

Robert L. Harris, Esq. (ISB # 7018)
rharris@holdenlegal.com
HOLDEN, KIDWELL, HAHN & CRAPO, P.L.L.C.
1000 Riverwalk Dr., Ste. 200
P.O. Box 50130
Idaho Falls, Idaho 83405
Telephone: (208) 523-0620
Facsimile: (208) 523-9518
Attorneys for Applicant Telford Lands, LLC

**BEFORE THE DEPARTMENT OF WATER RESOURCES
OF THE STATE OF IDAHO**

IN THE MATTER OF APPLICATION
FOR TRANSFER NO. 76286 IN THE
NAME OF TELFORD LANDS, LLC

**TELFORD LANDS, LLC
PETITION FOR RECONSIDERATION**

INTRODUCTION

Telford Lands, LLC ("Telford" or "Applicant"), by and through their counsel of record, Robert L. Harris of Holden Kidwell Hahn & Crapo PLLC, hereby submits this *Petition for Reconsideration* of the *Hearing Officer's Preliminary Order Denying Application* filed on July 1, 2011.

As set forth below, the Hearing Officer failed to understand the transmissivity concept presented by the Applicant's expert either because of a fundamental misunderstanding of the assumptions and mechanisms incorporated into the Applicant's methodology, or because the Applicant was inartful in conveying these concepts at the hearing. The Hearing Officer also made very clear factual errors in quoting from the record, and further legal errors by failing to issue his decision in compliance with Idaho Code § 42-226, and further erred in describing the Applicant's burden of proof in an administrative hearing.

It is not clear how proper understanding of the factual errors contained in the Preliminary Order will affect the Hearing Officer's reconsideration of this matter. Therefore, in the interest

RECEIVED

JUL 15 2011

Department of Water Resources
Eastern Region

of thoroughness, the most efficient way to address the conceptual, factual, and legal errors made by the Hearing Officer is to set forth the the specific finding of fact or conclusion of law that is in error, and provide argument and citation to the administrative record demonstrating the error.

Omission of a finding of fact or conclusion of law in this following section indicates the Applicant's position that the specific finding of fact or conclusion of law is correct.

Lastly, Telford has provided new evidence in response to the Hearing Officer's conclusion that the southern boundary was an appropriate assumption, which it is not, as well as a recreation of the Wood model with modeled results with higher and more reasonable transmissivity values without the southern boundary. A petition for reconsideration before the Department is analogous to a motion for reconsideration allowed under Rule 11(a)(2)(B) of the Idaho Rules of Civil Procedure. In that regard, "the case law applying Rule 11(a)(2)(B) *permits* a party to present new evidence when a motion is brought under that rule, but does not *require* that the motion be accompanied by new evidence." *Johnson v. Lambros*, 143 Idaho 468, 472, 147 P.3d 100, 104 (Ct. App. 2006) (italics in original); See also *Coeur d'Alene Mining Co. v. First Nat'l Bank of North Idaho*, 118 Idaho 812, 800 P.2d 1026 (1990) (A rule 11(a)(2)(B) motion was properly denied in the absence of additional evidence that would provide a basis upon which to reconsider the prior order).

Pursuant to these cases, we request that the arguments the new evidence attached to this brief (and described below) be considered by the Hearing officer, and that the Hearing Officer reverse the *Preliminary Order*. We note that the evidence does not present new modeling concepts, but rather, simply produces results from Mr. Wood's framework found to be reasonable by the Hearing Officer, only with higher and more reasonable transmissivity values and removal of the southern boundary.

I. FINDINGS OF FACT

8. The River #2 Well has not been completed. (See Photo #10, Jensen Exhibit 4) Mr. Telford testified that the River #2 Well will likely never be completed and can be removed from the water rights if this transfer is approved. The Higgs Report confirms Mr. Telford's statement. "[I]f this Transfer is approved, the [River #2 Well] will be replaced with the proposed point of diversion sought under this Transfer." (Higgs Report, page 2, Exhibit All (emphasis removed)) "The authorized point of diversion located at [the River #2 Well] will no longer be listed as an authorized point of diversion on Telford's water rights." (Id.)

APPLICANT'S RESPONSE: Paragraph 8 indicates that the River #2 Well will likely never be completed and can be removed from the Telford Water Rights if the transfer is approved. Removal of this point of diversion if the transfer is completed is entirely accurate. However, Mr. Telford testified that the River #2 Well will likely never completed without pursuing eminent domain proceedings pursuant to Idaho law because a neighboring landowner, who initially provided verbal authorization to place the pipeline, now refuses to allow construction of the pipeline.¹ A more accurate statement would be that the River #2 Well will likely never be completed without engaging in eminent domain proceedings, but could be removed from the Telford Water Rights if this transfer is approved. Removal of the River #2 Well would require, of course, reversal of the Hearing Officer's *Preliminary Order*.

9. The Babcock Well is shared by Telford Lands and Reuben (Harold) Babcock and is used to supply irrigation water to Mr. Babcock and Telford Lands. In 1999, an agreement relating to the use of the Babcock Well was signed by Harold and Marjorie Babcock and Cannon Shelley Property Limited Partnership (Telford Lands' predecessor in interest). (See Exhibit PIS) The agreement confirms the use of the well to deliver water under rights 34-2330B and 34-12376. (See *id.*) These two rights authorize a combined diversion rate of 3.00 cfs. Mr. Telford testified that Telford Lands is not allowed to draw more than 3.00 cfs under its water rights from the Babcock Well. The Babcock water rights associated with the well also carry a combined diversion rate of 3.00 cfs. The total amount of water diverted from the Babcock Well cannot exceed 6.00 cfs.

APPLICANT'S RESPONSE: Paragraph 9 indicates that there is a combined diversion limitation on Telford's water rights diverted at the Babcock Well after the Mickelsen transfer. This is not accurate. Water Rights No. 34-2330B and 34-12376, which combined allow Telford to divert 3 cfs, were originally developed at the Babcock Well. However, the Mickelsen transfer did not limit diversion of Telford's water rights from the Babcock Well to 3 cfs.

The Hearing Officer states "the Babcock Water Rights associated with the well also carry a combined diversion rate of 3.00 cfs. The total amount of water from the Babcock Well cannot exceed 6.00 cfs." This is not accurate. The Applicant has reviewed the conditions issued as a result of the Mickelsen transfer, as well as the listed conditions on the current water reports, and there is no water right limitation on the diversion amount that can be diverted from the Babcock

¹ Unfortunately, this is not the first time Mr. Telford has had to exercise eminent domain for installation of a buried pipeline that will have no impact on the property it crosses. Mr. Telford is currently engaged in litigation over a buried pipeline located further north of the location of the proposed well, where the opposing party has vowed to appeal it the matter to the Idaho Supreme Court, even though the District Court has granted Telford's Motion for Summary Judgment to be able to condemn the pipeline easement across 100 feet of an old railroad right-of-way.

APPLICANT'S RESPONSE: This paragraph is factually accurate, but somewhat incomplete. At the time this transfer application was filed, Telford was pursuing the construction of the River #2 Well, and Mr. Telford initially received verbal authorization from a neighboring landowner to place a pipeline, but now refuses to allow construction of the pipeline. Even with a restored Babcock well, Telford would still not be able to divert the entirety of its 37.03 cfs water rights when Babcock is also diverting from the Babcock well. Therefore, it was necessary to pursue the transfer application, even though the reason for the application had changed. We are unaware of any requirement under the Department's transfer policies and procedures requiring amendment to the transfer application if the motivation for the transfer changes. In either event, whether as a result of the well dispute or the River #2 dispute, it was necessary for Telford to drill an additional well.

13. Telford Lands offered Timberdome Canal Company records to support its argument that it is not able to divert the full 37.03 cfs authorized under its ground water rights. (See Exhibits A 7) Mr. Jensen offered a similar exhibit as part of his case. (Jensen Exhibit 1) The Timberdome Canal Company records are poorly organized and confusing. No testimony was offered explaining what the records mean. Without adequate testimony deciphering the records, they carry little weight in the evidentiary record.

APPLICANT'S RESPONSE: We disagree with the Hearing Officer's statement that the Timberdome Canal Company records are "poorly organized and confusing", and that "no testimony was offered explaining what the records mean." The Timberdome Canal Company records were included to provide a basis for the actual measured diversion rates from each of the relevant Telford wells in years prior. Farmers often "name" a well, and it was necessary to include these records to demonstrate what the Timberdome Canal Company had called each of the Telford wells. Clear testimony was offered explaining what the records were, by Mr. Telford, and a spreadsheet summarizing the measurements from those records was introduced as Applicant's Exhibit 6 (A6). Paragraph 14 of the findings of fact cites to that exhibit, and correctly summarizes that even if the Babcock well was brought into full working order, Telford would still be 2.63 cfs short in a best case scenario. The records were not poorly organized and confusing, but in fact demonstrate that the well-monitored Timberdome Canal Company's system, where wells are measured virtually a number of times per week every year to determine their diversion rates in order for the company manger to accurately deliver water to its patrons. At the prehearing conference in this matter, Mr. Jay Jensen, who is the manager of the

Well. We should note, however, that the Babcock Well has been designed to divert 6 cfs, so as a practical matter, provided both Babcock and Telford are diverting and using their water, each will take 3 cfs from this particular location. However, it is entirely possible that Babcock may not be irrigating during some portions of the irrigation season (such as when their hay has been swathed and is drying), and Telford would be entitled to divert 6 cfs under his total 37.03 cfs of water rights to his authorized place of use. This would be especially important to Telford in the event the *Preliminary Order* is not reversed, as he still remains approximately 3 cfs short in what his water rights authorize him to divert.

Lastly, the well use agreement likewise does not limit diversion from the Babcock Well to 6 cfs. This finding of fact should therefore be corrected to correctly reflect the records of the Idaho Department of Water Resources.

11. Recently, Mr. Telford and Mr. Babcock resolved a civil dispute regarding access to the well and maintenance of the well and pump. Babcock and Telford entered into a stipulated agreement regarding the well. In the spring of 2011, Mr. Telford initiated maintenance work on the Babcock Well, with the intent of increasing the diversion capacity of the well.

APPLICANT’S RESPONSE: In this paragraph, the Hearing Officer states that Mr. Telford initiated maintenance on the Babcock Well, “with the intent of increasing the diversion capacity of the well.” The original water rights that authorized development of the Babcock Well total 6 cfs—3 cfs of Babcock’s right and 3 cfs of two of Telford’s combined rights. After the Mickelsen transfer, more of Telford’s water rights can be diverted from the Babcock well. The necessary maintenance work performed by Mr. Telford and Mr. Babcock will restore the diversion capacity of the Babcock Well to 6 cfs. Therefore, we believe it is inaccurate to indicate that the maintenance work is intended to *increase* the diversion capacity of the well. Rather, the intent of the work is to restore the well to its historic diversion capacity. As testified at the hearing, the bowls have not been pulled in the Babcock Well since the early 1990s, and the well was in a state of serious disrepair. It has now had its needed and necessary maintenance.

12. The transfer application states: "The application is necessary because of a shared well dispute between the Applicant and Babcock." (Exhibit AI) Although the Telford Babcock dispute was resolved and maintenance work has been performed on the well, which should increase its production capacity, Mr. Telford still wants to pursue this transfer for the right to draw 5.00 cfs from an additional point of diversion (the proposed well).

Timberdome Canal Company, and at the time of the prehearing conference was the water master for Water District 34, indicated that the water district's goal was to measure each well in the Big Lost River Basin every three (3) years. Therefore, the more frequently-measured diversion records should carry significant weight in the evidentiary record, not little weight as indicated by the Hearing Officer.

14. In their current state, Telford Lands' wells are not able to produce the 37.03 cfs authorized under the Telford Lands' rights. (See Exhibit A6) Even if the Babcock Well is brought into full working order, Telford Lands would still be 2.63 cfs short of its full authorized diversion rate. (See id.) In a drought year, the pumping capacity of the wells decreases and the shortage will be more than 2.63 cfs.

APPLICANT'S RESPONSE: See Applicant's response to finding of fact 13 above.

16. Mr. Carpenter also owns a domestic well, located approximately 0.4 miles to the east of the proposed well. The domestic water right associated with the well, 34-10134, carries an 1896 priority date. Due to drought conditions, a replacement domestic well was drilled in 2002. The existing 80-foot domestic well had gone dry. The Well Driller's Report, completed by Guthrie Drilling, indicated that water was first encountered at a depth of 88 feet, a point where the aquifer material changed from brown clay to sand and gravel. (Exhibit P5) After the well was completed, the static water level was found to be 78 feet below land surface, indicating localized artesian pressure and suggesting that the aquifer may be partially confined near the Carpenter domestic well. The 2002 Carpenter domestic well is 140 feet deep.

APPLICANT'S RESPONSE: In this finding of fact, the Hearing Officer relies upon a well driller's report at the Carpenter Domestic Well to support findings that the aquifer may be partially confined near the Carpenter Domestic Well. While there are very likely confining fingers of clay throughout the Big Lost River aquifer, we have reviewed the well driller's report relied upon by the Hearing Officer, and it is inconclusive to us whether the depth where the first water was encountered was listed either as 88 feet first or 78 feet. It appears that the first eight of the written depth may have been written over. Based upon review of the hydrogeologic data from previous reports discussed and cited to in this matter, it is clear that the Big Lost River aquifer is heterogeneous, with fingers of brown clay protruding out into the sand and gravel deposits. However, if the well driller's report is the sole support for this finding, it appears that this report is inconclusive.

