GZA
GeoEnvironmental, Inc.

Engineers and Scientists

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

Petition of BNE Energy Inc. for a Declaratory Ruling for the Location, Construction and Operation of a 3.2 MW Wind Renewable Generating Project on New Haven Road in Prospect, Connecticut ("Wind Prospect")

Petition No. 980

March 24, 2011

PRE-FILED TESTIMONY OF RICHARD J. DESROSIERS, LEP

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Q1. Mr. Desrosiers, please state your name and position.

A. Richard J. Desrosiers. I am a Senior Project Manager with GZA GeoEnvironmental Inc. (GZA). My office is located at 655 Winding Brook Drive, Suite 402 in Glastonbury, Connecticut.

Q2. Please state your qualifications.

A. I have a Bachelor of Science in Geology from Northeastern University. I am a Connecticut Licensed Environmental Professional (LEP) and a Professional Geologist with licenses in New Hampshire and Tennessee. Connecticut does not license geologists.

I have extensive experience conducting environmental and geologic site investigations evaluating both overburden soil and bedrock conditions. This has included conducting detailed environmental investigations that involve the identification of releases of contamination to the subsurface and delineating the nature and extent of the contaminant migration.

Q3. Please describe your involvement in this matter.

A. GZA was retained by BNE Energy Inc. (BNE) to provide geotechnical and groundwater consulting services in support of BNE's plan to construct two 1.6 MW wind turbines on a 67.5 acre parcel at 178 New Haven Avenue located in Prospect, Connecticut.

This included a review of the proposed location for the two wind turbines, an April 2003 Brownfield Targeted Site Assessment report prepared by Tetra Tech NUS for the U.S. Cap and Jacket Site located at 214 New Haven Road (U.S. Cap and Jacket), an August 6, 1996 site screening and investigation of alleged site

contamination report at the U.S. Cap and Jacket site prepared by the Connecticut Department of Environmental Protection (CTDEP), a March 14, 2011 letter from the CTDEP concerning the 3.2 MW Wind Turbine Generating Project, a March 24, 2011 Supplemental Pre-Filed Testimony of Michael Libertine, LEP, the Surficial Geology of the Mount Carmel Quadrangle (report No. 12, 1962) prepared by the State Geological and Natural History Survey of Connecticut, the 1975 Map Showing Depth to Bedrock Mount Carmel Quadrangle, Connecticut (Map MF-540 B) prepared by the United States Department of the Interior Geologic Survey, the 1974 Contour Map of the Bedrock Surface, Mount Carmel Quadrangle, Connecticut (Map MF-540 A) prepared by the United States Department of the Interior Geologic Survey, and the 1963 Bedrock Geology of the Mount Carmel Quadrangle Connecticut map prepared by the U. S. Geological Survey.

Q4. Please describe your understanding of the geologic subsurface conditions at the proposed wind turbine locations.

A. In accordance with The Surficial Geology of the Mount Carmel Quadrangle, report No. 12, the proposed wind turbine site is located on a glacial drumlin comprised of glacial till. These glacial tills were deposited during the last ice age and are comprised of non-sorted, typically non-stratified deposits of clay, silt, sand, cobbles and boulders.

The depth of these glacial till deposits was reported to range between 0 to 50 feet below grade within Map MF-540 B. However, the 1974 Contour Map of the Bedrock Surface (Map MF-540 A) depicts bedrock surface elevations assuming that all the glacial till were removed. Map MF-540 A represents that the depth to bedrock would be in the range of 20 to 50 feet below grade at the proposed wind turbine locations.

The April 2003 Tetra Tech report describes the construction of a drinking water well on the 214 New Haven Road property as being drilled to a depth of 305 feet below grade with bedrock being encountered approximately 70 feet below grade. The thickness of the overburden soil (70 feet), is greater than the reported depth to bedrock identified on Map MF-540 A. Thus, based upon this direct line-of-evidence, Map MF-540 A may underestimate the thickness of the glacial till.

These data would support that the depth to bedrock at the proposed wind turbine location would be in excess of 20 feet below grade. These types of findings would be consistent with glacial drumlin deposition. As such, since the proposed excavation depth for the wind turbine structural support will be less than 10 feet, bedrock is not expected to be encountered based upon these documents, therefore there will not be a need for blasting to remove bedrock.

