

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

ORDER WR 2012-0004

In the Matter of the Alleged Waste and Unreasonable Use of Water by
Hidden Lakes Estates Homeowners Association

Parties

Division of Water Rights Prosecution Team
Hidden Lakes Estates Homeowners Association
Ted and Cheri Allegra

Source: Hidden Lakes Tributary to Linda Creek

County: Placer

ORDER DISMISSING COMPLAINT

BY THE BOARD:

1.0 INTRODUCTION

Hidden Lakes Estates is a community in Granite Bay, near Folsom Lake, California. The community property includes two small lakes, each about 1 acre in surface area, constructed for the purpose of recreation and scenic enhancement. Tony and Donna Wood, and Ted and Cheri Allegra (Complainants) filed a request for investigation of the alleged waste and unreasonable use of water by Hidden Lakes Estates Homeowners Association (Association). The State Water Resources Control Board's (State Water Board or Board) Division of Water Rights (Division) Complaint Unit conducted an investigation and prepared a report that addressed the allegation that a misuse of water is occurring. The Complaint Unit determined that the Association had failed to take steps to correct the seepage of water from the Association's north lake. The State Water Board conducted a public hearing to determine whether the loss of water from the lake and its replenishment constituted a waste or unreasonable use of water. The Complainants, the Association, and the Division's Prosecution Team¹ (Prosecution) appeared and presented evidence. The State Water Board was assisted

¹ The Prosecution Team included Engineering Geologist, Charles NeSmith; Senior Water Resources Control Engineer, Charles Rich; and Staff Counsel, David Rose.

by a Hearing Team² consisting of Division and Office of Chief Counsel staff members (Hearing Staff). After consideration of the evidence presented at the hearing and written closing statements, the State Water Board finds the Prosecution did not support its assertions that waste or unreasonable use has occurred.

2.0 FACTS AND PROCEDURAL BACKGROUND

2.1 Water Right Complaint

On April 28, 2005, the Division received a water right complaint from the Complainants against the Association. The Complainants alleged that the north lake at Hidden Lakes Estates leaks to such an extent that it constitutes a misuse of water. The complainants stated that, according to the Association's own records of February 1990, the Association's board had determined that the lakes were leaking at a rate of 57,087 gallons per day (63.9 acre-feet per year³).

Complainants argue that the seepage from the north lake has damaged and devalued their properties. (Prosecution Team (PT) Ex. 1, 9 & 21; Hidden Lakes Estates (HLE) Ex. 46.)

The Association submitted an answer to the complaint, dated May 16, 2005. The Association acknowledged that lake seepage was a naturally occurring condition, but disagreed that the leakage had damaged Complainants' properties. The Association denied that the lakes had been leaking severely for the past several years, and asserted that Complainants' calculations regarding leakage were in error. (PT Ex. 1; HLE Ex. 46.)

Staff from the Division's Complaint Unit conducted a field investigation of the site on July 14, 2005. In a report dated June 22, 2006, Division staff concurred with the Association that Complainants' calculations were either in error or unconvincing but staff concurred with Complainants that seepage from the north lake constituted misuse of water because it had "damaged and thus likely devalued Complainants' properties while serving no beneficial use." (PT Ex. 9.)

On May 28, 2007, the Association submitted a preliminary report containing a seepage evaluation of the dam at the north lake. (PT Ex. 13.) In a letter dated March 11, 2008, the Assistant Chief for the Division (Assistant Division Chief) concluded that the Association had not presented any new evidence to change the Division's initial finding that the seepage of water

² The Hearing Team included Engineering Geologist, Paul Murphey; Water Resources Control Engineer, Ernest Mona; Senior Water Resources Control Engineer, Charles Lindsay; and Senior Staff Counsel, Dana Heinrich.

³ 57,087 gallons per day ÷ 325,851 gallons per acre-foot × 365 days per year = 63.9 acre-feet per year.

from the north lake constituted a misuse of water and recommended that the State Water Board conduct an evidentiary hearing to: (1) determine if a misuse of water exists at the Association's north lake; (2) determine the appropriate corrective actions and time schedule to prevent any continued misuse of water, if existing; and (3) recommend any action necessary to compel the Association to correct existing damages caused by the misuse of water. The Assistant Division Chief provided a list of actions the Association could take to resolve the matter without a hearing. (PT Ex. 14.)