17. Reuben Babcock co-owns a ground water well (identified above as the "Babcock Well"), located approximately 0.3 miles to the east of the proposed well, which he uses to irrigate 153 acres, in combination with water rights from the Big Lost River. The Babcock ground water

rights associated with the well are 34-2330A (1955 priority date) and 34-12377 (1961 priority date). The well is 180 feet deep. In April 2011, the depth to water was measured and found to be 75 feet.

APPLICANT'S RESPONSE: This finding of fact indicates that Reubon Babcock owns a well located .3 miles to the east of the proposed well. This is inaccurate. The well is point .3 miles to the west of the proposed well.

18. Mr. Babcock also owns a domestic well, located approximately 0.3 miles to the east of the proposed well. The domestic water right associated with the well, 34-10404, carries an 1889 priority date. Due to drought conditions, a replacement domestic well was drilled in 1988. After the well was completed, the static water level was found to be 70 feet below land surface. The 1988 well was drilled 120 feet deep. During another drought cycle in the early 2000s, the bowls had to be lowered to the bottom of the well.

APPLICANT'S RESPONSE: Similar to finding of fact 17 above, the domestic well is not located .3 miles to the east of the purposed well. It is located .3 miles to the west of the proposed well.

19. Mr. Babcock also owns a stockwater well, located approximately 0.3 miles to the east of the proposed well. The stockwater well was originally drilled in 1969. The Well Driller's Report, completed by Findlay Well Drilling, stated that the well was 68 feet deep and the static water level was 42 feet below land surface. (Exhibit P13) Due to drought conditions, a replacement well was drilled in 1990. The Well Driller's Report, completed by Findlay Drilling, states that the replacement well is 111 feet deep and the static water level in the well was 93 feet below land surface. (Exhibit P14) The stockwater well went dry in 2003 and did not have water in it again until 2005.

APPLICANT'S RESPONSE: Similar to findings of fact 17 and 18 above, the stockwater well is located 0.3 miles to the west of the proposed well, not east of the proposed well.

21. There is significant interaction between the surface water and ground water within the Big Lost River basin. Drought and flood cycles can have a dramatic impact on water levels in the aquifer. A monitoring well (05N26E32DBA1) located approximately 1 mile southwest of the proposed well confirms a strong correlation between flows of the Big Lost River and water levels in the monitoring well. (See Wood Report, Figure 4, Exhibit P21)

APPLICANT'S RESPONSE: There is nothing in this paragraph with which the Applicant disagrees with, but it deserves emphasis that there is a significant interaction between the surface water and groundwater within the Big Lost River Basin. The Higgs analysis attempted to take this significant interaction into account, but nevertheless, later findings of fact and conclusions of

law accuse Mr. Higgs of ignoring this significant interaction surface-ground water interaction.

The Higgs approach does take into account this interaction because it is based upon matching transmissivity values with actual ground water depth measurements, which are influenced by surface water influx. Because transmissivity is defined as “a measure of the amount of water that can be transmitted horizontally by the full saturated thickness of the aquifer under a hydraulic gradient of one,” Fetter, C.W., *Applied Hydrogeology*, Merrill Publishing Company, 1980., and because water availability can affect aquifer levels and consequently the saturated thickness of an aquifer, transmissivity can change depending on water levels. In other words, it is not a constant number.

Higgs’s approach therefore attempted to match real life conditions in 2010, with a higher transmissivity than the number generated by Mr. Wood. Mr. Wood’s transmissivity value was based upon a single pump test taken in April of 2011, which only looked at results that, according to Mr. Wood himself, were suspect because of changing barometric pressure from a passing storm and their impact on observation wells. P21 at 6 (unstable weather conditions (i.e. a storm) during the three day test cause[d] significant barometric effects to water levels.”). Conceptually, the Higgs approach was to take into account on the ground data from a number of locations, not simply data obtained from a single pump test, the interpretation of which is suspect, as explained below.

22. Water levels in the aquifer can rise during the irrigation season due to the influx of surface water, made up of seepage from the Big Lost River, canals, and flood irrigation. Ground water levels are sometimes at their highest at the end of the irrigation season. During drought years, the surface water contribution to the aquifer is greatly reduced because the Big Lost River is dried up completely at the Moore diversion, located 3.5 miles north of the proposed well. Aquifer levels fall throughout a drought irrigation season, due, in part, to increased ground water pumping. Water levels near the proposed well can vary by more than 75 feet between a good water year and the last year in a drought cycle. (See Wood Report, Figure 14, Exhibit P21)

APPLICANT’S RESPONSE: The Hearing Officer indicates that “during drought years, the surface water contribution of the aquifer is greatly reduced because the Big Lost River is dried up completely at the Moore diversion, located 3.5 miles north of the proposed well.” Neither the Applicant nor the Protestants provided recorded historic measurements at the Moore diversion, and there is no citation to the record by the Hearing Officer in support of this assertion. The finding that only during “drought years” water is dried up at the Moore diversion is not correct. Based upon the experience of Telford and his communications with others, the Big Lost River is

completely dried up every year at the Moore diversion, even during wet years, not simply during drought years. It is therefore not a matter of *if* the river is dried up at the Moore diversion, it is simply a matter of *when*.

Additionally, this finding of fact notes that the water levels can vary by approximately 75 feet between a wet water year and last during a drought cycle. Citing to Mr. Wood's report (Exhibit P21 Figure 14), there is a difference of 75 feet indicated on the graph. This 75 foot variation is also shown on the graph generated by Mr. Wood in his rebuttal report. P29 at 20. However, as explained in further detail below, despite these significant drought conditions, and increased ground water pumping during drought conditions, Mr. Wood testified that the drawdown in the Carpenter Well would be 123.5 feet, not 40 feet during a drought condition, as stated by the Hearing Officer. This error is significant, set forth in further detail below under finding of fact 36. For purposes of this finding of fact, however, it is worth noting that Mr. Wood's predicted drawdown from Telford's single new well would be nearly two times the 75-foot reduction in water levels caused by drought and all other ground water pumping in prior years. This conclusion defies logic.

23. Three aquifer boundaries or barriers to flow exist in the vicinity of the proposed well. One boundary is located to the west of the Carpenter and Babcock wells, where the Big Lost River aquifer, made up of unconsolidated alluvial deposits, comes into contact with the less-permeable carbonate rock of the hillside. (See Wood Response, Figure 3 (taken from a 1970 Crosthwaite et al. Report), Exhibit P29 and Exhibit P19) A similar aquifer boundary exists on the east side of the valley, where the aquifer's alluvial material intersects the rock layers of the mountain. (See id.)

APPLICANT'S RESPONSE: The Applicant's expert indicated very clearly that there are certainly boundaries on the east and west side of the Big Lost River valley, but that the exact location of these boundaries is not necessarily known and has not been mapped, which is why the boundaries were not included in the Higgs analysis. Regarding the third boundary existing on the south end of the aquifer due to a steep hydraulic gradient, see Applicant's Response to Paragraph 24 below.

24. A third boundary exists at the south end of the aquifer. "The southern boundary is also considered a no flow boundary because of the steep hydraulic gradient, perched water lens and the numerous pumping wells to the south, which prevent water from flowing up-gradient from a southerly direction." (Wood Report, page 9, Exhibit P21) At the south end of the Big Lost River Valley, the aquifer gradient descends quickly as the local aquifer flows down to join the larger, deeper Eastern Snake Plain Aquifer ("ESPA"). Water cannot be drawn back up the water

gradient to satisfy the demands of ground water wells located in the Big Lost River aquifer, resulting in a conceptual boundary to flow.

APPLICANT’S RESPONSE: The Hearing Officer determined that there is a conceptual boundary to flow because there is a steep hydraulic gradient at some point between the proposed well location and the mouth of the Big Lost River valley. This is a remarkable finding by the Hearing Officer, as conceptual boundaries modeled at locations of steep hydraulic gradient are not incorporated into IDWR’s Eastern Snake Plain Aquifer Model (“ESPAM”), nor the related IDWR transfer tool.

It is self-evident that areas of steep water level contours do not necessarily mean that water cannot transmit through these specific areas. For example, the Applicant’s counsel participated in a University of Idaho class taught by Dr. Donna Cosgrove, a then-faculty member of the Idaho Water Resources Research Institute, or IWRRI. Attached to this petition as Exhibit 1 are four (4) power point slides from that class, which show Snake River Plain Aquifer contours measured in the spring of 2001. As indicated on the second slide, these areas where the contour lines are close together means that the aquifer cannot transmit as water very well and the water backs up. Continuing with this theme, slides 3 and 4 raise the question that has commonly been raised in conjunctive management of the Eastern Snake Plain Aquifer, which is whether areas of low transmissivity should be taken into account when conjunctively managing the Eastern Snake Plain Aquifer. In other words, should the aquifer be divided into “zones.”

Dr. Cosgrove identified two particular areas of low transmissivity, known as the Mud Lake Barrier and the Great Rift. These areas are labeled on the third slide. The fourth and final poses the question of whether the Snake Plain Aquifer is like one bathtub, or three, based upon the Mud Lake Barrier and the Great Rift. The slide concludes that the ESPA should not be treated as multiple bathtubs because “in reality, water crosses these barriers although it is more impeded, and that the whole system is really interconnected.” This forms the logical basis for the Department’s ESPAM model, and its offspring, the IDWR transfer tool. If the Hearing Officer is really saying that areas of tight water level contours indicate “conceptual boundaries to flow,” we believe this a landmark finding. Because decisions of the Department have precedential value, it is important to know whether or not the Hearing Officer in this case supports the concept of the ESPAM, or Dr. Wood’s approach to put a conceptual boundary to flow a mere two (2) miles south of the proposed well location in this matter, which would

indicate that the Big Lost River aquifer is really a series of various “bathtubs.” This question must be specifically answered in response to the *Petition for Rehearing*.

It is worth noting that in Conclusion of Law No. 4, which is discussed below, the Hearing Officer concluded that “Mr. Wood may have modeled the southern aquifer boundary too close to the proposed well,” and that the change in water level two miles south of the proposed well is only 50 feet. From a modeling standpoint, the southern boundary input into the model reduces the area that ground water can be pulled from, and therefore, exaggerates the hydrologic impact, making a better case for the protestants. However, it also stands for the proposition that there are isolated pockets, or bathtubs, throughout the Big Lost River basin and the ESPA, which would isolate them from conjunctive administration. It perhaps goes without saying that if the hearing officer maintains his finding that steep hydraulic gradients form boundaries to pumping effects, this philosophical shift in IDWR thinking is significant. The Hearing Officer should further explain his reasoning in this regard, or reverse his prior position, and find that there should not be a conceptual southern boundary.

26. To be able to predict the possible drawdown effects of the proposed well, it is essential to know the physical properties of the local aquifer, including the transmissivity of the local aquifer substrate. Transmissivity is a measure of how quickly water moves through the aquifer. A higher transmissivity means water travels through the aquifer more easily and results in a larger and shallower cone of depression. A lower transmissivity means water travels through the aquifer slowly and results in a smaller and deeper cone of depression. Transmissivity can vary greatly throughout an aquifer and can even vary within a vertical column of the aquifer. To determine drawdown effects of a proposed well, the combined or collective transmissivity of the local aquifer area must be determined.

APPLICANT’S RESPONSE: The Hearing Officer defines transmissivity as “a measure of how quickly water moves through the aquifer.” This is not an accurate definition. As stated above, transmissivity is defined as “a measure of the amount of water that can be transmitted horizontally by the full saturated thickness of the aquifer under a hydraulic gradient of one,” Fetter, C.W., *Applied Hydrogeology*, Merrill Publishing Company, 1980. The Hearing Officer’s definition is not a definition of transmissivity, rather, it is a definition of the water’s velocity.

This is a significant point, because it again highlights the fact that transmissivity will vary in an aquifer that is highly interactive with surface water, such as the Big Lost River aquifer. This fact is central to the Higgs approach, and a clear understanding of the hydrogeologic inputs present and used in an aquifer model is critical.

