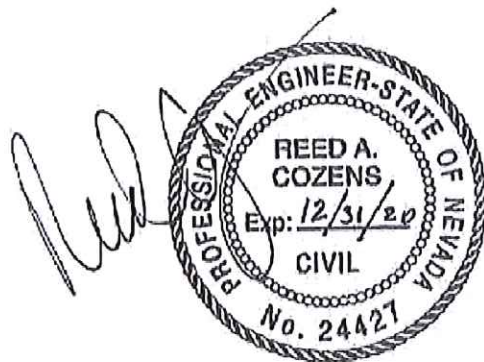


**SUMMARY OF WITNESS TESTIMONY
FOR WILFORD AND CAROLYN BAILEY FAMILY TRUST
DATED FEBRUARY 20, 2018
TO PRELIMINARY ORDER OF DETERMINATION**



Prepared by



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BAILEY 011

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Technical Qualifications

My name is Reed A. Cozens. The details of my qualifications and experience are set forth in Exhibit ____ to this report. In summary, I have a bachelor's degree in civil engineering from the University of Nevada and am licensed as a Professional Engineer and State Water Rights Surveyor in Nevada. I have fourteen years of experience in the field of water rights including employment with the Nevada Division of Water Resources (NDWR), and the Utah Division of Water Rights (UDWRi). Currently, I work as a Senior Water Rights Engineer with Resource Concepts, Inc., in Carson City, Nevada.

A significant amount of my career has involved historical pre-statutory water rights. This experience includes several years working directly within the Adjudication Section of the NDWR, and an additional two years as the River Commissioner appointed by the Utah State Engineer administering and overseeing the historical Weber and Ogden River Decrees in northern Utah (UDWRi). The most senior water rights that I have had direct involvement include the Glenwood Ditch with a priority date of 1849, located in Ogden City and multiple 1850's era water rights located Douglas County, Nevada, under the Mott Creek Decree.

Data

As an expert witness in this matter, I have had the opportunity to review the following:

1. Field Investigation Report, Diamond Valley (Basin 153) Adjudication, Bailey Ranch Area, Eureka County, Nevada, Claims of Vested Right: V-01104, V-10868, and V-10960 Investigated September 13–14, 2016.
2. Claims of Vested Right: V-01104 and V-10868
3. The Preliminary Order of Determination in the matter of the determination of the relative rights in and to all water of Diamond Valley, Hydrographic Basin No. 10-153, Elko and Eureka Counties, Nevada.

I chose to review the Field Investigation Report because of the aggregate of information cited within, including historical aerial imagery, spring flow records, a straight forward site

visit narrative, and its mapping overlays. This investigation also appeared to be the primary source of information used in the Preliminary Order of Determination in the matter of Claims of Vested Right V-01104 and V-10868. Copies of the subject Claims of Vested Right, the above-mentioned Field Investigation, and the Preliminary Order of Determination were provided to me by Mr. Gordon DePaoli, Esq, where, at such time, Mr. DePaoli asked for my opinion regarding the findings of these Claims within the Preliminary Order of Determination.

Conclusion

The claim of Vested Right V-01104 was initially filed in 1912, claiming irrigation of 130.81 acres. A subsequent amendment to this claim in 2016 added 232.66 acres to the initial filing, for a total of 363.47 acres. Claim of Vested Right V-10868 was filed in 2016 for the Bull Spring complex, for the irrigation of 9.09 acres and the stock watering of 500 head of cattle. During the interim years between the initial filing and the amendment, Bailey and Bull Springs ceased to flow and are now dry. My consensus is that these springs no longer flow due to excessive groundwater pumping with the Diamond Valley hydrographic area.

To isolate the scope of my opinions in this report, I would like to note that the place of use as described in the initial filing of V-01104 is not being disputed (130.81 acres). I was not asked to address the 9.09 acres of irrigation associated with the Bull Springs complex under V-10868. The area of concern for this statement is the 232.66 acres that amended the initial filing of V-01104 — recognizing that this area has been rejected under the Preliminary Order of Determination.

United States Government Land Office (GLO) plat maps from 1879, illustrates that a portion of the amended *Place of Use* under V-01104 was once “meadow” (figure 1). As mentioned in the subject field investigation, “meadow” was a ubiquitous term used back then to describe an area receiving water. This meadow area and its water is the reason for the pioneer’s settlements in the area. These meadows had likely existed at this location

since prehistory and were the result of passive irrigation from Bailey Spring before settlers arrived at this location. The question now is, can a previously passive meadow become actively managed as the result of intentional water delivery. I believe the answer is yes, and that is what happened here.

