brewer, ME
- Kents Hill Athletics Center; Kents Hill, ME
- Eastern Maine Medical Center CAP Facility; Bangor, ME
- Alford Youth Center; Waterville, ME
- Casco Bay Bridge; Portland, ME
- Ellsworth Hydro Dam and Concrete Repairs; Ellsworth, ME
- Bowwater/Great Northern Paper Procurement Department; East Millinocket, ME
- Erving Lagoon Bypass Project; Erving, MA
- Niantic River Bridge Replacement; Niantic, CT
- West Enfield Hydro Electric; West Enfield, ME
- Ft. Fairfield Power Plant; Ft. Fairfield, ME



**CRAIG A.
WEAVER, P.E.**
DESIGN MANAGER

**CERTIFICATIONS &
TRAINING:**

Licensed Professional
Engineer:

- ME No. 10899
- FL No. 75148
- NC No. 039607
- MA No. 53040

Organizations:

- American Society of
Civil Engineers
(ASCE)
- Design Build Institute
of America (DBIA)

Education:

MS, Civil Engineering, University of Maine, 1999-2001
BS, Civil Engineering, University of Maine, 1995-1999

RESPONSIBILITIES

As Design Manager, Craig is responsible for managing project teams for design reviews, utility relocations, right-of-way coordination, constructability reviews, scheduling, project controls, and public outreach. Craig works closely with design teams, construction teams, and owners to ensure compliance with project specifications, standards, and requirements. Craig is also responsible for implementing project quality control systems for design and construction.

EXPERIENCE

Craig has over 22 years of experience working in the construction industry. Craig's experience spans the analysis and design of various bridge structure types, including short to long single and multiple span bridges. In addition, Craig is experienced with precast concrete systems and elements, cast-in-place concrete, steel, and timber bridges. He has led many bridge design teams as well as managed several projects from conceptual designs through final design and construction support. Craig has experience with developing proposals, preliminary design, final design, construction administration, invoicing, quality assurance / quality control and utilizing loss prevention systems. Craig currently maintains professional development hours (PDHs) for Engineering Licenses in four states (Maine, Florida, North Carolina and Massachusetts). Craig is renowned by his peers for his quality of work, productivity, punctuality, and communication skills.

CIANBRO PROJECTS

- Massachusetts Bay Transportation Authority – Rehabilitation of Merrimack River Bridge Piers; Haverhill, MA

Prior Work History:

- Project Manager, Kleinfelder, Augusta, ME
2006 - 2016
- Project Engineer, TY Lin, Falmouth, ME
2002 - 2006
- Graduate Research Assistant, University of Maine, Orono, ME
1999 - 2001
- Construction Laborer, Cianbro, Various Locations, ME
Summer of 1996, 1997 and 1998



LAUREN C. WALSH

*CORPORATE
ENVIRONMENTAL
MANAGER*

With Cianbro Since 2010

CERTIFICATIONS / LICENSES:

OSHA 10 Hour

Pennsylvania DEP
Biosolids Compliance
Training

Erosion & Sediment
Control – Various states
with certification in Maine

Maine Hazardous Waste
and Universal Waste

Hazardous Material
Communication

DOT Hazardous Material

Leading w/ Safety
Management

Ethics Compliance
Management

Project Management
Administration

Safety Specialist

HIPPA Privacy

Daily Safety

Supervisory Training

Hearing Conservation

Fall Protection (Tie-Off)

DOT Drug & Alcohol

Caught In/Struck By

Fleet & Driving Safety

Driver Level 2

CIANBRO Safety
Specialist Annual Training

CIANBRO Accident
Prevention Process
(CAPP)

First Aid, CPR &
Defibrillator

EDUCATION

B.S. Biology, Moravian College; Bethlehem, PA
Chemistry Minor, Northampton Area Community College; Bethlehem, PA

PROJECT RESPONSIBILITY

As the Corporate Environmental Manager, Lauren is responsible for continued development and execution of the Corporate Environmental Management System, through support of the Project Team, through development and implementation of the Project Environmental Plan; achieving an injury-free environment through the Project Safety Plan; performing employee environmental orientations and various environmental awareness trainings; and managing environmental regulatory compliance through Activity Planning, environmental inspection, reporting, and hazard analysis. Lauren assists the Project Team with performing compliance audits and inspections and conducting mandatory weekly safety and environmental talks for all employees. Lauren is also responsible for working with the onsite Project Team to ensure compliance with EPA and other environmental regulatory agencies through coordination of correspondence, meetings and permit compliance documentation.

EXPERIENCE

Lauren has 17 years of environmental experience. Lauren's experience includes working knowledge of various industrial sectors, environmental regulations, environmental compliance, personnel management, OSHA compliance, quality control and quality assurance program development and administration, process control, and permit compliance and negotiation. Prior to joining the Cianbro team, Lauren worked as an Environmental Specialist III with the Maine Department of Environmental Protection, which provided her with the opportunity to interact with State agencies and programs, Federal government agencies, the general public, municipal officials, consultants and business entities to discuss and enforce environmental policies. Additionally, Lauren has experience maintaining permit compliance requirements for air quality, industrial dischargers, NPDES, land application of biosolids and storm water; organizing permit applications and negotiating renewals, performing compliance charting and communicating with regulators and clients, implementing quality control and quality assurance programs, writing operating procedures inclusive of environmental compliance items and performing training. Since joining the Cianbro team, Lauren has provided support to all markets through the ongoing development of the company's Environmental Management System and Project Environmental Plans.

SELECT PROJECT EXPERIENCE

- Walden Green Energy – Big Level Wind; Hector Township, Potter County, PA
- ConnDOT – CP243 Interlocking and Danbury Branch Dockyard Projects; Norwalk, CT
- Pittsfield Solar, LLC – Pittsfield Solar Project – 13.9 MW DC
- Line 396-3001 345 kV Transmission Structure Replacements; ME
- 34.5 kV Transmission Line Rebuild; ME
- American Electric Power – Allen 138 kV T-Line; Fort Wayne, IN
- Madison Electric Solar; Madison, ME
- National Grid – Meadowbrook Substation; Chelmsford, MA
- Massachusetts Bay Transportation Authority – Merrimack River Bridge Piers; Haverhill, MA
- Portsmouth Naval Shipyard; Kittery, ME
 - Dry Dock #3 Caisson Replacement and Seat Repairs
 - Berth 11A, 11B, & 11C
 - Bridge 1 Structural Repairs

SELECT EXPERIENCE CONTINUED...