After further investigation, the Association submitted a letter dated June 3, 2008, including a May 5, 2008, final report by Paragon Geotechnical. (PT Ex. 18.) Based on this report, the Association maintained that seepage from the north lake was not excessive and did not constitute a misuse of water. The Association also argued that conclusive evidence had not been provided or established that any seepage from the north lake was the cause of damage alleged by Complainants. The Association added that any damage to Complainants' properties must be considered in light of the fact that Complainants had filled in a drainage swale that once existed in a meandering drainage easement between the properties. In a letter dated December 8, 2008, the Association submitted additional documentation in support of the allegation that Complainants had caused the alleged damage to their properties by filling in and constructing improvements in the drainage swale. (PT Ex. 20.)

2.2 The Lakes and Their Operation

Hidden Lakes Estates is located immediately west of Folsom Lake State Park. Within the community there are two separate artificial lakes, each approximately one acre in surface area when full. The south lake was constructed in 1977 and the north lake was constructed in 1978 by the Hidden Lakes Estates subdivision developer during installation of the community's infrastructure. The north lake is formed by an earthen dam constructed across a swale. According to the Prosecution, the estimated maximum capacity of the north lake is seven acre-feet (ac-ft) (PT Ex. 21 p. 2; Reporters Transcript (R.T.) p. 57.) Overflow from the north lake drains, via a short man-made channel, to the south lake, which in turn, spills south to a tributary of Linda Creek. Linda Creek, in turn, flows west to Dry Creek in Roseville, which flows west to the Natomas East Main Drain Canal and the American River in Sacramento. (HLE Ex. 21; PT Ex. 9, Figs. 1-2.) The lakes were built into the drainage system that had formed naturally within the hilly area now comprising the subdivision. (HLE Ex. 42, pp.3-5 to 3-8.) John H. Humphrey, Ph.D., P.E., in a report dated October 12, 2005, estimated that the

surrounding drainage watershed area for the north lake and south lake is 8 acres and that precipitation runoff drains into the north lake from a tributary source lying east of the north lake. (PT Ex. 8.) The estimated annual average runoff to the lake is 8.0 ac-ft per year. (HLE Ex. 21.) Testimony presented by Scott L. Barmann, P.E., a witness for the Association, suggests that the initial filling of the two lakes occurred as a result of natural precipitation runoff. (R.T. pp. 168, 171-172.) Testimony of Susanne Kraemer, a professional geologist and witness for the Association, suggests that were it not for the lakes, all of the runoff from the 8-acre watershed would flow down the swale between the complainant's properties. Instead, much of the winter runoff reaching the north lake overflows to the south lake and subsequently spills from the south lake dam, away from the Complainants' properties. (HLE Ex. 43, pp. 4-5.)

During the dry season of the year, the lakes are maintained full with supplemental water that the Association purchases from the San Juan Water District (SJWD).⁴ All purchased water is measured by a meter owned by the SJWD, referred to as the Gina Lane Park water meter. Downstream of the meter, the purchased water line splits to the irrigation system for the common area's landscaping and to the replenishment system for the lakes. (R.T. p. 169.) In late 2007 an additional water meter was installed downstream of the split to measure the water specifically applied to maintain the lakes, separate from the irrigation water. The supplemental purchased water from the SJWD is piped directly into the south lake, and a pumping system conveys water from the south lake to the north lake in order to maintain a constant level in both lakes and to provide circulation to prevent stagnation. The SJWD water therefore supplements both lakes. The north lake is bordered at the south end by a weir, and any water above the elevation of the weir flows by gravity into the south lake. (HLE Ex. 42, pp. 2-3; R.T. p. 171.) Beginning in 2008, using the additional water meter, the Association has been able to track the specific quantity of SJWD water used to refill the lakes. In 2008, the amount was about 16.9 ac-ft and in 2009 about 13.3 ac-ft. (R.T. p. 169; HLE Ex. 42, p. 2; HLE Ex. 35.) In late 2007, the Association installed a float valve to prevent overfilling the lakes with supplemental water. (HLE Ex. 22; R.T. p. 135.) As a result, the north lake level stays relatively constant, not varying more than about one inch in elevation throughout the year. (HLE Ex. 42, p. 2.)

⁴ SJWD holds water right License 6324 (Application 5830) authorizing diversion of 15 cubic feet per second from Folsom Reservoir during the period June 1 to November 1 of each year for irrigation and domestic purposes within SJWD's service area (27,400 acres) in Placer County.