It is a reasonable conclusion that the early pioneers of the Bailey Ranch sought the most efficient manner to increase the forageable biomass within the vicinity of their homestead. At the time of early settlement, the pioneers observed a prehistoric meadow that was already green and did not require additional diversion works. However, this fact does not deplete the value of this essential asset to the homestead. As a matter of fact, in the first years of settlement, this meadow may have been one of the only things of value to the entire homestead. With time, the desire to expand the available forage at the homestead increased. So, the pioneers at the Bailey Ranch constructed new ditches and even several ponds. These features delivered water to the acres initially claimed under V-01104. In the historical employment of water for irrigation in Diamond Valley, water applied at a higher hydraulic gradient, i.e., on the edge of the valley, or within a pond, helped to water the lower ground, this is because when the water was first applied to the soil, it would sink in so rapidly that even with a significant flow of water it would seem unlikely to saturate an entire acre. Gradually, throughout months and years, the water levels in these areas were raised. This elevated water table was necessary, insomuch that a comparably small amount of water was then sufficient for a season's worth of irrigation on an area that otherwise couldn't be utilized. For this reason, it is my opinion that the ponds illustrated on the 1879 GLO plat maps served this exact purpose, and directly aided in the irrigation of the Bailey Ranch.

With the construction of these ditches and ponds, the water from Bailey Spring is actively managed as early as 1880, in the sense that at this time the water had separate potential destinations, i.e., enhanced meadow land including alfalfa/grain, or harvest land (meadow land through seepage and direct irrigation), all these areas irrigated decidedly as the result of a human decision and actions.

The amount of water that flowed from Bailey Spring before the anthropogenic effects of groundwater pumping was not very likely not static. As is the case with most springs in Nevada, Bailey Spring's flowrate fluctuated depending on regional precipitation in the surrounding mountain area. The two reported measurements for Bailey Spring are: 1) 0.446 CFS, estimated on July 11, 1966, and 2) 1.14 CFS, estimated on November 19, 1965; these figures attest to the variability of flow from Bailey Spring. Unfortunately though, these measurements do not take into account the amount of precipitation that fell in the area during that time period.

The precipitation record for the nearest location (Town of Eureka, Nevada), are incomplete for the years immediately preceding these measurements, i.e., no data between June 1960 through October 1964, (Table 1). With the absence of these data, there is no way to identify what type of conditions the measured spring flows are recording. Therefore, without compelling evidence to the contrary, it is my judgment that the claimed flow rate (both initial and amended) from Bailey Spring is accurate at 2.0 CFS, with the caveat that this diversion rate was assessed with a precision of $\pm 15\%$.

**Table 1: Total of Precipitation (Inches), Eureka, Nevada
(Desert Research Institute site 262708)**

YEAR(S)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1958	0.08	0.87	2.00	1.51	0.41	0.37	0.14	0.63	0.62	0.00	0.17	0.03	6.83
1959	0.13	3.46	0.33	0.25	0.94	0.22	0.23	0.28	0.63	0.00	0.00	1.20	7.67
1960	0.70	0.85	0.88	1.12	0.59	-----z-----	-----z-----	-----z-----	-----z-----	-----z-----	-----z-----	-----z-----	4.14
1961	-----z-----	-----z-----	-----z-----	-----z-----	-----z-----	-----z-----	-----z-----	-----z-----	-----z-----	-----z-----	-----z-----	-----z-----	0.00
1962	-----z-----	-----z-----	-----z-----	-----z-----	-----z-----	-----z-----	-----z-----	-----z-----	-----z-----	-----z-----	-----z-----	-----z-----	0.00
1963	-----z-----	-----z-----	-----z-----	-----z-----	-----z-----	-----z-----	-----z-----	-----z-----	-----z-----	-----z-----	-----z-----	-----z-----	0.00
1964	-----z-----	-----z-----	-----z-----	-----z-----	-----z-----	-----z-----	-----z-----	-----z-----	-----z-----	-----z-----	-----z-----	-----z-----	1.07 2.32 3.39
1965	0.86	0.74	0.83	1.86	1.06	1.86	0.87	2.44	0.91	0.23	1.67	1.92	15.25
1966	0.32	0.80	0.22	0.41	0.83	0.74	0.82	0.57	0.44	0.35	0.34	2.07	7.91