- Mid-Atlantic Area Utility; Various Locations
 - Crew to Fort Pickett Transmission Line; Blackstone, VA
 - Edenton Substation Transmission Line Work; Edenton, NC
- New Hampshire & Maine Departments of Transportation – Sarah Mildred Long Bridge Emergency Repairs; Kittery, ME & Portsmouth, NH
- Vermont Electric Cooperative – Northeast Kingdom Connector Project; Bloomfield, Lemington & Cannan, VT
- Quantum Utility Generation – Passadumkeag Windpark Distribution Project; Lowell, ME
- Iberdrola / Central Maine Power Company; Various Locations
 - 345 kV Energized Structure Replacements; Various Locations, ME
 - Guilford Substation; Parkman, ME
 - Lakewood Substation & 115 kV Transmission Line Rebuild; Madison, ME
 - Berwick-Lebanon-Sanford Substations; Berwick-Lebanon, ME
 - NERC Electric Construction; Various Locations, ME
 - Maine Power Reliability Program (MPRP) Central Loop, 230 Miles; ME
 - Norridgewock River Crossing; Norridgewock, ME
 - Saco Bay Reinforcement; Saco & Old Orchard Beach, ME
 - Groton Wind Farm; Groton, NH
 - Design-Build Substations
 - Larrabee Road 345 kV Site & Substation Construction; Lewiston, ME
 - Raven Farm 345 kV Site & Substation Construction; Cumberland, ME
 - Albion Road 345/115/13.8 kV Site & Substation Construction; Benton, ME
- Williams Field Services, LLC – Williams Central Phase III Electrical Installation; Susquehanna County, PA
- PPL Electric Utilities Corporation; Various Locations
 - Hosensack – Wescoville 230 kV Transmission Line; Hosensack, PA
 - 138/69 kV Transmission Line; Honeybrook – Morgantown, PA
 - Hosensack Quarry #1 & #2; Bethlehem, PA
- Emera Maine; Various Locations
 - Line 396-3001 345 kV Transmission Structure Replacements; Orrington to Orient, ME
 - Line 396 Structure 10 Energized Replacement; Orient, ME
 - 46 kV Energized Change Outs; Island Falls, ME
 - Transmission Rebuild, Lines 85 & 87; Chester & Lincoln, ME
- Bangor Hydro Electric Company – Keene Road Substation; Orrington, ME
- The University of Maine – Offshore Wind Laboratory; Orono, ME
- AllEarth Renewables, Inc. – Georgia Mountain Wind; Milton, VT



THOMAS HAZLETT, PE

DIRECTOR OF WATER PRACTICES

Professional Profile

Tom has 17 years of civil and environmental engineering experience working on wastewater, water, and stormwater projects for clients in the public and private sectors. Tom leads Woodard & Curran's Water Practice. His project experience is focused on large scale municipal wastewater treatment, pumping and collection systems and includes significant facility planning, engineering design and construction of plant upgrades in Billerica, MA, Troy, MO, Upper Montgomery, PA, and Warren, RI. Tom's experience on large scale municipal wastewater infrastructure projects includes planning, permitting, public outreach and education, municipal funding, detailed design, bidding, construction administration, startup and operations. As a licensed wastewater operator and incoming chair of the NEWEA plant operations committee, Tom puts operational issues at the forefront in both the design and construction of projects.

Related Experience

Town of Billerica, MA – Influent Screens Replacement. Senior Principal and Project Manager responsible for the \$1.3 million replacement of the preliminary treatment system at the 5.4 MGD ADF /16.5 MGD PHF Letchworth Avenue WWTF. The replacement includes design and construction administration of the upgrades which includes the replacement of the influent screens, installation of a new wash press, replacement of the grit collectors and dewatering screw, installation of an automatic dumpster loading system and all associate electrical and controls.

Upper Montgomery Joint Authority, PA – Wastewater Treatment Plant (WWTP) Improvements. Principal in Charge responsible for the 2.5 MGD ADF / 11.5 MGD PHF replacement of a lakeside rotary drum screen with two headworks mahr bar screens, wash press and installation of a new building over the existing outside headworks with odor control.

Town of Nantucket, MA – Surfside Wastewater Treatment Facility Upgrades. Principal in Charge responsible for the 4.0 MGD ADF / 7.0 MGD PHF replacement of grinders with new Duperon screen, washpress (construction complete) and installation of a new building over the existing outside headworks with odor control.

Greater New Haven, CT WPCA – Pump Station Screen Replacement. Senior Principal responsible for QA/QC and technical review of the replacement of screens at two 30 MGD and one 42 MGD pump stations with Duperon screens. These upgrades consisted of replacing the coarse and fine mechanical screens at the East Street and Boulevard Pump Stations with new mechanical screens, and the installation of a new mechanical screen at the Morris Cover Pump Station. The design and construction of this project was completed on a very tight schedule with a limited amount of change orders.

Education

- Bachelors, Civil and Environmental Engineering, University of Massachusetts

Registrations

- Registered Professional Engineer - MA, 46482
- Wastewater Operator Grade 5C - MA, 12863

Professional Associations

- American Society of Civil Engineers
 - Boston Society of Civil Engineers
 - New England Water Environment Association
 - Water Environment Federation
-

Town of Warren, RI – Wastewater Treatment Facility Upgrades. Senior Principal responsible for QA/QC and technical review of the 2.2 MGD ADF / 9.0 MGD PHF replacement of screen, aerated grit chamber and odor control equipment.

City of Troy, MO – WWTP Upgrades. Senior Principal responsible for the facility planning, permitting and funding of \$17M SRF funded upgrades to the 4.5MGD Southeast WWTP, demolition of the Highway 47 WWTP and construction of an interceptor sewer connecting the two plants to enable the City to consolidate all wastewater treatment operations to a single facility.