3.0 LEGAL BACKGROUND

3.1 Policy on Waste and Unreasonable Use is Stated in the California Constitution

The State's policy on prevention of waste and unreasonable use of water is based upon article X, section 2 of the California Constitution which provides:

"It is hereby declared that because of the conditions prevailing in this State the general welfare requires that the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare. The right to water or to the use or flow of water in or from any natural stream or water course in this State is and shall be limited to such water as shall be reasonably required for the beneficial use to be served, and such right does not and shall not extend to the waste or unreasonable use or method of use or unreasonable method of diversion of water."

This language is repeated in section 100 of the Water Code. This broad language clearly establishes that any right to use water does not extend to the waste or unreasonable use of water. Waste or unreasonable use of water is prohibited whether the misuse results from the type of use, the manner of use or the manner of diverting the water to the place of intended use. In all instances, the key determination is one of reasonableness.

3.2 Authority for this Hearing is Found in the California Code of Regulations

The State Water Board's regulations provide that Board staff shall investigate an allegation of misuse of water when an interested person shows good cause or when the Board itself believes that misuse may exist. (Cal. Code Regs., tit. 23, § 856.) If the investigation indicates that a misuse of water may have occurred, staff must notify interested persons and afford them a reasonable period of time to terminate the misuse or demonstrate that misuse has not occurred. (*Id.*, § 857, subd. (a).) If the issue is not resolved, the Board may hold a hearing to determine if misuse has occurred or continues to occur, and may issue an order requiring any misuse to be prevented or terminated. (*Id.*, § 857, subds. (b) & (d).) In a letter dated March 11, 2008, the Assistant Division Chief recommended to the Board that this matter should be resolved at a hearing.

4.0 DETERMINATION OF WASTE AND UNREASONABLE USE AT THE NORTH LAKE

4.1 Waste and Unreasonable Use is Determined by the Situation

The parties agree that all earthen dams leak to some measure and a certain amount of seepage is acceptable. All parties also agree that construction of a reservoir for recreational and visual enhancement in the community is not by itself, a waste or unreasonable use of water. The issue before the Board is whether the seepage of SJWD water, imported from a source outside the north lake's watershed, is so excessive that it constitutes a waste and unreasonable use of water.

Reasonable use is not a static concept. What constitutes reasonable water use is dependent upon not only the entire circumstances presented but varies as the current situation changes. (*Imperial Irrigation Dist. v. State Water Resources Control Bd.* (1986) 186 Cal.App.3d 1160, 1166.)

Reasonable use depends on the circumstances of each case, [and] "such an inquiry cannot be resolved *in vacuo* from statewide considerations of transcendent importance." "Paramount among these... [is] the ever increasing need for the conservation of water in this state." (*Joslin v. Marin Municipal Water Dist.* (1967) 67 Cal.2d 132, 140 (*Joslin*).)

In prior Board determinations of waste and unreasonable use, the Board has applied a series of factors to evaluate whether a use constitutes waste and unreasonable use in violation of article X, section 2 of the California Constitution. In [State Water Board Decision 1600](#), the Board evaluated the Imperial Irrigation District's (IID) water use in the Imperial Valley and provided the following series of factors to consider in allegations that water use is wasteful or unreasonable:

- 1) Other potential beneficial uses for conserved water;
- 2) whether the excess water serves a reasonable and beneficial purpose;
- 3) probable benefits of water savings;
- 4) the amount of water reasonably required for current use;
- 5) amount and reasonableness of the cost of saving water;
- 6) whether the required methods of saving water are conventional and reasonable rather than extraordinary;
- 7) availability of a physical plan or solution.

Although not all of the above factors will apply or apply equally in every case, they provide guidance in determining whether a particular use is wasteful and unreasonable in light of the constitutional mandate to avoid such uses. The factors are discussed below as they apply to the circumstances of this case.

4.2 Other Potential Beneficial Uses

The Prosecution asserts that water deliveries to the Association's lakes to replace the water that is lost to seepage from the north lake is unreasonable because water should be conserved within the region and public trust resources may be affected due to the incremental impacts of projects such as this one. The Prosecution does not argue that the filling and maintenance of recreational lakes is unreasonable, rather, the contention is that other than natural run-off, any water delivered to the lakes from SJWD is unreasonable given the rate of seepage.

