



Hydrogeologic Consulting & Water Resource Management
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3153 Redwood Drive, Aptos, CA, 95003

August 6, 2012

Members of the Board of Supervisors
Monterey Peninsula Water Management District
5 Harris Court, Building G
Monterey, CA 93940

RE: Flores and Pistenti Water Distribution System Permits

As Flores/Pistenti hydrogeologist, *Bierman Hydrogeologic (BHgl)* has prepared this letter in response to Mr. Beech's Appeal, dated 8/1/12 to Monterey Peninsula Water Management District regarding Flores (S12-03-L2) and Pistenti (S12-04-L2) Water Distribution System Permits, dated July 12, 2012.

In lieu of debating the Beech Appeal, and completing another simultaneous test on the Flores/Pistenti Wells as Beech has requested in the Appeal, BHgl has already been monitoring and recording the groundwater level in Flores/Pistenti Well#2 (herein referenced as Pistenti Well) using a pressure transducer and data-logger, recording every hour from January 25, 2012 through July 23, 2012. Monitoring is currently ongoing. A graph of the data is shown on Figure 1 – attached. An earlier monitoring event, conducted from June 14 through July 6th, 2011 is shown on Figure 2 – attached.

The reason for this monitoring and recording was to determine and document whether or not the Beech Well and the Flores/Pistenti Wells are hydrogeologically connected (i.e. if pumping one well, will the other well “go dry” or at a minimum show a groundwater level change in response to neighboring well pumping). BHgl chose the Pistenti Well for monitoring as it is closer than the Flores Well (formerly reported as Flores/Pistenti Well #1). Since the Flores/Pistenti Wells are currently not being used they make good monitoring points such that any groundwater level change in these wells would be a response to either; 1) neighboring well pumping (such as the Beech Well) or, 2) seasonal groundwater rise and fall or, 3) natural barometric pressure responses on a body of water or aquifer or, 4) tidal, stream, or creek influences.

In summary, the data suggest (Figure 1, 2) that that there is a seasonal groundwater response with a natural barometric response, and NO impact by neighboring well pumping, tidal, stream or creek influences. A detailed discussion to support the above findings follows.

Monitoring of Pistenti Well:

As shown on the Figure 1, between January to approximately May, 2012 there was a gradual groundwater level rise due to recharge from precipitation to the fractured rock aquifer system. Based on the data, around early May, the groundwater level started dropping due to seasonal groundwater decline. If one looks closer at the data (magnified view on Figure 1) there is an oscillation pattern observed in the data which is attributed to barometric pressure changes through the day and night and its effect on the groundwater level.

Assuming Beech uses his well for irrigation purposes, and if the wells are hydrogeologically connected, there should be a groundwater level change in the monitored Pistenti Well while

Beech Well is pumping. On the contrary, the groundwater level data shows that there IS NO significant groundwater level change that would be typical of a neighboring wells pumping impact on another well. A typical response of pumping influence on a neighboring well from a pumping well is shown on "Inset Graph" on Figure 1.

Additionally, between May 15 and May 21st 2012 (a period of hotter weather for early 2012) the Beech property was being extensively irrigated (visually observed by BHgl – drive-by). Monitoring of the Pisenti Well over this same time period (magnified view on Figure 1) showed no groundwater level response that would be typical of a neighboring wells pumping impact on another well (albeit, assuming Beech well was being used to irrigate his property).

More so, Figure 2, shows the groundwater level in Pisenti Well between June 14, and July 6, 2011, also during a time when Beech property was being extensively irrigated (visually observed by BHgl). Again, monitoring of the Pisenti Well over this same time period (Figure 2) showed no groundwater level response that would be typical of a wells pumping impact on another well. Rather, the Pisenti Wells groundwater level is basically static with an oscillation pattern typical of natural groundwater level rise and fall over several days due to barometric pressure.

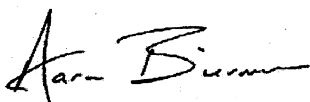
Most importantly, independent of whether or not the Flores/Pisenti and Beech wells are hydrogeologically connected¹, the conclusion is that the technical calculations (as required by MPWMD) for project water demand at build-out indicate there are less than significant impacts to ALL offsite wells, including the Beech Well.

