ASHISH DAW
Senior Hydrogeologist and GIS Expert
UHL & Associates, Inc.

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Graduate Studies in Hydrogeology, State University of New York at Buffalo, USA, 2003 - 2005
M.Sc. Applied Geology (Remote Sensing), Anna University, Chennai, India, 2003
B.Sc. Geology, Fergusson College, Pune, India, 2001

SPECIALITIES

WATER RESOURCES DEVELOPMENT AND PLANNING

- **Small and large scale groundwater supply exploration and development.**
- **Drilling applications, test/production well drilling program design and implementation.**
- **Aquifer test design, implementation and evaluation.**
- **Watershed sustainability analysis.**
- **Aquifer Storage Recovery (ASR) and horizontal collector well applications.**
- **Modeling of groundwater systems.**

GIS and REMOTE SENSING

- **Stereo aerial photo analysis.**
- **Satellite image (LANDSAT, ASTER) processing and analysis.**
- **Building GIS database, preparing field maps.**
- **Integrating GIS and remote sensing to identify features.**
- **AutoCAD mapping applications.**

PROJECT MANAGEMENT

- **Project conceptualization, planning, funding, staffing and initiation.**
- **Capacity building, training program development.**
- **Proposal writing, report preparation.**
- **Business development.**

EMPLOYMENT HISTORY

UHL & Associates, Inc.:	Senior Hydrogeologist & GIS Expert, 2006 to Present
Dept. of Geology, University at Buffalo:	Research Assistant, 2003 to 2006

Netherlands Assisted Project Office, India: Hydrogeologist, 1999

PROFESSIONAL PROFILE

Ashish Daw is a hydrogeologist and GIS expert with a Bachelors Degree in geology, and a Masters Degree in Applied Geology. He has completed graduate studies in Hydrogeology at the State University of New York, Buffalo. Mr. Daw began his career as a hydrogeologist with the Netherlands Assisted Project Office in Hyderabad, where he participated in a project to identify areas of wells in the State of Andhra Pradesh with acceptable fluoride concentrations, and set a framework for sharing and distributing high quality water.

With UHL & Associates, Mr. Daw has performed and managed many water-supply related and environmental projects. He has installed and tested numerous municipal and private commercial water-supply wells in bedrock and unconsolidated settings. He managed a highly successful well redevelopment program to restore capacity of a major 1.4 MGD production well critically needed by a large water utility. Other programs of note have included installing test wells to assess the feasibility of extracting and filtering river water during periods of high-flow by horizontal collector wells, and drilling bedrock wells up to 1000 feet (300m) to reach into an abandoned iron-ore mine being considered as a possible water storage reservoir.

Mr. Daw has sited wells using state-of-the-art methods, including the identification of lineaments and faults from aerial photographs, and working closely in the field with geophysicists. He has evaluated hydrogeological properties and aquifer characteristics through research of scientific data databases, and the implementation and analysis of long and short-term pumping tests. He is experienced with analytical and numerical groundwater models and their applications, and created an analytical element model (AEM) for simulating groundwater flow and contaminant transport that supported a water allocation permit issued for a production well by the state of New Jersey.

Internationally, Mr. Daw has recently implemented a project to select and sample 200 water-supply points in the capital city of Monrovia, Liberia, where he led the field team and trained local staff. His expert GIS skills have been tapped to create fundamental base maps and related databases for many groundwater supply projects conducted for large development entities (World Bank, USAID, ADB), including projects in Liberia, Afghanistan, Sri Lanka and Lebanon. He has processed and interpreted satellite images to identify potential well drilling sites for projects in Afghanistan, Cameroon and Sri Lanka.

Mr. Daw is fluent in English, Hindi, Marathi, and can communicate in various Indian dialects.

REPRESENTATIVE PROJECTS

World Bank Water and Sanitation Program (WSP), Monrovia, Liberia, 2011

Selected and evaluated 200 representative water points (kiosks, open hand-dug wells, hand pumps, drilled wells) in Greater Monrovia for the Liberian Water and Sewer Authority. The

program involved preparing field maps of water point locations, assembling field teams, training field teams on proper sampling techniques and methodologies, collecting field parameters, and creating a GIS database of sampling results. Analysis for total coliform and *E-coli* was completed in a portable laboratory setup in Monrovia. Inorganic analysis was performed by the University of The Free State in Bloemfontein, South Africa.

The primary objective of this effort was to evaluate water-quality conditions at water points in Monrovia on a sample basis, classifying water points according to their level and type of contamination, and identifying causes and patterns of pollution.

Litani River Basin Management Support, International Resource Group (IRG), Litani River Basin, Lebanon, 2010 to 2012

Developed the groundwater contour map for a USAID funded water resources study in Lebanon of the Litani River Basin. Prepared a temporal GIS database of groundwater level measurements and maps showing groundwater flow patterns, and changes in water levels between wet and dry periods.

The Litani River Basin is the major agricultural area in Lebanon and heavily dependent on irrigation from groundwater.

Bakwa Groundwater Study, Farah Province, Afghanistan, 2009 to 2010

Interpreted Landsat satellite imagery and prepared project figures and field base maps for a USAID-funded groundwater study for irrigation potential.

WorldWater & Power Corporation, Hambantota District, Sri Lanka, 2006 to 2007

Worked on a USTDA-funded (United States Trade and Development Agency) water supply project for six villages in Hambantota District, Sri Lanka.