27. Previous groundwater studies have tried to estimate the transmissivity within the Big Lost River aquifer. In a 2003 water budget analysis of the basin, Said, Stevens, and Sehlke used a transmissivity value of 75,000 ft²/day for the upper Big Lost River, including the area where the proposed well would be located. (See Said et al. Report, Table 1 and Figure 3, Exhibit P18). In April 1991, a pump test was performed on a well located approximately 2 miles south of the proposed well. (See Bassick and Jones 1992 Report, Description of Aquifer Test, Exhibit P19). Bassick and Jones found that transmissivity in the area ranged from 61,000 to 330,000 ft²/day; values of 130,000 to 200,000 ft²/day were most probable. (See id., Results of Aquifer Test)

APPLICANT'S RESPONSE: The Hearing Officer fails to site to page 12 of the Said et al. report, which states "transmissivity in the Big Lost River valley commonly exceeds 9290 meters²/day (100,000 ft²/day) and in places 92,900 meters²/day (1M ft²/day). In other words, transmissivities "commonly" exceed 100,000 ft²/day up to 1,000,000 ft²/day. Furthermore, Bassick and Jones determined that transmissivity at the Well Orchard, which is located further west than the proposed point of diversion and closer to the likely western barrier boundary, found that transmissivity could vary from 61,000 to 330,000 ft²/day and that **values of 130,000 to 200,000 ft²/day were most probable**. Mr. Wood's transmissivity of 84,000 ft²/day is not within this most probable range articulated by Bassick and Jones, yet this number was relied upon by the Hearing Officer as a reasonable estimate of transmissivity. A doubling of Mr. Wood's low 84,000 ft²/day number would equal 168,000 ft²/day, which would be within the "most probable" range. It is unclear why the hearing officer would conclude that the 84,000 ft²/day number was reasonable, when it was not within Bassick and Jones' "most probable" range. The reports suggest that Mr. Wood's transmissivity is much too conservative.

While the Hearing Officer cites to the Said, Stevens and Sehlke study for using the transmissivity value of 75,000 ft²/day for the Upper Big Lost River. Citing to table 1 and figure 3 of the Said et al. report, the Hearing Officer concludes that a transmissivity value of 75,000 ft²/day was used. This conclusion fails to note that 75,000 ft²/day is an average for the entirety of the rest of the Big Lost River watershed, excluding the Butte sub-basin, which has an estimated transmissivity of 400,000 ft²/day, a significantly higher amount. Reliance on an overall average, especially with a neighboring area with an estimated transmissivity of over five times the 75,000 ft²/day value, does not appear to be reasonable.

28. Water Well Consultants, Inc. (Brian Higgs) was hired by Telford Lands to "determine the possible impacts to surrounding well owners." (Higgs Report, page 3, Exhibit All) Mr. Higgs developed a method for determining the transmissivity of the local aquifer (the "Higgs Method"). The Higgs Method involved modeling the expected drawdown caused by the five largest nearby ground water diversions at varying transmissivity values and comparing the modeled drawdown to the actual measured drawdown observed during the 2010 irrigation season. According to Mr. Higgs, the transmissivity of the local aquifer would be the transmissivity of the modeled drawdown that most closely matched the measured 2010 drawdown.

APPLICANT'S RESPONSE: We generally agree with the Hearing Officer's description of the Higgs method and note that this explanation very clearly demonstrates that the Higgs method attempted to match transmissivity values with actual measured data, which actual measured data was influenced by surface water influx during the 2010 irrigation season.

29. First, Mr. Higgs set up a model based on a standard Theis equation. Higgs ground water model incorporated the following assumptions: 1) The five largest existing ground water diversions within a 1.5 mile radius of the proposed well were pumped for 100 days at the maximum measured diversion rate for each well; 2) The model aquifer did not include any surface water contributions; 3) The storativity of the local aquifer was 0.024; 4) The model aquifer was not bounded on any side and extended continuously in all directions from the proposed well. The storativity value used by Mr. Higgs was derived from a 1964 study by Mundorf and others. (Higgs Report, page 3, Exhibit All) Mr. Higgs ran the model using four different transmissivity values (50,000, 100,000, 250,000, and 500,000 ft²/day).

APPLICANT'S RESPONSE: We generally agree with the assumptions summarized by the Hearing Officer in this finding of fact, but it deserves emphasis that while the Higgs initial conceptual model did not take into account surface flow influx in order to determine a water-dependent transmissivity value, the trade-off for not doing so was to only consider the five largest existing groundwater diversions within 1.5 mile radius of the proposed well even though it is undisputed that there is substantially more ground water pumping occurring than from only five wells. Based on the slightly increased pumping levels in some of the wells throughout the irrigation season, even with the substantial influx of surface water from the Big Lost River, it is evident that groundwater pumping has some impact on water levels in this particular area. However, a reliable methodology to calculate the total volume of surface flow influx would be difficult to determine because of the heterogeneous nature of the aquifer. The trade off, then, was to only consider withdrawals of the five largest well existing within the 1.5 mile radius.

Additionally, while the model did not have barrier boundaries, the model still incorporated one of the standard assumptions of the Theis equation of having an infinite areal

extent. As stated at the hearing by both experts, all of the assumptions of the Theis equation are never exactly met in any model. The barrier boundary was not included by Higgs because the exact location of the barrier boundaries is not known. Bassick and Jones did not identify the location of a barrier boundary in their report, which was based upon a well located further to the west and closer to the conceptual barrier boundary surely exists at some point. The proposed well is located further towards the middle of the Big Lost River Basin, away from the barrier boundary, than the Well Orchard well studied in the Bassick and Jones report.

30. During the 2010 irrigation season, Mr. Higgs measured the water levels of four wells in the area (Old Moss Well, Babcock Well, Dad's Place Well, and USGS Well 05N26E23CDA1). The first of the measurements were taken on June 28, 2010. The last of the measurements were taken on September 13, 2010, 77 days later. An initial measurement was not performed at the Old Moss Well until August 9, 2010, resulting in a 35-day measurement period. Mr. Higgs observed drawdown in the wells ranging from a 3.5 foot decline in water level to a 1.0 foot gain in water level. 2010 was a good water year and water flowed in the Big Lost River near Arco for a large portion of the irrigation season.

APPLICANT'S RESPONSE: The Hearing Officer indicates that 2010 was good water and that water flowed in the Big Lost River near the Arco gauge for a large portion of the irrigation season. However, the Hearing Officer does not cite to evidence in the record showing that water flowed in the Big Lost River near Arco for a large portion of the irrigation season. The only evidence presented at the hearing regarding these flows was of figure 7 of the Wood rebuttal report found at P29, on page 22. It is difficult to tell from the resolution of the graph, but it appears that there were some flows at the Arco gauge for some portion of the irrigation season, but certainly not for a large portion of the irrigation season. Telford has reviewed actual measurements, a summary of which is attached at Exhibit 2 to this brief, and it shows that there was a total of 3 days in May, 22 in June, and 9 in July—for a total of 34 days—that water flowed at the Arco gauge. 34 days out of a 214 day irrigation season, which equates to 16%, is not a “large portion” of the irrigation season.

It appears that the Hearing Officer's conclusion is made to somehow question or discredit the Higgs approach of calibrating a transmissivity to what the Hearing Officer believes is an unusually high water year in 2010. The flow data at the Arco gauge does not support this finding, however. While it is likely that most would agree that the water year was above average, it was not unusual. Calibration of the transmissivity to 2010 should therefore be considered appropriate and a fair representative of water availability in the Big Lost River valley.

31. Mr. Higgs compared his modeled drawdown to the measurement data and concluded that "the [transmissivity] of the aquifer when taken as an areal formation is much greater than 250,000 ft²/day and closer to 500,000 ft²/day." (Higgs Report, page 14, Exhibit All) "The conclusion of this study determines the average [transmissivity] throughout the proposed location area is greater than 500,000 ft²/day." (Id.)

APPLICANT'S RESPONSE: It deserves emphasis that Higgs's determination was based upon observed water levels in 2010, and that the transmissivity value will change from year to year based on water levels in the aquifer. In 2010, it is likely that the transmissivity was around 500,000 ft²/day, and was likely higher than 500,000 ft²/day.

32. Mr. Higgs then calculated the potential drawdown effects of the proposed well, assuming a transmissivity value of 500,000 ft²/day and the proposed well diverting 5.00 cfs for 100 days. Mr. Higgs found that the drawdown at the Babcock Well (located approximately 0.3 miles to the west of the proposed well) would be 0.5 feet. (Higgs Report, page 14, Exhibit All)

APPLICANT'S RESPONSE: The information contained in paragraph 32 is accurate, although it does not discuss the range of analysis provided by Mr. Higgs, where he included transmissivity values ranging from 50,000 ft²/day and 500,000 ft²/day. It is unclear why this additional part of the analysis was not included in the Hearing Officer's analysis. In Higgs' best judgment, the water dependent transmissivity value is likely 500,000 ft²/day, which is the value he included in his conclusion. However, the Hearing Officer does not paint a complete picture. The figures attached to Higgs Report shows a range of T values and their potential drawdowns. If, in fact, the Hearing Officer believes the T value is more appropriately located between 50,000 ft²/day and 100,000 ft²/day, the graphs show drawdowns for these values. The Hearing Officer was therefore incorrect, as set forth below, to state that the Higgs approach did not provide a reliable estimate of transmissivity, and therefore, the Applicant did not meet its burden of proving transmissivity. Higgs presented a range of transmissivities and their associated drawdowns, and therefore very clearly met the Applicant's burden.

We would additionally request that the hearing officer—who has adopted the Wood model as reasonable—consider the additional evidence presented with Wood's model, only with higher transmissivity values within the most probable range and without the southern boundary, which are explained in the discussion below the conclusions of law below.

34. Mr. Wood testified that the data collected at the Babcock and Loftus wells was unreliable and not used in his analysis. "Drawdown observed in both observation wells [were] rendered

[uninterpretable] due to fluctuations in barometric pressure and rising aquifer levels due to the apparent influx of river water." (Wood Report, page 7, Exhibit P21) "Unstable weather conditions (i.e. a storm) during the three day test cause[d] significant barometric effects to water levels." (Id.) The only data used by Mr. Wood in his analysis was collected at the Carpenter irrigation well.

APPLICANT'S RESPONSE: While we agree that this finding of fact summarizes correctly quotes from the Wood report, we again note that the rising aquifer levels observed by Mr. Wood support the concept that the Big Lost River aquifer is highly influenced by surface flow influx.

35. Mr. Wood used the Cooper-Jacob form of the Theis solution for a confined aquifer to calculate the aquifer parameters at the test pump location. Mr. Wood's use of a "confined" aquifer solution is supported by the 2002 Well Driller's report for the Carpenter irrigation well and by the 1992 Bassick and Jones study, conducted about three miles south of the Carpenter well. (See Exhibit P5 and Bassick and Jones 1992 Report, Theis Analysis, Exhibit P19) Mr. Wood estimated the transmissivity of the local aquifer to be 84,000 ft²/day.

APPLICANT'S RESPONSE: This finding of fact does not fully explain how Mr. Wood arrived at the transmissivity of 84,000 ft²/day. Pages 32 and 33 of his report illustrate the measured pump test data, as well as a graph with a line with a slope from which the transmissivity value is obtained. As shown on page 32, the early timed data shows a transmissivity of 680,000 ft²/day, which is higher than the estimated transmissivity value of around 500,000 ft²/day provided by Mr. Higgs. The Hearing Officer did not note this initial transmissivity value measurement in this finding of fact. Instead, the Hearing Officer focused only on page 33 of the report, which purports to show a much greater slope resulting in a transmissivity value of 84,000 ft²/day.

During rebuttal at the hearing, Mr. Higgs zoomed in on this particular part of the regression line, and it was extremely obvious that the regression line does not flow through the center of the data between the 1,000 minute and beyond time period. It is further important to note that this value was obtained by fluctuations in the well of mere inches, as shown by the corrected displacement (drawdown) in feet on the Y axis of the graph. As explained by Mr. Higgs at the hearing, the slope of the regression line would result in the transmissivity value being higher if the slope was more leveled out. This methodology of obtaining a T value through a single pump test based a regression line that appears to be skewed to a result favorable to the Protestants, cannot be reliable. There is no discussion by the Hearing Officer regarding the line slope approach of Mr. Wood, and the ability for the modeler to move the line and amend the

slope. A careful review of that regression line demonstrates that it is not accurately placed. Mr. Wood arbitrarily limited the portion of the graph where he put the line, and did not place it over the entire data set, but chose where to place it. This is a manipulative approach that should be rejected.

In light of the fact that the Hearing Officer has agreed with the Wood approach, and similar to the Hearing Officer's replication of the Wood model, Higgs has likewise replicated that model, with the boundaries that the Hearing Officer found to be appropriate on the east and west sides of the Big Lost River Valley (but without the southern boundary for the reasons set forth above), but with transmissivity values that are within the range of reasonableness set forth above. If all of the pump test data is taken into consideration, the modeling programs curve match feature draws in the line shown in the document attached hereto as Exhibit 3. That feature, free of manipulation, provides a transmissivity of 755,900 ft²/day. This is clearly much higher than the 84,000 ft²/day determined by Mr. Wood, and evidences that his estimate is not reasonable.

36. Mr. Wood then created a model to determine the drawdown impacts of the proposed well. The model was based on a standard Theis equation and incorporated the following assumptions: 1) a transmissivity of 84,000 ft²/day; 2) a storativity value of 0.001; 3) diversion from the proposed well at 5.00 cfs for the entire irrigation season - 214 days; 4) an aquifer boundary existing 3,200 feet to the west of the proposed well where the alluvial aquifer intersects the impermeable rock of the mountainside; 5) a similar aquifer boundary existing 2 miles to the east of the proposed well; and 6) an aquifer boundary existing 2 miles to the south of the proposed well. (See Wood Report, Table A3-1, Exhibit P21) The storativity value used by Mr. Wood (0.001) is consistent with the findings of previous aquifer studies in the area. (See Bassick and Jones 1992 Report, Results of Aquifer Test, Exhibit P19) Mr. Wood concluded that the draw down in the nearby wells could be as much as 40 feet in a drought year, when there are little or no surface water contributions to the aquifer. (See Wood Report, page 12, Exhibit P21)

APPLICANT'S RESPONSE: Paragraph 36 contains perhaps the most significant factual error made by the Hearing Officer, who summarizes Mr. Wood's calculations to show that "drawdown in the nearby wells could be as much as 40 feet in a drought year, where there are little or no surface water contributions to the aquifer." Emphasis added. This finding of fact is absolutely incorrect and does not summarize Mr. Wood's conclusions.

