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Rebuttal Report on Position Papers Submitted by Edward S. Smith and DuWayne Kimball on Water Right Transfers 79357, 79380, 79384, and 79466

Brockway Engineering, PLLC
March 6, 2015

Prepared for:

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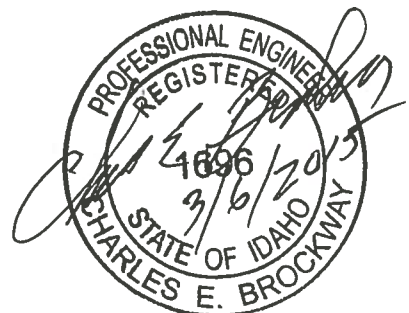


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A. Position Response to Edward S. Smith's Submitted Reports

This report addresses the allegations and arguments presented by Edward S. Smith, a protestant to the applications for water right transfers by Cedar Ridge Dairy for portions of ground water right 47-7106 to dairy sites and an irrigation well. Water right 47-7106 is located in Idaho on the Mule Creek Ranch just north of Jackpot, Nevada. Figure 1 shows the location of the proposed points of diversion for the water right transfers in these proceedings (Transfers 79380, 79357, 79466 and 79384).

Mr. Smith submitted responses to the comments and concerns expressed by the applicants experts and his observations on other water right transfers which have been approved by IDWR in the basin, topography of the area, hydrologic unit boundaries, and IDWR requirements .