The problem with this argument is that the Prosecution does not present evidence of what would be an acceptable rate of delivery of SJWD water to the lakes. Based on the Prosecution's calculations, every year approximately 85% of the north lake leaks through the dam. Whether support exists for this figure will be discussed more fully below, but if the assertion is taken at face value, SJWD would need to deliver about 6 ac-ft of additional water to the north lake every year. While there are certainly other potential beneficial uses of 6 ac-ft of water, the Prosecution does not present evidence to show what impact 6 additional ac-ft of water would have, if it remained in SJWD's system, nor does it compare that savings to the benefit of maintaining the lakes.

The Prosecution cites [Board Decision 1463](#) to support its assertion that the filling of a recreational lake, even if the amounts are relatively small, can constitute a waste and unreasonable use. In that case, the Board determined that the filling of a recreational reservoir in Southern California was unreasonable. In Decision 1463, several factors led to the Board's determination: 1) the state was in a period of severe, prolonged drought where mandatory water rationing was in effect in several counties; 2) filling the lake could stress water deliveries to agricultural areas of the state; and 3) filling the lake would require approximately 2,000 ac-ft of water.

Decision 1463 does not stand for the proposition that maintaining these reservoirs is an unreasonable use of water. In that decision the Board concluded that, "the proposed filling and operation of an artificial lake covering 125 acres principally for private use in Orange County results in waste or unreasonable use of water during the present drought." The Association does not contend that filling a recreational lake during a drought can be an unreasonable use of water. It certainly can be as the Board determined in Decision 1463. Rather, the primary question here is whether maintenance of a small recreational lake is unreasonable in these circumstances.

4.3 Does the Excess Water Serve a Reasonable and Beneficial Purpose

Although it is unclear precisely how much water is necessary to maintain the lakes, the parties do not assert that maintenance of the lakes for recreational and aesthetic purposes constitutes an unreasonable use of water. Moreover, there is a lack of evidence to indicate the amount of annual make-up water that would be considered reasonable in order to maintain the lake's levels. Presumably the Prosecution would not argue that some amount of make-up water is reasonable, however, it did not present any evidence to indicate what would be a reasonable quantity of annual make-up water using imported water.

Given the failure of the Prosecution to provide evidence that the continued maintenance of the lakes is unreasonable, and given the lack of evidence showing the amount of annual make-up water that would be reasonable for lakes of similar size and location, this factor is non-determinative and does not support a finding of waste and unreasonable use.

4.4 Probable Benefits of Water Savings

If seepage is reduced from the lakes, water deliveries can be reduced and presumably damage to the two properties that are most affected by the north lake will be alleviated. According to the Prosecution, the seepage has reduced property values by 80 thousand dollars. Taking this figure at face value, the Prosecution failed to correlate this monetary amount to the alleged excessive SJWD deliveries to the north lake. It is impossible for the Board to determine how much damage is attributable to SJWD water deliveries and how much of the "dampness" on the Complainant's properties would be present without the deliveries. The Association presented evidence from expert witness Susanne Kraemer, a registered geologist and certified engineering geologist, to support its contention that dampness was not primarily a factor that could be attributed to the lakes. In her written testimony, Ms. Kraemer describes a combination of shallow bedrock and soil that causes drainage problems throughout the subdivision. (HLE Ex. 43, p2.) She states that: "Homeowners throughout the subdivision have had to modify their onsite drainage and install improvements in order to protect their property from damage by surface water and groundwater." (*Ibid.*) Her testimony lists specific lots where sump pumps and/or French drains are installed to control and resolve drainage problems. (*Ibid.*) During cross examination, Mr. Watts, the attorney for the Allegra's, asked Ms. Kraemer if the seepage would cease if the north lake was empty. She responded, "If you stop the rain and stop everyone irrigating, you'd have no water in the lake, then potentially your seepage would be gone. But you've got rainfall that comes in, drains into that area and into the lake because the natural

drainage that was there originally would go through those two lots.” Mr. Watts then followed up with another question: “And it would flow through those meandering drainage easements, correct?” Ms. Kraemer’s response was: “It would flow through there and recharge that low flat area where there’s a break in grade and the water has nowhere to go.” The flat area she was referring to is the back yard areas of the Complainants’ properties. The existence of this flat area is confirmed by a survey made by Dr. C. Hugh Thompson, P.E., a witness for the Allegra’s. The survey shows slight elevation increases along the drainage easement from the foot of the dam to about the middle of the backyards. (Ted Allegra and Cheri Allegra (Allegra) Ex. 10, pp. 3-4.) During cross examination by Mr. Schofield, Dr. Thompson stated that the grade in this portion of the easement, near a cobbled sump, was either “reasonably horizontal or it actually decreases.” His survey confirms the “break in grade” described by Ms. Kraemer.

