



PARAGON GEOTECHNICAL, INC.
CONSULTING ENGINEERS

MEMORANDUM

DATE: September 14, 2009

TO: Hidden Lakes Estates Homeowners Association
c/o Frei Real Estate Services
8340 Auburn Boulevard, Suite 100
Citrus Heights, CA 95610

ATTN: Ms. Ashley Teegarden, Association Manager

FROM: Frederick J. Wentz, Jr., G.E. *F.J.W.*

RE: **Evaluation of Piezometer Measurements through September 8, 2009**
Hidden Lakes Estates Pond Seepage Evaluation
Granite Bay, CA
(Proj. No. 1383-01-07)

No. of Pages: 4

Attached are the measurements that we have taken to date from 4 of our piezometers, along with some early measurements from those on the Allegra and Woods properties. The piezometers are all located on north side of the pond. As of now, we have periodic measurement data spanning about 27 months back to April, 2007, and continuous data over the past 18 months.

Based on our review of the piezometer measurements, there has been a relatively clear seasonal change in the groundwater levels adjacent to the pond in response to extended periods of drier or wetter weather. This can be seen in the attached graph of water surface elevation with time which shows the groundwater levels trending higher in the winter/spring months and lower in the summer/fall months. The winter/spring of 2008/2009 (significant rain in February and March) was wetter than that of 2007/2008 (little or no rain from February onward) and therefore, the trend is more pronounced. We believe that this trend will become more apparent during a "normal" wet winter/spring.

There are likely two main causes of the change in groundwater levels near the pond. The primary cause is due to rainwater seeping into the shallow relatively porous "decomposed granite" (e.g., DG) present at the site and becoming perched on top of a deeper less weathered and therefore less permeable rock layer. As the rainy season progresses (assuming a normal wet year), the perched groundwater slowly builds up, then dissipates during the dry season. A

secondary cause of the groundwater fluctuations is believed to be the level of the pond. Given the relatively porous nature of the DG terrain in the area, even small changes in the pond level would be expected to result in a similar change in the groundwater levels near to the lake.

If the lake level was relatively constant throughout the year and there was no rain, the change in groundwater elevations should theoretically be quite small and that is demonstrated by the graphical data from January to November, 2008 (a relatively dry period). The more pronounced changes in groundwater levels in December 2008 and March 2009 are believed to have resulted from periods of relatively significant rainfall when the groundwater levels rose relatively rapidly in response to infiltration; possibly combined with a small rise in lake level. As the amount of rainfall increased and decreased from February through May, 2009 the groundwater levels rose and fell accordingly. From June onward, the groundwater levels have been falling as the perched water dissipates with no recharge from rainfall.

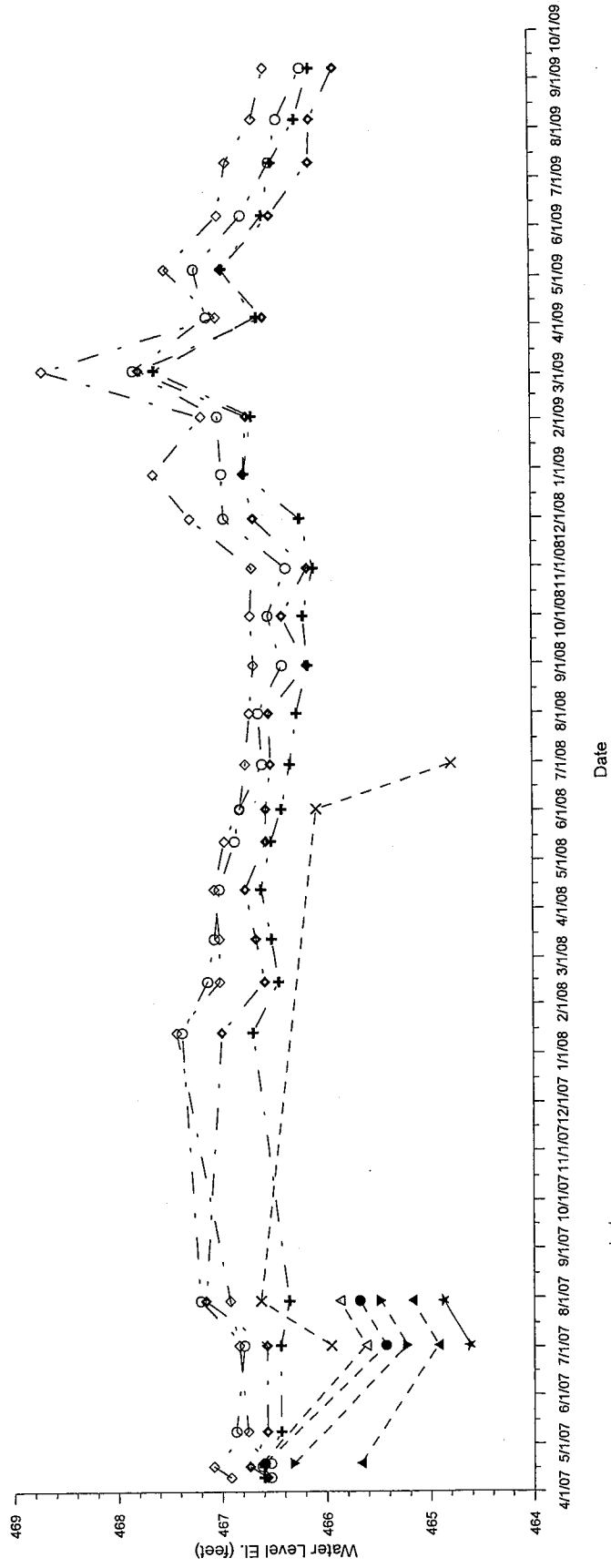
Given the predictions for the upcoming winter to be relatively wet due a strong El Nino off of California, we recommend that the piezometer measurements be continued into next summer to confirm the groundwater response to rainfall.