Q5. Please describe your understanding of the subsurface conditions at the former U.S. Cap and Jacket Property and its hydraulic connection to the proposed wind turbine locations.

A. Based upon the findings within the Tetra Tech NUS and the CTDEP reports, there had been releases of contamination to the subsurface soil and groundwater at the former U.S. Cap and Jacket property. These releases were from the facility building, storage tanks and the leaching field. The resultant groundwater contamination has impacted the glacial till soil and, to a limited extent, the bedrock. The greatest concentrations were detected nearest the loading dock of the former U.S. Cap and Jacket facility.

The CTDEP report provided a groundwater contour map identifying that the groundwater flow direction was to the northeast. In addition, their results from April 12, 1996 (Table 3) indicate that groundwater was not contaminated in those upgradient wells located to the south and southeast of the loading dock and that a downgradient sample to the north-northeast of the loading dock was contaminated. These data would be consistent with their groundwater contour map that identified groundwater flow to the northeast.

A recommendation within the April 2003 Tetra Tech report (Section 7.1.5) was the removal of the 214 New Haven Road stormwater drainage system because it is likely "providing a preferential pathway for the horizontal migration of contaminated groundwater and subsequent discharge to surface waters". In glacial till sites, the soil permeability is generally low (as noted by septic leaching failures) and thus the migration of the contamination is limited to the rate of groundwater movement through this low permeability material. However, due to the shallow excavation of these tills to install drainage systems, the backfill material is usually more permeable than the surrounding tills resulting in the preferential pathway along these more permeable zones. Therefore, at contaminated sites with different permeable materials, the removal of these preferential pathways will reduce the migration of the contaminants. The data reviewed does not identify the extent of the groundwater contamination to the northeast nor if contaminated groundwater has discharged to surface water.

Groundwater contamination has been identified beyond the Cap and Jacket property by the CTDEP at two residential drinking water wells. The April 6, 1996, CTDEP report identified that at 1 George Street (east of the Cap and Jacket Site) trichloroethylene (TCE) was detected at concentrations below potable water criteria. The March 14, 2011 CTDEP letter reports that a filtration system was installed at 213 New Haven Road (north of the Cap and Jacket Site). These two wells are located north and east of the Cap and Jacket property. These data are consistent with the *Site Geology and Hydrogeology* reported in the April 2003 Tetra Tech NUS report that identified that the bedrock foliation planes are nearly north to south with a dip of 85 degrees to the east. These findings are also

consistent with the 1963 USGS Bedrock Geology Map. Thus, contamination would be expected to migrate along these planes further supporting that groundwater/contamination is migrating north and east of the Cap and Jacket property. This contaminant migration pathway is also consistent with the CTDEP's shallow overburden groundwater contour map.

The proposed wind turbine is located to the west of the Cap and Jacket property on the other side of the glacial drumlin. The glacial drumlin would act as a hydraulic divide separation surface water and groundwater. Thus, the contamination on the Cap and Jacket property would not impact the proposed wind turbine locations as the Cap and Jacket groundwater migrates to the northeast and the expected groundwater flow direction at the wind turbine sites would be to the west to northwest.

The applicant is proposing to install a bedrock well on-site. The 2003 Tetra Tech report also indicated that there were other bedrock contacts in close proximity with the strike of these bedrock oriented in a north-south direction with a nearly vertical dip. In addition, the CTDEP has published a Water Supply Well Receptor Survey Guidance Document that states that the expected source area for a bedrock well pumping 3 to 5 gallons per minute would be 500 feet in crystalline bedrock. Thus, this limited use water supply well is not likely to draw water from the Cap and Jacket site located greater than 500-feet to the east.

Q6. Please summarize your review of the data.

A. There was very good correlation between the documents that I have reviewed. At the proposed wind turbine locations blasting is not expected given the documented thickness of the glacial till. With respect to the contamination at the U.S. Cap and Jacket property, groundwater data supports that the contamination migrates away from the proposed wind turbine sites. Since blasting is not expected, the excavation will be limited to standard earth removal techniques (i.e., excavator or backhoe) which will not influence groundwater at the U.S. Cap and Jacket property. The proposed on-site potable water supply well will be located greater than 500 feet upgradient of the U.S. Cap and Jacket property. Given the limited use of this well, it is unlikely that contaminants from the U.S. Cap and Jacket property will be drawn to the west, especially given the migration flow direction of the contaminants in groundwater.

