

DOWNLOAD PDF HYDROGEOLOGY OF SHALLOW BASIN-FILL DEPOSITS IN AREAS OF SALT LAKE VALLEY, SALT LAKE COUNTY, UTAH

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2 Hydrogeology of Shallow Basin-Fill Deposits in Areas of Salt Lake Valley, Salt Lake County, Utah Comparison of water levels measured in the monitoring wells and deeper wells in the same.

January 16, The Utah Division of Water Rights administers a cooperative program of studies to improve the understanding of the water resources of the state and provide data for technically based water right decisions. The cooperative program partners with other local, state, and federal entities in areas of common interest to share costs and study resources. The following studies are currently underway:

- Bryce Canyon City Area Hydrologic Framework Study** The purpose of this study is to develop a hydrogeologic framework of the area.
- Ogden Valley Hydrogeologic Study** The purpose of this study is to characterize the hydrogeology and groundwater conditions in Ogden Valley.
- Juab Valley Hydrogeologic Study** The purpose of this study is to characterize the hydrogeology and groundwater conditions in Juab Valley.
- Water Budget and Conceptual Model Improvement** The objectives of the proposed study are to 1 refine estimates of selected groundwater recharge and discharge budget components; and 2 improve the conceptual understanding of the aquifer system and hydraulic connection between the Glen Canyon Group formations and the valley-fill aquifer within and adjacent to Spanish Valley. The objectives of the study are to:
- Goshen Basin Hydrogeologic Framework and Groundwater-Quality Study** The purpose of this study is to characterize the hydrogeology and groundwater conditions in Goshen Valley. The study will determine sources of water to selected currently used wells and springs and determine residence times of groundwater to investigate groundwater flow paths and assess interbasin flow between adjacent valleys. This information will also be used to evaluate future changes to the groundwater flow system. The primary goal of the well is to determine the nature of groundwater flow and potential interconnection of the Entrada and Navajo aquifers. This study will extend from July 2007 to June of 2009. This is a 4-season evaluation that should be completed by the end of 2009.

The ground-water resources of northern Utah Valley, Utah, were assessed during to describe and quantify components of the hydrologic system, determine a hydrologic budget for the basin-fill aquifer, and evaluate changes to the system relative to previous studies. A three-dimensional, finite-difference, numerical model was developed to simulate ground-water flow in northern Utah Valley, Utah. Water levels in wells covering all aquifers dropped an average of 22 feet and well water age ranged from 2 to 50 years. The Report is available on the UGS website <http://www.water.utah.gov>. The study finds that a substantial increase in ground-water pumping for agriculture over the past 40 years, combined with lower-than-average precipitation during the past 10 years, are the most likely causes of the declining discharge at Locomotive Springs. Water levels and water quality in agricultural areas north of the springs have declined during the same time period. This study is a cooperative 3-year study conducted from by the Utah Geological Survey and the United States Geological Survey that will characterize the hydrogeology of Rush Valley as it pertains to the flow of groundwater in the basin-fill aquifer with aquifer tests using existing wells in the basin.

- Morgan Valley Groundwater Study** The Utah Division of Water Rights is conducting a co-op study with the Utah Geological Survey for a geologic and hydrologic study of the Morgan Valley drainage basin, Morgan County, Utah. The primary goals of the study are: The proposed work will require one and one-half years 18 months of research, data collection, data analysis, and report preparation and will be complete in early 2009.
- Well Cutting Logging** This is an ongoing co-op study with the Utah Geologic Survey to log cuttings from selected water wells in Utah to reveal relevant geologic characteristics and thickness of rock and sediment types.
- Stream Gage Accuracy Calibration and Automation** - This is a pilot co-op agreement with the USU Water Lab to calibrate gages on sample river systems and make recommendations for their improvement and automation. This project will also involve USGS funding and other federal monies and will result in a presentation to the Water Users Workshop in 2009.
- Dam Outlet Venting Requirements** This is an ongoing co-op agreement with the USU Water Lab and other federal monies to determine venting requirements for dam outlets and recommend a design procedure for these requirements.

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The project involves a literature search of existing procedures, the gathering of empirical information from existing Utah dams, and a model study to calibrate proposed design guidelines. This project was started in and will continue through This is an ongoing project through at least. There is also a groundwater component and a water use component and a water quality component with the DEQ and the Department of Agriculture. Funding provided by the Division will be used to extend and improve capabilities of the monitoring system in Utah. This project extends from to Cedar Valley Groundwater Modelling This is a cooperative study being conducted by the Utah Geological Survey which is current in the second of three years of study. The researchers have collected an extensive set of groundwater level data particularly in the northeast area of the valley. A cooperative groundwater monitoring program with Eagle Mountain City is expected to add additional definition to groundwater system. It is anticipated this study will be published early in The study is currently in the last year of a 5 year study plan. A progress report is available from the review meetings held August 31, , February 16, , September 8, and April 26, , Duchesne Distribution Water Right Model The Division is developing a computerized water rights distribution model for the Duchesne River System. Gertrudys Adkins is the project lead. The model is operational for planning purposes at present and will be used to develop day to day operational procedures on the river Cove Fort Area Hydrogeologic Framework This study is conducted by the Utah Geological Survey. The study began July and is planned as a one year study. It will look at the occurrence of groundwater in the study area, identify key components of the system and the potential for additional groundwater development Bothwell Pocket Water Quality Investigation This study is conducted by the Utah Geological Survey UGS. This project began in September and is funded as a one year study. The study will consider the water quality history in the basin, look at sources of poor quality groundwater, and any changes in quality which may be occurring with an objective to provide information to manage the resource which will minimize potential for quality degradation. Cache Valley The Division in conjunction with Cache Valley and other entities is developing a proposal to improve groundwater characterization in Cache Valley. The component of the study of particular interest to the Division is the ground water - surface water interaction and timing. Salt Lake Valley Water Right Uses Conversion The Division needs to study parameters under which water uses can be changed from existing irrigation use to other uses particularly if the new use move to Utah County. The disposition of the carrier water is a particular concern. Should it remain in Utah Lake, be released downstream, or remain available to the user who gave up the use for support of the remaining right.

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