Lastly, in addition to the above information, BHgl has attached (for reference) previously submitted information to the Board of Supervisors regarding the Flores/Pisenti WDS, specifically:

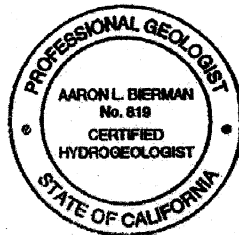
- BHgl Letter dated July 15, 2011 "Summary of Events" for Flores and Pisenti Wells
- BHgl Letter dated November 18, 2011 "Background" of information and permits received for Flores and Pisenti Wells

In summary, both the Flores and Pisenti Water Distribution System (WDS) Applications should be deemed "Complete" as originally deemed, and be issued WDS permits for their respective projects.

Respectfully submitted,

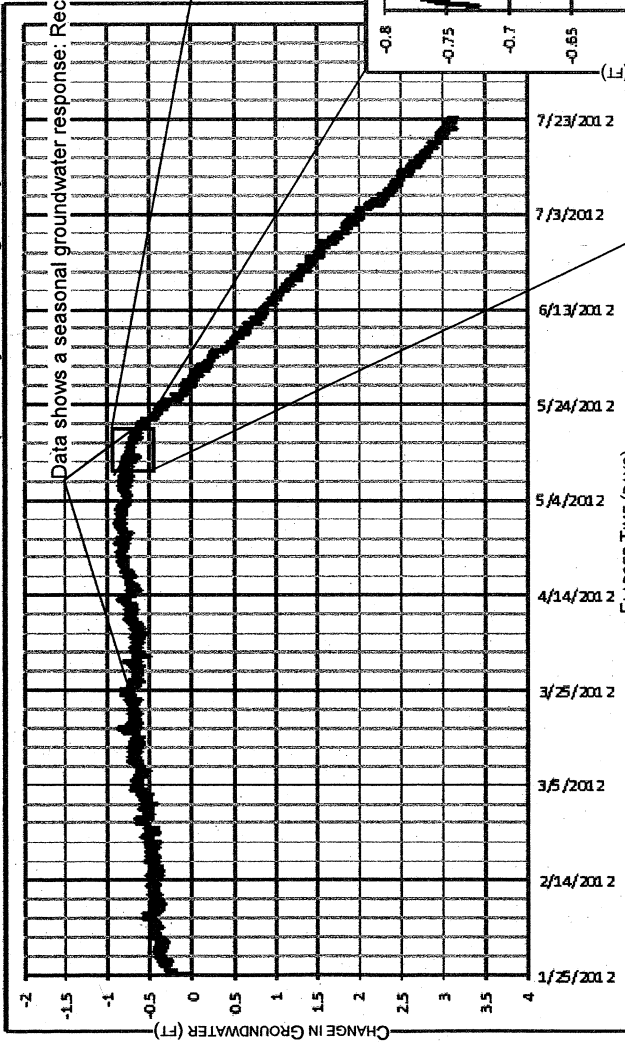


Aaron Bierman
Consulting Hydrogeologist #819