The statements above are true and accurate to the best of my knowledge.

March 24, 2011
Date

Richard J. Desrosiers
Richard J. Desrosiers, LEP

EXHIBIT 1

Richard J. Desrosiers, LEP, P.G.
Senior Project Manager

RESUME

Education

B.S., 1982, Geology, Northeastern University

Continuing Education

2005, Health and Safety Training 8-Hour HAZWOPER Refresher Course, Environmental Compliance Services, Agawam, MA

1998, Permit-Required Confined Space Entry Awareness, FGS-Jacksonville, White Plains, New York

1992, Level A Aquifer Course, Connecticut DEP, Storrs, CT

1992, Modflow Short Course, National Water Well Association, Boston, MA

1991, Health and Safety Training 40-Hour HAZWOPER Course

1990, The Princeton Course, Groundwater Associates of Princeton, Princeton, New Jersey

Ground Water Modeling without Mathematics I & II, Denver, CO

Professional Registrations

Licensed Environmental Professional (LEP) Connecticut, 1999

Professional Geologist (PG), New Hampshire, 2003

Professional Geologist (PG), Tennessee, 1999

Areas of Specialization

Hydrogeologic Evaluation
Remedial System Design/Installation
Expert Testimony
Third Party Review
RCRA/CERCLA Investigation and Closure
Phase II/III Investigations
High Yield Bedrock Wells
Environmental Impact Statements

Summary of Experience

Mr. Desrosiers is a Senior Project Manager who focuses on complex hydrogeologic issues as they relate to compliance situations regarding soil and groundwater. He is responsible for developing environmental investigation, remediation and compliance strategies for industrial, municipal and governmental facilities. Mr. Desrosiers has 27 years of experience in the environmental field including the completion of complex RCRA/CERCLA hazardous waste investigations/closures; development of innovative technologies to remediate groundwater contamination; the development of high yielding groundwater supplies in both the surficial and deep bedrock aquifers; hydrogeologic evaluations in conjunction with environmental impact statements; groundwater modeling; the completion of Phase I, II, and III environmental site assessments; and involvement in litigation issues related to the release of hazardous waste.

Relevant Project Experience

Project Manager and Senior Hydrogeologist – Enfield Landfill Subsurface Investigation, Enfield, Connecticut. Mr. Desrosiers was in charge of determining if a low concentration of benzene and chlorinated solvents was related to a continuing source of contamination or if the concentrations were isolated areas. Monitoring wells were installed using a GeoProbe™ to determine the groundwater flow in the upper aquifer and to determine if the previous well installed in a clay unit provided useful information. The data indicated that previous wells installed in the clay did not provide useful information in relation to the contaminant transport and that with the additional wells, it was determined that the contamination was isolated and decreasing with time.

Project Manager and Senior Hydrogeologist – CRRA Wallingford Landfill Hydrogeological Investigation, Connecticut. Developed work plan and completed a hydrogeologic assessment/trend analyses of the Wallingford landfill data. The purpose of the study was to determine the adequacy of the groundwater monitoring program, determine if the frequency of groundwater sampling could be reduced and evaluate if the monitoring well network was sufficient.

Project Manager – Soil and Groundwater Evaluation and Remediation-Confidential Client - Connecticut. For this industrial client, conducted an extensive review of historical soil and groundwater data collected by Navy contractors. The data were complied from 360 discrete groundwater samples that were collected from a network of 131 monitoring wells and groundwater grab samples collected from approximately 229 direct push sampling locations. In addition, 299 soil borings were completed to assess subsurface conditions related to 42 identified areas of concern. The data were used to develop remedial cost estimates related to the potential property transfer of the property. To evaluate the potential impact on the groundwater, the available groundwater data were entered into a 3-D graphical computer model to determine the extent of impacts to the environment above regulatory thresholds. This information was used to develop and determine remedial strategies that were presented to an insurance company to

support cost cap insurance. This project also required providing third party oversight during the removal of contaminated soil from a former Navy fire fighting training area. Approximately 770 cubic yards of soil contaminated with chlorinated solvents and petroleum hydrocarbons have been removed. Sidewall and bottom confirmation samples have been subsequently collected and are pending analytical analysis to determine if additional soil removal is required. The task's goal was to ensure that sufficient soil samplings were completed so that future site verification can be completed in accordance with the Connecticut Remediation Standards Regulations (RSRs).