Page 12 of Mr. Wood's report, which the finding of fact quotes from, states the following: "The drawdown caused by the proposed Telford transfer would be about 40 feet to nearby groundwater pumpers." There is no reference to drought conditions anywhere in this

sentence. In fact, if the Hearing Officer were to review page 11 of Mr. Wood's report, Mr. Wood engages in an analysis where he states that the drawdown to the Nate Carpenter irrigation in **normal** water conditions would be 40 feet. Mr. Wood further concludes that based upon the hydrograph contained at figure 14 of his report showing a maximum 75 feet fluctuation in water levels between wet and drought cycles over the past sixty (60) or so years, the drawdown would be an additional 75 feet. Further, Mr. Wood includes an in-well pumping decline of 8.5 feet and then states very clearly "the water level decline in the Nate Carpenter irrigation well **during drought periods will be 123.5 feet if the proposed transfer is approved.**" Emphasis added.

This remarkable conclusion would blame 123.5 feet of drawdown on a single pumping irrigation well in an aquifer that is highly responsive to surface flows, when a combination of hundreds of other groundwater wells pumping during drought conditions years prior would only drop the water table 75 feet. This predicted drawdown from Telford's single new well would be nearly two times the 75-foot reduction in water levels caused by **drought and all other ground water pumping in prior years.** This conclusion defies logic.

The tone of the Hearing Officer's decision is favorable to Mr. Wood's conclusions. However, we invite the Hearing Officer to reconsider the rationality of Mr. Wood's approach. His conclusion in this regard is patently unreasonable.

We further note from finding of fact 36 that the Hearing Officer believes a storativity value of .001 is a better measure of the actual storativity in this particular area. Storativity is defined as "the volume of water released from storage for a unit horizontal surface area through the combination of gravity drainage and elastic deformation over the entire thickness of the aquifer for a unit decrease in the height of the water table." John F. Hermance, *A Mathematical Primer on Groundwater Flow*, at 157 (1998). In the Crosthwaite Report which is cited to nearly all of the reports from the Big Lost River Basin, page 81 of that report assumes a storativity of .20, which is very close to the storativity value provided by Mr. Higgs of .024.

Regarding the aquifer boundary existing 2 miles to the south, please see the discussion of finding of fact 24 above.

II. ANALYSIS / ADDITIONAL FINDINGS OF FACT

1. The Higgs Method of determining transmissivity in the area of the proposed well is not reliable and suffers from three major flaws. First, the Higgs Method compares expected drawdown derived from a model, which **does not account for surface water contributions to the aquifer,** to drawdown measurements collected in 2010, a year when surface water contributions

to the aquifer were very significant. A hydrograph for a nearby monitoring well (05N 26E 05 SESWNE), included in the Higgs Report, shows that the water table can rise as much as 10 feet during the irrigation season. (Higgs Report, Figure 2, Exhibit All) This rise in water level still does not account for all of the surface water contributions because some of the influx of surface water is masking the drawdown from ground water pumping. (See Higgs Report, pages 9-10, Exhibit All) In a good water year, such as 2010, the actual effect of surface water contributions on ground water levels could be far greater than 10 feet. Matching modeled water levels that do not account for the contributions from surface water sources, to observed data that is heavily influenced by contributions from surface water sources does not work.

APPLICANT’S RESPONSE. Matching modeled water levels to observed data which is impacted by surface flow influx *does work*. As set forth above, transmissivity is influenced by water levels in the aquifer. Higgs’ straightforward approach to match measured data with modeled results is rational and reliable.

Conceptually, the Hearing Officer unfairly criticizes the Higgs approach as not taking into consideration the significant influx of water lost from the Big Lost River and other canals in the Lost River Valley. This is not accurate. The Higgs approach attempted to logically define aquifer properties based upon real world measurements. Alternatively, the Wood approach was based entirely on computer generated modeling, without any consideration of measured well depth-to-water measurements. The message of the Hearing Officer’s decision appears to be that computer-generated results will be relied upon more by the Department, as opposed to real world mechanisms that attempt to fit real world well-depth measurements with modeled results.

The fundamental difficulty in defining aquifer characteristics is that the Big Lost River aquifer is highly dependent upon lost surface water from the Big Lost River and neighboring canals. The problem is attempting to model what that influx could be, because it varies from year to year. Matching data to the most recent water year—2010—is reasonable.

Furthermore, there is no guidance from the with Department of Water Resources a fundamental question that has to answered is: Under what water year scenario must injury be analyzed in a highly-influenced ground water system from surface water influx? There can be little doubt that Mr. Wood’s rather pessimistic report focused on water levels during times of extreme scarcity or drought. Quoting from Mr. Wood’s rebuttal report, “the carrying capacity is not determined by the ability of the aquifer to store and transmit water *during times of plenty*. The carrying capacity is defined by how much water can be pumped during periods of drought when it is needed most. This is the times that Clearwater focused on and demonstrated that the proposed transfer will damage nearby water users.” P28 at 12.

In fact, Mr. Wood acknowledges that there will be no impacts in years of above-average water supply: “It is certainly true that one or more years in a row surface water recharge might exceed pumpage.” *Id.* Nevertheless, Mr. Wood then accuses Mr. Higgs of taking a “short-sighted one season look at the water levels in the basin and said things are OK”. *Id.* In Mr. Higgs report, he states very clearly that “hydrographs throughout most of the BLR valley illustrate the fact that the groundwater is highly connected with the surface water. A11 at 6. Mr. Higgs further acknowledges that during drought period where there is much less interaction with the aquifer in the Big Lost River, the aquifer responds to this reduced influx with lower depth to water. *Id.* at 6-9.

In short, it is no secret, and in no way did Mr. Higgs try to downplay, the significance of water from the Big Lost River infiltrating into the aquifer. The question therefore becomes what is the standard that must be met by the applicant to show that there be will no injury? Certainly if the standard is that there can be no drawdown to neighboring wells, even in Armageddon-type drought conditions, there is no way that any water user could meet that particular standard. Focusing on a worst-case drought scenario does not appear to be what the legislature had in mind when it called for the “full economic development of the underground water resource.” Idaho Code § 42-226. Prior appropriation and reasonable pumping levels would address lower water conditions in a drought year. *Id.*

In short, Mr. Higgs demonstrated that in a good—but not unusual—high water year such as 2010, the transmissivity is high, and the potential for injury to other wells is virtually nonexistent. In drought conditions, other management considerations must be implemented.

2. Second, the Higgs Method does not account for existing aquifer boundaries. In his testimony, Mr. Higgs acknowledged that a flow boundary exists to the west of the proposed well. As described above, barriers to flow also exist to the east and to the south of the proposed well. Mr. Higgs stated that he chose not to include the aquifer boundaries because he was unsure of the exact boundary locations. Although the precise location of these boundaries may not be known, a conservative analysis of the potential draw down impacts of the proposed well should have included these boundary conditions at a best-estimate location.

APPLICANT’S RESPONSE. See responses to findings of fact 24 above.

3. During the hearing, Mr. Harris challenged Mr. Wood's inclusion of a southern boundary in his model as being inconsistent with the Department's ESP A Model. Mr. Harris noted that the ESPA Model shows impacts hundreds of miles away with a large hydraulic gradient between points. Mr. Harris' analogy to the ESPA Model is misplaced. The purpose of including no-flow boundaries in ground water modeling is to limit the areal extent of recharge or supply to a

pumping well. The impacts of pumping from the proposed well can reasonably be assumed to propagate down-gradient to the ESPA, depriving the ESPA of a source of recharge. However, due to the physical relationship of the well and the ESP A (the well resides at an elevation significantly above the ESPA) the ESPA cannot in turn serve as source of recharge or supply to the well.

APPLICANT’S RESPONSE: In this finding of fact, the Hearing Officer interpretation of Mr. Harris’s exchange with Mr. Wood regarding the southern boundary assumption is misunderstood. The point of the exchange is to explain that conceptual boundaries modeled at locations of steep hydraulic gradient are not incorporated into IDWR’s ESPAM, nor the related IDWR transfer tool.

It is self-evident that areas of steep water level contours do not necessarily mean that water cannot transmit through these specific areas. The Exhibit 1 slides attached hereto, and explained in response to finding of fact 24 above, illustrate this very issue. The fourth and final slide poses the question of whether the Snake Plain Aquifer is like one bathtub, or three, based upon the Mud Lake Barrier and the Great Rift. The slide further states that “in reality, water crosses these barriers although it is more impeded, and that the whole system is really interconnected.” This forms the logical basis for the Department’s ESPAM model, and its offspring, the IDWR transfer tool. If the Hearing Officer is really saying that areas of tight water level contours indicate “conceptual boundaries to flow,” we believe this a landmark finding. Because decisions of the Department have precedential value, it is important to know whether or not the Hearing Officer in this case supports the concept of the ESPAM, or Dr. Wood’s approach to put a conceptual boundary to flow a mere two (2) miles south of the proposed well location, which would indicate that the Big Lost River is really a series of various “bathtubs.” This question must be specifically answered in response to the *Petition for Rehearing*.

We agree with Conclusion of Law No. 4 that “Mr. Wood may have modeled the southern aquifer boundary too close to the proposed well,” and that the change in water level two miles south of the proposed well is only 50 feet.” From a modeling standpoint, the southern boundary input into the model reduces the area that ground water can be pulled from, and therefore, would artificially increase the hydrologic impact making a better case for the protestants. However, it also stands for the proposition that there are isolated pockets, or bathtubs, throughout the Big Lost River basin and the ESPA, which would isolate them from conjunctive administration. It perhaps goes without saying that if the hearing officer maintains his finding that steep hydraulic gradients form boundaries to pumping effects, this philosophical shift in IDWR thinking is

significant. The Hearing Officer should further explain his reasoning in this regard, or reverse his prior position, and find that the southern boundary assumption is not reasonable.

4. Mr. Wood may have modeled the southern aquifer boundary too close to the proposed well. According to the water level contour bars displayed in the 1992 Bassick and Jones Report, the change in the water table elevation between the proposed well and Mr. Wood's southern aquifer boundary is only 50 feet. (See Exhibit P19 and Wood Report, Figure 13, Exhibit P21) Further analysis may be required to determine the proper placement of the southern boundary relative to the proposed well.

APPLICANTS RESPONSE: See response to Conclusion of Law No. 3 above.

5. Third, although the Higgs drawdown model assumes a pumping season of 100 days, he compared his modeled drawdown scenarios to water level measurements from a 77-day interval (and in one case a 35-day interval). There is some doubt as to whether the five largest pumps were even running for the entire 77-day period. Given the flows in the Big Lost River during 2010, it is likely that water users within the area were able to rely more heavily on surface water supplies, reducing the demand on ground water. By comparing 100 days of pumping in the drawdown model to the results of far less actual pumping, the transmissivity value was estimated higher than it should be, resulting in a decreased drawdown estimate.

APPLICANTS RESPONSE: In this paragraph, the Hearing Officer criticizes the Higgs approach to assume a 100-day pumping time period. At the outset, it perhaps goes without saying that a model simply presents a conceptualized attempt to replicate real world situations based on various inputs. In dealing with heterogeneous aquifers, it therefore follows that any assumption made on any model could be critiqued and criticized. However, the criticism offered by the Hearing Officer in paragraph 5 and the following paragraph 6, appears to be backwards.

In paragraph 5, the Hearing Officer criticizes Higgs by using a 100 day pumping time period, which would increase the amount of volume pumped from the aquifer, and result in an increased amount of water pulled from the aquifer, which would result in an increased drawdown estimate, not a decreased drawdown estimate as articulated by the Hearing Officer. Similarly, in paragraph 6, the Hearing Officer criticizes Higgs by using a higher pumped volume assumption. Again, in a conceptual model, which attempts to look at impacts to neighboring wells, an increased volume assumed to be pumped from these five wells without taking into account the model surface flow influx would result in a greater drawdown, not a decreased drawdown estimate. These findings of fact need additional explanation, as they appear to be incorrect because if anything, the increased assumed pump volume would result in a more conservative model.

6. There is a significant difference between the diversion volumes assumed in the Higgs drawdown model and the actual diversion volumes measured in 2010. Mr. Higgs had the actual diversion numbers from 2010, yet he created a model based on theoretical 100-day diversion rates. The 2010 data was even included in Table 2 of the Higgs Report. Taking the five wells used in the model, the “assumed” diversion volume for the wells would have been 5,445 acre-feet (wells pumping at 12,354 for 100 days). By comparison, Table 2 in the Higgs Report shows the 2010 diversion for all of the irrigation wells in the area was only 3,107 acre-feet. Mr. Higgs drawdown model overstated the theoretical drawdown for 2010, which, when compared with the measured drawdown, resulted in a higher transmissivity value and decreased drawdown estimate.

