

PROFILE

Ms. Lambert is a senior hydrogeologist leading projects simulating mining, water supply, dewatering, and environmental conditions. She specializes in groundwater flow modeling, chemical transport modeling, and 3D geologic modeling. Ms. Lambert's hydrogeologic analysis, characterization, and GIS skills support development of 3D models and informative visualizations. She has extensive experience with hydrogeologic systems at the regional, local, and site scales. Her analyses support Environmental Impact Statements, Aquifer Protection Permits, Discharge Impact Area analyses, mining and construction dewatering, water-supply development, and surface water and groundwater interaction analyses. Ms. Lambert has over 20 years of experience in Geographic Information Systems (GIS) including management, training, and programming. These advanced skills have led to development of innovative methods for integrating software packages that streamline computer model development, data processing, technical analyses, and visualization.

REGISTRATIONS AND CERTIFICATIONS

Registered Professional Geologist – Wyoming

MSHA Surface Miner Safety Training

PROFESSIONAL AFFILIATIONS

National Groundwater Association (NGWA)

EDUCATION

Master of Science, Hydrology and Water Resources, University of Arizona, 2003.

Bachelor of Science, Environmental Geology, University of Arizona, 1998.

PRACTICE AREAS

Groundwater flow modeling	Hydrogeological characterization
Groundwater transport modeling	Water supply
Mine and construction dewatering	Environmental impacts and permitting
3D hydrogeologic visualization	Water supply and management
GIS data management	GIS analysis and production

SELECTED PROJECT EXPERIENCE

GROUNDWATER FLOW AND TRANSPORT MODELING – MINING PROJECTS

Regional Flow Model, Rosemont Copper, Pima County, Arizona. Senior Hydrogeologist responsible for regional flow and contaminant transport modeling, and updates. Development of three-dimensional geologic models, groundwater flow models, contaminant-transport models for use in Environmental Impact Statements, Discharge Impact Area analyses, and open-pit dewatering analyses.

Regional Flow Model, Long Canyon, Elko County, Nevada. Constructed and calibrated a regional flow model in support of an Environmental Impact Statement, open-pit and underground dewatering analysis, and rapid-infiltration basin planning.

Regional Flow Model, Pinto Valley, Gila County, Arizona. Expanded and calibrated a regional flow model in support of an Environmental Impact Statement. Incorporated groundwater / surface water interaction to predict impacts of open pit mine on nearby surface water supply.

Regional Flow Model, Tarapacá Region, Chile, South America. Developed a new groundwater flow model for a mine in northern Chile in support of pore pressure and slope stability analysis. Project included incorporating existing Vulcan model into MODFLOW-SURFACT, calibration, sensitivity analyses, and report production.

Uranium Contamination Remediation, Dawn Millsite, Ford, Washington. Developed and calibrated a three-dimensional groundwater flow and transport model to evaluate remediation measures at a historic uranium ore stockpile area. The site-scale model includes a detailed 3D geologic model and simulation of seasonal precipitation and streamflow.

Water Supply Evaluation, Rhodes Homes, Mohave County, Arizona. Developed two new three-dimensional groundwater flow models in support of Analysis of Adequate Water Supply in northwestern Arizona. Project included conceptual model design and implementation, calibration, sensitivity analyses, and report production.

Groundwater Remediation, Air Force Plant 44, Tucson, Arizona. Refined existing three-dimensional groundwater flow and solute transport model to project clean-up of 1,4-dioxane plume at Air Force Plant, Tucson Airport Area Superfund Site in southeastern Arizona.

GROUNDWATER FLOW MODELING – DEWATERING PROJECTS

Construction Dewatering, First Creek Interceptor Pipeline, City of Aurora, Aurora, Colorado. Developed geologic model and groundwater flow model to simulate pipeline dewatering well spacing, depths, construction details, inflows, and timing.

Dam Construction Dewatering, Sylvan Lake Dam, Eagle County, Colorado. Developed 3D geologic model and 3D groundwater flow model to optimize dewatering for dam upgrade construction.