- Interpreted lineaments and fractures from aerial photographs using stereoscopy.
- Used ASTER and LandSAT satellite images to identify target areas for geophysical investigations.
- Test and production well drilling locations were confirmed following the combined results of geophysics and imagery analysis.
- Used GIS to create project base maps.

University of Delaware and Engineers Without Borders, Bamendjou District, Cameroon, Africa, 2007

Procured and analyzed Landsat images for the students and developed base maps. This project was a collaboration between students from the University of Delaware and Engineers Without Borders to develop a solar-based groundwater pumping and distribution system.

Clinton Borough Water Department, New Jersey 2006 to 2011

- Supervised the drilling, construction and development of a 0.5 MGD production well in a dolomite/limestone formation.
- Conducted and analyzed a step-drawdown test to calculate the well efficiency and sustainable long term pumping rate.
- Conducted and analyzed a 72-hour constant rate aquifer test on production well.
- Created an Analytical Element Ground water model to determine pollutant paths from point sources under pumping conditions and recommend pumping scenarios. This study resulted in the New Jersey Department of Environmental Protection issuing a Water Allocation permit for a critically needed municipal production well.

East Orange Water Commission, New Jersey, 2010 to 2011

- Conducted short-term specific capacity tests to assess decrease in well efficiency.
- Developed well redevelopment program for wells completed in sand and gravel formation.
- Redeveloped large capacity wells in the East Orange Wellfield using time tested methods such as simultaneous airlift and double surge blocks, acid and chlorine treatment, and newer techniques such as air-surging, and air-bursting.
- Developed bedrock and glacial wells redevelopment specifications.

City of Orange Water Department, New Jersey, 2009 to 2010

- Supervised the drilling, construction and development of a 1.4 MGD replacement production well in coarse glacial outwash material.
- Conducted and analyzed a step-drawdown test on the replacement production well to calculate the well efficiency and sustainable long term pumping rate.
- Conducted and analyzed a 72-hour constant rate aquifer test on replacement production well.
- Report and permit preparation.

Morris County Municipal Utilities Authority, New Jersey, 2006 to 2007

- Supervised the investigation of a production well to determine the cause of severely increased turbidity, and the successful redevelopment of this well to open partially closed screens, reduce entrance velocities, increase specific capacity, and achieve an acceptable level of turbidity. Participated in the redesign of this high capacity well.
- Supervised the drilling, construction and development of shallow wells in coarse glacial outwash materials adjacent to the Rockaway River to evaluate the feasibility of extracting river water during periods of high-flow. This program utilized an innovative sonic drilling technique that proved optimal in this setting. Conducted and analyzed short and long-term aquifer tests to evaluate aquifer characteristics and modeled yields for potential horizontal collector wells.
- Supervised the drilling and construction of bedrock wells into stopes of an abandoned iron-ore mine being considered for use as a water storage reservoir. Conducted and analyzed a

long-term aquifer test to determine the interconnection of the mine stopes and the natural flux of groundwater into the mine.
- Supervised and analyzed two step-drawdown and two 72-hour constant rate pumping tests to assess impacts of higher pumping rates.

Washington Township Municipal Utilities Authority, New Jersey, 2007

- Analyzed long-term pump test results and prepared a hydrogeologic report as part of a Water Allocation Permit Application submitted to the New Jersey Department of Environmental Protection.
- Analyzed Very Long Frequency (VLF) survey data, aerial photography, and Landsat images to identify and map lineaments and fracture zones. This study was followed by field geophysics to accurately identify lineaments and fractures to drill and construct three production wells.
- Assisted the lead geophysicist in conducting a Vertical Electrical Sounding (VES) survey to identify the thickness of a fractured zone. The results of this study were used to select an appropriate drilling method and well construction.
- Transferred VES data points into the GIS system and developed resistivity surface maps using kriging methods. The outputs resulted in base maps showing the VES location and the corresponding vertical surface resistivity for each VES location.

Boonton Township Water Department, New Jersey, 2008

Conducted and analyzed a step-drawdown test on a replacement production well to calculate well efficiency and a sustainable long term pumping rate.

Spring Meadow Farm, Delaware Township, New Jersey, 2008

- Managed a watershed study to determine groundwater recharge in the basin.
- Supervised drilling, construction and development of two wells in sandstone/shale bedrock.
- Conducted and analyzed a 24-hour pumping test to determine the effects of pumping on wetlands and neighboring properties.
- Prepared a hydrogeologic report as part of a study to determine the viability of using a natural spring as a source for potable drinking water.

Aqua Pennsylvania, West Chester, Pennsylvania, 2008

- Provided oversight on installing shallow monitoring wells.
- Conducted slug tests for calculating the hydraulic conductivity of the rock.
- Estimated collector well yields using calculated aquifer parameters.

Princeton Hydro, Southampton Township, New Jersey, 2007 to 2008

Conducted multiple soil borings to examine lake-bottom sediments and define the historical lake bottom for dredging purposes.

Lafayette Township, New Jersey, 2006

Conducted and analyzed slug and permeability tests to determine aquifer characteristics.

City of Lambertville Environmental Commission, New Jersey, 2007

Assisted the commission in updating the zoning, soils, geology, soils, flood, wetlands and open space maps for the 2008 Environmental Resource Inventory Report.

Chubb Insurance Company, 2006 to 2012

- Provided oversight of soil and groundwater remediation of releases from residential heating oil underground storage tanks in New Jersey.
- Supervision of monitoring well installations and sampling.

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