Town of Billerica, MA – Influent Screens Replacement. Senior Principal and Project Manager responsible for the \$1.3 million replacement of the preliminary treatment system at the 5.4 MGD Letchworth Avenue WWTF. The replacement includes design and construction administration of the upgrades which includes the replacement of the influent screens, installation of a new wash press, replacement of the grit collectors and dewatering screw, installation of an automatic dumpster loading system and all associate electrical and controls.

Town of Billerica, MA – WWTF and Pump Station Improvements, Phase 1. Project Manager responsible for the \$14.3 million SRF funded expansion of the 5.4 MGD Letchworth Avenue WWTF to provide biological nitrogen removal for the expansion of the Town's wastewater collection system. The upgrades included comprehensive planning, permitting, funding, detailed design and construction phase services for the expansion which includes replacement of the secondary clarifiers, RAS pumping system, disinfection system and upgrades to six of the Town's major pump stations.

Town of Billerica, MA – Middlesex Turnpike Pump Station Upgrades. Project Manager responsible for upgrades to the Middlesex Turnpike Pump Station as well as the installation of a licensed radio SCADA system to allow for remote monitoring of all 26 of the Town's pump stations.

Town of Billerica, MA – Rogers Street Pump Station Upgrades. Project Manager responsible for the complete rehabilitation of the Town's largest pump station. The project included planning, permitting, funding, detailed design of the 15.3 MGD pump station upgrade and construction administration for the replacement of all three pumps, electrical systems, controls, SCADA, HVAC, and installation of an odor control system.

City of Gloucester, MA – Beacon Marine Pump Station Upgrades. Project Manager responsible for the complete rehabilitation of the City's 1.7 MGD Beacon Marine Pump Station. The project included funding, detailed design and construction administration for the replacement of both pumps, electrical systems, HVAC, and controls.

Town of Billerica, MA – Shawsheen River Pump Station Upgrades. Project Manager responsible for the complete rehabilitation of the Town's 5.5 MGD Shawsheen River Pump Station. The project included planning, permitting, funding, detailed design and construction administration for the replacement of both pumps, electrical systems, controls, SCADA, HVAC, generator, building envelope improvements and installation of an odor control system.

Town of Acton, MA – Sewer System. Engineer during the construction and startup phases of 11 miles of sewer, force main, and water main, as well as ten pumping stations. Responsibilities included inspecting the installation of sewer mains, pump stations, temporary and permanent paving, drafting correspondence to the client and contractor, researching and responding to proposed change orders and requests for information, reviewing shop drawings, handling monthly requisitions and SRF drawdowns, and coordinating drafting of record drawings.

City of Gloucester, MA – Influent Pump Replacement. Engineer responsible for the design of replacement 72-inch-diameter screw pumps, wetwell walls, and sluice gates for the existing headworks at the WPCF. Responsibilities included soliciting price quotes from vendors, review of shop drawings, scheduling and sequences of construction.





BARRY SHEFF, PE

PRINCIPAL-IN-CHARGE

Professional Profile

Barry is a Senior Principal and Senior Project Manager with over 25 years' experience working with the public sector on infrastructure planning and implementation, and with the private sector on urban revitalization projects. He is responsible for design and project management, with expertise engaging and facilitating stakeholder processes. His project work has involved utility infrastructure with focus on stormwater and wastewater utility planning studies, evaluations, and engineering; green infrastructure; master development planning and site design; and environmental/land-use permitting at the local, state, and federal levels. Barry focuses his work on sustainable environmental design and is committed to collaborating with owners and stakeholders to develop practical solutions to complex problems. He has been involved in numerous projects with high-performance buildings and LEED certification and was a member of a national ASCE/EWRI task force evaluating green infrastructure in street/highway applications. Barry is currently a member of APWA's National Water Resources Management Committee. Barry has strong cost estimating experience, a track record of understanding client expectations, consistent budget controls and excellent communication skills that enable him to drive the success of small and large projects of varying complexities.

Related Experience

City of Portland, ME - Rockland Avenue Outfall. Principal-in-Charge for the outfall replacement project. The 60" reinforced concrete pipe stormwater outfall discharges runoff at a rate of 250 CFS (135 MGD) during a 25-yr storm from 160-acres of highly developed residential and commercial area into Capisic Pond, in the lowest portion of the Capisic Brook watershed, and drains south to the tidal Fore River. The solution involved an underground in-line trash and sediment control structure, and rebuilding the outfall pipe with energy dissipation within the channel, to prevent trash and the other contaminants from reaching the pond and eliminating the erosion problem that had plagued the outfall channel.

City of Portland, ME – Preble Street Outfall Alternatives Analysis. Project Manager responsible for the development of an alternatives analysis that identified repair and replacement alternatives for the Preble Street Outfall (CSO #17). Responsibilities included an assessment of the current pipe condition, identification and evaluation of multiple repair and replacement scenarios, and the creation of a prioritization decision matrix for the comparison of each alternative respective to project costs, life longevity/long-term maintenance costs, project time requirements, odor control, aesthetics, integration level with the City's CSO Master Plan, permitting, and impacts on land-use.

City of Auburn, ME – Pettengill Pond Maintenance Dredging. Principal-in-Charge responsible for coordinating sediment sampling for beneficial reuse purposes, and developing permitting application for maintenance dredging of Pettengill Pond, an approximately 1-acre pond within the Pettengill Park.

Education

- Bachelors, Civil / Environmental Engineering, University of Vermont

Registrations

- Registered Professional Engineer - ME, #9708

Professional Associations

- American Society of Civil Engineers
 - American Society of Civil Engineers - Environmental & Water Resources Institute
 - American Society of Civil Engineers - Maine Section
 - American Public Works Association
 - New England Water Environment Association (NEWEA)
 - Order of the Engineer
-

City of Portland, ME –Curtis Road Pump Station Upgrade Business Case.