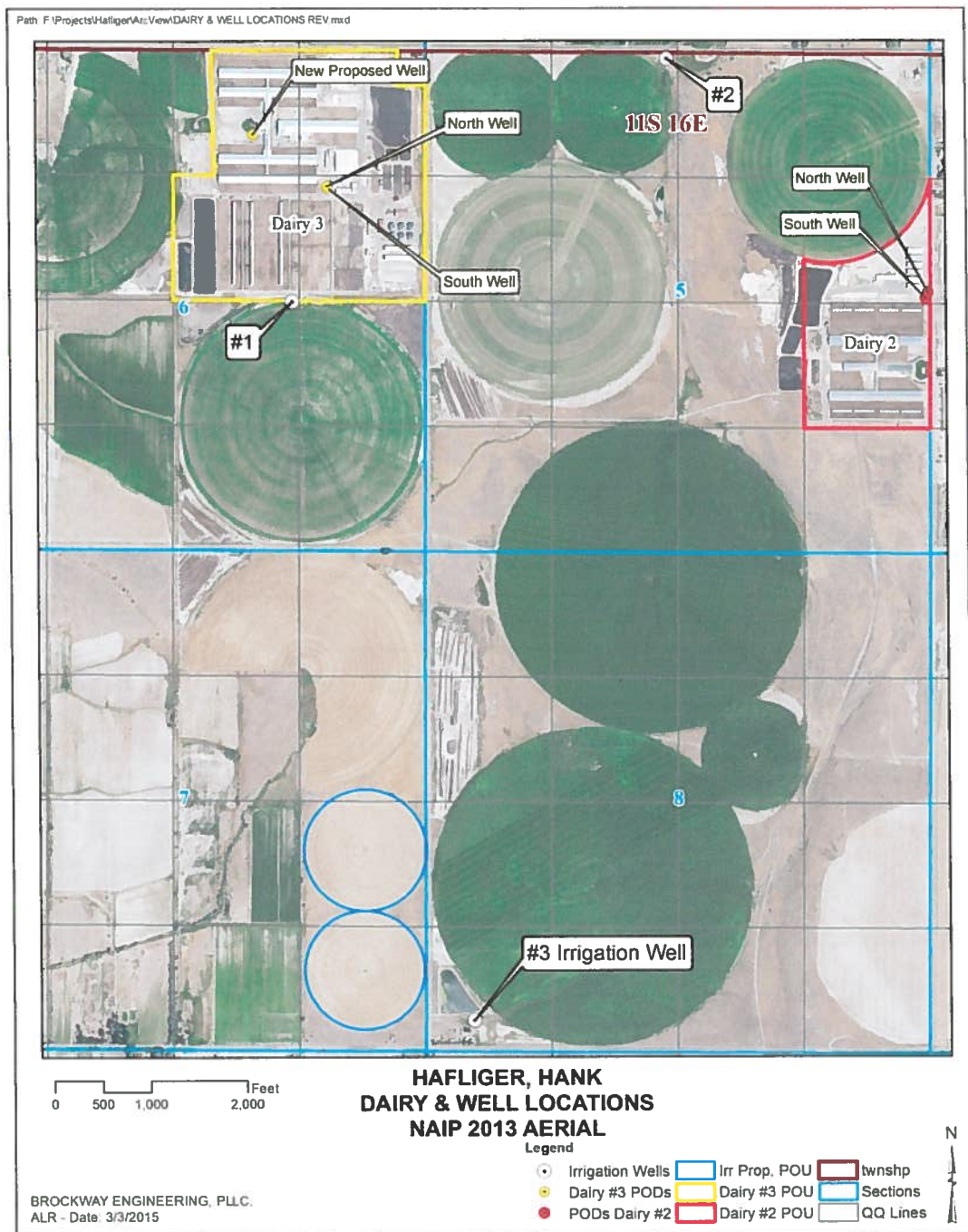


Figure 1: Map showing locations of the proposed dairies and irrigation well for Transfers

Mr. Smith opined that earlier transfers approved from the Leno property to water users in the Berger-Buhl area have no bearing on the current transfer proceedings. He states that the previous transfers were not "close to several neighbor's existing domestic wells" (page 1, Smith Position Paper 3, March 2015). This is incorrect. Figure 1 of the Brockway Engineering Rebuttal Report shows the locations of the three previous transfers which are in the Castleford-Buhl area near residential developments. Mr. Smith states, correctly, that IDWR has the responsibility to evaluate potential injury to existing domestic wells. IDWR, in its approval of the three previous transfers from the Leno water right was required to perform the same evaluations as required for the pending transfer. IDWR did perform these evaluations and corresponded with Brockway Engineering on various topics.

Mr. Smith also opines that "The topography in the Leno-Well area does not support ground water nor surface water movement to the North" (Page 2, Smith Position Paper, Tab A). Mr. Smith appears to believe groundwater flow direction is dictated by topography and, because the direct ground surface elevation profile from the Leno property to the proposed new transfer areas is not conducive to direct surface flow, that there is no way water from the Leno site can get into Idaho. Mr. Smith is correct when he states that the ground surface gradient from the Leno site is into Nevada; and, he is correct that the ground water flow gradient from the Leno well is into Nevada. What Mr. Smith neglects to mention is that the ground water flow from Mule Creek, Shoshone Creek and the other small drainages also flow into Nevada and leave Nevada via the aquifer underlying Salmon Falls Creek and Salmon Falls Creek to the west of Mule Creek. The references (A, B,C,D, and E Position Paper) do not support Mr. Smith's conclusion that all water from Mule Creek and Shoshone Creek and other tributaries flows into Nevada and apparently stays in Nevada because of evapotranspiration from riparian vegetation. Mr. Smith provides no analysis or information to quantify the evapotranspiration in the Shoshone Basin which he

contends "consumes all of the water which would go to satisfy the applicants transfer and therefore is not returned to the state (Idaho) and therefore cannot be reused" (Page 3, Smith Position Paper). No riparian vegetation consumptive use analysis is needed to conclude that the volume of consumptive use in the area of Mule Creek or the Leno property is very small compared to the water available to satisfy the proposed transfer.

A thorough evaluation of the references cited by Mr. Smith lead to the conclusion that the ground water which has been available to satisfy the Leno water right, if not used on the Leno property, flows underground into Salmon Falls Creek, or into the aquifer underlying Salmon Falls Creek. This flow system conveys water, either underground into the aquifer south and east of Rogerson and thence north to the Berger area or in Salmon Falls Creek to the Salmon Falls Creek Reservoir from which reservoir leakage to the east flows north and northwest to the Berger area.

Mr. Smith concludes (Page 4 of his Position Paper) that the IDWR requirement for evaluation of transfer applications----"has not been accomplished. Past transfers are not an automatic pathway for approval for these proposed transfers and IDWR's reliance on the Applicant's self-serving computer modeling analysis and incomplete pump test to approve the transfers is not equitable to neighbor's existing domestic wells" (emphasis added). This conclusion is certainly premature since the hearing process is the procedure, which IDWR uses in contested cases to ascertain the probability of injury to existing water rights, and the hearing has not been conducted.