APPLICANT’S RESPONSE: See response to paragraph 5 immediately above.

7. The 1964 Mundorf study, described in the Higgs Report, has limited relevance to the current application. According to the Higgs Report, The Mundorf pump test was conducted in a basalt aquifer 4 miles west of Arco. (Higgs Report, page 3, Exhibit All) The results of this test could vary significantly from tests performed in a different aquifer material, such as the unconsolidated alluvial material found at the proposed well. Mr. Higgs used a storativity coefficient in his model, 0.024, based on the Mundorf test. Because of the distance to the Mundorf test well and the difference in aquifer material, use of the Mundorf storativity value to model drawdown at the proposed well is questionable.

APPLICANT’S RESPONSE: See response to finding of fact 36 above. Crosssthaite used a storativity value of .2. See also response to conclusions of law below, summarizing analysis of drawdown values using a storativity of .001.

8. Mr. Wood's method of determining transmissivity, by performing an actual pump test, is more reliable. There is some degree of uncertainty relating to the pump test. The variation in water levels observed in the test well at the end of the test period were so small, it is difficult to know whether changes in barometric pressure may have influenced the results. Mr. Wood stated that data from the two observation wells had to be discarded because they may have been influenced by barometric pressure changes resulting from storms. (Wood Report, page 7, Exhibit P21) Mr. Wood's estimate of transmissivity was based on the slope of the test data plotted on a logarithmic graph. (See Wood Report, Figure A2-1 and A2-2, Exhibit P21) Even a slight change in the data due to barometric pressure may have influenced the slope of the line and accordingly, the transmissivity estimate.

APPLICANTS RESPONSE: In this paragraph, the Hearing Officer accepts Mr. Wood’s method of determining transmissivity, because it was done with an actual pump test, but then states that there is some degree of uncertainty relating to the pump test. Respectfully, the Hearing Officer should not be able to have it both ways by relying upon the data, and yet acknowledges its uncertainty. Remarkably, the Hearing Officer further states that “even a slight

change in the data due to barometric pressure may have influenced the sloping of line, and according the transmissivity estimate.” How can this uncertainly be considered reliable?

Despite the uncertainty, the Hearing Officer states that the estimate of transmissivity by Mr. Wood was reasonable even though it was based on the slope of the plotted pump test data. As discussed above, a simple observation of the slope of the graph indicates that the slope is too steep, and in order to bisect the data correctly, would need to be more flat which would result in a higher transmissivity value. Indeed, even with Mr. Wood’s analysis, at a time of up to 1,000 minutes of pumping, the transmissivity value was a rather large 680,000 ft²/day. Perhaps a reasonable approach would have been to average these amounts. Nevertheless, the Hearing Officer goes on to further state that the 84,000 ft²/day, which is the amount measured after 1,000 minutes of pumping, was most likely. We request that the Hearing Officer reconsider his findings in this particular paragraph, because, as written, they are inconsistent.

9. In a preliminary analysis, before employing the Higgs Method, Mr. Higgs estimated a transmissivity for the local aquifer close to that proposed by Mr. Wood. In a letter to Mr. Telford, dated September 8, 2010, Mr. Higgs states: "Based on the data from surrounding wells an estimate of the transmissivity at approximately 100,000 ft²/day is most likely in the area of your proposed well." (Exhibit P26) In the letter, Mr. Higgs acknowledges that he "reviewed all available data from within the area of [the] proposed well location," including "all known hydrologic reports." (Id.) It seems that Mr. Higgs only strayed from this initial estimate of transmissivity because of the results of the Higgs Method, which, as described above, is fundamentally flawed and unreliable.

APPLICANT’S RESPONSE: In paragraph 9, the Hearing Officer notes that in a letter from Mr. Higgs provided to Telford early on in these proceedings, that the transmissivity of 100,000 ft²/day would be most likely. The Hearing Officer then suggests that Mr. Higgs only strayed from this initial estimate because of the results of the Higgs method.

The letter provided to Telford was an initial estimate of transmissivity based on published data. The letter does not purport to contain any in-depth analysis similar to that conducted by Higgs after the prehearing conference in this matter. In an attempt to be conservative on the transmissivity value, from which to base some initial analyses, Mr. Higgs provided the 100,000 ft²/day. As indicated in the letter, this value was pulled from known hydrologic reports, and not from his later more-detailed analysis. Mr. Higgs did not change his position to achieve a desired result, as seems to be suggested in this finding of fact. Rather, as a result of more detailed

analyses, the transmissivity value changed when the influx from the river and the measured ground water depths in 2010 were taken into consideration.

Furthermore, the Hearing Officer continues to ignore that Mr. Higgs plotted various transmissivity values, including a transmissivity value of 100,000 ft²/day in his charts. Yet there is no mention of these, and even at a value of 100,000 ft²/day, there is a predicted drawdown that the Hearing Officer could review and determine whether or not the drawdown causes injury. Doing so would necessarily require the Hearing Officer to perform the Department's function in determining reasonable pumping levels, which the Hearing Officer did not do later on in the decision, for unexplained reasons.

10. Attached to the Higgs' September 2010 letter is a Well Driller's Report for a municipal well drilled by the City of Moore. (See Exhibit P26) The well is located approximately 0.5 miles to the northeast of the proposed well. At the time the well was completed in November 1969, a pump test was conducted for 6 hours. The draw down measured at the test well was over 21 feet. Mr. Wood's model, with a transmissivity of 84,000 ft²/day, shows the expected drawdown at the proposed well after 6 hours would be about 7 feet. This is an indication that Mr. Wood's drawdown estimates are not unreasonable, and may actually be somewhat conservative.

APPLICANT'S RESPONSE: This finding of fact contains analyses that were not presented at the hearing but appear to have been conducted during the Hearing Officers review of the data prepared, there is no discussion of how Mr. Wood's model was replicated internally within the Department, but trust that it was replicated correctly. The Hearing Officer goes further and states that Mr. Wood's drawdown estimates were not unreasonable and may be actually conservative. However, it appears that this statement was based upon the misunderstanding in Mr. Woods testimony that drawdown would be 40 feet in a drought condition, as opposed to the actual prediction provided by Mr. Wood, which would be 123.5 feet caused by pumping from a single well in a drought year.

11. Given all of the evidence in the record, Mr. Wood's transmissivity estimate is reasonable. It largely agrees with the previous studies cited by both experts in this case and even agrees with Mr. Higgs' initial estimate. Although the transmissivity proposed by Mr. Wood, 84,000 ft²/day, is slightly lower than some of the values found in previous pump tests, it still falls within the reliable range stated in those studies. Mr. Wood's incorporation of aquifer boundaries to the west, east, and south are valid assumptions. His assumption that the proposed well will be pumping for 214 days straight, however, is not reasonable. Using Mr. Wood's model output (represented in Figure A3-1, Exhibit P21) and assuming an irrigation season of 100 days (144,000 minutes), the estimated drawdown in the Carpenter and Babcock wells could be as much as 28 feet.

APPLICANT'S RESPONSE: As stated above, we disagree with the Hearing Officer's determination that Mr. Wood's transmissivity was appropriate. Remarkably, the Hearing Officer states that the 84,000 ft²/day falls within the reliable range stated in those studies. Yet in paragraph 2 of the findings of fact, citing Bassick and Jones, these individuals state that the most probable transmissivity would be values of 130,000 at 200,000 ft²/day. Mr. Wood's value does not fall within that range. Additionally, the Hearing Officer states unequivocally that Mr. Wood's incorporation of the southern aquifer boundary is a valid assumption. We again ask the Hearing Officer to articulate clearly how a southern boundary could be considered a valid assumption, and yet conceptually gradient boundaries be ignored in the ESPA model employed extensively by the Department. In other words, the Hearing Officer appears to indicate that there are multiple bathtubs in the Big Lost River valley. If this indeed the case, the Hearing Officer should very clearly state so.

With regards to the Hearing Officer's comment that Mr. Wood's model output which assumes an irrigation season of 214 days is unreasonable, we agree with the Hearing Officer's finding in that regard. Nevertheless, we note again that this calculated drawdown estimate made by the Hearing Officer of 28 feet should be reconsidered in light of the Hearing Officer's review of the Wood report showing a drawdown of 123.5 feet in a drought.

Furthermore, we invite the Hearing Officer to reconsider Higgs's approach to match modeled results to real world data. Rising water levels in a well even after irrigation wells have been pumping means that the system is supplying more water than the water user can utilize. The aquifer is full and the surface water system is infiltrating more water than is needed. A continually rising water level would result in a higher transmissivity value. As stated in the Higgs report the Burnett well was down almost 1 foot. The Babcock well was down almost 1.5 feet and the River Place well was down a little more than 3.5 feet.

The Higgs method considered the above facts when determining a methodology. In addition, using the actual pumping data, a conservative storativity of 0.001, and low transmissivities in a model to match the actual measured water levels would not result in a correct calibration. Therefore, the Higgs model used increased pumped volumes, assumed that not all the wells were pumping, but also assumed no influx from the river, as well as a storativity of 0.025. Even with all the somewhat liberal parameters in the Higgs model, the transmissivity was calculated to likely be more than 500,000 ft²/day. Based upon our further review of the AQTESOLV model, adding influx from the river, dropping the storativity to 0.001, and using the

lower pumped volumes from all wells would have actually increased the transmissivity even higher than 500,000 ft²/day.

12. Mr. Telford testified that, if the transfer were approved, the River #2 Well could be removed from the water rights altogether. It is not clear from the transfer application that the River #2 Well would be removed from the rights. The transfer application still listed the River #2 Well as a valid point of diversion. If the River #2 Well had been completed as planned, Telford Lands arguably would be able to divert its full water rights, and this transfer would likely not have been needed. The pending transfer application seems to be the direct result of the River #2 Well not being completed. If the transfer application had been clearer, the proper analysis in this case should have been to determine the difference in drawdown between the River #2 Well pumping at 5.00 cfs and the proposed well pumping at 5.00 cfs.

APPLICANT'S RESPONSE: While hindsight after a contested case hearing is always helpful, the approach taken by Telford was not to look at the River #2 Well pumping at 5.00 cfs because Telford wanted to present a realistic scenario treating the new well as its own independent well. We perhaps assumed incorrectly that the Hearing Officer would take judicial notice of the fact that the proposed well was surrounded by many of Telford's other wells, which means that there are already authorized impacts from those wells present. This was clearly not the case, and we should have provided analysis on the legal pumping effects from this well. However, Telford wanted to be conservative in his approach.

III. CONCLUSIONS OF LAW

Injury to Other Water Rights

3. Telford Lands failed to prove that its proposed change, adding a point of diversion to ten existing ground water rights, would not injure other water rights. The Higgs Method of determining the transmissivity of the local aquifer is fundamentally flawed and unreliable. Because the remainder of his analysis was derived from his estimated transmissivity, Mr. Higgs determination of potential draw down in nearby wells in the area is also unreliable. The figures and graphs included in the Higgs Report cannot even be used to derive a possible drawdown scenario because they do not incorporate known local aquifer boundaries.

4. The protestants provided reliable evidence suggesting the drawdown in nearby wells could be as much as 28 feet. Although there is some uncertainty as to the influence of barometric pressure on the data collected by Mr. Wood, his estimated transmissivity falls within the acceptable ranges established by previous studies in the Big Lost River basin. Ultimately, the protestants do not bear the burden of showing the possible drawdown effects on nearby wells. Mr. Wood's Report raises concerns about possible injury to existing water rights, particularly in

drought years. It is the Applicant's burden to show the proposed change will not injure other water rights.

5. Idaho Code § 42-226 states: "Prior appropriators of underground water shall be protected in the maintenance of reasonable ground water pumping levels as may be established by the director of the department of water resources ... " No basin-wide reasonable pumping levels have been established in the Big Lost River basin. Therefore, the reasonableness of drawdown impacts to neighboring wells caused by a proposed well must be evaluated on a case-by-case basis. Because the Applicant failed to provide a reliable estimate of the possible drawdown in nearby wells, the Department cannot make a determination of the reasonableness of pumping levels.

6. The potential drawdown derived from the protestants' evidence (28 feet) is significant enough that the Carpenter irrigation well and the Babcock Well could go dry in a drought period similar to the early 2000s. Without the possible drawdown caused by the proposed well, these two wells would likely still be able to pump, even in a drought period similar to the early 2000s. Any evaluation of reasonable pumping levels in the area of the proposed well must account for the high variability of water levels in the Big Lost River aquifer.

7. In a 1982 case, the Idaho Supreme Court determined that the "reasonable pumping levels" standard of Idaho Code § 42-226 does not apply to domestic wells used prior to 1978. (See *Parker v. Wallentine*, 103 Idaho 506 (1982)) Two pre-1978 domestic wells are located within 0.5 miles of the proposed well (the Carpenter domestic well (1896) and the Babcock domestic well (1889)). The difficulty with a *Parker v. Wallentine* analysis in this case is that the protestants' own irrigation wells are contributing to the decline of water levels in their pre-1978 domestic wells. The Babcock Well (irrigation), for example, sits within 800 feet of the Babcock domestic well. Further, the location, size, and depths of the original (replaced) domestic wells are unknown.