Principal-in-Charge responsible for the evaluation the City's aging Curtis Road Pump Station, a 300-gpm duplex pump station serving 164 single family homes in a residential neighborhood in the City of Portland. As part of a high level City-wide Sanitary Sewer CMOM Assessment, the pump station was scheduled for elimination however the City sought to take a second look and perform a Business Case Study (BCS). The City's goal of the BCS was to evaluate direct and non-direct costs (environmental and social impacts) to select the best option to address the aging pump station. This was the City's first Business Case Study (BCS) and thus we were tasked with developing their process. The four step process we created involved our work to Define the Project Drivers (safety and health requirements, regulations, system limitations, reliability, cost efficiencies, and aesthetic concerns); Develop a Problem Statement - the "why" for the project; Formulate the Options; and Complete a Triple Bottom Line Analysis of the Options – present worth analysis to compare mutually exclusive options and using life-cycle cost inclusive of budgetary impacts, risk, environmental considerations, and societal costs.

City of Portland, ME – Curtis Road Pump Station Upgrades Design-Build.

Principal-in-Charge responsible for the City of Portland's first progressive design-build project, a comprehensive upgrade of the Curtis Road Pump Station. The project involved our completing a 60% design of pump station upgrade and development of a Guaranteed Maximum Price (CMP) proposal for the City's consideration. Upon City acceptance of the GMP we completed design documents for funding and regulatory agency review; procured major equipment (generator and package pump station); solicited subcontractor bids for mechanical and electrical trades; and are preparing to start construction early spring.

City of Portland, ME – Franklin Street Pump Station Upgrades Design-Build.

Principal-in-Charge responsible for the City of Portland's progressive design-build project, a prioritized upgrade of the Franklin Street Pump Station. Scheduled by the City in 2015 to be removed from service in 2019, the City has foregone investments in the pump station in the recent past. The project involved an assessment of critical pump station infrastructure and prioritization of improvements, completing a 60% design of pump station upgrade and development of a Guaranteed Maximum Price (CMP) proposal for the City's consideration. Upon City's recent acceptance of the GMP we have initiated development of final design/construction documents for funding and regulatory agency review in anticipation of spring 2019 construction start.

City of St. Charles, MO – Elm & Sibley Drainage Improvements.

Principal-in-Charge for the evaluation and modeling of stormwater management systems within a watershed that has historically flooded due to undersized collection and conveyance systems. Project also involves the design and preparation of bid documents for twin 80" diameter culvert replacements and major road crossings to address flood issues.

City of Portland, ME – West Side Interceptor Sewer Separation.

Principal-in-Charge responsible for the replacement of the existing West Side Interceptor sewer in Portland, ME with over one mile of 60" diameter combined sewer piping, increasing capacity in the conveyance system and eliminating overflows into the Fore River Estuary. Project included flow monitoring, flow modeling, sewer design, roadway design, and state and federal wetlands permitting.

Town of Peterborough, NH – WWTF Upgrades.

Principal-in-Charge responsible for construction phase services on this \$10M 0.62 MGD sequencing batch reactor biological nutrient removal system. The overall upgrade included a new headworks facility, advanced secondary treatment, sludge storage, sludge thickening, chemical feed systems, odor control, septage receiving, phosphorous removal, disinfection and upgrade to the existing main pump station. The project was complicated by a funding package that included ARRA stimulus grant funds, NHDES revolving loan funds, and local funding.

City of Portland, ME –Sewer Separation and Street Improvements.

Principal-in-Charge responsible for new storm drain and sanitary sewer systems on numerous commercial, residential and industrial streets in Portland, ME. Projects included stormwater modeling and the development of design plans and specifications for separated storm drain, sanitary sewer, roadway reconstruction, and green infrastructure stormwater treatment systems.



PAUL PORADA, PE

TECHNICAL MANAGER

Professional Profile

Paul has over 25 years of experience with technical design and permitting issues. He is involved in all aspects of civil engineering projects, including permitting for landfills, solid waste facility design, landfill gas controls, wastewater discharges, stormwater discharges, and wetland impacts. His responsibilities include concept planning, site design, regulatory permit applications, preparation of construction specifications, and writing operations manuals. Paul has a background in hydrology and hydraulics from previous employment with the U.S. Department of Agriculture Soil Conservation Service and private engineering consultants. Paul is experienced with U.S. EPA's QUAL2E-UNCAS and WASP water quality analysis simulation models, which are used for studying water chemistry of river and estuary environments; use of the CORMIX model to analyze wastewater discharge plumes; the TR20 and TR55 stormwater runoff models; developing water surface profiles using HEC-RAS and WSP2 computer programs; the HELP model for estimating the water balance of landfills; and application of the Federal Highway Administration's HY8 program for hydraulic structure design.

Related Experience

Town of Rockport, ME – Wastewater Discharge Application. Prepared a wastewater discharge application for the Town to obtain a permit to allow the discharge of snow from winter plowing operations into Rockport Harbor.

Champion International Corporation, Bucksport, ME – Wastewater Discharge License Applications. Prepared State and Federal wastewater discharge license applications for the proposed construction of a new pulp mill at an existing paper making facility. This work included development of documentation to satisfy the National Environmental Policy Act (NEPA) review process.

McCain Foods, Easton, ME – Waste Discharge License Application. Assembled the documentation required for a waste discharge license application to Maine's Department of Environmental Protection.

Large Industrial Facility, Presumpscot River – Wastewater License Renewal. Assisted a large industrial facility with renewal of its National Pollution Discharge Elimination System (NPDES) wastewater license renewal. This work required computer simulations of the receiving water body using QUAL2 model to evaluate the impacts on ambient water quality resulting from the discharge.

City of Ellsworth, ME – Wetlands Permitting. Provided wetlands permitting assistance to the City of Ellsworth for dredging the local harbor. The work involved both Maine Natural Resource Protection Act, and Army Corps of Engineers permits.

City of Portland, ME – Portland Trails. Assisted the organization with Natural Resource Protection Act permitting that was necessary for construction of a new walking path, which passed through wetland areas.

Education

- Bachelors, Forestry Engineering, University of Maine

Registrations

- Registered Professional Engineer - ME, 6421

Professional Associations

- Water Environment Federation
-

Confidential Client, ME – Water

Modeling. Developed a CORMIX model to evaluate the dilution of wastewater discharges into the ocean by a food processing facility. This information was used as support for a request to increase the loading limits of the facility's waste discharge license.

Warren Sanitary District, Warren, ME – Estuary Study.

