

Mr. Al Knight
42606 N. River Dr.
Sweet Home, OR 97386
Ph: 541-367-7399

June 15, 2008

I SUMMARY

On June 14, 2008, I conducted a field reconnaissance at the residence of Mr. Al Knight at his request. This report is written for the Oregon Water Resources Department, Eugene District Office. Mr. Knight desires to obtain approximately two acres of water right from the South Santiam River. As part of that process, the Water Resources Board desires verification that a pond on the north side of the property is sourced from the South Santiam River and does not derive its water from some other aquifer. In summary, the field investigation confirmed that the source of the water in the pond is ground water that is recharged by flow from the South Santiam River.

II PROPERTY

The property (13S01E28, TL 500, Parcel 3) of about 3.6 acres sits between North River Drive (County Road No. 908) and the South Santiam River, and is physically located in Linn County at 42606 North River Drive, Sweet Home, OR 97386. The approximately ¼ acre pond was constructed by excavation in about 1995.

III ANECDOTAL EVIDENCE

At our meeting Mr. Knight reported:

A) He installed an approximately 6000 gallon per hour pump soon after construction of the pond. The water was pumped from the pond into the River. His objective was to recycle water in the lake during the summer months. He indicated that he would run the pump for hours or days, and the level of the water in the pond did not substantively change.

B) During the February 1996 storm, he noted flood water running approximately 18 inches deep over the lowest part of his driveway (which is about 10 feet above the current level of the pond). This would have approximately been the high water level of the Santiam River.

C) Since 1995, he has observed on numerous occasions throughout the year, that the water in the pond approximately corresponds with the River level - summer through winter.

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D) He told me that a water rights civil engineer recently testified in a court in support of his observations that the water in the pond parallels the river level.

E) He pointed out an approximately 24 inch plastic pipe that was recently installed under the roadway of North River Drive by the County Road Department. He indicated that the culvert, which empties into the pond, is primarily a surface water source that only runs during the rainy period. It dries up each summer and fall. On June 14, I saw that it was running approximately 1 gallon per minute.

IV SITE GEOLOGY

Mr. Knight's property resides in a series of alluvial terraces of the South Santiam River. The house rests on what is likely a Holocene (?) terrace remnant. The surface soil is about four or five feet thick and is comprised of well sorted medium to fine sand. This is underlain by an extensive deposit of unconsolidated, highly permeable sand and gravel with numerous rounded cobbles. Evidence of almost open graded gravels can be found in nearby cuts. The pond was excavated from this lower sand, gravel, cobble layer.

The pond area is located in a swale that runs intermittently for a couple of miles between this terrace remnant (or others), and a much older terrace to the north, on which North River Road is located. The swale was likely an older abandoned channel of the river and is now part of the 100 year flood plain. This assumes that the 1996 storm would have approached the 100 year return interval if the flow was not regulated by Foster Dam.

Of some significance, I hiked east of Mr. Knight's pond for several hundred feet on the Holocene (?) terrace. This area is covered with brush and young timber. Numerous low lying areas in the swale were observed, and all had standing water. No surface flow was observed between any wet or ponded area in the swale. I ran a cross section with hand level over the terrace between the ponded water in the swale and the River. The horizontal distance was about 250 feet, and the terrace was about 10 to 13 feet above the river level. The river level is within one foot of the standing water in the swale.

I also hiked and drove along a section of North River Drive for about 2 to 3 miles, both east and west of Mr. Knight's residence. There is no evidence of extensive seepage or spring activity crossing North River Drive, that might serve as another upland aquifer.

V CONCLUSIONS

There is an abundance of evidence to indicate that the water from Mr. Knight's pond is recharged from the South Santiam River. This includes: 1) The presence of a highly permeable or open graded, gravel and cobble layer that underlies both the South Santiam River and the pond; 2) The anecdotal evidence provided by Mr. Knight on the flow volumes; 3) The presence of naturally ponded water several hundred feet east of Mr.

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Knight's pond, that is essentially at river level, and not recharged by any overland flow; and 4) The absence of any substantive large scale seepage or spring activity coming off the other terrace areas to the north. Without a more definitive investigation such as a dye test, it is not possible to state conclusively that the water from the South Santiam flows through the gravels to Mr. Knight's pond. However, all the available evidence would certainly indicate that that is so.

Respectfully submitted,

Douglas C. Shank

Douglas C. Shank

Registered Oregon Geologist, G0091
Registered Oregon Engineering Geologist, E0091

Douglas C. Shank
27910 Meridian Hts. Lp.
Sweet Home, OR 97386
Phone: 541-367-5344



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