HYDROGEOLOGIC INVESTIGATIONS

Hydrogeologic Characterization, Mission Mine Complex, Pima County, Arizona. Developed monitoring and dewatering program for an open pit mine including vibrating wire piezometer and horizontal drain design plans. Incorporated 3D geologic model and fault analyses.

Hydrogeologic Characterization for mining company, Big Sandy Valley, Arizona. Hydrogeologic characterization of a watershed in northwestern Arizona for a large mining company. Project included creating a GIS database, preparing geologic maps and cross sections for the region, as well as designing, implementing and analyzing aquifer tests to aid in the characterization.

SURFACE WATER INVESTIGATIONS

South Platte River Watershed (SPRW) Study, Southeastern Wyoming. Developed a water balance for three subwatersheds in the SPRW to estimate groundwater availability as part of a Level I study characterizing water resources and implementing conservations practices.

Water Supply Evaluation, Nazas River Basin, Central Mexico. Prepared numerical analysis of surface water flow in central Mexico in support of a regional evaluation of an alternative municipal water supply.

Surface Water Modeling, City of La Paz, Baja California Sur, Mexico. Prepared a surface water model for analysis of an alternative development scenario for a municipality in southern Baja California, Mexico.

GEOGRAPHIC INFORMATION SYSTEMS APPLICATIONS

Advanced Dewatering Simulation Process. Developed Python code to automate the process for creating groundwater modeling input files to simulate open-pit mine and construction dewatering. The code incorporates changing excavation extent, shape, and depth to accurately represent project development and changing conditions over time. The code flexibility and robust nature has allowed it to be successfully implemented on a variety of projects. For example, simulation of sequential pit shells that define open-pit advancement and Mine Plan of Operations requirements and phased construction dewatering. The functionality of ArcGIS, MODFLOW, and Groundwater Vistas software are seamlessly integrated to dramatically reduce the time required to build dewatering models that support environmental permitting and operational dewatering programs.

Hydrogeologic Investigation, Northern Chile. Developed ArcGIS model builder process to prepare a two-dimensional representation of hydrogeologic units and historical groundwater levels for a FEFLOW model.

GIS Interface for Contaminant Investigation, Pima County, Arizona. Developed GIS interface for analysis of sulfate contamination for a mining company in southern Arizona.

TEACHING EXPERIENCE

Groundwater Geology Instructor. Adjunct professor responsible for curriculum development, assignment and exam preparation, assessments, and weekly instruction for undergraduate and graduate level course in Groundwater Geology.

GIS Instructor. Established new GIS department in a hydrogeology firm; trained and supported dozens of employees in using GIS for groundwater modeling pre- and post-processing, field work, data analysis, and map production.

PROFESSIONAL EMPLOYMENT HISTORY

Senior Hydrogeologist, NEIRBO, Fort Collins, Colorado (2013-present)

Adjunct Professor, University of Northern Colorado (2015-2018)

Senior Staff II Hydrogeologist, Engineering Analytics Inc., Fort Collins, Colorado (2011-2013)

Hydrogeologist, Montgomery & Associates LLC, Tucson, Arizona (2004-2011)

Hydrologist, University of Arizona / Harvard University, Tucson, Arizona (2004)

Hydrologist, New Mexico State Engineer's Office, Tucson, Arizona (2003-2004)

GIS Programming Specialist, EnerQuest Systems, LLC, Albuquerque, New Mexico (1999-2001)

GIS Specialist, EarthData LLC, Tucson, Arizona (1998-1999)

GIS Specialist, OAO Corporation, Tucson, Arizona (1997-1998)

PUBLICATIONS

Steinitz, C., Faris, R., Flaxman, M., Vargas-Moreno, J., Canfield, T., Arizpe, O., Angeles, M., Cariño, M., Santiago, F., Maddock, T., **Dragoo Lambert, C.**, Baird, K., Godínez, L. 2006. "A Sustainable Path? Deciding the Future of La Paz." *Environment: Science and Policy for Sustainable Development*, 1939-9154, Volume 47, Issue 6, pp 24-38.

Dragoo (Lambert), C., and Faris, R. 2004. "Alternative Futures for the City of La Paz, Mexico." *Southwest Hydrology*, Volume 3, Issue 3, pp 6 -7.