Assisted with the design of a sampling plan, field study, and WASP water quality simulation of the St. George River estuary. The purpose of this study was to determine potential impacts to water quality for regulatory relicensing of the wastewater discharge.

Champion International, Bucksport, ME – Water Modeling.

Performed CORMIX computer simulations of the non-contact cooling water discharge to evaluate the impact to the Penobscot River estuary by a proposed increase in thermal discharge. These simulations allowed the facility to revise their wastewater discharge license to increase heat released to the estuary.

Presumpscot River, Maine – River

Model. Developed a river model for the Presumpscot River from its headwaters in Sebago Lake to Smelt Hill Dam. This effort was coordinated with parallel activities by

the Maine DEP with joint efforts to gather the physical data necessary to calibrate the model, intense negotiations to agree to an effective calibration approach and the presentation of a creative management approach based on the relationship between water flow, temperature and ability to assimilate waste loads. In addition, Paul analyzed the estuary model developed by the DEP to determine its effectiveness in describing the estuary arteries.

Edwards Dam – Augusta, ME.

Responsible for the hydraulic analyses associated with permitting the removal of a 162-year-old dam on the Kennebec River. Hydraulic models were used to assess future flood conditions using the HEC-RAS model, and the DAMBRK model to determine the proper size breach hole and method to create the breach for lowering the dam's head pond without flooding down river locations.

West Kennebunk, ME – Stormwater Management Analysis.

Performed stormwater management analysis and developed an erosion and sedimentation control plan for permitting of an industrial site. Stormwater from the site was managed by infiltration, and significant attention was given to improving stormwater quality prior to its infiltration.





JIM WILSON, PE

SENIOR PROJECT MANAGER

Professional Profile

Jim has 30 years of experience with Woodard & Curran and has been involved in the management of water, wastewater, stormwater, civil and energy generation/conservation projects. Jim is a licensed engineer in Maine but also works with clients in other geographies to insure our project teams match project needs and objectives to meet client goals and schedules. As a senior project manager, Jim is responsible for our communications with our clients and our project teams to insure we are responsive and on-target to our client needs. He has managed projects ranging from engineering studies all the way through design and construction. Delivering successful projects on time and on budget is a hallmark of Jim's project management approach.

Related Experience

City of St. Charles, MO – Elm & Sibley Drainage Improvements. Senior Project Manager for the evaluation and modeling of stormwater management systems within a watershed that has historically flooded due to undersized collection and conveyance systems. Project also involves the design and preparation of bid documents for culvert replacements and major road crossings to address flood issues.

Lakeland Florida Wastewater Treatment Facilities - Effluent Wastewater Storage Pond Repair. Senior Project Manager for the design and replacement of the liner in the existing storage pond, damaged by a sink hole that developed. Jim was responsible for coordination of the soil scientist who studied the soil conditions and suggested the response to the sink hole conditions. Coordinated the surveyors who provided field data for plan development and selected the design team who prepared the bid documents, and participated in negotiation with the apparent low bidder to allow the City and the POTW staff to proceed with the repairs.

City of Newberry, FL – Wastewater Forcemain Relocation. Senior Project Manager for the design and permitting of a new forcemain to direct wastewater flows from an over utilized portion of the system to a less utilized area to avoid other more significant repairs and upgrades. The project involves the design and upgrades to three pump stations and approximately 3,000 lineal feet of buried PVC forcemain including beneath Florida DOT roads, a railroad crossing and Town roads. Responsibilities included managing the design, communications with the client and permitting agencies.

Town of Hampden, ME – Wastewater Collection Systems Evaluations and Systems Upgrades. Project Manager for the evaluation of existing sewer lines and pump stations to assist municipal officials in the prioritization of needed improvements due to age, community growth and future State DOT projects. Also includes subsequent design and preparation of bid documents for various sewer main replacements and pump station upgrades. Our services are on-going and involve management of project from concept to completion.

Education

- Associates, Drafting Technology, NMTC
- Bachelors, Civil Engineering, University of Maine

Registrations

- Professional Engineer - ME, 8592

Professional Associations

- American Society of Civil Engineers, Member
 - Indoor Air Quality Council, Member
 - Construction Specifications Institute, Member
-

McCain Foods, Easton ME – Relocation of Water and Sewer Utilities in Anticipation of Major MDOT Highway Project.

Services included acting as McCain's representative at several coordination meetings with the MDOT and assessing the impact to their utilities from the MDOT project since schematic design through final. Woodard & Curran was the lead for the design build delivery of the project to complete the relocation and tie-in the new utilities during a three-day plant shut down.

City of Ellsworth, ME – WWTF. Project Manager for the design, permitting, construction administration, and funding acquisition for a new 1.0 MGD ADF wastewater facility with peaks of 6.5 MGD for the City of Ellsworth including a new outfall into the Union River, a new main pumping station, an upgraded pumping station, and two miles of interconnected large force main piping. A Comprehensive Facility Evaluation was completed for the Ellsworth wastewater system, including both the collection system and treatment facility.

Town of Southwest Harbor, ME – Wesley Avenue and Mansell Lane Street and Utility Reconstruction. Project Manager for the full depth reconstruction of street and utilities on approximately 2,000 lineal feet of residential street in Southwest Harbor.

City of Ellsworth, ME – North Main Street Drainage and Church Street Design. Project Manager for the evaluation of the North Main Street drainage issues and design of the Church Street drainage corridor including utility upgrades, road reconstruction, sidewalk design and stormwater modeling.

Town of Hampden, ME – Sanitary Sewer Collection System Upgrade.

Senior Project Manager for the upgrade on the sanitary sewer collection system in advance of MDOT reconstruction of Route 1 including concept planning, budgeting, preliminary design, and construction of approximately 9,000 lineal feet of sewer with associated structures.

Town of Hampden – Mayo Road Reconstruction. Senior Project Manager for the full depth reconstruction of approximately one mile of town road. The project involves horizontal and vertical realignment, utility upgrades, pedestrian access, and stormwater system design. Project includes public outreach to resolve right-of-way issues, slope easements, and utility connections.

Town of Vinalhaven, ME – Wastewater System Design. Project Manager for the design and construction management of the community-wide wastewater collection system, treatment facility, and outfall. Responsibilities included preparation of bid documents and supervising the design staff and resident engineer.

