RESUME

Steven K. Barrett
Principal, Water Resources Specialist

Education

- M.Eng., Geographic Information Systems, University of Colorado at Denver, 2009
- B.S., Environmental Studies, University of Kansas, 1997

Registrations/Affiliations

- Water Well Meter Tester Certification, 2010
- Level 3 MS Access DB Certificate, 2008
- GIS Certificate, College of Engineering & Applied Science, University of Colorado at Denver, 2007

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Experience Overview

Mr. Barrett has over 15 years experience in the water resources field. Prior to working at HRS, he worked for the Colorado Division of Water Resources; Assistant Water Commissioner on the Animas River; Engineering Technician for Ground Water Supply Department in Denver Office; and Hydrographer, Division 1 Greeley office. Through his work with the Colorado Division of Water Resources, he developed a strong understanding of the priority system and how water rights are administered in the State of Colorado.

Since starting work at HRS, Mr. Barrett has been involved in numerous projects ranging from water rights change of use cases and augmentation plans to water rights valuations.

Representative Experience

- Assisted in a court approved, complex change of use/augmentation plan water court case involving reservoir shares and ditch shares in the Greeley Canal No. 2 located on the Cache La Poudre River. A parcel specific analysis was completed which included: use of individual soil moisture water budget spreadsheets to calculate consumptive use on a per share basis for each farm analyzed, review of aerial photos and calculation of irrigated areas using a GIS, timing of return flows and well depletions using the AWAS program, and revision of existing accounting spreadsheets to account for new uses and augmentation components.
- Conducted a lawn irrigation return flow ("LIRF") analysis for a water and sanitation district in the Cherry Creek alluvial basin. Applied the widely accepted Cottonwood Curve analysis to determine a deep percolation percentage for both commercial and residential accounts. The resulting LIRF deep percolation percentages will be used in the determination of return flow credits under the client's plan for augmentation.
- Prepared four change of use applications for wells inside the North Kiowa-Bijou Designated Basin. Project work included: site visit to observe client's operations, analysis of well use, review and analysis of FSA records, power records, and aerial photographs, review of well PCC tests, in depth cattle consumptive use analysis, and historical consumptive use analysis. Final project work included preparation of the application package and negotiations with the Ground Water Commission Staff resulting in approval of the four change of use applications by the Ground Water Commission Staff.
- Completion of a water supply/demand analysis for a water and sanitation district inside the closed basin of the San Luis Valley. Project work included: analysis of client's leased water rights, review and analysis of streamflow and diversion records, quantification of future demand, consumptive use analysis, and development of project geodatabase.

- Performed several historical consumptive use analyses to compliment work in change of use cases, plans for augmentation, and water right valuations.
- Development and maintenance of reservoir accounting spreadsheets used to account for daily inflows, outflows, and changes in reservoir storage involving multiple water rights. These accounting sheets were developed according to the Division One - Reservoir Accounting Guidelines and were approved by the Division Engineer's Office.
- Development and maintenance of accounting spreadsheets for depletion/accretion timing for various well and recharge projects.
- Call analyses using CDSS call chronology records to determine the number of days a water right was in priority or could potentially be in priority. Exchange Analysis to determine exchange potential within a specified reach.
- Conducted numerous streamflow measurements to determine flow rates in various creeks and ditches. These measurements were made using standard measurement techniques and completed as part of gain/loss assessments.
- Used a combination of pivot tables and database queries to manipulate/standardize large amounts of data from different sources. These data were then organized in a single database for input into Colorado State University's IDS CU and AWAS programs to calculate consumptive use and stream accretions/depletions for the client.
- GIS data management which included: custom data queries to facilitate project needs, processing of fieldwork data and integration into GIS projects, design and implementation of geodatabases based on project requirements, efficiently working with data sets in differing coordinate systems by re-projecting them into a uniform projection/datum, and collection and/or creation of new imagery and GIS coverages as needed.
- GIS Data Processing/Spatial Analyses work which included: use of ArcGIS model builder to streamline complex geoprocessing tasks, georeferencing of aerial photos which were then used to quantify historically irrigated areas, use of advanced spatial analysis techniques to develop subsurface layers which were used as input into ground water models, production of numerous presentation quality figures/maps for final reports, and use of GIS to convert shape files to KMZ files which can then be input into Google Earth for client presentations or client use.
- Assisted with well development work including well step tests and pumping tests.
- Setup, installed, and has maintained several data loggers in monitoring wells for various HRS clients. Responsible for updates and maintenance of associated client databases.
- Examination of decrees, diversion records, streamflow data, and well logs to meet project objectives.