If you have any questions, please do not hesitate to call us.

HLE EXHIBIT 15



- B1A - Paragon Geotechnical
- ⊕ B2A - Paragon Geotechnical
- ◇ B3 - Paragon Geotechnical
- ◆ B4 - Paragon Geotechnical
- P1 - HTA Lot 71
- ▲ P2 - HTA Lot 71
- △ P3 - HTA Lot 71
- ▽ P4 - HTA Lot 71
- × P5 - HTA Lot 72
- ★ MW 1 - HTA Lot 71



Date

PLATE
1

PIEZOMETER READINGS
Hidden Lakes Estates Pond Seepage
Evaluation
Granite Bay, California

Project No.: 13833-01-07
Reviewed: DD
Drawn: RW
Date: September 2009



HLE EXHIBIT 15

13833-01-07_Piezo_Readings_HLE-15.dwg

Paragon Geotechnical, Inc.
Piezometer Measurement Data - Hidden Lakes Estates

Proj. No. 1383-01-07

Date	Depth to Groundwater Below Casing (in.)											
	Common Areas					Private Parcels						
	B1A	B2A	B3	B4	B5	P1	P2	P3	P4	P5	MW1	MW2
4/10/2007	62.0	54.0	49.0	52.0	90.0	--	--	--	--	--	--	--
4/17/2007	61.0	54.0	47.0	50.0	89.0	--	--	--	--	--	--	--
4/19/2007	62.0	54.0	--	--	--	68.0	45.0	21.0	46.0	--	--	--
5/9/2007	58.0	56.0	51.0	52.0	92.0	--	--	--	--	--	--	--
7/2/2007	59.0	56.0	50.0	52.0	107.0	82.0	57.0	30.0	59.0	41.0	13.0	--
7/30/2007	54.0	57.0	49.0	45.0	101.0	79.0	54.0	27.0	56.0	33.0	10.0	--
1/14/2008	52.0	53.0	43.0	47.0	85.0	--	--	--	--	--	--	--
2/15/2008	55.0	56.0	48.0	52.0	86.0	--	--	--	--	--	--	--
3/13/2008	55.8	55.2	48.0	51.0	87.6	--	--	--	--	--	--	--
4/13/2008	56.4	54.0	47.4	49.8	91.2	--	--	--	--	--	--	--
5/13/2008	58.2	55.2	48.6	52.2	94.2	--	--	--	--	--	--	--
6/2/2008	58.8	56.4	50.4	52.2	96.6	--	--	--	--	39.6	--	--
6/30/2008	61.4	57.4	51.1	52.8	102.2	--	--	--	--	55.2	--	--
8/1/2008	61.0	58.2	51.6	52.6	105.6	--	--	--	--	--	--	--
8/31/2008	63.8	59.5	52.1	57.0	106.9	--	--	--	--	--	--	--
10/1/2008	62.2	59.0	51.8	54.2	106.0	--	--	--	--	--	--	--
10/31/2008	64.3	60.2	52.0	57.1	107.3	--	--	--	--	--	--	--
12/1/2008	57.2	58.7	44.9	51.0	100.3	--	--	--	--	--	--	--
12/29/2008	57.0	52.4	40.7	49.9	87.7	--	--	--	--	--	--	--
2/3/2009	56.6	53.3	46.3	50.3	86.8	--	--	--	--	--	--	--
3/4/2009	46.9	42.1	28.0	37.9	78.8	--	--	--	--	--	--	--
4/6/2009	55.4	54.0	48.1	52.3	90.5	--	--	--	--	--	--	--
5/6/2009	54.0	50.0	42.2	47.5	82.8	--	--	--	--	--	--	--
6/8/2009	59.5	54.7	48.4	53.2	94.4	--	--	--	--	--	--	--
7/11/2009	62.8	55.8	49.4	57.7	102.1	--	--	--	--	--	--	--
8/7/2009	63.7	58.6	52.4	57.8	103.8	--	--	--	--	--	--	--
9/8/2009	66.5	60.2	53.9	60.6	108.1	--	--	--	--	--	--	--