8. The protestants did not assert a *Parker v. Wallentine* type protection for the two pre-1978 domestic wells. Nor was there any evidence presented regarding water levels in the wells prior to 1978. Therefore, the Department will not conduct a *Parker v. Wallentine* analysis as part of this Order. However, the protestants are free to pursue such an argument in any future proceeding.

APPLICANT'S RESPONSE TO THE ABOVE PARAGRAPHS: In this serious of conclusions of law, the Hearing Officer claims that Telford failed to prove that its proposed change would not injure other water rights. The Hearing Officer concluded that the Higgs method of determining transmissivity is flawed and unreliable, even though the amounts fall within ranges previously provided in studies of the Big Lost River basin. We disagree.

Recognizing this undisputed fact that the Big Lost River aquifer is substantially influenced by surface flows in the Big Lost River, Mr. Higgs attempted to provide a real world water level influenced transmissivity value. The surface water influx showed responses in actually measured depth-to-water well measurements, and therefore the challenge was to develop a conceptual model that would match with the real world measurements. Again, this is an

attempt to incorporate actual on the ground surface water influx that occurs every year from the Big Lost River.

Because there is no reliable way to measure the amount of surface water influx, Mr. Higgs, using his best professional judgment, determined that his conceptual model would ignore the surface water influx, which was substantial, but on the other side of the coin, would only model pumping from the five largest existing groundwater diversion within 1.5 miles of the purposed well to be pumped for 100 days. The idea was simply that even with all of the surface water influx, a number of wells showed declines in groundwater levels throughout the irrigation season. Mr. Higgs determined that the measured water level influenced transmissivity, which would take in to account surface flow influx from the Big Lost River, would be between 250,000ft sq/day to slightly greater than 500,000 ft sq/day. These are values well within the range of the transmissivity values from studies cited by the Hearing Officer or introduced at the hearing. This is a far cry from the Wood analysis, which placed the transmissivity in the bottom 10% of the ranges estimated by Said et al. to be between 50,000 ft²/day and 1,000,000 ft²/day.

Properly understood, the Higgs approach attempts to take into account the real world situation, by attempting to match drawdown values to measured well locations. This water dependent transmissivity approach is certainly innovative, and in a highly interactive ground and surface water system such as the Big Lost River valley, would appear to be appropriate. We therefore invite the Hearing Officer to review the record, as well as the addition discussion provided in this *Petition for Reconsideration*, and request that the Hearing Officer reconsider his prior decision.

In addition, however, in the above conclusions of law, the Hearing Officer surprisingly makes a conclusion that the Applicant did not meet his burden in this case even after citing to Idaho Code § 42-226, which provides “while the doctrine of first and time is first and right is recognized a reasonable exercise of this right shall not block full economic development of the underground water resources. Prior appropriators of underground water shall be protected in the maintenance of reasonable groundwater pumping levels as may established by the director of the Department of Water Resources as herein provided.” Emphasis added.

The Hearing Officer notes that there have not previously been reasonable pumping levels established by the Department. The Hearing Officer then states that “because the Applicant failed to provide a reliable estimate of the possible drawdown in nearby wells, the Department cannot make a determination of the reasonableness of pumping levels.” Emphasis added.

However, Idaho Code § 42 -226 does not place the burden of establishing pumping levels on an applicant or a water right user. It is placed squarely on the Department. The Department cannot shirk its duties because it has to make these types of determinations. The evaluation of reasonable pumping levels is not done on a case-by-case basis, as held by the Hearing Officer. They are to be established by the Department and apply to all water users. The Hearing Officers should reverse his decision once he undertakes a proper analysis under Idaho Code 42-226.

Additionally, the Hearing Officer makes the conclusion that because he does not believe the information presented by Higgs, the Applicant failed to meet its burden in proving that the transfer would not injure other water rights. Yet in doing so, the Hearing Officer also holds very clearly that he adopts Mr. Wood's approach, and with some tweaks to his model, concludes that drawdown in nearby wells could be as much as 28 feet.

It is evident that in any contested case or trial, the burden is certainly upon the party bringing the litigation or the contested case to initially prove their case. The defense will then obviously attempt to provide other information for the trier-of-fact. Ultimately, there is a determination made as to, for example, the amount of damages incurred in a case, or the scope of an easement, etc. The judge does not state at the end of a trial that because the court didn't adopt every bit of evidence provided by the plaintiff, that the plaintiff did not meet its burden of presenting evidence. The trier-of-fact is to weigh the evidence and at the end of the day, the trier-of-fact is charged with making factual findings as a matter of law to resolve the issue.

In this case, the Hearing Officer suggests that because he doesn't adopt the Higgs approach, but does adopt the Wood approach, that the Applicant failed to meet his burden to presenting reliable evidence. The Applicant certainly met its burden of providing evidence, even though it was not relied upon by the Hearing Officer. Given that the Hearing Officer is determined the drawdown could be 28 feet, we are at a loss to understand how filing another transfer hearing will change the Hearing Officer's findings adopting the Wood approach. It is clear that the Wood approach would apply. Having adopted the Wood approach, and finding a drawdown of 28 feet during normal (not drought) conditions, the fundamental question to be answered in this regard by the Hearing Officer is: Does this result in injury in light of Idaho Code 42-226?

The Applicant stands by the simplistic principle that there will more often be years where there is sufficient supply in this part of the Big Lost River aquifer that would enhance the Applicant's ability to irrigate his farmland. This would contribute to the full economic

development of the water resource, and benefit the Big Lost River Valley at a time when businesses in the valley have moved on, and buildings have been shuttered. In the meantime when supplies drop, the establishment of reasonable pumping levels will protect existing water users. Further, prior appropriation can be enforced under the Department's conjunctive management rules, and thereby provide a remedy to prior appropriators. If the standard articulated by the Hearing Officer is that an applicant must disapprove injury even in severe drought conditions in the Big Lost River valley, the Hearing Officer has effectively signaled the end of any additional transfers to fully develop that water resource during times of plenty.

In light of the fact that the Hearing Officer has agreed with the Wood approach, and similar to the Hearing Officer's replication of the Wood model, Higgs has likewise replicated that model, with the boundaries that the Hearing Officer found to be appropriate on the east and west sides of the Big Lost River Valley (but without the southern boundary for the reasons set forth above), but with transmissivity values that are within the range of reasonableness set forth above. Exhibit 4 shows predicted drawdown at a transmissivity of 130,000 ft²/day. Exhibit 5 shows predicted drawdown at a transmissivity of 200,000 ft²/day. Exhibit 6 shows a predicted drawdown at a transmissivity of 330,000 ft²/day. Exhibit 7 shows a predicted drawdown at a transmissivity of 500,000 ft²/day. At a pumping period of 100 continuous days, the drawdown is plotted, and shows a range of 7-8 feet of drawdown to neighboring wells at 500,000 ft²/day, to 13-15 feet of drawdown to neighboring wells.

While this data is helpful, it does nothing without something to compare it to in terms of a reasonable pumping level. This is the role of the Department, and we request that the Hearing Officer determine such a reasonable pumping level and determine whether this new evidence would demonstrate injury to the protestants.

In short, we request that the Hearing Officer reconsider his prior findings of fact, understanding of the Higgs approach, Mr. Wood's conclusion of an estimated drought drawdown of 123.5 feet despite the maximum 75 foot water level drop evidenced by historic data, the Wood model with increased transmissivity values, as well as the other errors identified above, and reverse the *Preliminary Order* and allow Telford to utilize his full water right with a new well at a location surrounded by his existing wells.

Conservation of Water Resources

10. The transfer application is consistent with the conservation of water resources within the state of Idaho. The Applicant's method of pumping ground water, discharging it into an open ditch, and conveying the water over five miles to the irrigated place of use is arguably inefficient and wasteful. However, this system of conveyance is how the water rights were developed, licensed, and decreed. There are a number of water users within the Big Lost River basin that operate similar ground water irrigation systems. Although the delivery system is inherently wasteful, this transfer application does not increase the inefficiency of the existing system in any measureable way. It is beyond the scope of the transfer review process to determine the wisdom of having issued water rights that allow groundwater to be conveyed such long distances in open ditches.

APPLICANT'S RESPONSE: Finally, conclusion of law #10 places the Applicant in an impossible situation. The Applicant certainly agrees with the conclusion arrived at by the Hearing Officer that this transfer is not contrary to the conservation of water resources within the State of Idaho. However, the Hearing Officer inexplicably offers other commentary as whether or not it is wise to discharge groundwater into an open ditch and transport the water 5 miles to the place of use, stating that it is "inherently wasteful."

We request that this part of the Finding of Fact be stricken, as it was obviously not considered by the Hearing Officer, when he stated that the inefficiency of the existing system is "beyond the scope of the transfer review process to determine the wisdom of having issued water rights that allow groundwater to be conveyed such long distances in open ditches." To the extent the Hearing Officer desires to keep this conclusion of law, however, it is a patently unfair and irrelevant comment.

Most ground water users in the Big Lost River basin commingle their supplies with surface water systems, and that surface water likewise experiences conveyance loss. Are these surface water users also employing an "inherently wasteful" system? There are thousands of miles of canals in Idaho, and yet these rights are not indicted as wasteful water uses even though they suffer significant losses. It is illogical to label transportation of one type of water as wasteful, and yet not the other type of water use when they are conveyed through the same system. The fact that these uses exist demonstrates that the economics of the system, even if not ideal, allow farmers to grow crops

Further, the Hearing Officer failed to articulate a standard that demonstrates what percentage of loss a delivery must suffer in order to be "inherently wasteful." The Hearing Officer's conclusion is surprising, given the fact that the Hearing Officer's predecessors in the

Department of Water Resources not only issued the licenses upon which these water rights are based, but eventually issued recommendations in the Snake River Basin Adjudication vouching for their use.

While we do not think it is necessary because the Hearing Officer made the right conclusion regarding conservation of water resources, but to the extent we can provide further enlightenment on the struggles of ground water users to engage in farming in the Era Flat, we would be happy to provide the Hearing Officer with the substantial amount of evidence Telford and others have attempted to do to increase efficiency in the system and efforts by others to prevent that. For example, Mr. Telford and others attempted to put in pipelines and construct alternative open ditch delivery systems to avoid the existing surface water delivery systems, and now only have losses of 25%, whereas prior commingling with these surface water systems could result in conveyance loss amounts of over 40%. While one of these pipelines is in place and operational, Telford is now currently in litigation regarding placement of the pipeline in the old railroad right-of-way, an easement appraised to be worth \$27.00. The matter is certain to be appealed to the Idaho Supreme Court.

In another instance, when the primary operator of these surface water delivery canals, the Big Lost River Irrigation District, was approached with photographs demonstrating there were not adequate measuring devices or accounting of their water supplies that resulted in higher shrink allocations to ground water users, the irrigation district terminated the transport agreements of these water users, alleging that they did not have adequate measuring devices, even though the system was capable of being measured by a high-tech sonic meter. The Hearing Officer seems to suggest that the inefficient delivery systems and the decision for ground water users to place their water there was made consciously. Nothing could be further from the truth. Ground water users had no choice, and even now as they try to develop their more efficient systems, they are met with significant resistance. Ground water users would like nothing more than to develop their own delivery systems and will continue the fight to do so moving forward.

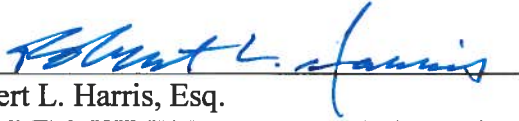
Lastly, we note that it is actually a criminal misdemeanor in Idaho to waste water. Idaho Code § 18-4309 provides that “[e]very person who shall willfully waste water for irrigation . . . shall be guilty of a misdemeanor.” Idaho Code § 18-4302 similarly criminalizes “waster water used for irrigation.” It is unclear if the Hearing Officer’s use of the term “wasteful” is intended to have the same meaning of the exact same word as the term “wasteful” in these criminal statutes. If so, this is absolutely beyond the scope of a transfer proceeding, and the statement

should be stricken. If the Hearing Officer is not stating that it is criminal in nature, given the controversies that exist in the Big Lost River valley, it is not a stretch of the imagination to see how a statement that ground water transportation to the Era Flat is “inherently wasteful” could be interpreted by other water users, particularly those opposed to irrigation out on the Era Flat, to hereinafter declare irrigation at the Era Flat to be criminal. Obviously the term “waste” has significantly negative connotations in Idaho. This statement from the Hearing Officer regarding the inherent wastefulness of their delivery system is not helpful to his decision and is inappropriate, and should be removed upon further reconsideration. In the alternative, we invite the Hearing Officer to articulate an actual standard for open ditch efficiencies—as well as the rationale behind singling out only ground water users of the same delivery system as surface water users—before declaring such a delivery system to be inherently wasteful.

III. CONCLUSION

For the reasons set forth above, the Hearing Officer should reverse his prior decision, and grant Telford’s application for transfer to add a new point of diversion in the vicinity of his other existing wells.