Project Manager - Remedial System Design: Investigated and designed a remedial system at this industrial facility where there was a chlorinated and petroleum hydrocarbons release. The concentrations detected in groundwater indicated the presence of a dense non-aqueous phase liquid. The initial remedial design focused on reducing the organic vapors in-situ via a soil vapor extraction system because the release was located beneath and adjacent to the building resulting in vapor intrusion to a building at concentrations greater than regulatory standards. Mr. Desrosiers designed and his team continues to operate this system effectively reducing the mass of the contamination present while preventing the vapors from entering the building.

Project Manager, Hydrogeologic Evaluation, Commercial Development. Mr. Desrosiers is Senior Project Manager of the team conducting a hydrogeologic evaluation to support permitting of a proposed sanitary wastewater leaching field. For this large commercial development, the goal is to develop an assessment of the groundwater flow direction, the vertical hydraulic gradient, overburden/bedrock relationships, groundwater quality in bedrock, permeability (via slug tests), groundwater flow rates, and high groundwater condition.

Project Manager and Senior Hydrogeologist, Groundwater Evaluation, Gasoline Release. Mr. Desrosiers was Project Manager and lead Senior Hydogeologist in charge of determining how MTBE, a gasoline additive, entered downgradient private drinking water supply wells. Various down-well geophysical techniques were used to evaluate whether there was leakage around several well casings and to determine the location and orientation of these fractures in relationship to the contaminant source. This study concluded that the release (MTBE) had been induced into a pumping well from the sand and gravel aquifer where the contaminant subsequently migrated to other residential wells via interconnected bedrock fracture.

Project Manager, Imminent Environmental Hazard Mitigation, Fortune 50 Company, **Connecticut**: As Project Manager for this industrial site that had been contaminated by chlorinated solvents, Mr. Desrosiers designed and developed an 11-point Soil Vapor Extraction system that was operational within the 10-day timeframe ordered by the CTDEP because the contamination at the site had resulted in imminent indoor air quality issues. Offgas from the SVE system was treated with 4,000 lbs of granulated activated carbon. Managed the site characterization and investigation in soil and groundwater at the property and developed the Conceptual Site Model in advance of the remediation workplan to be approved by the CTDEP.

Project Manager, Third Party Review for Counsel, Private Golf Course, Connecticut. Hired by counsel to a private golf course in western Connecticut to review the investigation results commissioned by a nearby property owner. This investigation had shown that chlorinated solvent contamination was originating from historic manufacturing operations at that property and migrating to the golf course property via groundwater flow. During this effort, Mr. Desrosiers discovered that much of the work had not been done in accordance with the CTDEP Site Characterization Guidance Document and that the proposed remedy for the contamination was premature since neither the horizontal nor vertical extent of contamination in groundwater had been defined. Theories regarding the migration of the contamination had been suggested but had not been thoroughly investigated in accordance with a normal Conceptual Site Model protocol. In addition, he found that in at least one instance, a critical criterion used by the CTDEP had not been considered by the other consultant in developing their opinion as to whether, or what, areas on-site exceeded the target cleanup levels established by the Remediation Standards Regulations.

Project Manager, Investigation and Remediation, Industrial Facility-Connecticut. Project Manager in charge of developing a Conceptual Site Model and designing a subsurface investigation to determine

compliance with the Connecticut Department of Environmental Protection Remediation Standards for an early 1900's metal recovery operation. This study involved the evaluation of underground storage tanks (USTs), building interiors, groundwater evaluation, slug testing to determine hydraulic conductivity, and plume delineation. Fully characterized the horizontal and vertical extent of groundwater contamination. Negotiated a reclassification from "GA" to "GB" groundwater zone for this site.

Project Manager and Senior Hydrogeologist – Landfill Contaminant Investigation- Connecticut. Mr. Desrosiers was in charge of determining if a low concentration of benzene and chlorinated solvents was related to a continuing source of contamination or if the concentrations were isolated areas. Monitoring wells were installed using a GeoProbe™ to determine the groundwater flow in the upper aquifer and to determine if the previous well installed in a clay unit provide useful information. The data indicated that previous wells installed in the clay did not provide useful information in relation to the contaminant transport and that with the additional wells, it was determined that the contamination was isolated and decreasing with time.