Mr. Smith provided a paper titled "LISTING AND DISCUSSION OF PROTENTANTS CONCERNS OVER THE PROPOSED HAFLIGER DAIRY WATER RIGHT TRANSFERS (THOMAS AND DOROTHY LENO AND FOUR SISTERS DAIRY TRANSFERS) INCLUDING ACTIONS AND/OR CONDITIONS

THAT WOULD RESOLVE THOSE CONCERNS" (Page 2, 2 MARCH15). This paper is not signed by any author and is not dated. This paper was likely not prepared by Mr. Smith but does include a statement 'I SUPPORT The ABOVE CONCERNS & RESOLUTIONS' and a signature of Edward S. Smith with a date of 2 MAR 15. This report has no author signature nor stamp of a professional geologist or professional engineer and no date except a hand written date of 2 MAR 15. Since the report author cannot be verified and vetted, it should not be admitted in these proceedings. However, in the event the report is verified, the topics will be discussed in this rebuttal.

Section 1) a. Discussion of this paper is a treatise on the aquifer flow through basalt aquifers, the effects on adjacent wells from a pumped well and the inadequacy of groundwater models. These same topics were alleged in previous submittals by Mr. Smith and other protestants and were addressed in the Rebuttal Report by Brockway Engineering dated March 6, 2015 and will not be repeated here.

Section 1) b. Acceptable Action or Conditions of Approval (page 4). The author of the paper suggested 12 (twelve) conditions should be applied to any approved transfer. These conditions specify the duration of a long term pumping test and water level monitoring and reporting plan, the instruments to be used and instructions of how to calibrate instruments, types of flow meters, frequency of reporting to IDWR, number of measurements or observations to be taken, measurement of atmospheric pressure to correct water level measurements, discharge measurements, and adequate pumping rates.

These suggestions are requirements above and beyond the standard pumping test performed to determine the yield of a well. We know of no other pumping test for irrigation wells with these types of requirements by IDWR.

Section 2) of the paper expresses concern "That the proposed ground water withdrawals from existing and new future wells, including future deepening and/or replacement of existing wells, as a consequence of approval of the proposed transfers of water rights, may lower water levels in area wells regionally over time causing damage to the Parties' domestic wells and interfering with senior priority water rights coupled with the fact there is currently no provision for long term monitoring of the effects to the ground water system from the new proposed uses".: Page 2-3.

The discussion of these concerns mentions pressure –changing effects, of new pumping-induced stresses which take several years to fully manifest and that new water uses are rarely pumped at full diversion from the start but increase gradually as the water right is developed. (Section 2a., page 3). Specifically, the recommendation is for a baseline (one-year minimum) water level data in the area proposed for additional development prior the imposition of new uses"(Section 2aii, Page 4)

The concerns and potential concerns from new pumping induced stresses are speculative and should not be considered in evaluating any type of injury related to the current transfers. These types of monitoring programs for an irrigation well are onerous and expensive and not justified.

The writer of the above paper suggests that a recently approved water right permit 63-32573 for a municipal well in Eagle, Idaho is an example of the type of monitoring and reporting plan that should be required for the proposed irrigation well. This permit, 63-32573, is for a municipal well including municipal storage for a diversion rate of 23.18 cfs and annual diversion of 6,535 acre-feet of water for reasonably anticipated future needs for a 30 year planning horizon. The proposed discharge and annual volume for the proposed irrigation well requested in transfer application 79384 is 0.49 cfs and 124.8 acre feet annual volume.

Therefore, the permit offered as an example of the type of monitoring plan which should be implemented in this case has a discharge rate 47 times as large as the proposed discharge under transfer 79384. The permit 63-32573 was contested and resulted in a long litigation which generated an estimated 900 to 1,000 individual documents and involved numerous protestants and expert witnesses. Utilization of this water permit as an example of the type of effort which should be expended in developing data and providing long term monitoring for an irrigation water right transfer of less than 0.5 cfs is a poor choice and not justified.