Based on the totality of the evidence presented, there was an inadequate showing by the Prosecution of the benefits that would result if water deliveries from SJWD to the north lake are reduced or ceased.

4.5 The Amount of Water Reasonably Required for Current Uses

Much of the evidence presented at the hearing focused on this factor. The Prosecution alleges that the amount of water delivered to the lakes is excessive. The Association countered with evidence that the level of seepage is typical for this type of impoundment. Because there is substantial uncertainty in all figures provided, the Board cannot find that sufficient evidence was presented by the Prosecution to support its contention that an unreasonable amount of water is delivered to the lakes.

Charles Rich, one of the Prosecution’s two witnesses, testified that his analysis found a total computed seepage of 19.15 ac-ft over a 38-month period. (PT Ex. 23.) He further testified that the average seepage was 6.05 ac-ft per annum. (PT Ex. 21, p. 2.) He computed these amounts by “subtracting evaporation from total deliveries over the 38-month period of record.” (*Ibid.*)

Mr. Rich also described in his written testimony how he calculated that the amount of seepage he determined (6.05 ac-ft average per year) was excessive. He calculated that based on this

analysis, and assuming the storage capacity of the north lake is 7 ac-ft⁵, the total annual seepage amount is 85% ($6.05 \text{ ac-ft} \div 7 \text{ ac-ft} = 0.86$)⁶ of the capacity of the lake. (*Ibid.*) Finally, Mr. Rich argues that the seepage is unreasonable by stating: “If the same ratio were accepted for Folsom Lake, annual seepage losses at the Association’s north lake are **relatively** (emphasis in original) very large and therefore unreasonable, constituting a misuse of water.” (*Ibid.*)

Assuming for the sake of argument that Mr. Rich’s total seepage estimate is accurate, his method to demonstrate a waste of water by making a proportional comparison to Folsom Lake is not reasonable. Folsom Lake is located less than a mile east of the north lake, and according to Mr. Rich has an approximate volume of one million ac-ft. Mr. Rich asserts that based on his calculations, annual seepage losses from Folsom Lake would be over 850,000 ac-ft per year if Folsom Lake leaked at the same rate (85%) as the north lake. (*Ibid.*) The assumption in his argument is that any reservoir that leaks 85% of its capacity is a waste of water.

The Association, in its cross-examination of the witness, compared the north lake to a cup of water, just as the Prosecution compared the north lake to Folsom Lake. (R.T. p. 58.) In its hypothetical, the Association contended that a cup of water poured into a small hole in the ground would seep away and be lost immediately.⁷ Surely if Folsom Lake Dam leaked 85% of its storage, it would be unacceptable. But the Board believes that the scaled comparison of the two vastly different reservoirs, both in terms of their size and purpose, is unconvincing evidence of waste or unreasonable use.

⁵ The estimated 7.0 ac-ft storage capacity figure was derived from Prosecution witness Mr. Rich’s computation of the north lake capacity using the following formula: $[10 \text{ ft maximum lake depth}] \times [1.15 \text{ ac. surface area}] \times [0.65] = 7.47 \text{ ac-ft}$. (R.T. p. 45:21-25; p. 46:1-4.) During cross-examination, Mr. Rich testified that the approximated 10 ft depth of the north lake used in his volume calculation was based on a “guess.” (R.T. p. 46:5-9.) Additionally, Mr. Rich conceded that his volume calculation would have been different had he taken into account other available lake-depth information that suggests the north lake’s depth is greater than 10 ft. (R.T. p. 47:5-9.) Although the hearing record contains no information showing the results of a recently conducted reservoir-capacity survey for the north lake, several documents in the hearing record suggest that the maximum depth of the north lake is approximately either 13.5 ft or 14 ft deep, not 10 ft deep as estimated by Prosecution witness Mr. Rich. (HLE Ex. 2; HLE Ex. 29, p. 2; HLE Ex. 45.) Applying the capacity formula used by Mr. Rich, and using either 13.5 ft or 14 ft as the maximum depth, the estimated storage capacity of the north lake would be 10.1 ac-ft or 10.5 ac-ft, respectively.

⁶ Alternatively, if the estimated maximum capacity of 10.5 ac-ft is used, instead of 7 ac-ft, the total annual seepage amount is 58% ($6.05 \text{ ac-ft} \div 10.5 \text{ ac-ft} = 0.57$).