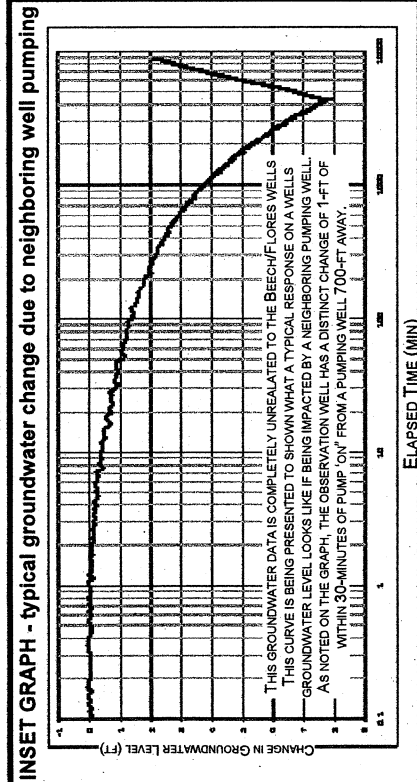
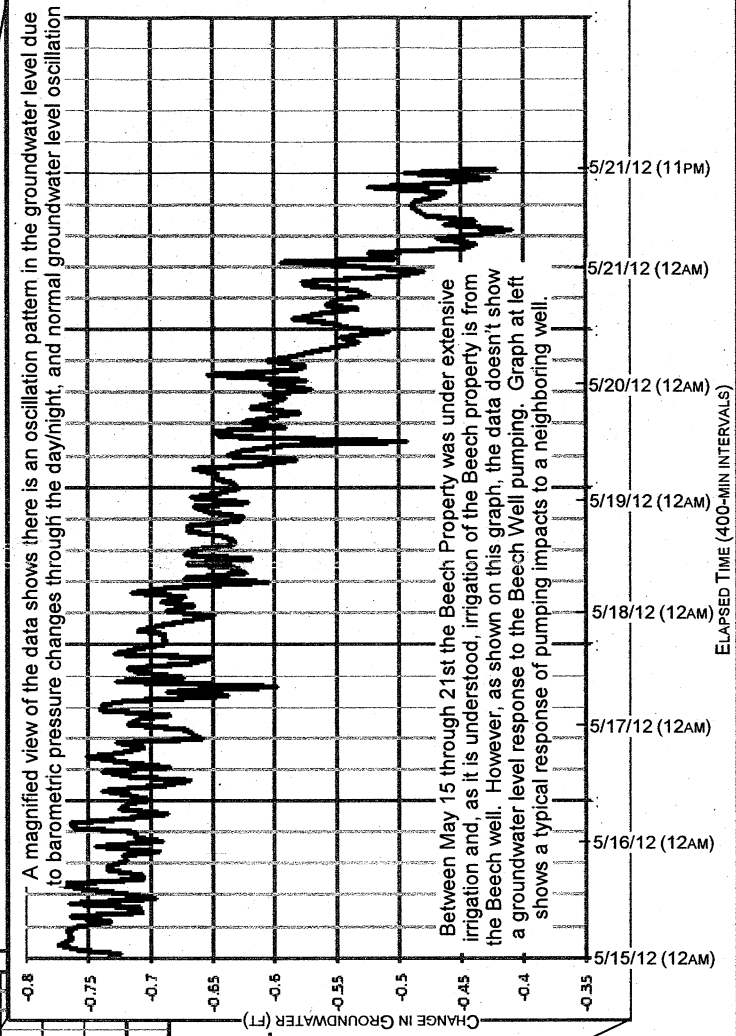


¹ A good-faith effort was made by Bierman/Flores/Pisenti to conduct another pumping test while monitoring the Beech Well, however due to the language in the "Agreement" e-mail dated 10/14/11 that Mrs Erickson (Attorney for Beech) provided, the agreement was never signed and no follow-up pumping test was conducted.

Flores/Pisenti Well #2 Groundwater Level Data (January 25 through July 23, 2012)



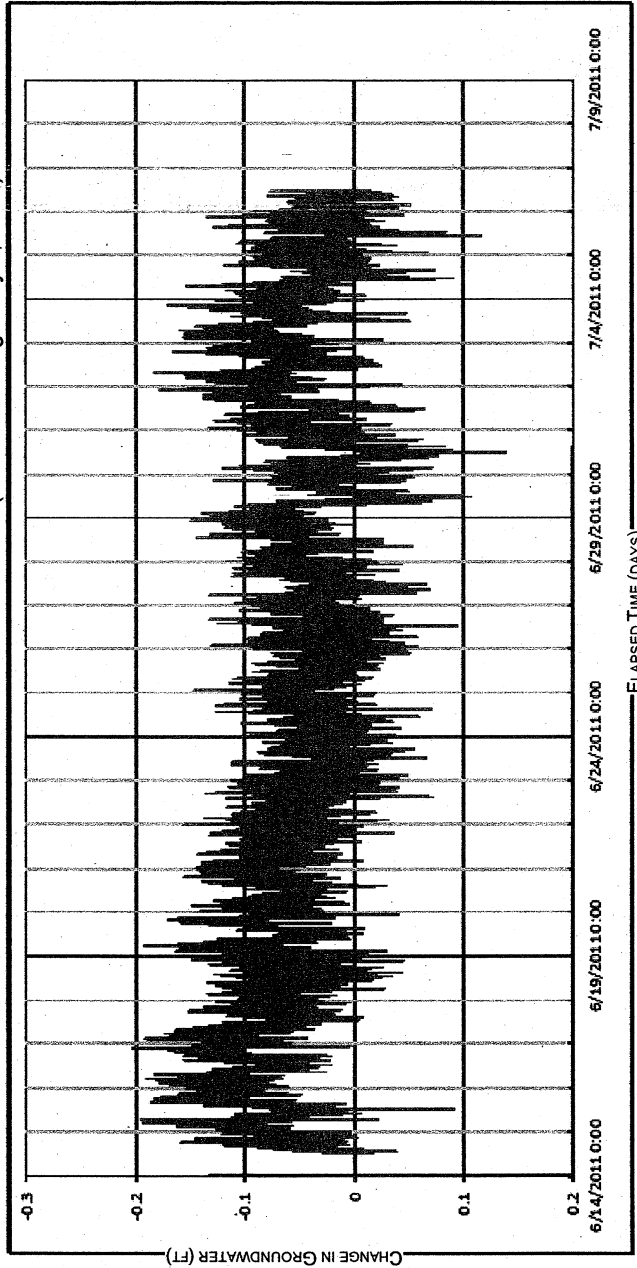
In summary, out of all of the groundwater level data reviewed (over 7-months) none of the groundwater level data shows any drawdown response from pumping of the Beech Well, therefore, there is lack of connectivity between the wells.