DATED this 15th day of July, 2011


Robert L. Harris, Esq.
HOLDEN, KIDWELL, HAHN & CRAPO, PLLC
Attorneys for the Applicant

CERTIFICATE OF SERVICE

I hereby certify that on this 15th day of July, 2011, I served a copy of the following described pleading or document on the parties listed below by mailing or hand delivery, with the correct postage thereon, a true and correct copy thereof.

DOCUMENT SERVED:

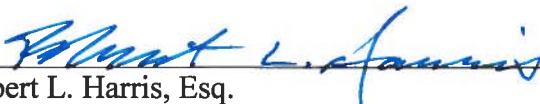
**TELFORD LANDS, LLC PETITION FOR
RECONSIDERATION**

INDIVIDUALS SERVED:

Idaho Dept. of Water Resources
900 N. Skyline Dr., Suite A
Idaho Falls, ID 83402-1718

James P. Speck
SPECK & AANESTAD
Post Office Box 987
Ketchum, Idaho 83340

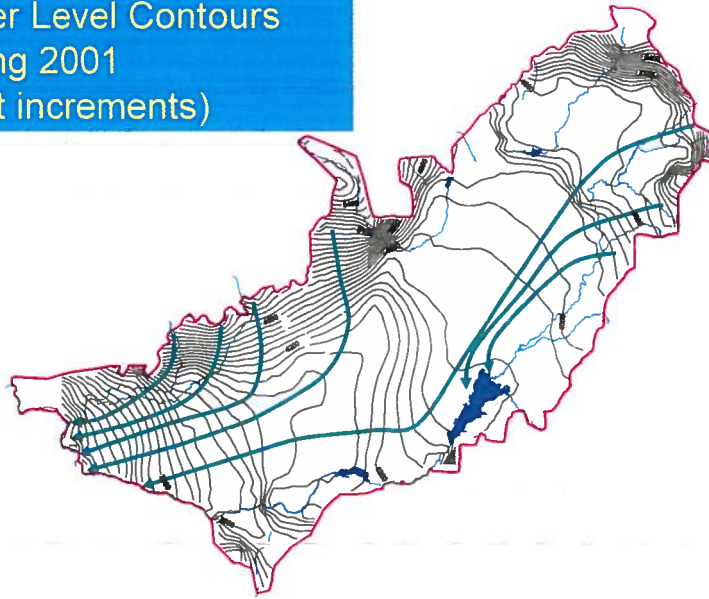
Kirby A. Jensen
2781 N. 3375 W.
Moore, ID 83255



Robert L. Harris, Esq.
HOLDEN, KIDWELL, HAHN & CRAPO, P.L.L.C.
Attorneys for Applicant

EXHIBIT 1

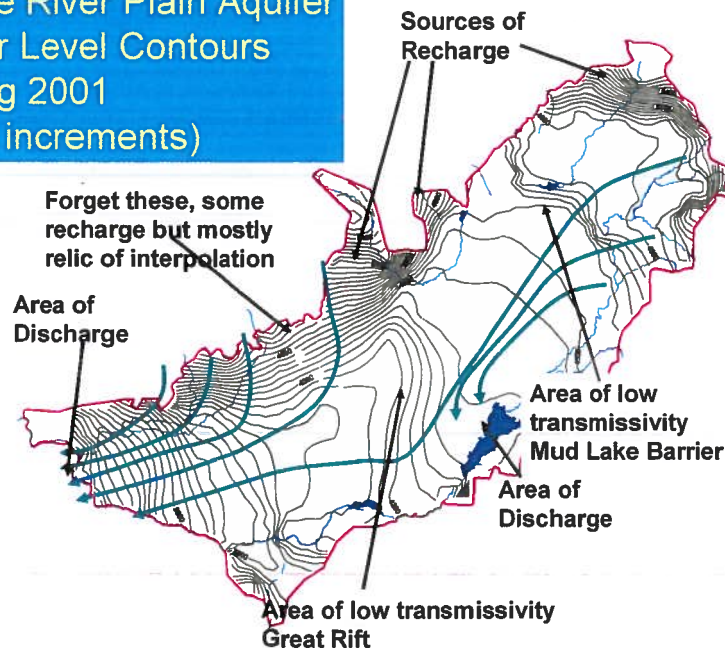
Snake River Plain Aquifer
Water Level Contours
Spring 2001
(50 ft increments)



Interpreting the water table map

- When the contour lines are close together, either the gradient is steep or it is an area of recharge or discharge
 - This means that the aquifer can't transmit water as well and the water backs up
- When the contour lines are more spread out, the gradient is shallow
 - The aquifer is more transmissive in these areas
- Lets look at that map again

Snake River Plain Aquifer
Water Level Contours
Spring 2001
(50 ft increments)



One Bathtub or Three??

- Because of Mud Lake Barrier and Great Rift, some people want to call it three bathtubs
- In reality, water crosses these barriers, although it is more impeded
- Whole system is really interconnected

EXHIBIT 2

Big Lost River near Arco 2010

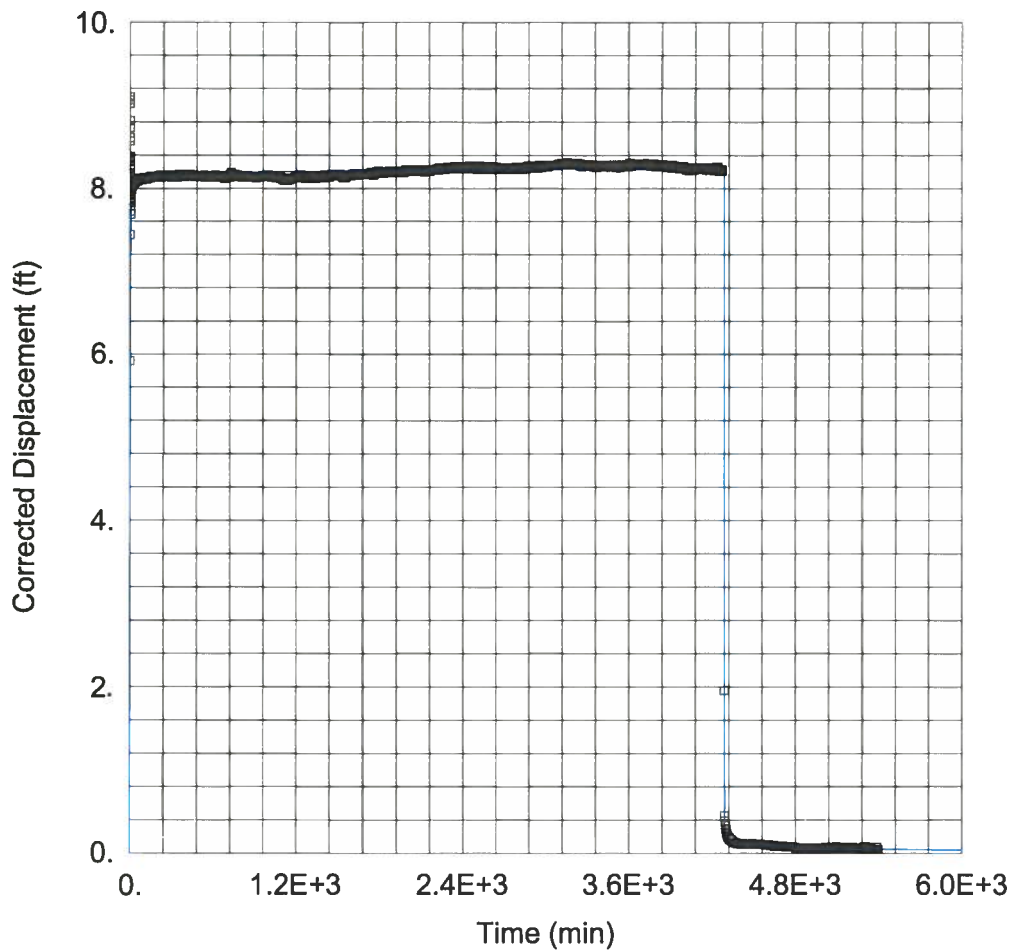
	Jan	Feb	Mar	Apr	May	June	July	aug	Sept	Oct	Nov	Dec
1	0	0	0	0	0	0	56	0	0	ND	ND	ND
2	0	0	0	0	0	0	61	0	0	ND	ND	ND
3	0	0	0	0	0	0	74	0	0	ND	ND	ND
4	0	0	0	0	0	0	58	0	0	ND	ND	ND
5	0	0	0	0	1	0	29	0	0	ND	ND	ND
6	0	0	0	0	3	0.32	4.1	0	0	ND	ND	ND
7	0	0	0	0	4.2	109	1.2	0	0	ND	ND	ND
8	0	0	0	0	3.7	170	0.57	0	0	ND	ND	ND
9	0	0	0	0	2	202	0.08	0	0	ND	ND	ND
10	0	0	0	0	0.01	178	0	0	0	ND	ND	ND
11	0	0	0	0	0	147	0	0	0	ND	ND	ND
12	0	0	0	0	0	142	0	0	0	ND	ND	ND
13	0	0	0	0	0	83	0	0	0	ND	ND	ND
14	0	0	0	0	0	24	0	0	0	ND	ND	ND
15	0	0	0	0	0	2.6	0	0	0	ND	ND	ND
16	0	0	0	0	0	16	0	0	0	ND	ND	ND
17	0	0	0	0	0	155	0	0	0	ND	ND	ND
18	0	0	0	0	0	141	0	0	0	ND	ND	ND
19	0	0	0	0	0	36	0	0	0	ND	ND	ND
20	0	0	0	0	0	3.3	0	0	0	ND	ND	ND
21	0	0	0	0	0	0.19	0	0	0	ND	ND	ND
22	0	0	0	0	0	0	0	0	0	ND	ND	ND
23	0	0	0	0	0	0	0	0	0	ND	ND	ND
24	0	0	0	0	0	0	0	0	0	ND	ND	ND
25	0	0	0	0	0	1.7	0	0	0	ND	ND	ND
26	0	0	0	0	0	24	0	0	0	ND	ND	ND
27	0	0	0	0	0	33	0	0	0	ND	ND	ND
28	0	0	0	0	0	49	0	0	0	ND	ND	ND
29	0	0	0	0	0	55	0	0	0	ND	ND	ND
30	0	0	0	0	0	61	0	0	0	ND	ND	ND
31	0	0	0	0	0	0	0	0	0	ND	ND	ND

Total cfs

Total AF

0	0	0	0	0	13.91	1633.11	283.95	0	0	0	0	0
0	0	0	0	0	27.5712	3237	562.82	0	0	0	0	0

EXHIBIT 3



WELL TEST ANALYSIS

Data Set: C:\Users\Jaxon\Documents\Jaxon WWC\Telford\Aqtesolv Stuff\woodFullTest.aqt

Date: 07/14/11

Time: 09:39:43

PROJECT INFORMATION

Company: WWC

Client: Telford Lands

Location: Carpenter

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
Carpenter	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
□ Carpenter	0	0

SOLUTION

Aquifer Model: Unconfined

Solution Method: Theis

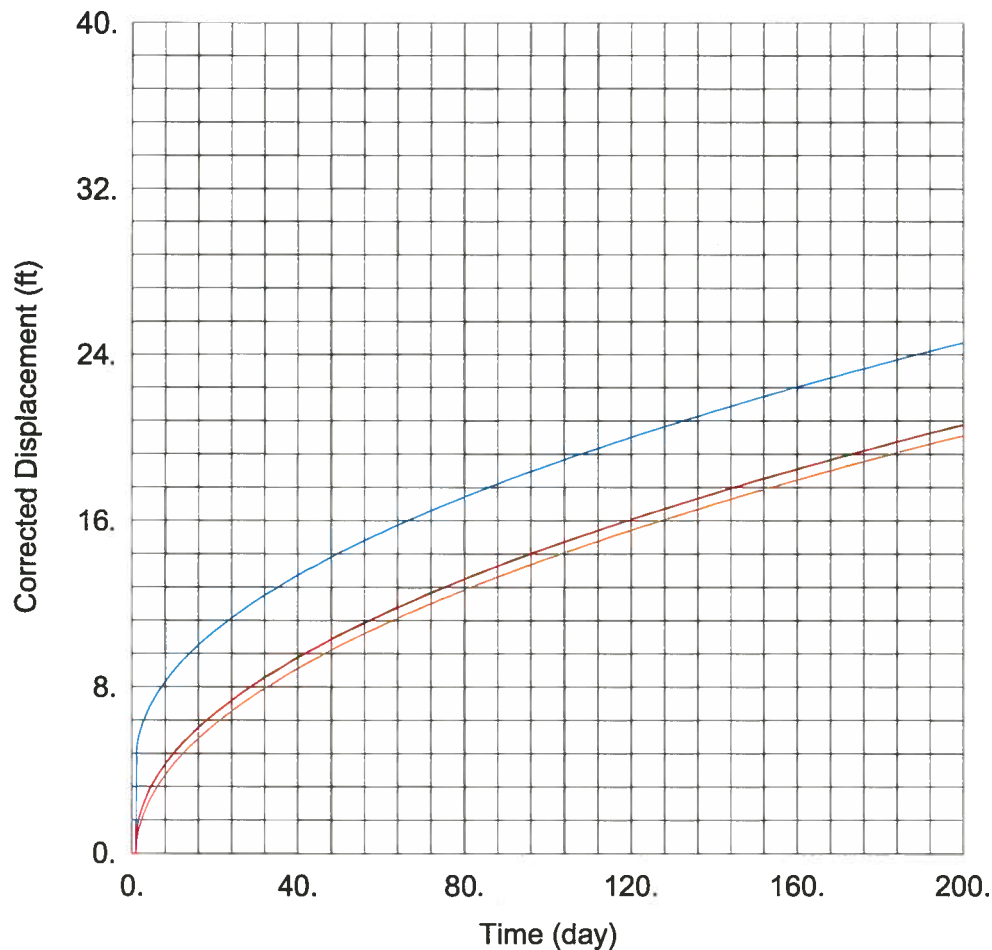
T = 7.559E+5 ft²/day

S = 9.111E-112

Kz/Kr = 1.