Town of Vinalhaven, ME – Waterfront Improvements. Project Manager for the design and construction management of improvements to the existing municipal working waterfront facilities including bulk head stabilization, crane installation, wharf and ramp upgrades.

City of Ellsworth, ME – Dredge Material Removal. Project Manager for the removal of the maintenance dredge material from the Union River in Ellsworth. Responsibilities included occasional support of the City staff on an as-needed basis as they managed the work of the contractors.

McCain Foods, Easton, ME – Well Improvements and Pump Replacements. Project Engineer for well improvements and pump replacements to convey process water from wells near the Aroostook River in Presque Isle to the processing facility in Easton approximately six miles away. Responsibilities included conceptual design and hydraulic calculations for the selection of submersible pumps to provide approximately 2,400 gallons per minute (GPM) at the new standpipe storage facility in Easton. The work also included the drawings and specifications necessary to install the pumps and provide various improvements to access the wells for regular maintenance.



Michael A. Mobile, Ph.D.

Summary

Dr. Mobile focuses in the areas of quantitative hydrogeology and hydrology, contaminant fate-and-transport, and water resources management. He has worked as a research assistant and consultant specializing in numerical groundwater flow and reactive contaminant fate-and-transport modeling. His 15 years of professional experience has included model development in support of several large-scale, high-profile construction activities; natural resource management projects; and litigation/conflict resolution assignments. The sensitive nature of much of this work has allowed Dr. Mobile to explore a wide variety of innovative and interdisciplinary approaches to meeting client needs and addressing site-specific challenges.

Education

2003--B.S. Hydrology, University of New Hampshire

2008--M.S. Environmental Engineering, Virginia Polytechnic Institute and State University (Virginia Tech)

2012—Ph.D. Civil Engineering, Virginia Polytechnic Institute and State University (Virginia Tech)

Representative Major Projects Completed Prior to Joining MMA

Confidential Contaminated Site, Michigan, 2017 – 2018 -- Primarily responsible for reviewing analytical data associated with sampling and analysis of soil, groundwater, and drinking water from sites potentially impacted by PFAS use at former tannery. Additional responsibilities included preparation and implementation of site investigation work plans and conceptual model development.

Investigation of Perfluorooctanoic Acid (PFOA) Contamination, Amherst, New Hampshire, 2016 - 2018 -- Responsible for preparation and implementation of soil sampling and site investigation work plans associated with assessing PFOA contamination linked to a former textile coating operation in Amherst, New Hampshire. Additional responsibilities included serving as point-of-contact with the State regulatory agency, coordination and management of specialized analytical laboratory services, and coordination of performance sampling related to temporary point-of-entry treatment (POET) systems.

Representative Major Projects Completed Prior to Joining MMA (cont.)

Brentwood Drill Yard Site Investigation, Brentwood, New Hampshire, 2017 – 2018

Responsible for preparation and implementation of site investigation work plan associated with assessing PFAS contamination linked to historical fire training practices. Additional responsibilities included serving as point-of-contact with the State regulatory agency, coordination and management of specialized analytical laboratory services, data analysis, and report preparation.

Third-Party Review of Supplemental Remedial Investigation of the Former Chlor-Alkali Plant Property, Berlin, New Hampshire, 2017 – 2018

-- Provided third-party reviews of documents submitted by the responsible party's consultant pertaining to assessing and proposing potential remedial options for various site contaminants, including mercury in soil, groundwater, and occurring in liquid elemental form within the Androscoggin River. Acted as technical lead in communications with EPA, the responsible party, and their consultants.

Expert Testimony Support for the Independent Oil and Gas Association of West Virginia, 2016 – 2017

-- Provided review and expert testimony services related to a geospatial analysis and empirical modeling technique being used to determine zones of critical concern (ZCCs) and zones of peripheral concern (ZPCs) above surface water intakes. Presented expert opinion during appeal heard by the West Virginia Environmental Quality Board.

Remedial Performance Assessment for Confidential Industrial Client,

Massachusetts, 2014 – 2016 -- Served as technical lead responsible for evaluating state of capture associated with existing groundwater "pump-and-treat" remediation system at a site contaminated with chlorinated solvents. Developed three-dimensional numerical groundwater flow model (MODFLOW-2005) for the site and calibrated the model to observed hydraulic head and pumping test data using a model-independent parameter estimation technique (PEST). Recommendations were made to the client regarding locations and target pumping rates for recovery system expansions and replacements.

Charles P. Spalding, P.G.

Summary

Mr. Spalding has more than 30 years of experience in the completion of quantitative hydrogeologic investigations. During these 30 years, Mr. Spalding has applied numerous numerical and analytical models for the characterization of ground water flow and solute transport, performed hydrogeologic investigation management, scheduling, and staffing. Mr. Spalding is experienced in the completion of a broad range of field tasks, including well drilling and installation, ground-water sampling, soil sampling, geophysical surveys, and aquifer tests.

Education

1982--B.S. Geology, Virginia Polytechnic Institute and State University (Virginia Tech)

1985--M.S. Hydrology, New Mexico Institute of Mining and Technology

Professional Registrations

Licensed Professional Geologist, Registration #931, State of South Carolina

Representative Major Projects

Republican River Compact Administration Support, Nebraska, 2003 – 2016 -- As requested by the Nebraska Department of Natural Resources and the Office of the Nebraska Attorney General, completed groundwater simulations and related reports in assisting evaluation of water rights management tools and applications in negotiations related to the Republican River Compact. This support involves use of a numerical model of the Republican River Basin to evaluate groundwater management strategies, determine factors affecting stream depletion, evaluate potential for streamflow augmentation, and assess the impact of climate change.

Water Rights Litigation Republican River, Nebraska, 2001 - 2003 -- Provided expert support services to the State of Nebraska regarding a water rights dispute with neighboring States. Work involved use of numerical ground water flow models to determine the effects of pumping on stream flow. Evaluation of quantitative analyses conducted by adversarial parties to the State.

Representative Major Projects (cont.)

