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## Manu Sharma, M.S., P.E.

### President

Mr. Sharma is a licensed professional environmental engineer with over 30 years of domestic and international consulting experience. He has led investigations, risk assessments, feasibility studies, and conceptual remedial designs at Superfund, RCRA, state-lead, brownfields, and merger and acquisition-related sites. Types of facilities evaluated include: chemical/petrochemicals, large-scale manufacturing, mineral processing, manufactured gas plants, and waste disposal. Mr. Sharma has experience in assessing a wide range of contaminants, including chlorinated solvents, NAPLs, PCBs, per- and polyfluoroalkyl (PFAS), petroleum hydrocarbons, and mercury and other trace metals. He has also evaluated the fate and transport and potential risks from chemicals associated with a diverse group of products, ranging from personal care to hydraulic fracturing.

Mr. Sharma has served as a consulting and/or testifying expert on litigation matters related to contaminant fate and transport, remedy appropriateness/reasonableness, environmental liability evaluation, cost recovery/allocation, water resources, and environmental forensics.

### Areas of Expertise

- Contaminant Fate & Transport
- Risk-Based Remediation
- Cost Recovery/Allocation
- Remedy Reasonableness
- Environmental Forensics
- Water Resources

### Services

- Ecological Risk & NRD
- Chemistry/Forensics
- Chemical Fate & Transport
- Remedial Strategies
- Water Resources
- Cost Estimation & Analysis
- Insurance Claims
- PRP Cost Recovery/Allocation
- NCP Consistency
- Historical Site Analysis
- Database Development
- Global Chemical Registration
- Climate Science
- Environmental Risk Assessment

### Education

- M.S., Civil Engineering, Syracuse University
- M.B.A., Boston College
- B.Tech., Civil Engineering, IIT, Bombay
- Licensed Professional Engineer

### Selected Projects

**PFAS Fate and Transport:** Provided expert testimony at an administrative hearing regarding the effectiveness of the leachate collection liner system at a solid waste landfill and the fate and transport of PFAS substances and 1,4-dioxane in groundwater.

**LNAPL Fate Evaluation:** Provided expert testimony regarding the transport of and remedial strategy for a large gasoline LNAPL plume associated with a petroleum refinery that was the subject of a RCRA health endangerment lawsuit.

**Remediation Standard of Care:** Provided expert testimony at an arbitration regarding the standard of care used by an environmental contractor in designing and implementing a groundwater pump and treat remedy at a Superfund site that failed due to metals precipitation.

**DNAPL Remedial Strategy:** Led a multi-year investigation and remedy development process at a complex, multi-party Superfund site with pine tar and creosote related groundwater and sediment contamination.

**Urban Waterway Cost Allocation:** Developed a risk-based cost allocation model that accounted for sources and relative risks posed by mercury, dioxins, and PAHs in sediments.

**Sediment Remediation and Forensics:** Developed an ecological risk-based sediment remediation strategy for a stream affected by PCBs and PAHs contributed by multiple sources. Reassessed the impact of the presence of perfluorinated compounds on selected remedy.

**Hydraulic Fracturing Risk Evaluation:** Assessed fate/transport and human health risks associated with hydraulic fracturing additives and flowback constituents in tight shale formations in the US. Submitted work to US EPA and other agencies.

**Personal Care Product Risk Assessment:** Developed a framework to conduct screening-level environmental risk assessments for personal care product ingredients, which is being used to rank ingredients and make substitution decisions.

### Selected Publications and Presentations

Flewelling, SA; **Sharma, M.** 2014. "Constraints on upward migration of hydraulic fracturing fluid and brine." *Ground Water*, 52(1):9-19.

**Sharma, M.** 2011. "Modeling Drinking Water Related Human Health Risks from Hydraulic Fracturing (HF) Additives." Presented at US EPA Hydraulic Fracturing Workshop, Arlington, VA, March.

Thakali, S; **Sharma, M;** Verslycke, T. 2008. "Environmental Safety Ranking Framework for Surfactants in Personal Care Products (PCPs)." Poster presented at the Society for Risk Analysis (SRA) 2008 Annual Meeting, Boston, MA, December.