⁷ The Board believes the hypothetical is meant to demonstrate that comparing the seepage rates of reservoirs with such vastly different capacities does not make sense. The assumption in this argument is that 100% of the water poured into a cup-sized hole in the ground would seep into the ground almost immediately. The implication being that in general a higher percentage of the total capacity of small reservoirs will seep, than will the total capacity of large reservoirs, and attempting to scale the seepage rates between such vastly different reservoirs does not make a convincing argument.

Another estimate of seepage losses was proposed by John H. Humphrey, PhD., P.E. According to Prosecution witness Charles NeSmith, Dr. Humphrey was hired by the Association after the Complainants initiated litigation against the Association. (PT Ex. 1, p. 3.) The hearing record includes two slightly different versions of Dr. Humphrey's Report (Humphrey Report).⁸ Both versions of the Humphrey Report state: "Measurement of seepage outflow at Jon Way on July 25, 2005 was 1.23 gallons/minute (2 AF per year) consistent with Wood's pump system operation." (PT Ex. 8, p. 1.) (HLE Ex. 21, p. 1.) Mr. NeSmith cites to the October 12, 2005 version (PT Ex. 8) of the Humphrey Report and states that "the seepage loss through the man-made berm on the Wood and Alegra parcels was 2.0 ac-ft..." (PT Ex. 1, p. 3.) This amount conflicts with Mr. Rich's estimate of average annual seepage of 6.05 ac-ft (3.75 gallons per minute)⁹. (PT Ex. 21, p. 2.) Mr. Rich stated that he did not recall reading the portion of the Humphrey Report regarding the 2 ac-ft per year seepage amount and that he arrived at his estimate by relying on information Mr. NeSmith provided. (R.T. pp. 51-56.) Mr. Rich was unable to resolve the difference between his testimony and that of Mr. NeSmith, and the estimates provided in the Humphrey Report.

In addition to the conflicting testimony of the Prosecution's two witnesses, several sources of error in the Prosecution's methodology of determining the seepage amount were highlighted during cross examination. Potential errors included: the failure to account for seepage from the south lake; the failure to more accurately estimate the capacity of the north lake or south lake using reasonably available information; the failure to account for increased evaporation from the operation of the fountain at the south lake; and the failure to account for SJWD water applied to landscaping. (R.T. pp. 42-47.)

The assumption that all seepage of water occurs only at the north lake dam is unreasonable. Frederick J. Wentz, Jr., a civil and geotechnical engineer, and witness for the Association, discussed the south lake dam during re-direct examination. He testified that "seepage through the two dams is in relative terms probably about the same." (R.T. p. 178.) He based his conclusion on a soil sample boring in the south dam that showed it was made of the same material as the north

⁸ Dr. Humphrey's reports are letters to John J. Fritsch, an attorney representing the Association. The letter submitted by the Prosecution (PT-8) is dated October 12, 2005. The Association also submitted, as HLE-21, what initially appears to be the same Humphrey Report, however, HLE-21 is dated October 4, 2005. There is no explanation in the record as to why there are two different versions of the letter. Both letters describe a water balance calculation done by Dr. Humphrey. Examination of the letters reveals additional text in the October 12 letter and slightly different numbers in the water balance calculation.

⁹ $6.05 \text{ ac-ft per year} \times 325,851 \text{ gallons per ac-ft} \div \text{by } 525,600 \text{ minutes per year} = 3.75 \text{ gallons per minute.}$

dam. But even if the south dam does not seep as much as the north dam, an assumption that it does not seep at all is unreasonable. In both versions of his analysis, Dr. Humphrey states: “The summer portion of the water balance, when precipitation and runoff were negligible, showed that other seepage losses...to groundwater were significant.” (PT Ex. 8, p. 2.)

It is an unreasonable assumption that all SJWD water that does not evaporate seeps exclusively through the upstream surface of the north lake dam and not also through the bottom of both reservoirs and through the south dam. Assuming uniform seepage from both reservoirs and using the Prosecution methodology with a 14 ac-ft total capacity¹⁰ of both reservoirs, the calculated seepage would amount to about 40% of capacity, less than half the 85% suggested by Mr. Rich.