Parkview Well Superfund Site, Grand Island, Nebraska, 2009 – 2010 -- On behalf of a confidential client completed development, calibration and application of a groundwater flow model to evaluate the potential source of groundwater contamination at the Parkview Well Superfund Site, Grand Island Nebraska. The groundwater flow model considered groundwater flow conditions over a 50-year period and examined the impact of municipal pumping and drain systems on groundwater flow directions.

B.F. Goodrich Superfund Site, Calvert City, Kentucky, 2010 – 2013 -- Completed the development of steady-state and transient groundwater flow model and reporting in support of remediation feasibility studies at the B.F. Goodrich Superfund Site. The Site is adjacent to the Tennessee River in northwestern Kentucky, and groundwater levels are significantly affected by water level changes in the River. Potential remedial alternatives capture zones were evaluated using endpoint analysis in this complex hydrogeologic setting.

Savannah River Site, Aiken, South Carolina, 1987 – 1998 -- Task Leader for groundwater flow and solute modeling for predictive analysis of facility closures, remedial pumping schemes, and impact on wetlands by remedial measures for DOE's Management and Operations contractors, E. I. Du Pont de Nemours, and subsequently, Westinghouse Savannah River Company. Responsibilities included development and maintenance of site models, post-processing, coordination with site representatives, and reporting of modeled results.

Superfund Site, Southern Florida, 1985 – 1996 -- Project Manager for technical investigations at a PCB-, lead-, and arsenic-contaminated site. Responsible for coordination and staffing of post-remediation groundwater investigations, including well design, construction, and abandonment; groundwater sampling; and hydrogeologic and geochemical data review. Additionally, provided supervision of data collection quality assurance and site health and safety and technical support for negotiations with USEPA, Region IV representatives. Pre-remediation support included predictive solute transport modeling and application of a geostatistical method, kriging, to develop statistical level of confidence related to the extent and depth of PCB and lead contamination. The kriging calculations reduced the probable extent of soil contamination and related sampling over the original estimates by consultants representing the state and Federal agencies, resulting in a more efficient and cost-effective remedial design.

Daniel J. Morrissey, P.G.

Summary

Mr. Morrissey has 40 years of experience in hydrogeology and is an expert in the application of groundwater flow and solute transport models. Prior to founding McDonald Morrissey Associates, Inc. (MMA) in 1990, he served as Chief of the New Hampshire/ Vermont District of the Water Resources Division of the U. S. Geological Survey. While with McDonald Morrissey Associates, Inc. Mr. Morrissey has provided consulting services on issues involving groundwater flow, contaminant migration, mine dewatering and groundwater /surface-water interactions at sites throughout the United States. Mr. Morrissey has conducted training courses in groundwater flow modeling for the USGS, for the National Ground Water Association, State and local water management districts, and for private clients in both the United States and abroad.

Education

1975--B.A., Biochemistry- Southern Connecticut State University

1977--M.S., Hydrology- University of New Hampshire

Professional Registrations

Certified Professional Hydrologist, Registration #975, American Institute of Hydrology

Licensed Professional Geologist, Registration #579, State of New Hampshire

Representative Major Projects

B.F. Goodrich Superfund Site -- Calvert City, Kentucky, 2011-2016 -- Develop numerical groundwater flow model in support of RI/FS activities at the site. Evaluate a variety of remedial alternatives including pump and treat and barrier systems designed to prevent movement of contaminants from the site.

Olin/Standard Fusee Site, Morgan Hill, California, 2011 -- Evaluate groundwater modeling studies done to predict extent of perchlorate contamination from a former flare manufacturing facility near Morgan Hill, California. Provide testimony in U.S. District Court regarding issues related to extent and timing of contamination.

Nestle Waters of North America, 2003 – present – Providing expert services on evaluation of ground water and spring resources at several sites around the US. Work involves development of ground water flow models to analyze ground water supplies.

Representative Major Projects (cont.)

City of Malibu, California, 2001 – 2014 -- Prepare three-dimensional models of ground water flow and solute transport in coastal alluvial aquifer. The purposes of the modeling are to determine the effects of subsurface septic waste disposal on ground quality, loading of nutrients to Malibu Creek and estuaries and to evaluate the effects of alternative waste disposal alternatives.

Northwest Florida Water Management District, 2009 -- Provide technical review services for groundwater modeling analyses done for the District with respect to the proposed Bay County well field.

Portland Water District, Portland, Maine, 2004-2005 -- Develop numerical models of groundwater flow to evaluate feasibility of ground water supplies in the Otter Pond area.

Water Rights Litigation Republican River Basin, State of Nebraska, 2001 – 2009 -- Provide expert services to the State of Nebraska regarding a water rights dispute with neighboring States of Colorado and Kansas. Work involved development of numerical ground water flow model of the Republican River Basin to determine the effects of pumping on stream flow. Evaluation of quantitative analyses conducted by adversarial parties to Nebraska.

Oxford, Connecticut Level A Mapping Study Bridgeport Hydraulic Company Well Field, 1996 -- The Level A contributing areas for municipal supply wells in Oxford, Connecticut, that are part of the Bridgeport Hydraulic Company system, were delineated by Mr. Morrissey using three-dimensional ground water flow and particle tracking models. The models were constructed and calibrated using information obtained from test drilling, pump tests, stream gaging and ground water level measurements.

Wheelabrator Environmental Systems, Lisbon, Connecticut, Water Supply Development and Diversion Permitting for a Municipal Waste Incinerator, 1991-1996 -- Mr. Morrissey served as principal investigator and project manager for a hydrogeologic investigation that involved the identification and development of a ground water supply for the Wheelabrator Environmental Systems municipal waste incinerator in Lisbon, Connecticut. The project included all aspects of water supply development including geologic mapping, test drilling, pump testing, stream gaging, groundwater flow and solute transport modeling and extensive testimony at public hearings and meetings.

West Coast Regional Water Authority, Tampa, Florida, 1993 -- Provided technical consulting services to a major water supply utility in western Florida. The project involved construction of a three-dimensional ground water flow model to determine the effects of pumping in the Floridan aquifer on ground water levels in the Floridan and surficial aquifers. Specific questions addressed with the modeling efforts involve effects of pumping water levels in lakes and wetland areas and saltwater intrusion.