- Notes:
1. B1A through B5 installed by Paragon Geotechnical
 2. P1 through P4 and MW 1 on Woods Property
 3. P5 and MW 2 on Allegra Property.
 4. MW 2 has never been identified. Homeowner reported it may be buried.

Date	Groundwater Elevations (ft)											
	Common Areas					Private Parcels						
	B1A	B2A	B3	B4	B5	P1	P2	P3	P4	P5	MW1	MW2
4/10/2007	466.5	466.6	466.9	466.6	462.5	--	--	--	--	--	--	--
4/17/2007	466.6	466.6	467.1	466.7	462.6	--	--	--	--	--	--	--
4/19/2007	466.5	466.6	--	--	--	466.6	466.6	465.7	466.3	--	--	--
5/9/2007	466.9	466.4	466.8	466.6	462.3	--	--	--	--	--	--	--
7/2/2007	466.8	466.4	466.8	466.6	461.1	465.4	465.6	464.9	465.2	466.0	464.6	--
7/30/2007	467.2	466.4	466.9	467.2	461.6	465.7	465.9	465.2	465.5	466.6	464.9	--
1/14/2008	467.4	466.7	467.4	467.0	462.9	--	--	--	--	--	--	--
2/15/2008	467.1	466.4	467.0	466.6	462.8	--	--	--	--	--	--	--
3/13/2008	467.1	466.5	467.0	466.7	462.7	--	--	--	--	--	--	--
4/13/2008	467.0	466.6	467.1	466.8	462.4	--	--	--	--	--	--	--
5/13/2008	466.9	466.5	467.0	466.6	462.2	--	--	--	--	--	--	--
6/2/2008	466.8	466.4	466.8	466.6	462.0	--	--	--	--	466.1	--	--
6/30/2008	466.6	466.3	466.7	466.5	461.5	--	--	--	--	464.8	--	--
8/1/2008	466.6	466.3	466.7	466.5	461.2	--	--	--	--	--	--	--
8/31/2008	466.4	466.1	466.7	466.2	461.1	--	--	--	--	--	--	--
10/1/2008	466.5	466.2	466.7	466.4	461.2	--	--	--	--	--	--	--
10/31/2008	466.3	466.1	466.7	466.1	461.1	--	--	--	--	--	--	--
12/1/2008	466.9	466.2	467.3	466.7	461.6	--	--	--	--	--	--	--
12/29/2008	467.0	466.7	467.6	466.7	462.7	--	--	--	--	--	--	--
2/3/2009	467.0	466.7	467.1	466.7	462.8	--	--	--	--	--	--	--
3/4/2009	467.8	467.6	468.7	467.7	463.4	--	--	--	--	--	--	--
4/6/2009	467.1	466.6	467.0	466.5	462.5	--	--	--	--	--	--	--
5/6/2009	467.2	466.9	467.5	466.9	463.1	--	--	--	--	--	--	--
6/8/2009	466.7	466.5	467.0	466.5	462.1	--	--	--	--	--	--	--
7/11/2009	466.5	466.5	466.9	466.1	461.5	--	--	--	--	--	--	--
8/7/2009	466.4	466.2	466.6	466.1	461.4	--	--	--	--	--	--	--
9/8/2009	466.2	466.1	466.5	465.9	461.0	--	--	--	--	--	--	--

- Notes:
1. Groundwater elevations based on surveyed elevations of the top of the piezometer casings provided by Hunter Surveying, Topographic Drainage Survey, dated Dec. 17, 2007.

HLE EXHIBIT 15