Failure to subtract the SJWD water applied to landscape irrigation is also a significant oversight. The water delivery records (PT Ex. 23) used by Mr. Rich include all water purchased by the Association from SJWD, some of which was applied to 1.5 acres of landscaping. Late in 2007, the Association installed an additional water meter that records the water delivered to the lakes for replenishment. Beginning in 2008, the annual records separate the two uses of SJWD water. Applying the data presented at the hearing (HLE Ex. 35 and HLE Ex. 30) the Association purchased about 15.4 ac-ft in 2009 and of that, 13.3 ac-ft was used to maintain the lakes. Therefore in 2009, about 86% of the purchased water was used at the lakes. At the very least, it is reasonable to reduce the Prosecution’s figures by 14%. The amount of purchase water in 2008 that was applied to landscaping was not available.

Estimated seepage losses are further reduced when storage capacity of both reservoirs is considered. Records available after the additional meter was installed indicate that 16.9 ac-ft of SJWD water was used to maintain lake levels in 2008. As noted above, the amount used in 2009 was 13.3 ac-ft. (R.T. p. 169.) According to the Prosecution, the annual evaporation from both lakes is about 12.0 ac-ft.¹¹ Subtracting evaporation from the water used to maintain lake level in 2008 (16.9 – 12.0) results in 4.9 ac-ft of seepage. The same calculation for 2009

¹⁰ The capacity of the south lake is not specifically found in the hearing record. The record does suggest that both lakes have approximately the same surface area and likely similar depths.

¹¹ PT-24 lists annual evaporation as 5.58 feet. This is multiplied by the total lake surface area of 2.15 acres to obtain 12.0 ac-ft.

(13.3-12.0) results in 1.30 ac-ft of seepage. Using 14 ac-ft as the capacity of both lakes, results in an estimated seepage loss of 35% in 2008 and 9% in 2009.¹²

The Prosecution's evidence suggesting that an unreasonable amount of SJWD water is used to maintain the water levels of the two lakes is unconvincing. Various assumptions were presented by the Prosecution at the hearing and countered with reasonable arguments challenging the credibility of those assumptions. Critically, the amount of seepage of supplemental water, and what would be a reasonable amount of seepage was unresolved. The Humphrey Reports provide some guidance, but neither report gives a conclusive determination of what would be a "reasonable" amount of seepage in this circumstance. While there is not a bright line between reasonable use and waste, the Prosecution failed to provide sufficient evidence to support its contentions.

Both the Prosecution and the Association agree that all dams leak and that a certain amount of seepage is acceptable. The Prosecution, however, failed to provide standards or examples of acceptable seepage rates for similar reservoirs for the Board to consider in determining reasonableness in this matter. The burden of proof to show the use is unreasonable lies with the Prosecution and it has failed to demonstrate by a preponderance of evidence that the seepage rates constitute a waste or unreasonable use of water.

4.6 Amount and Reasonableness of Cost of Saving Water; Whether Means to Save Water are Conventional; Whether a Physical Solution Exists

The above factors are closely interrelated. At the outset, the problem in evaluating these factors is a lack of evidence presented to allow the Board to determine the amount of water that should be expected to seep from the north lake dam under reasonable circumstances. Division of Water Right's investigator, and Prosecution witness, Charles NeSmith, in the conclusion of his memorandum dated June 22, 2006, (PT Ex. 9) states: "Staff recognizes that some seepage is to be expected from any unlined water containment facility, especially one overlying porous soils and fractured bedrock as is the case in the subject complaint.....however, such storage

¹² Even if the lower evaporation value used by Dr. Humphrey, 10 ac-ft per year from both lakes, is applied, the results are 6.9 ac-ft or 49%, and 3.3 ac-ft or 23.5% of total seepage of SJWD water from both dams and through the bottom of both lakes in 2008 and 2009 respectively. Both figures are significantly lower than Mr. Rich's calculation of 85% loss to seepage. It is unknown why SJWD water deliveries in 2009 are significantly lower than in 2008. No specific explanation is provided in the hearing record, but both versions of the Humphrey report suggest that the primary use of SJWD is to replace water lost to evaporation. (HLE Ex. 21, p. 2; PT Ex. 8, p. 2.)

facilities are rarely located such that the water level in the storage pond is above the adjacent developed property.” Mr. NeSmith’s statement suggests that building homes at the foot of a small dam and in a flat area within a swale draining an 8-acre watershed are significant factors contributing to drainage problems in this case.

In both versions of his report, Dr. Humphrey commented on the acceptability of the seepage amount, though the conclusion differed slightly in each version. In the version submitted by the Association dated October 4, 2005, the report states:

“Some seepage is expected and even desirable for earth dams. Seepage losses up to 1” per month (2.1 ac-ft) are considered good. Up to 2 ft. per year (4.2 ac-ft.) is considered acceptable. Seepage loss from the north lake is in the range of acceptability.” (HLE Ex. 21, p.2.)

