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TESTIMONY OF SCOTT L. BARMANN

I. INTRODUCTION

1. My name is Scott L. Barmann. I am a registered mechanical engineer and fire protection engineer in the State of California and am employed with the U.S. Army Corps of Engineers ("Corps") in Sacramento. I hold a Bachelor of Science degree in mechanical engineering from California State University, Sacramento. I have more than 26 years of experience working as an engineer. Although the focus of my engineering work largely concerns the design of large-scale heating and cooling systems, one of the Corps' primary missions is to design, build, and maintain levees, dams, and reservoirs. Accordingly, I have periodically worked with civil engineers on projects that include dams and reservoirs, have served for the last several years on a team addressing the review of dams and related water operations, and am familiar with general principles of civil engineering relating to dams and water operations.

2. I have lived in the Hidden Lakes Estates subdivision since April 2004. I own and live on Lot 69 (7844 Jon Way), which is two houses down from Lot 71 and borders the northern lake within the subdivision. I have walked, driven, and cycled throughout the community hundreds of times and have repeatedly observed the subdivision's layout, topography, drainage system, and two artificial lakes.

3. I have been a volunteer member of the Hidden Lakes Estates Homeowners Association's Common Area Planning Committee ("Committee") since July 14, 2005. The Committee was formed for the purpose of investigating issues relating to seepage from the subdivision's northern lake, retaining consultants to perform investigations, and making recommendations to the Homeowners Association ("HOA") Board of Directors regarding reasonable and feasible further actions. In participating on the Committee, I have reviewed numerous technical reports, proposals, topographical maps, and historical subdivision maps, plans and data as they relate to the Committee's purposes. On several occasions, I have viewed the backyards of Lots 71 (aka Lot 25 or 7884 Jon Way) and 72 (aka Lot 26 or 8316 Hidden Lakes Drive East) from the vantage point of the northern lake, which adjoins those lots, and once

1 attended a gathering in the backyard of Lot 72. I have also made numerous direct observations of
2 the drainage emanating from those lots where they adjoin at the corner of Jon Way and Hidden
3 Lakes Drive East (approximately twice monthly for several years) and into the larger community
4 drainage system.

5 4. In a volunteer capacity, I tend the pumping system for the subdivision's two lakes.
6 The HOA purchases water from the San Juan Water District ("SJWD"), which meters and
7 charges the HOA for all water delivered for the purposes of both irrigating the HOA common
8 areas and refilling the lakes. I obtained a commercial water meter from SJWD and installed it to
9 enable the HOA to separately track the quantity of supplemental water used to refill the lakes.
10 The meter has a manual readout, which I check monthly, and for two years have maintained a
11 record of the quantity of water used to refill the lakes (approximately 16.9 acre feet in 2008 and
12 13.30 acre-feet in 2009). These data are depicted in cubic feet and average cubic feet and gallons
13 per day in Hidden Lake Estates ("HLE") Exhibit 35.

14 5. I also installed a float mechanism to regulate the supplemental water used to refill
15 the lakes. The float mechanism replaces the function of a mechanical timer with multiple trippers
16 that needed to be adjusted monthly to maintain lake water levels without overflowing the
17 southern lake. Although I have not quantified the effect of the float, the system as modified
18 requires less oversight and prevents inadvertent overfilling of the lakes with supplemental water.
19 As a result, the northern lake elevation stays relatively constant, not varying more than about 1"
20 in elevation throughout the year.

21 **II. THE HIDDEN LAKES ESTATES SUBDIVISION**

22 6. The Hidden Lakes Estates subdivision consists of 199 homes within a hilly area of
23 Granite Bay, an unincorporated community in Placer County. (See HLE Exhibit 1.) The
24 subdivision lies about ¼ mile from Folsom Lake. (HLE Exhibit 38.)

25 7. The subdivision's two artificial lakes are commonly referred to as the northern
26 lake and the southern lake. Precipitation falling within some areas of the community drains by
27 gravity into the lakes. Supplemental water purchased from SJWD is piped into the southern lake.
28 A pumping system conveys water from the southern lake to the northern lake in order to maintain

1 a consistent level in both lakes and provide circulation to prevent stagnant areas in the lakes. The
2 northern lake is bordered by a weir. All water above the elevation of the weir flows by gravity
3 into the southern lake. The southern lake discharges into a local creek system when rainfall
4 overfills the lakes.

5 8. The Hidden Lakes Estates subdivision developer arranged for the construction of
6 these lakes in approximately 1977 (southern lake) and 1978 (northern lake) when the rest of the
7 community infrastructure—including the roads and utility lines—was installed. The lakes were
8 built into the drainage system that had formed naturally within the hilly area now comprising the
9 subdivision. (See HLE Exhibits 2-4.)