b = 150. ft

EXHIBIT 4



130,000 T BOUNDED

Data Set: C:\Users\Jaxon\Documents\Jaxon WWC\Telford\Aqtesolv Stuff\330K_T.aqt
 Date: 07/14/11 Time: 17:48:47

PROJECT INFORMATION

Company: WWC
 Client: Telford Lands
 Location: BLR Valley
 Test Well: Proposed Well

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
Proposed	1700	-3400

Observation Wells

Well Name	X (ft)	Y (ft)
Proposed	1700	-3400
Carpenter	0	0
Babcock	-270	-3700
Loftus	1770	-50
Waddoups	2850	-4000

SOLUTION

Aquifer Model: Unconfined

Solution Method: Theis

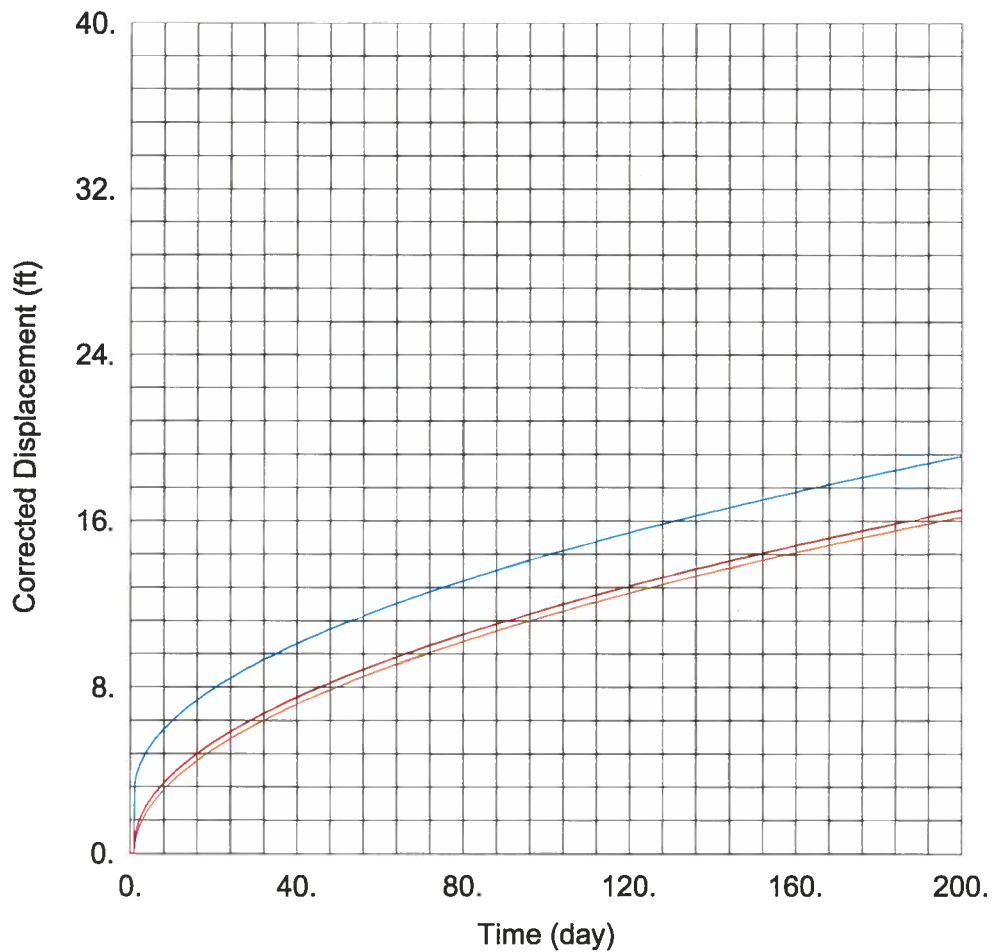
$T = 1.3E+5 \text{ ft}^2/\text{day}$

$S = 0.001$

$Kz/Kr = 1.$

$b = 150. \text{ ft}$

EXHIBIT 5



200,000 T

Data Set: C:\Users\Jaxon\Documents\Jaxon WWC\Telford\Aqtesolv Stuff\330K_T.aqt

Date: 07/14/11

Time: 09:42:48

PROJECT INFORMATION

Company: WWC

Client: Telford Lands

Location: BLR Valley

Test Well: Proposed Well

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
Proposed	1700	-3400

Observation Wells

Well Name	X (ft)	Y (ft)
☐ Proposed	1700	-3400
☐ Carpenter	0	0
☐ Babcock	-270	-3700
☐ Loftus	1770	-50
☐ Waddoups	2850	-4000

SOLUTION

Aquifer Model: Unconfined

Solution Method: Theis

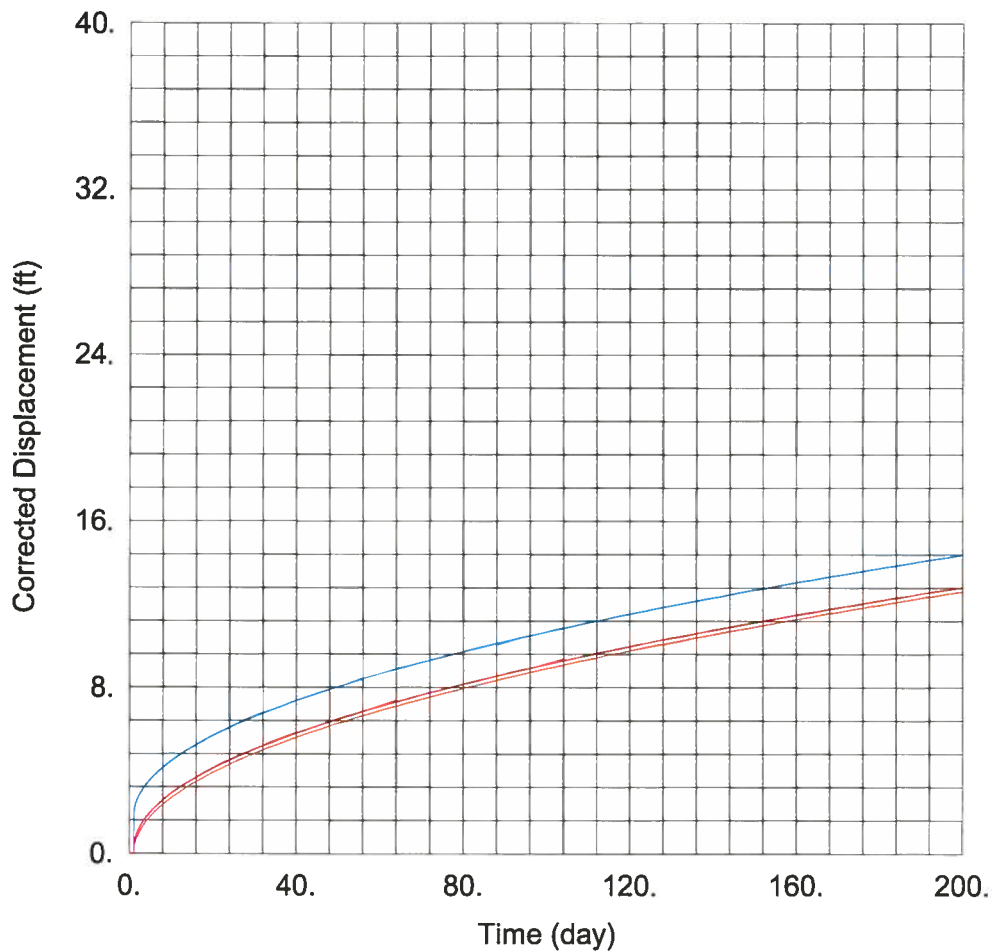
T = 2.0E+5 ft²/day

S = 0.001

Kz/Kr = 1.

b = 150. ft

EXHIBIT 6



330,000 T

Data Set: C:\Users\Jaxon\Documents\Jaxon WWC\Telford\Aqtesolv Stuff\330K_T.aqt
Date: 07/14/11 Time: 09:44:25

PROJECT INFORMATION

Company: WWC
Client: Telford Lands
Location: BLR Valley
Test Well: Proposed Well

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
Proposed	1700	-3400

Observation Wells

Well Name	X (ft)	Y (ft)
☐ Proposed	1700	-3400
☐ Carpenter	0	0
☐ Babcock	-270	-3700
☐ Loftus	1770	-50
☐ Waddoups	2850	-4000

SOLUTION

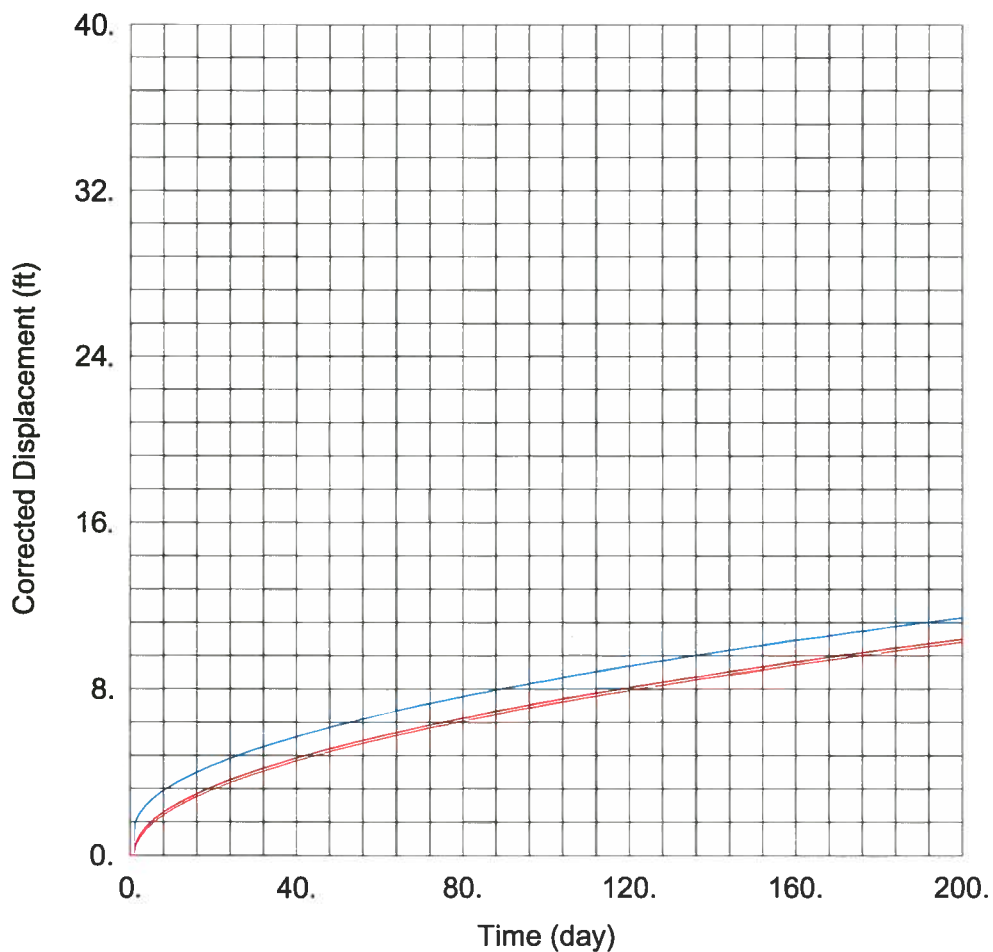
Aquifer Model: Unconfined

Solution Method: Theis

T = $3.3E+5$ ft²/day
Kz/Kr = 1.

S = 0.001
b = 150. ft

EXHIBIT 7



500,000 T BOUNDED

Data Set: C:\Users\Jaxon\Documents\Jaxon WWC\Telford\Aqtesolv Stuff\330K_T.aqt

Date: 07/14/11

Time: 15:51:05

PROJECT INFORMATION

Company: WWC

Client: Telford Lands

Location: BLR Valley

Test Well: Proposed Well

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
Proposed	1700	-3400

Observation Wells

Well Name	X (ft)	Y (ft)
Proposed	1700	-3400
Carpenter	0	0
Babcock	-270	-3700
Loftus	1770	-50
Waddoups	2850	-4000

SOLUTION

Aquifer Model: Unconfined

Solution Method: Theis

T = 5.0E+5 ft²/day

S = 0.001

Kz/Kr = 1.

b = 150. ft