FLORES/PISENTI WELL #2 - GROUNDWATER LEVEL DATA
 January 25, through July 23, 2012
 Monterey County, California



Flores/Pisenti Well #2 Groundwater Level Data (June 14 through July 6, 2011)



Extensive irrigation was being conducted on the Beech Property (assumed to be water from the Beech Well) during the time period presented above. Again, based on the data, there is no groundwater level response in the Flores/Pisenti Well #2 that suggest the Beech Well and Flores/Pisenti Wells are hydrogeologically connected.



Hydrogeologic Consulting & Water Resource Management
Office: (831-888-8888) Call: (831-334-2237) E-Mail: ebierman@comcast.net
3153 Redwood Drive, Aptos, CA, 95003

July 15, 2011

Monterey Peninsula Water Management District
Attn: Henrietta Stern

Monterey County Environmental Health Department
Attn: Roger Van Horn

RE: Flores/Pisenti Wells #1, 2 @ 564 and 577 Monhollan Road, Monterey, Ca, APN: 103-071-019 & -002

Bierman Hydrogeologic (BHgl) has been prepared this letter as per request of Monterey Peninsula Water Management District (MPWMD) to provide a summary of events in regards to a neighboring well owner (Beech) request of denial of WDS permits for Flores/Pisenti Wells #1, 2.

SUMMARY OF EVENTS:

- October 15 thru 21/2010: Simultaneous Aquifer Pumping & Recovery Tests on Flores/Pisenti Wells #1, 2¹. In summary, each well sustained greater than 3 gpm for 72hrs with minimal drawdown. MCEHB Post Recovery Pumping Rates were 7.58 gpm / 3.30 gpm respectively. MPWMD Post-Recovery Calculated Yields were 32.89 gpm/24.52 gpm respectively.
- February 15, 2011: Beech submits "Objection to Application (PLN100560) for Lot Line Adjustment" to MC Planning Department. In this letter, Mr. Beech suggests that his well went dry as a result of the October 2010 pumping tests completed on Flores/Pisenti Wells, and therefore; 1) request denial of the proposed lot line adjustment pending at MC Planning Department, and 2) accounts for using his well to irrigate 3-parcels without a valid WDS permit.
- March, 2011: Submittal of MPWMD Application for Water Distribution System (WDS) permit and BHgl report for Flores/Pisenti Well #2, dated March 22, 2011.
- March, 2011: Submittal of MPWMD Application for Water Distribution System (WDS) permit and BHgl report for Flores/Pisenti Well #1, dated March 23, 2011.
- April 29, 2011: MPWMD concurs with Pueblo Water Resources review of BHgl Report on Flores/Pisenti Well #2, indicating the well is adequate for intended use with no significant offsite impact to neighboring wells or sensitive environmental receptors.
- May 23, 2011: MPWMD concurs with Pueblo Water Resources review of BHgl Report on Flores/Pisenti Well #1, indicating the well is adequate for intended use with no significant offsite impact to neighboring wells or sensitive environmental receptors.
- June 8, 2011: MPWMD (via e-mail) circulates Letter submitted by Mr Beech dated June 7, 2011 along with attachment of HydroMetrics Water Resources Inc., Letter dated, June 3, 2011 which question 1) Flores/Pisenti Well Yields and Offsite Technical Calculations as presented in BHgl Report of Flores/Pisenti Well #2, and 2) MPWMD potential authorization of WDS Permits, and therefore requests MPWMD and MCEHB to deny reports and to authorize another pumping test be conducted while the Beech Well is monitored.