z = 26 or more days missing

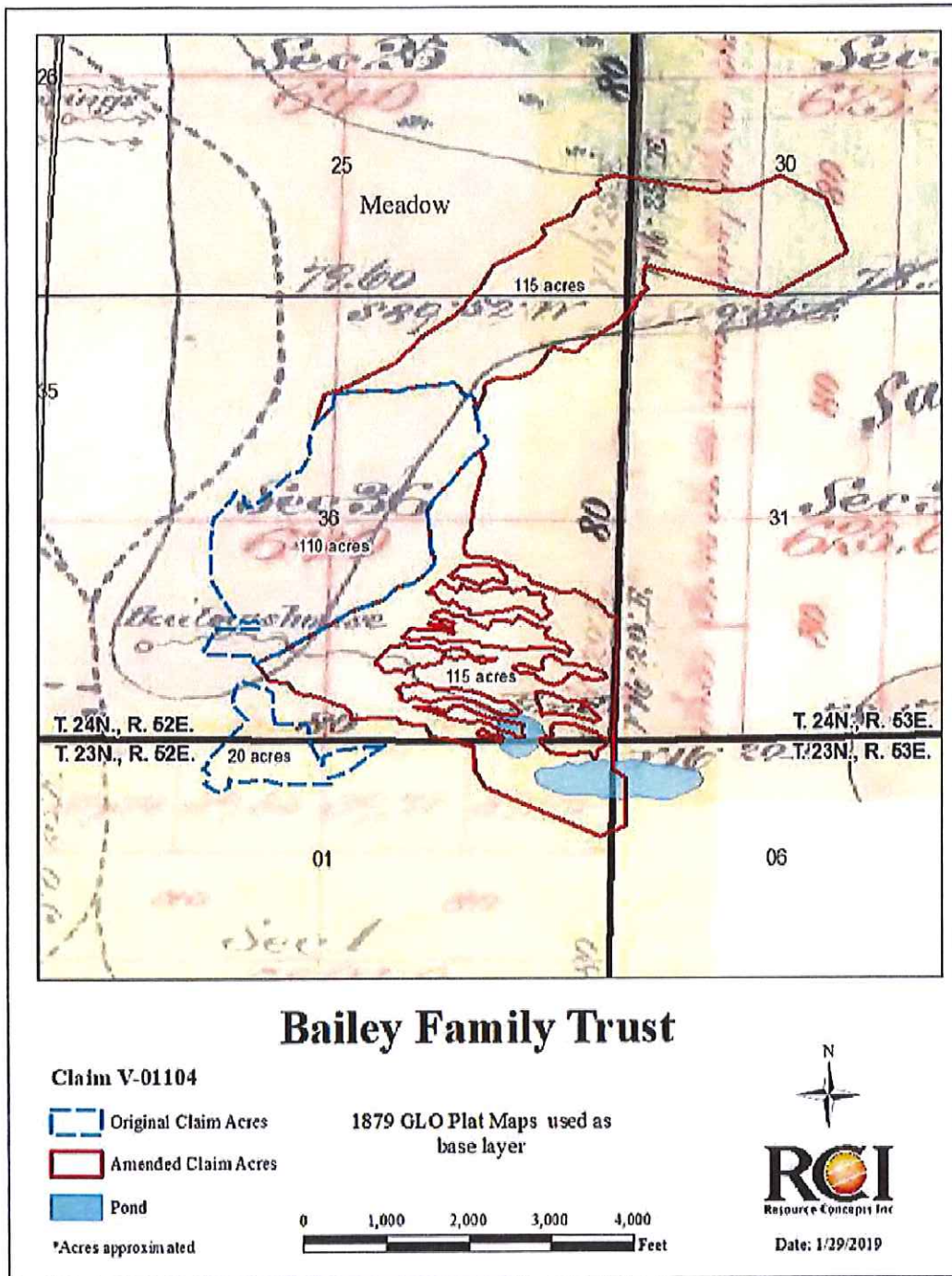


Figure 1: Place of use under Claim of Vested Right V-01101 with 1879 GLO Plat map as base layer

Conclusion

There is no doubt that the Bailey family were some of the earliest pioneers in Diamond Valley. There is also no doubt that the Bailey Ranch is the sole historical water user of Bailey Spring, and that this water source has been lost because of gross over pumping within the basin. What remains is the question of water use. Unfortunately, the passage of time has substantially reduced the availability of the standard information used in evaluating these matters, i.e., spring flow rate, and place of use investigation. No one alive at the turn of the twentieth century could have predicted that Bailey Spring would one day be dry as the result of over-pumping; had they had the 20/20 vision that hindsight provides, I imagine-there would be a much better record of water use to draw a conclusion.

Nonetheless, if one utilizes the 1879 GLO Plat maps, indentifies the meadow and pond features of these maps, and understands the historical irrigation practices of the time, I believe they will find that the amendment of V-01104 was submitted to more fully define a place of use that was established during the last twenty-five years of the nineteenth century.

Therefore, based on my experience in evaluating historical water rights in the Great Basin, and my research into this matter directly, it is my opinion that amended Claim of Vested Right V-01104 is complete and factual.

References

Nevada Division of Water Resources. Field Investigation Report, Diamond Valley (Basin 153) Adjudication, Bailey Ranch Area, Eureka County, Nevada, Claims of Vested Right: V-01104, V-10868, and V-10960 Investigated September 13–14, 2016.

Official Records of the Nevada State Engineer. Claims of Vested Right: V-01104 and V-10868

Nevada Division of Water Resources. The Preliminary Order of Determination in the matter of the determination of the relative rights in and to all water of Diamond Valley, Hydrographic Basin No. 10-153, Elko and Eureka Counties, Nevada.

Desert Research Institute. Online precipitation record for Eureka, Nevada, <https://wrec.dri.edu/cgi-bin/cliMAIN.pl?nv2708>

Government Land Office. [map] 1879 Plat Survey – T.23N., R.52E., M.D.M.

Government Land Office. [map] 1879 Plat Survey – T.24N., R.52E., M.D.M.

Government Land Office. [map] 1879 Plat Survey – T.24N., R.53E., M.D.M.