Brant Konetchy

31 Years

Hennigsdorfer Str. 22
13503 Berlin
Tel: 0151 2223 5765
bkonetchy@gmail.com

BIO

I am an American, who recently moved to Germany from Austin, Texas. I am educated and trained as a hydrogeologist, but my work title could be more aptly described as a groundwater data analyst and GIS lead. At the heart of my job I was using data to tell a story of how groundwater can be conserved and appropriately used for future generations. To do that I had to convert complex and technical groundwater data into easy to understand graphs, maps, tables and presentations. My goal was to show our clients; who ranged from farmers to lawyers, how the data they had been collecting was useful, what it meant, and how it can be used to make future decisions. I personally enjoy the process of analysing data and pulling out the meaningful insights and creating informative graphics and maps.

EXPERIENCE

Baumgardt Consultants, Berlin, Germany — *GIS Technician*

August 2020 - Present

Creation and maintenance of interactive web maps and development of internal software to improve the production speed of geographic datasets.

WSP Deutschland, Berlin, Germany — *Project Hydrogeologist*

January 2019 - July 2020

Groundwater modeling and development of custom software for the visualization and analysis of groundwater systems and for spatial regulation of well locations.

### WSP USA, Austin TX, USA — *Project Hydrogeologist*

January 2018 - December 2018

Modeling of groundwater systems and development of custom built software tools for clients to interact with and visualize complex groundwater datasets.

LBG-Guyton Associates, Austin TX, USA — *Hydrogeologist I/II*

November 2014 - December 2017

Analysis of spatial groundwater data with focus on producing graphics, tables, maps, reports, and statistical summaries of data.
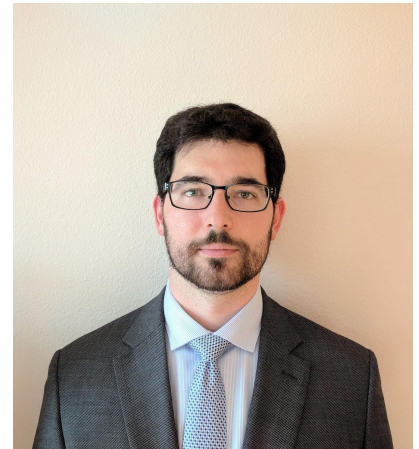
SKILLS

R – Programming language

Geospatial Information Systems (ArcGIS, QGIS)

Python

MODFLOW (groundwater modeling software)

Microsoft Office

LANGUAGES

Fluent English (writing and speaking)

Learning German

EDUCATION

The University of Kansas, Lawrence, USA — *Master of Geology*

August 2012 - August 2014

Master Thesis – "High-resolution quantification of groundwater flux using heat as a tracer: laboratory sandbox tests"

GPA: 3.94

Trinity University, San Antonio, USA — *Bachelor of Science in Geoscience*

August 2008 - May 2012

Undergraduate Thesis – "Evidence of minor post-depositional displacement of the Methow Basin, Northern Washington: Detailed provenance analysis of the Harts Pass Formation"

GPA: 3.28

PROFESSIONAL EXPERIENCE

Well Spacing Tool — *Prairielands Groundwater Conservation District, Texas, 2019*

Developed and coded an interactive dashboard within R coding language that allows the client to perform a series of well spacing (distances from other groundwater wells) calculations to determine if new wells would be in compliance with the district's rules. The tool allows the user to simply click on a location in the interactive map, input the desired pumping rate and aquifer, and the tool will calculate the drawdown at nearby wells and property boundaries. The tool then produced an automated report detailing the results through graphs, tables, and maps. Development involved centralizing multiple disparate databases and data types (shapefiles, text files, binary files, etc.) into a single program that could then interact with the data to produce the necessary results.

Groundwater Network Design Evaluation —Southwest Florida Water Management District, *Florida, 2016*

Responsible for the spatial analysis of a groundwater monitoring network system to evaluate how effective the system was in measuring water level data. Developed code in python and using ArcGIS to produce a series of maps and analysis of the current monitoring system by measuring key parameters. Systematically well locations were removed from the system along with their data, and the spatial analysis was repeated and key parameters were measured. Each step reduced the number of wells in the system and the key parameters were measured to determine when the system no longer produced the desired results. Client was able to use the report to help identify locations that required additional monitoring

wells, and locations that no longer needed to be monitored.

DFC Tool — *Clearwater Underground Water Conservation District, Texas, 2017*

Responsible for developing a web-based tool using R that allows for the client to have an interactive and up to date interface that evaluates current and historical water level trends in their district. The tool is used to evaluate current water level trends against long term trends to help the district manage their groundwater resources in a visual format. Multiple methods were incorporated to allow the district to evaluate the effect of different initial conditions and calculation methods. Incorporated both well by well analysis and large scale aggregate interpolation of water levels within the district using geostatistical methods. Presented the tool at the Districts board meeting.

Groundwater Model Update — *San Antonio Water Supply and Glen Rose Conservation District, Texas, 2017 - 2019*

Responsible for updating and calibrating an existing groundwater model to focus on a smaller region within the larger model. Model refinement involved restructuring time series data into a monthly time period, as well as interpolation of datasets to a refined spatial grid. Calibration involved matching known values against modeled values to ensure the model was performing adequately. Data analysis focused on the gathering and manipulation of multiple data sets and types for pre-processing and analysis. Processing the datasets into structured format that could be read into a FORTAN environment, as well as producing a series of graphs, maps, and tables that summarize the data that would be going into the model. Modeling analysis focused on the reading and extracting of results from the model. Post-Processing analysis was automating the results to quickly produce a series of graphs showing the results along with a series of maps showing the results through time. Responsible for the written report and two presentations to the clients.

Statistical Evaluation of Springflow within Cibilo Creek — *Clearwater Underground Water Conservation District, Texas, 2017*

Performed a multivariate linear analysis to determine what input values could be used to predict streamflow discharge at Cibilo creek. The analysis looked at multiple variables such as groundwater levels, rainfall gauges, and drought index values. Analysis involved determining both the spatial and temporal relationship between the input variables and the discharge location at Cibilo creek. The results of the analysis showed that the district could use three different wells water level measurements to be able to estimate the discharge rate at Cibilo creek.

Groundwater Model Predictive Analysis — *Texas, 2017 - 2019*

Responsible for a yearly update on a groundwater model predictive evaluation. Update current groundwater level data and well pumping for each year, and then perform a predictive run to evaluate long term groundwater trends. Analysis focused on visualizing both the regional and cumulative effect of the different pumping scenarios on groundwater levels, and also local effects at each well. Project highlight was reducing a complex model into easy to understand and informative graphs, that allowed the client to quickly comprehend the results of the model and how the model was working.