¹ See respective Bierman Hydrogeologic Reports, dated March 22, and 23, 2011 for details.

- June 9, 2011: BHgl (via e-mail) concurs with Beech requests and suggest scheduling pump test for the week of June 20th. As part of scheduling, BHgl requests preliminary well information from Beech including; whether or not the well has a sounding tube, what the wells static groundwater level and pumping water levels are, pump type, typical flow rate, and installation depth, and irrigation schedule.
- June 10th -20th, 2011: (via e-mail) Beech, Flores/Pisenti, MPWMD, MCEHB and BHgl have an understanding that pumping test should be able to be completed at any time between June 1 and October 31st of any given year, and that pumping testing in October to mimic previous years data is not necessary to determine constructive interference patterns.
- June 14th: BHgl installs pressure transducers (Xd's) in both Flores/Pisenti Well #1, #2 and starts background base-line groundwater level monitoring in these wells to determine whether constructive interference patterns are observed during the daily cyclic irrigation pumping of the Beech Well. Sprinkler irrigation was observed at the Beech Property on several different occasions, and as per the landscape staff, irrigation water is from the well.
- June 21st, 2011: Mr. Beech (via e-mail) requests: 1) MPWMD and MCEHB re-evaluate the BHgl Reports and pumping test and whether or not they were completed in accordance with respective agency standards, 2) MPWMD and MCEHB to require new tests on both wells, and, 3) "if such new test are planned, owners of nearby wells be notified of their option to request concurrent monitoring"
- June 24, 2011: MPWMD (via e-mail) responds to Mr. Beech June 21st e-mail. In summary, MPWMD issues directive time-line for BHgl/Beech, at a minimum; 1)reschedule pumping tests with 14-day advanced notification to all neighbor's with wells within 1,000 ft of Flores/Pisenti Wells, and 2) Provide 7-day timeline for response for requesting concurrent monitoring.
- June 27th, 2011: BHgl (via e-mail) provides MCEHB, MPWMD, Beech, et.al. 14-day advance notification that a pump test is scheduled for Well #2 on July 12, 2011, and that a response for monitoring is due by July 5, 2011. In this e-mail chain, BHgl again request whether or not the Beech Well has a sounding tube, as well as the wells static groundwater level and pumping water levels, pump type, typical flow rate, installation depth, and irrigation schedule.

In addition to the e-mail correspondence on this day, BHgl completed a site visit to all neighboring well owners within 1,000ft radius of Flores/Pisenti Well #2, which included Beech, Maney, Shake. Beech (personal communication) refused access to property and well monitoring and requested e-mail communications only. Maney (personal communication) approved access although was not critical of potential constructive interference between the wells and thus declined concurrent monitoring. Shake was not home, and therefore was notified in writing of the upcoming pumping test, and the time-line to respond.

- June 27th-30th, 2011: (via e-mail) Beech, Flores/Pisenti, MPWMD, MCEHB and BHgl discuss whether the technical calculations that BHgl used for Flores/Pisenti Wells #1, 2 followed respective agency guidelines. In summary, the discussion was that BHgl followed appropriate guidelines.
- June 30th, 2011: MCBOS approves, with recommendation from MCEHB and MC Planning, Lot line Adjustment for the Flores/Pisenti Parcels, APN: 103-071-019 & 002.
- July 5th, 2011: As per the request of Beech's Attorney, MPWMD (via e-mail) grants extension to July 5, 2011 deadline for opting to request concurrent monitoring and provides an additional 7-day time-frame to respond.

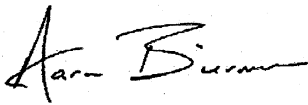
- July 6th, 2011, BHgl (via e-mail) reschedules test for July 19th, 2011, and request response by July 12, 2011 (7-days).
- July 7th, 2011, BHgl contacts Mr. Shake in person, provides contact information and notifies Shake of upcoming pumping test and his options to request concurrent monitoring. Mr Shake informed BHgl that he would contact his pump-contractor (Maggiara Brothers) and call back if interested. To this date no contact from Shake has occurred. Mr. Maney was not contacted the second time as he already declined concurrent monitoring.

On this same day, BHgl provided graphs to both MPMWD, and MCEHB regarding the past 21 days of baseline groundwater level monitoring in the Flores/Pisenti Wells #1, 2 with the conclusion, based on data, that there is no significant groundwater level impacts for cyclic pumping for offsite irrigation wells.