10 9. Houses began to be constructed within the subdivision in approximately 1977. Lot
11 71 was built in 1979 and Lot 72 was built in 1988. (HLE Exhibits 2-4.)

12 10. Twenty-three lots border the northern lake. Five of these lots border the dam (or
13 berm) that forms the north boundary of the northern lake, including my lot (Lot 69) and Lots 71
14 and 72. (HLE Exhibit 1.)

15 11. Lots 71 and 72 form the lowest elevation area bordering the northern lake.

16 12. The subdivision developer prepared a map showing that a natural drainage swale
17 crossed from the north dam of the northern lake (depicted on the map as Lot "C"), along the
18 property line between Lots 71 and 72, to the corner of Jon Way and Hidden Lakes Drive East.
19 When the map was submitted to Placer County in connection with the subdivision approval, the
20 developer dedicated to the public a "meandering drainage easement (MDE) for the flow of
21 drainage waters through the natural swales as shown on" the map. These documents were
22 recorded with Placer County. (HLE Exhibit 2.)

23 13. There are no concrete street gutters or conventional storm drains in the
24 subdivision. Most of the precipitation and irrigation overflow water drains through remnant
25 natural channels that cross many of the lots within the subdivision and that correspond to the
26 "meandering drainage easements" designated on the developer's original improvement plan and
27 construction maps. (HLE Exhibit 2.) The vast majority of these channels are kept in an open
28 state, with the typical channel being a few feet wide, a few feet lower than the surrounding

1 topography, and lined with rocks. Some channels are crossed by bridges or bordered by
2 landscaping. Typical channels are shown in HLE Exhibit 46, Schofield Letter of December 8,
3 2008 at page 3. Such an open channel crosses my lot, and it is rock-lined and free of trees, with a
4 depth of 2 to 3 feet lower than the surrounding land. I am aware of only one "meandering
5 drainage easement" in the subdivision that is not kept in an open state resembling a stream
6 channel: the easement that runs along the property line between Lots 71 and 72.

7 14. The subdivision's natural drainage swales are connected at various locations by
8 culverts, low-lying areas running alongside the streets, and the streets themselves. (See, e.g.,
9 HLE Exhibit 41 # 29.)

10 15. The subdivision's lakes support a resident fish population, including large-mouth
11 bass and bluegill. Residents are allowed to engage in recreational fishing if they have a State-
12 issued fishing license, though fishers must use barbless hooks and all caught fish must be released
13 back into the lakes pursuant to the subdivision Codes, Covenants and Restrictions ("CC&Rs").
14 Smaller fish, including minnows, also live in the lakes.

15 16. Numerous bird species frequent the lakes, including herons, egrets, ducks, and
16 Canadian geese. I have repeatedly observed birds feeding on the resident fish.

17 17. Vegetation borders the lakes, forming an attractive backdrop and a unifying theme
18 for the subdivision, which takes its name from the lakes. A fountain operates in the southern lake
19 year-round during daylight hours via a photo sensor.

20 18. Each of the lakes is approximately 1.1 acres in surface area.

21 19. The HOA has a service contract with a company to maintain the quality of the
22 water in the lake. The company adds two types of chemicals to the lake in order to reduce algae:
23 a colorant is routinely added to prevent sunlight from penetrating into the lake, thereby reducing
24 algae growth, and an algaecide is added on an as-needed basis. No other chemicals are added to
25 the lakes.

26 **III. HIDDEN LAKES HOMEOWNERS ASSOCIATION, CC&RS AND THE**
27 **COMMON AREA PLANNING COMMITTEE**

28 20. The HOA is funded by monthly dues payments by the subdivision homeowners.

1 When I purchased my lot in 2004, the dues were \$30 per month. The dues were increased to \$50
2 per month shortly thereafter mostly due to increased cost of liability insurance as a result of the
3 lawsuit that complainants filed against the HOA alleging claims for nuisance and trespass
4 associated with the northern lake.

5 21. The HOA enforces the subdivision's CC&Rs, as adopted August 4, 1997. A copy
6 of the CC&Rs is attached as HLE Exhibit 7. A copy of the CC&Rs as in effect from 1986 to
7 1997 is attached as HLE Exhibit 8.

8 22. Article V Section 1 of both the 1997 and 1986 CC&Rs states that each lot is
9 subject to all easements as shown on the recorded subdivision map. Section 2 of the 1997
10 CC&Rs says each owner must obtain the HOA's written approval before modifying a drainage
11 swale; states that the swales' location cannot be altered; and prohibits improvements "including
12 driveways, culverts, bridges, dams, ponds, or fences, except ground cover" over a drainage swale
13 without written approval of the HOA and the County. (HLE Exhibits 7 and 8.)