Section 3 Page 6 of the above paper suggests that "the proposed ground water withdrawals from new and existing wells will induce and or increase downward vertical ground water gradients that would, in turn, induce surficial and shallow ground water contamination to move downward into the aquifer relied upon by the Parties' domestic wells".

This assumption is speculative at best and should not be considered as evidence of injury. The proposed well is 550 feet deep with a static water level of 247 ft below ground level and the estimated drawdown from pumping the increased discharge is 153 feet. Table 2 page 26 (Brockway Expert Report). The increased drawdown caused by pumping additional discharge is not sufficient to induce surface contaminants to migrate below the static water level let alone the increased pumping depth. The author of this report suggests that the possibility of additional drawdown from pumping which will induce contamination in the aquifer will conflict with the local public interest (Section 3, Page 6) or that it would be contrary to conservation of water resources within the State of Idaho. These allegations are unfounded and are not general considerations for public interest concerns.

Implementation of a water quality monitoring program for “all wells to be pumped as a consequence of the approval of these transfers—” as recommended (page 6 of this paper) by the writer is not justified.

The author's concern in Section 4 over methods presented to support the transfer applications have been addressed in the Brockway Rebuttal report and will not be repeated in this report.

The author's concern in Section 5 over water right seniority dates after the proposed transfer have been addressed in the Brockway Rebuttal report and will not be repeated in this report.

B. Position Response to DuWayne Kimball's Rebuttal Report

Page 2, paragraph four. Idaho Department of Water Resources does not require that a pump test be performed on a specific well or at a specific location before a transfer can be approved. Other issues discussed by Kimball in this section is covered by the Brockway Engineering Rebuttal Report.

Page 2, paragraph six. Mr. Kimball implied that information was omitted or not available in the Expert Report for Transfer 79384. Specifically Kimball references Appendix D of that Expert Report. Kimball continues and assumed that the Expert Report for Transfer 79384 implied that a 94% irrigation efficiency is applied to the irrigation water right. Kimball's assumption that Brockway Engineering used a 94% irrigation efficiency is wrong.

It is not clear if Kimball read the Expert Reports for Transfers 79357 and 79380. Transfer 79357 and 79380 propose to change irrigation water into stockwater and commercial. It is IDWR policy that only the consumptive portion of any irrigation water right can be transferred to a 100% consumptive beneficial use

such as stockwater and commercial water. The assumed omitted calculations are provided in Appendix D of Expert Reports for Transfer 79357 and 79380.

Brockway Engineering worked with staff members of IDWR to perform the calculations in Appendix D of Expert Reports for Transfer 79357 and 79380. The calculations were used to determine the amount of primary irrigation water that is available for transfer. Parent water right 47-7106 was authorized to irrigate 155 acres. From these calculations it was determined that **94%** of the 155 acres (145.7 acres) are primary and can be transferred. The remaining 9.3 acres would have to remain on the ranch. The irrigation efficiency of 47-7106 that was utilized in the calculations was **75%**. Which is consistent with the Kimball's referenced textbook *Principles of Farm Irrigation System Design* efficiency values of 70-80%.

From these calculations it was determined that the consumptive use portion from each acre of irrigation water was 1.87 acre-feet per acre. This 1.87 acre-feet per acre is the basis for the amount of acres required to be dried up to meet the volume demand for the stockwater and commercial water needs for Transfers 79357 and 79380.

Transfer 79384 proposes to transfer 41.6 acres of irrigation water to 41.6 acres of irrigation water. The 41.6 acres has already been established as primary irrigation water. No irrigation efficiency is needed or should be applied to the 41.6 acres because the beneficial use of the 41.6 acres is not changing. The 124.8 acre feet annual volume of water that is allowed at the Leno's Ranch will be the maximum allowed volume that can be diverted from the new irrigation well.

Page 3 and 4. There is no published data available discussing which direction the ground water is flowing in the Mule Creek drainage. The general opinion is that ground water flows in the same direction as the gradient of the ground

surface. This general opinion is confirmed by the diagram of the irrigation and domestic well locations, ground water elevations and static water elevations provided in the Brockway Engineering Rebuttal Report.