In the version submitted by the Prosecution dated October 12, 2005, and in the same location in the document as the text above, the report states:

“Some seepage is expected and even desirable for earth dams. Seepage losses up to 1” per month (2.1 ac-ft.) are considered good. Up to 2 ft. per year (4.2 ac-ft.) is considered acceptable. The purpose of these lakes is aesthetic and they are therefore maintained at full capacity at all times. Seepage loss from the north lake is in the high range of geotechnical acceptability, depending on makeup water cost.” (PT Ex. 8, p 2.)

Dr. Humphrey’s reports were submitted into evidence by both the Association and the Prosecution, without objection. Dr. Humphrey’s conclusions are that seepage is in the range of acceptability. Whether the Board relies on the report that lists seepage in the “range” of acceptability or on the report that concludes the amount is in the “high range” of acceptability is not determinative - both reports found the seepage levels to be in an acceptable range.

Evidence suggests that the supplemental water from SJWD is not the only water source contributing to seepage and drainage problems in the back yards of the Complainants’ properties. Subsurface water flow within the subdivision is complex, with multiple water sources including direct precipitation, surface storm water flow, irrigation from up-gradient lots, and on some lots, seepage from the north and south lakes. (HLE Ex. 43, p 3.) In addition, the ability for water from any source to drain from the “flat area” [backyards of the Complainants’ properties], as described by Ms. Kraemer, could be an issue. If water could better flow off the

properties any damage related to seepage might be mitigated. The Association claimed that the Complainants' or their predecessors in title to the properties had altered the drainage easement along the shared boundary of the Complainants' properties. The Complainants deny any such alteration. Photographs of the easement between the Complainants' properties show vegetation and playground equipment in the easement, creating some doubt that the easements are properly maintained. (HLE Ex. 41.)

There does appear to be a significant drainage problem on the Complainant's property and possibly in other areas of the community as well. The evidence suggests there are several potential improvements that could alleviate the problem. French drains have been installed in different areas in the community and the photographs in the record show that the drainage easement below the dam has plants and obstructions that may limit the flow of water through the Complainants' properties.

Given the uncertainty as to whether the seepage is excessive under the circumstances, the Board cannot find that a physical solution that limits the amount of water that seeps to the Complainants properties is warranted, or available. The Prosecution did not provide a figure showing the rate of seepage that could be prevented with physical modifications to the dam or to the Complainants' properties. Written testimony submitted by the Allegras indicate that "...the Association received a "cheap fix" bid proposal for \$13,570 (to seal the Lake with fabric liner) and a more permanent fix proposal for \$39,340 (to install retaining wall)...". (Allegra Ex. 1, p. 8.) (See Declaration of Tony Wood, p. 6, lines 22-25.) In addition, other options to reduce seepage were considered as part of a preliminary settlement agreement (2005) between the Wood litigants and the Association. (HLE Ex. 20.) Additional options considered were: 1) lake sealant resulting in 60% to 90% "expected" seepage reduction (estimated cost \$20,000 to \$25,000); 2) lake liner resulting in 90% to 95% "expected" seepage reduction (estimated cost \$100,000 to \$125,000); and 3) cut-off/collection trench with pump-back into the lake (estimated cost \$60,000 to \$80,000). (*Ibid.*) Whether these improvements are still feasible, or would be permanent physical modifications that would actually alleviate seepage by the listed amount is unknown as no additional testimony or evidence was provided at the hearing to support the assertions. Additionally, there is a substantial question as to whether actions taken by the property owners have exacerbated any drainage problems that exist as a result of the topography and location of the properties.

5.0 CONCLUSION

The State Water Board cannot determine, based on the evidence presented, that the seepage rate from the north lake and maintenance of the lake level through water deliveries from the SJWD constitutes waste and unreasonable use of water.

ORDER

NOW, THEREFORE, IT IS HEREBY ORDERED THAT, based upon the foregoing findings:

The complaint is dismissed.

CERTIFICATION

The undersigned Clerk to the Board does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of the State Water Resources Control Board held on February 7, 2012.

AYE: Chairman Charles R. Hoppin
Vice Chair Frances Spivy-Weber
Board Member Tam M. Doduc

NAY: None
ABSENT: None
ABSTAIN: None



Jeanine Townsend
Clerk to the Board