14 23. The Committee was formed by the HOA Board of Directors to address issues
15 relating to seepage from the northern lake, including claims for trespass and nuisance filed against
16 the HOA by the owners of Lots 71 and 72.

17 24. The Committee's purpose was to make a broad investigation of seepage from the
18 northern lake in order to make recommendations to the HOA Board of Directors on the following
19 questions: (1) whether seepage from the northern lake is occurring at an acceptable/reasonable
20 level under the circumstances, and (2) if the seepage is exceeding an acceptable/reasonable level,
21 what measures should the HOA undertake to address the seepage.

22 25. As part of this work, the Committee reviewed technical reports and analyses
23 prepared during the course of the nuisance/trespass lawsuit, including reports submitted by the
24 owners of Lots 71 and 72 and those commissioned by counsel for the HOA. Some of these
25 reports and analyses are presented in HLE Exhibits 17, 19-21, 29. The Committee also
26 contracted for additional reports to be prepared. (See HLE Exhibits 15, 16, 18, 45.) The reports
27 generally concur that some seepage is occurring from the northern lake. None of the reports of
28 materials that the Committee reviewed provided a specific volume or seepage loss ratio that

1 provides a clear standard by which to measure whether seepage is acceptable or unacceptable.
2 However, several of the reports state that the seepage is within an acceptable or expected range
3 for this type of construction. (HLE Exhibits 16 at 9, 17 at 1, 19 ¶ 8, 21 at 2.) In my experience
4 working with civil engineers working on dams with the Corps, I understand that no dam is
5 completely water tight, certainly no earthen dam.

6 26. The Committee members considered statements made by the owners of Lots 71
7 and 72 regarding damage to their property, and made direct observations and reviewed
8 photographs of the northern lake, the southern lake, and Lots 71 and 72, including drainage
9 occurring at the front of the properties where the MDE on their joint property line terminates at
10 the corner of Jon Way and Hidden Lakes Drive East. I have personally observed the drainage at
11 this intersection for years, an average of at least twice per month. The quantity of drainage
12 throughout 5 or 6 months of the year is the equivalent of the amount of water flowing from a low-
13 flow sink faucet. During the wetter periods of the year, the drainage is higher.

14 27. In evaluating the drainage and damage information, the Committee considered the
15 drainage issues occurring on lots throughout the subdivision, the high local water table, the hilly
16 topography, and the shallow granite bedrock occurring in the community.

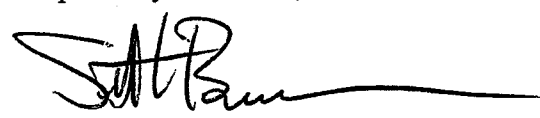
17 28. The Committee also considered that the meandering drainage easement on Lots 71
18 and 72 has been almost completely filled in, whether by the complainants or their predecessors in
19 title. Reports and photographs and a detailed survey map show that the easement has been filled
20 in with dirt and covered with improvements (fencing, planters, concrete pads, play area) and
21 planted in trees. (HLE Exhibit 41, #2 to #5.) The easement area also does not slope steadily
22 downward toward the terminus of the easement as is shown on the recorded subdivision maps for
23 the property. (HLE Exhibits 19 at 2-6, 41 #2 to #5, 45.) The Committee concluded that filling in
24 the easement contributed to the drainage issues asserted by the complainants in this action. If I
25 filled in the open channel on my lot, I would expect that water would back up into the yard of my
26 next-door neighbor.

27 29. I and the other members of the Committee ultimately concluded that the amount of
28 seepage from the northern lake was occurring at an acceptable/reasonable level and that the

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owners of Lots 71 and 72 have available to them the means to facilitate removal of much of the water from their property. These means would be similar in kind to measures undertaken by other homeowners in the area (French drains, pumps, maintained open drainage channels). Although the northern lake appears to provide a somewhat consistent source of water to Lots 71 and 72, other local water sources (including precipitation and resulting overflow, neighboring irrigation, and local groundwater) cause a significant fluctuation in the amount of water appearing on Lots 71 and 72 throughout the year, making it unlikely that remediation of the northern lake and berm would substantially eliminate drainage issues on the property, which is some of the lowest elevation property in the subdivision. (HLE Exhibits 2-4, 16 at 3, 17 at 1-2.) The fact that the easement has been filled in weighs in favor of the lot owners' undertaking measures that would adequately substitute for interference with the easements' function.

Respectfully submitted,



SCOTT L. BARMANN