Groundwater and Soil Contamination Delineation, Industrial Facility: For a site contaminated with chlorinated solvents, performed horizontal and vertical delineation of groundwater and soil contamination. Negotiated off-site access agreement(s) to delineate the horizontal extent of Conducted investigation beneath the floor of the manufacturing building and conducted a geophysical survey to delineate bedrock fractures to support the location of the bedrock wells.

Geophysical Studies for Remedial Design - Industrial Site Contamination: Designed an interim pump and treat system to a sanitary sewer – conducted geophysical studies to evaluate the thickness of weathered bedrock – delineated extent of methylene chloride in overburden weathered bedrock and bedrock for a former specialty chemical company. The groundwater treatment system was designed to remove methylene chloride from groundwater by way of a granular activated carbon (GAC) filtration system. The local sewerage authority receives monthly monitoring reports on the influent and effluent concentrations of methylene chloride, as well as the results of other analytical parameters. To date, over 2 million gallons of groundwater has been treated. After three years of operating the interim system, the site buildings were demolished and an intense Remedial Investigation was conducted for the overburden weathered bedrock and bedrock to delineate methylene chloride impact.

Third Party Review for Developer: Performed a third party review for a prospective buyer of a defunct manufacturing site having two large industrial buildings and 20-plus acres of land represented as well-documented and contaminated, but nearing completion under the cleanup process in the State of Connecticut. Part of the team that completed a time-sensitive review of extensive files that concluded otherwise, challenging the seller on the adequacy of the historic research, the adequacy of the investigation to-date, the adequacy of the remediation to-date, and the conclusion that CTDEP sign-off was near. Subsequent discussions with and correspondence from the CTDEP in fact bore evidence of the concerns that were raised during the review, and the site owner has been directed by CTDEP to conduct further investigation in many of the areas of concern once considered nearly done. The team developed costs estimates for reasonable-case and worst-case scenarios which the client and its attorney used in negotiation of the final purchase price. Issues involved significant chlorinated solvent contamination from a vapor degreaser; through on-line review of the EPA EnviroFacts databases, it was discovered that a significant amount of solvent (tens of thousands of pounds) had been released at the site annually as "fugitive" and "stack emissions".

Project Manager and Senior Hydrogeologist, Raymark Industries, Inc., Connecticut Project Manager and Senior Hydrogeologist in charge of a RCRA Section 3010 order/remedial investigation and corrective measures study/feasibility study on a 33 acre industrial site. Designed and supervised a 3,000 linear foot drilling program for 70 monitoring wells (clusters) and 62 soil borings totaling 1,600 linear feet; groundwater sampling using EPA's low flow sampling techniques; tidal study; permeability tests; health and safety, risk assessment, leachability analysis; quality control; data management of 500,000 data points and report graphics using a two dimensional model to interpret the data. The corrective measures study involved the selection of a remedial measure consistent with the analytical data and State, Federal and local regulations.

Project Manager and Technical Advisor, Raymark Industries, Inc.: Project Manager and Technical Advisor in charge of a CERCLA Administrative Order to secure the property/buildings; design and implementation of temporary closure for three dry lagoons; closure design of a wet lagoon; supervised the collection of samples from tanks, sump, pits and concrete; removal/disposal of a solid waste management unit; hydrologic analysis of surface flow including a smoke test.

Hydrogeologic Investigation for Commercial Developer. Designed and supervised a hydrogeologic investigation to evaluate the impact of a 24,000 gpd wastewater disposal system on the groundwater, tributary to a water resource and municipal water (well) supply whose zone of influence abutted the study site. Supervised the installation of monitoring wells, permeability tests, mounding calculations beneath the system and modeled the effluent discharge to sensitive receptors. The study concluded that tributary treatment was required.

Commercial Developer: Designed and supervised a hydrogeologic investigation to define seasonal groundwater elevations in conjunction with a gravel removal operation. A mathematical model was applied to determine the seasonal adjusted groundwater elevation to establish the required offset between groundwater and the permitted depth of excavations. The data was applied to an earthworks calculation to estimate the volume of sand and gravel.