- July 13th, 2011: BHgl (via e-mail) notifies MPWMD, MCEHB that no response for request of concurrent monitoring has been requested by Beech or Shake. Based on the above information, including the time-line directive issued by MPWMD on June 24th, 2011 and extension granted on July 5, 2011, BHgl request MPWMD complete WDS permits for both Flores/Pisenti Wells #1, 2. In response, MPWMD requested that BHgl provide a summary letter with a time-line of events relating to Beech and Flores/Pisenti Parcels/Well interaction.
- July 15th, 2011: BHgl prepares and submits this summary of events letter.

This concludes the summary of events between Beech and Flores/Pisenti Wells.

Respectfully submitted,



Aaron Bierman
Certified Hydrogeologist #819



Hydrogeologic Consulting & Water Resource Management
Office: (831-888 8688) Cell: (831-334 2237) E-Mail: abierman@comcast.net
3153 Redwood Drive, Aptos, CA. 95003

November 18, 2011

Monterey Peninsula Water Management District
Attn: Board of Supervisors

RE: Flores/Pisenti Wells #1, 2 @ 564 and 577 Monhollan Road, Monterey, Ca, APN: 103-071-019 & -002

Bierman Hydrogeologic (BHgl) has prepared this letter in response to the upcoming Monterey Peninsula Water Management District (MPWMD) board meeting regarding the Flores/Pisenti/Beech Wells/Properties scheduled for November 21, 2011.

Background:

Between October 15 and October 21, 2010, simultaneous constant rate well pumping & aquifer recovery tests were conducted on Flores/Pisenti Wells #1, 2¹. In summary;

- Flores Well #1 pre-recovery pumping rate was 8.06 gpm with only 61.11 feet of drawdown over 72hrs giving a remaining saturated thickness of 306.91 feet remaining above the pump.
- Pisenti Well #2 pre-recovery pumping rate was 6.25 gpm with only 8.71 feet of drawdown over 72hrs giving a remaining saturated thickness of 407.07 feet remaining above the pump.

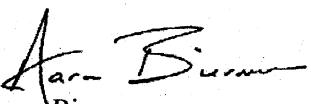
On October 26, 2011 the Monterey County Environmental Health Bureau (MCEHB) approved the source capacity credit for both the Flores/Pisenti Wells. Flores Well #1 was approved with a Source Capacity Credit of 7.6 gpm (sufficient for a two-connection system) whereas Pisenti Well #2 was approved with a Source Capacity Credit of 3 gpm (sufficient for a single connection system). The MCEHB Letters are attached to this document for reference.

It should be noted that MPWMD Post-Recovery Calculated Well Yields were calculated to be 32.89 gpm for Flores Well #1 and 24.52 gpm for Pisenti Well #2², again, more than adequate for intended use for each proposed project.

In addition, as per MPWMD guidelines³, conservative values (i.e; worst case scenario 'values' for Flores/Pisenti Wells) were used in the technical calculations to assess impacts to offsite neighboring wells if they were not monitored, using 'dry' season demand rates for the proposed project. The technical calculations indicate there is less than significant impacts to ALL offsite neighboring wells including the Beech Well at the cyclic pumping rates for each well for the proposed project⁴. It should also be noted, that Pueblo Water Resources (3rd party Hydrogeologist and consultant for MPWMD) generally concurred with BHgl technical calculations and also indicated that there is less than significant impacts to neighboring wells based on each projects water demand.

Therefore, independent of whether or not the Flores/Pisenti and Beech wells are hydrogeologically connected⁵, the conclusion is that the technical calculations for project water demand at build-out indicate there are less than significant impacts to ALL offsite wells, including the Beech Well. In summary, both the Flores and Pisenti Water Distribution System (WDS) Applications should be deemed "Complete" as originally deemed, and be issued WDS permits for their respective projects.

Respectfully submitted,


Aaron Bierman
Consulting Hydrogeologist #819

¹ See respective Bierman Hydrogeologic Reports, dated March 22, and 23, 2011 for details.

² As reposted in Bierman Hydrogeologic Reports, dated March 22, and 23, 2011 on respective wells.

³ Monterey Peninsula Water Management District, *Procedures for Preparation of Well Source and Pumping Impact Assessments*, dated September, 14 2005, Revised May 2006.

⁴ As reposted in Bierman Hydrogeologic Reports, dated March 22, and 23, 2011 on respective wells.