Precipitation accumulates in the mountain basins of northern Nevada and Southern Idaho and is transported naturally through springs, creeks, rivers and ground water into the waters of Idaho. Numerous Idaho irrigation water rights are provided water from Salmon Falls Creek (47-7252 owned by Visser Holsteins, 47-13 owned by Salmon River Canal Co. and 47-2269 owned by Magic Water Co.) It cannot be argued that the Idaho water rights from Salmon Falls Creek are not valid because the headwaters from Salmon Falls Creek originate in the State of Nevada.

Page 5, paragraphs 1. Kimball states that the USGS wells are "such a distance away that they are not indicators for what is happening for the proposed points of diversion." The USGS wells are between 3 and 8 miles away from the proposed points of diversions. However, the aquifer in which the USGS wells, the proposed point of diversions and the Protestants wells are located covers more than 700 square miles. In relation to the size of the aquifer itself, having two USGS monitoring well within 8 miles of the proposed points of diversions is a great advantage to understanding the local aquifer. These two USGS monitoring wells are the best local data available that indicates the current aquifer conditions.

Page 5, paragraphs 2. Kimball supplies no statistical data or calculations to support his opinion of trending within the aquifer based on the USGS monitoring data.

Page 5, paragraph 5 and 6. The hydraulic conductivity value of 55 ft/day was provided by the 1998 Cosgrove report. This hydraulic conductivity value is the

most precise value provided by any of the published reports referenced in the Expert Reports relating to the area in which the proposed points of diversion of Transfers 79384, 79357 and 79380 are located. It is necessary to assume that a calculated value for a given aquifer location is the most accurate representation of the aquifer as a whole in that area.

Brockway Engineering has been evaluating aquifer characteristics, water rights, irrigation wells, municipal wells, domestic wells, stream channel interactions with ground water and a variety of other hydraulic analysis for the past 20 years. The typical hydraulic conductivity of a basalt aquifer ranges from 10 to 100 ft/day (Ground Water Manual, 1977). Cosgrove's 1998 report conclude that the models designated zones of 4, 5, 6, 7, 8, 9 and 10 had hydraulic conductivity values that ranged from 30 to 75 ft/day.

It is not professionally appropriate to pick one pump test and to assume the values from that one pump test are constant for the entire aquifer. That is why multiple pump tests are reviewed (when available) and average values are calculated. This approach allows an appropriate representation of the area of interest in the aquifer.

Page 6, paragraph 1, The 1997 Cosgrove report indicated that the bottom of the basalt was 700 feet. This cold water aquifer is confined to the geological basalt layers. Average static water levels provided by Cosgrove was 265 feet below the surface. Therefore, the aquifer thickness was calculated to be 435 feet.

Page 6, paragraph 3, Kimball's opinion on the drillers written notes and data include in the well drillers logs are not supported by any evidence. No one at Brockway Engineering is recognized professionally to be a forensic document examiner or a handwriting expert. However, when examining the well log for the number 4 well in the name M. Danos. The well driller was consistent with his

handwriting throughout the log. The well driller's 2's are distinctive. The well casing is located at a depth of the 2 feet through 140 from the ground surface. The surface seal depth is 20 feet. The hole diameter is 20 feet. Top soil was encountered from 0 to 2 feet. The draw down from the pump test was 21 feet. Kimball's assumption that the drawdown should be 121 feet is incorrect.

Page 6, paragraph 7. The storativity value of 0.15 was used by Brockway Engineering because that is the standard storativity value that Brockway Engineering has used for basalt aquifers on multiple aquifer analysis reports. There is relatively vary little difference in an aquifers ability to provide water when comparing a 0.12 or a 0.15 storativity value.

Page 6, paragraph 9, 11. See rebuttal remarks concerning for Ed Squires expert report.

Page 7. See rebuttal remarks concerning for Ed Squires expert report.

Page 8, paragraph 3. If IDWR approves the transfers, the applicant will comply with all conditions set by IDWR.

References

- Cosgrove, Donna M., Johnson, Gary S., Brockway, Charles E. and Robison, Clarence W. (1998). Development of a Transient Ground-Water Model for the Twin Falls Area, Idaho. Idaho Water Resources Research Institute. University of Idaho Moscow, Idaho
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