



TETRA TECH, INC.

RECEIVED

NOV 14 2007

PUBLIC SERVICE COMMISSION

LETTER OF TRANSMITTAL

DATE: November 13, 2007

TO: Ms. Beth O'Donnell, Executive Director
Public Service Commission
211 Sower Boulevard
Frankfort, Kentucky 40602

RE: Case No. 2006-00191
Henry County Water District No. 2
Additional Calculations as Requested

WE ARE SENDING YOU THE FOLLOWING:

- Attached, Under separate cover via, Shop Drawings, Prints, Plans, Specifications, Reports, Samples, Copy of Letter, Change Order, Other

Table with 2 columns: Copies, Description. Row 1: 6 Copies of Tetra Tech November 6 response to email from Gerald E. Wuetcher, Assistant General Counsel. Row 2: 6 Additional calculations & assumptions - raw water intake costs excluded from OIC

THESE ARE TRANSMITTED:

- For Approval, For your use, As requested, For review and comment, Approved as submitted, Approved as noted, Returned for correction, Rejected, Resubmit ___ copies for approval, Submit ___ copies for distribution, Return ___ corrected prints, Other

COMMENTS:

As requested, we submit herewith the above referenced information. We have received no response to our November 6, 2007 email, and are herewith providing the raw water supply calculations.

Signed [Signature] Thomas Green

Copies to:

Honorable David Spenard, Office of the Attorney General
Merle Brewer, Chairman, HCWD2
Honorable D. Berry Baxter
Central Files - 07124

From: Green, Tom
Sent: Tuesday, November 06, 2007 1:50 PM
To: 'Wuetcher, Jerry (PSC)'
Cc: 'Berry Baxter'; 'Spenard, David (KYOAG)'
Subject: additional calculations for OIC

RECEIVED
NOV 14 2007
PUBLIC SERVICE
COMMISSION

Dear Mr. Wuetcher:

Berry Baxter forwarded to us the Commission Staff's request for "actual calculations and assumptions" used in estimating the \$710 of OIC-excluded growth costs.

Our storage tank cost calculations as submitted were current and came from project estimators at Phoenix Tanks and Caldwell Tanks. These two contractors put up almost all elevated tanks in Kentucky. In our submittal we explained our assumptions of one-day storage per customer, and the most likely sizes of new tanks. Throughout the HCWD2 distribution system there are currently ten tanks whose total available storage volume is 1,975,000 gallons. (The ground storage tank at the plant is both too distant and at too low an elevation to serve the distribution system in gravity-feed situations.)

The 1996 treatment plant project did not "expand" the previous plant. The old plant was scrapped because the treatment process was only chlorination, which the DOW had judged to be inadequate. So the new plant started from scratch with all new technology and processes as required by the DOW. Therefore the treatment cost calculation is straightforward: \$6.1 million total project cost for a 4 MGD plant = \$1.525 per gal/day. Treating 190 gal/day for each new customer = \$290.

Unless staff has other specific questions regarding these storage and treatment cost estimates, we are uncertain what additional calculations and assumptions we can provide.

We are preparing a more detailed explanation of the remaining excluded component, raw intake cost per new customer of \$95 per day. Please let us know if this will be acceptable.

Sincerely,

Tom Green

----- Forwarded Message: -----

From: "Wuetcher, Jerry (PSC)" <JWuetcher@ky.gov>
To: "Berry Baxter" <dbbaxter@bellsouth.net>
Cc: "Spenard, David (KYOAG)" <david.spenard@ag.ky.gov>
Subject: Case No. 2006-00191: Henry County Water District No. 2
Date: Tue, 6 Nov 2007 15:15:02 +0000

Dear Mr. Baxter:

Pursuant to our telephone conversation on 30 October 2007, I respectfully request on behalf of Commission Staff that Henry County Water District provide the actual calculations and assumptions used to prepare its Response to PSC Staff's Request for Information Made at the 13 September 2007 Hearing. Henry County Water District No. 2 has estimated excluded growth costs to be approximately \$710 per new customer. Commission Staff requests these calculations to better understand how the estimate was derived.

Commission Staff requests that this information be submitted to the Commission within 14 days. If additional time is required, please advise.

Thank you for your assistance.

Sincerely,

Gerald E. Wuetcher
Assistant General Counsel
Public Service Commission of Kentucky
(502) 564-3940, Extension 259
(502) 229-6500 (cell)
gerald.wuetcher@ky.gov

RAW WATER INTAKE AND TRANSMISSION

Cost calculation

The 2003 HCWD2 Regionalization Project included the installation of a new 20" raw water supply line from the wellfield to the treatment plant, and a new raw water intake well with 1500 gpm pump. The final pay order to Reynolds, Inc. included line items for this work which totaled just over \$833,000, or about a third of the \$2.5 million project. The final payment also included the contractor's project costs for mobilization, general conditions, and demobilization totaling \$40,000. Allocating a third of these costs, or \$13,300, to the \$833,000 intake components results in total construction cost of about \$846,000.

Increasing this construction amount to reflect 15% overall project administrative/engineering costs of planning, funding applications, preliminary and final design, easement preparation and acquisition, state approvals, bidding, contract administration and construction inspection, results in a total project cost for the raw water components of the project of $(\$846,000 \times 1.15)$ \$973,000.

Capacity calculation:

The new well/pump joined five others already at the wellfield. These six pumps operate in a scheduled array pattern such that every other day the new pump runs in tandem with two other pumps, and then is inactive the following day while the remaining pump group operates.

These pump groups typically operate a total of 12 hours on normal days, up to 14 hours during drought situations, with an all-time peak day of 16 hours. Therefore under peak conditions the new pump would run 16 hours every other day, or 16 out of 48 hours.

However, in analyzing the maximum capacity expansion which results from the new well/pump we have assumed a 24 hour pumping day. The new pump, under these peak future conditions would run 24 hours out of every 48, for an average of 12 hours each day. This 1500 gpm pump would therefore add $(1500 \times 60 \times 12)$ 1,080,000 gallons per day to the overall raw water intake and supply capacity from wellfield to treatment plant.

Even without the new well and 1500 gpm pump, the new 6000' x 20" ductile line from the intake wellfield to the treatment plant can provide an increase in maximum flowrate of about 580 gpm due to reduced friction losses compared to the smaller pipe it parallels. Because this 580 gpm capacity increase is available 24 hours a day, it provides $(580 \times 60 \times 24)$ 835,000 gallons per day additional potential supply to the plant.

Combining the 1,080,000 gpd and 835,000 gpd capacity expansions of the new well/pump and the 20" line produces a total increase of about 1.92 MGD. Dividing the \$973,000 cost by the total gallons per day results in \$0.507 per gallon per day, meaning that the cost of providing 190 gallons of raw water supply for each new customer is at least \$95.

This number is conservative because of the ongoing peak day assumption in its calculation, and also because it does not include the price which HCWD2 paid for the tract of land which expanded the wellfield property to accommodate the new well/pump. Because this tract will also permit additional future wells with unknown hydraulic characteristics, we could not make a fair determination of the share of the tract's expense allocable to the recent project in terms of gallons per day supply capacity. For the same reason, the proportion of the initial costs of supplying power to the wellfield, and constructing the access road from the highway, etc., were not allocated to the new intake facilities.