Broadwater Environmental, LLC

18 Grand St., South Portland, ME 04106

Ian N. Broadwater **Principal Scientist/Owner**

207-653-8737

ian@broadwaterenvironmental.com

Experience

Mr. Broadwater has over 32 years of experience in environmental consulting. His areas of expertise include land use permitting and data collection. Mr. Broadwater provides services including wetland delineation and characterization, vernal pool surveys, high intensity soil maps and subsurface wastewater disposal system design. Mr. Broadwater also has experience evaluating and designing river and wetland restorations. Mr. Broadwater has experience managing the completion of complex projects and is responsible for the preparation of project-related documents, and monitoring scope, schedule, and budget.

Specialized skill areas include: • land use permitting • wetland delineation, assessment, and mitigation design • river and stream restoration • high intensity soil mapping • vernal pool surveys • site screening studies

Employment History

- 2016-Present-Principal Scientist/Owner; Broadwater Environmental, LLC
- 2008 to 2016-Principal Scientist; Normandeau Associates, Inc.
- 2005 to 2008-President/Owner Broadwater Environmental, Inc.
- 1985 to 2005-Senior Scientist; MACTEC (currently Wood Group, a.k.a. AMEC Foster Wheeler)

Registration and Certification

Certified Soil Scientist – Maine No. 305

Certified Wetland Scientist-New Hampshire No. 162

Licensed Site Evaluator (Subsurface Wastewater Disposal Designer)– Maine (Maine No. 230)

Education

B.S., Plant and Soil Sciences, University of Maine, 1984

Representative Projects

Confidential Client, RCRA Clean-up, Woodard Curran, Inc., Groton, CT (2018-Present). Broadwater Environmental, LLC was retained by Woodard & Curran Inc. to assist with permitting at a riverfront facility owned by a large industrial client. Woodard Curran has been tasked with designing and implementing a clean-up of sediments that contain certain concentrations of metals and polyaromatic hydrocarbons. Mr. Broadwater provided consulting on permitting and completed a Natural Diversity Database Request Form, prepared for and attended a preapplication meeting with the Connecticut Department of Energy and Environment's (CTDEEP's), and completion of an Office of Long Island Sound Programs Coastal Maintenance General Permit Application which is currently in the review process.

Weaver Wind, Soil Survey and Permitting Services, SunEdison, Osborn, Aurora, and Eastbrook, Maine (2014 to 2015). Weaver Wind is a 23-turbine wind energy facility planned on four ridgelines in Hancock County. The project was originally proposed by SunEdison and plans included the construction of an electrical substation.

As Project Manager and designated Permit Agent, Mr. Broadwater coordinated the permitting effort for this this proposed development. The permitting effort included completion of a Tier III Maine Natural Resource Protection Act (NRPA) Permit Application and a Site Location of Development (SLOD) Permit Application.

As part of the application, Mr. Broadwater was also tasked with preparing site-specific soil maps in support of the SLOD application and associated stormwater engineering. The project was slated for fast filing by the client and both applications were completed in 2.5 months including extensive internal project team review. Mr. Broadwater coordinated with other subcontractors including visual, sound, and wildlife specialists. In addition to the State of Maine permit applications, a permit application for the Town of Eastbrook to address their Wind Energy Facility Ordinance requirements was also prepared under Mr. Broadwater's direction. Project Manager and Permit Agent.

Dollar General, Lyman, Maine (2015). Mr. Broadwater completed a wetland and vernal pool survey of a 7 acres parcel located in Lyman, Maine. After completion, Mr. Broadwater worked with engineers to finalize the site layout. Once the layout was finalized, Mr. Broadwater completed a septic system design for the store. Project Manager.

Memberships

Maine Association of Professional Soil Scientists, Maine Association of Wetland Scientists, Maine Association of Site Evaluators, Soil Scientist Society of Southern New England, Society of Wetland Scientists, Connecticut Association of Wetland Scientists

Training

Wetland Construction Design, Rutgers University (Cook College); Hillsborough, New Jersey, December 2006.
Sediment Stability Workshop 2002, Sediment Management Work Group, New Orleans, Louisiana
Wetlands and Remediation International Conference 1999; Salt Lake City, Utah
Wetland Delineator Certification Program, University of New Hampshire, May 1998

STEVEN N. WHIPPLE, P.E.

Mainely Environmental LLC

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Phone: 207-671-3787

Professional Profile

I have worked as an environmental engineer in the field of air quality since 1993. Since 1995 I have practiced as a consulting engineer for a variety of manufacturing, commercial, educational, health care, legal, and government agencies. Projects typically include permitting, regulatory compliance review, environmental impact mitigation, regulatory reporting, control technology analyses, air dispersion modeling analyses, green energy applicability and program implementation, and environmental operations and management.

Work Experience

May 2017 to Present - Mainely Environmental LLC

President and Sole Proprietor - Provide environmental consulting engineering services.

April 1999 to May 2017 - Woodard & Curran

Sr. Principal & Shareholder – Developed and ran the Air Permitting and Compliance program at Woodard & Curran. Also provided environmental engineering services to clients, including multi-media project development permitting, compliance support, environmental program operations management, and green energy applicability and program implementation.

While at Woodard & Curran I served on several Board of Director committees including Marketing and Personnel.

June 1995 to April 1999 – NMC Environmental Group

Engineer – Worked as a consulting engineer providing air permitting and compliance engineering services to entities throughout Maine.

June 1994 to June 1995 – State of Maine Department of Environmental Protection, Bureau of Air Quality

Licensing Engineer – Worked with companies throughout the state to identify applicable clean air act requirements and draft construction and operation licenses.

Summer 1993 – State of Maine Department of Environmental Protection, Bureau of Air Quality

Air Quality Scientist – Interned with the Bureau of Air Quality and assisted the Chief Meteorologist with air dispersion modeling for industrial sources.

Education

M.B.A., Finance, University of Southern Maine

B.S., Civil/Environmental Engineer, University of Vermont

Professional Registrations

Licensed Professional Engineer, ME, 9109

Licensed United States Coast Guard Captain, 100 Ton Inland Waters

Board Associations

Trustee, Unity College, 2014 - Present