Equipment Manufacturer: Directed hydrogeologic investigations related to 1) water well development; 2) modeled 120,000 gpd wastewater disposal system; and 3) surficial geologic investigation. The water well development for a 100,000 gpm water supply included extensive seismic surveys on 350 acres to evaluate a major fault and secondary faulting identified by fracture trace analysis; development of access roadways; drilling of bedrock wells (71,000 L.F.), geologic mapping of the bedrock, downhole seismic profiling, pumping tests, yield analysis and reporting. The proposed effluent discharge was modeled for nitrate loading on the groundwater and adjacent surface water bodies based upon the surficial geology, permeability and groundwater flow direction. The 225 acre facility was assessed for a proposed 1.35 MSF office/research and development which includes subsurface borings, profiling piezometer services including seasonal fluctuations, groundwater quality analysis and gradational analysis.

Developer: Directed a hydrogeologic investigation in conjunction with site development and an environmental impact analysis. The investigation included a subsurface investigations to assess the impact of a 70,000 gpd wastewater disposal system. The study included: permeability testing, soil evaluation, effluent fate and transport, nitrate/nitrite modeling , sodium and phosphorus loading to an abutting stream which was tributary to a shallow lake and the assessment of potential aquatic growth.

Developer: Designed and supervised a hydrogeologic investigation to assess the impact of fifty residential lots on a glacial tilt environmental adjacent to a known high quality aquifer. The investigation included subsurface investigation, soil classification and mathematical modeling of the cumulative impact from wastewater disposal systems.

Massachusetts Department of Food and Agriculture: Investigated over ten square miles of surficial geology in conjunction with agricultural land appraisals. Tracks of land ranged from 76 to 317 acres. Investigations included soil classification and permeability tests.

Real Estate Firm: Designed and supervised a hydrogeologic investigation on 312 acres. The investigation consisted of soil borings, geologic profiling, permeability tests, and groundwater monitoring. The data was assessed to determine maximum seasonal bedrock elevations, soil types and aquifer potential. The groundwater was modeled to determine maximum seasonal groundwater and to evaluate the recharge to the aquifer and perennial streams once 9.1 m.c.y. of overburden was removed. Bedrock cores were evaluated to assess the impact of shallow residential bedrock wells with the removal of 120 vertical feet of bedrock. Provided

technical analysis regarding surface water runoff and contaminant loading mitigation to proposed infiltration basins and the hydrogeologic impacts to the environment.

Commercial Developer: Directed hydrogeologic investigation related to effluent discharge to the groundwater. Modeled effluent discharge effects to shallow pond, bedrock reservoir and calculated groundwater mounding.

Developer: Designed and supervised a 250 acre hydrogeologic investigation to evaluate water resources within a valley outwash aquifer and to model the impact of 70,000 gpd of effluent discharge to an aquifer supporting municipal wells. Geologic borings, permeability testing, test wells, pumping tests, water quality and safe yields were analyzed. Groundwater mounding was calculated at the wastewater discharge locations and its impact to the environment. Bedrock wells were installed and fracture analysis was completed to evaluate the interactions of pumping wells on the bedrock aquifer in conjunction with a major fault.

PRESENTATIONS

"In-Situ Remediation Of A Shallow Btex Plume Using Vertical Groundwater Circulation (CGC) Technology", presented at Conference. 1998

"Demonstration of a Microbiologically Enhanced Vertical Ground Water Circulation Well Technology at a Superfund Site", *Groundwater Water Monitoring & Remediation*, Vol XVIII, No. 2, Spring 1998.

"In-Situ Remediation at Otis ANGB using UVB Technology", Presented at the 12th Annual Conference on Contaminated Soil, Amherst, Massachusetts. 1997

"Demonstration of a Microbiologically Enhanced In-Situ Groundwater Treatment Technology at a Superfund Site", Presented at the Mid-Atlantic Industries and Hazardous Waste Conference from Test Tube to Field, Buffalo, New York. 1996

"Demonstration of a Microbiologically Enhanced In-Situ Groundwater Treatment Technology at a Superfund Site", Presented at the I & EC Special Symposium American Chemical Society, Birmingham, Alabama. 1996

"In-Situ Groundwater Treatment Technology a Case Study at Otis ANGB", Presented to the Connecticut Bar Association annual Environmental Meeting. 1996

"UVB In-Situ Technology for Plume Containment", Presented to the MMR J-PAT and AFCEE. 1996