⁵ A good-faith effort was made by Bierman/Flores/Pisenti to conduct another pumping test while monitoring the Beech Well, however due to the language in the "Agreement" e-mail dated 10/14/11 that Mrs Erickson (Attorney for Beech) provided, the agreement was never signed and no follow-up pumping test was conducted.

MONTEREY COUNTY



DEPARTMENT OF HEALTH Ray Bullick, Director

ANIMAL SERVICES
BEHAVIORAL HEALTH
CLINIC SERVICES

EMERGENCY MEDICAL SERVICES
ENVIRONMENTAL HEALTH

PUBLIC HEALTH
PUBLIC ADMINISTRATOR/PUBLIC GUARDIAN

October 26, 2011

Paul Flores
#5 Zaragoza View,
Monterey, CA 93940

Re: Source Capacity Test

Dear Mr. Flores,

On October 12, 2010, a 72hr source capacity test was conducted by Aaron Bierman for well permit 98-318 at 577 Monhollan Rd for Well #1. The "72-hour Constant Rate Well Pumping and Aquifer Recovery Test and Pumping Impact Assessment for Flores/Pisenti Well #1" report was received on March 29, 2011 and reviewed by the Monterey County Health Department, Environmental Health Bureau (EHB).

In accordance with the California Waterworks Standards, Section 64554, (C), the well shall demonstrate that, within a length of time not exceeding the duration of the pumping time of the well capacity test, the water level shall recover to within two feet of the static water level measured at the beginning of the well capacity test or to a minimum of ninety-five percent of the total drawdown measured during the test, whichever is more stringent.

Your source capacity test did not fully recover in accordance with the above referenced California Waterworks Standards. Therefore, based upon the data collected during the source capacity test, a reduced credit of 7.6 gallons per minute has been given. This quantity meets the required capacity for a single family dwelling, as requested in your application. This also meets the requirements for a two connection water system that was discussed in the report submitted by Aaron Bierman. If you wish to pursue a two connection water system, the application can be downloaded from our website at: http://www.mtyhd.org/index.php?option=com_content&view=article&id=480%3Alocalwater&catid=169%3Alocal-small-water-systems&Itemid=589&lang=en

If you have any questions, please feel free to contact me at (831) 755-4552.

Sincerely,


Cheryl Sandoval, REHS
Supervising Environmental Health Specialist

Cc: Bierman Hydrogeologic

1270 Natividad Rd., Salinas, CA 93906 Phone (831) 755-4507 Fax (831) 755-8929
<http://www.co.monterey.ca.us/health/EnvironmentalHealth/>

MONTEREY COUNTY



DEPARTMENT OF HEALTH Ray Bullick, Director

ANIMAL SERVICES
BEHAVIORAL HEALTH
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ENVIRONMENTAL HEALTH

PUBLIC HEALTH
PUBLIC ADMINISTRATOR/PUBLIC GUARDIAN

October 26, 2011

Paul Flores
#5 Zaragoza View,
Monterey, CA 93940

Re: Source Capacity Test

Dear Mr. Flores,

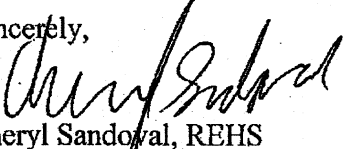
On October 12, 2010, a 72hr source capacity test was conducted by Aaron Bierman for well permit 10-11806 at 577 Monhollan Rd for Well #2. The "72-hour Constant Rate Well Pumping and Aquifer Recovery Test and Pumping Impact Assessment for Flores/Pisenti Well #2" report was received on March 29, 2011 and reviewed by the Monterey County Health Department, Environmental Health Bureau (EHB).

In accordance with the California Waterworks Standards, Section 64554, (C), the well shall demonstrate that, within a length of time not exceeding the duration of the pumping time of the well capacity test, the water level shall recover to within two feet of the static water level measured at the beginning of the well capacity test or to a minimum of ninety-five percent of the total drawdown measured during the test, whichever is more stringent.

Your source capacity test did not fully recover in accordance with the above referenced California Waterworks Standards. Therefore, based upon the data collected during the source capacity test, a reduced credit of 3 gallons per minute has been given. This quantity meets the required capacity for a single family dwelling and guest house, as requested in your application.

If you have any questions, please feel free to contact me at (831) 755-4552.

Sincerely,


Cheryl Sandoval, REHS
Environmental Health Specialist