

Exhibit No.:
Witness: Charles D. Morris
Type of Exhibit: Surrebuttal Testimony
Issue: Plant Expenditures;
Prudence; Alternative
Selection
Sponsoring Party: St. Joseph Industrials
Case No.: WR-2000-281 et al.

FILED³

MAY 25 2000

MISSOURI PUBLIC SERVICE COMMISSION
UTILITY DIVISION

Missouri Public
Service Commission

MISSOURI-AMERICAN WATER COMPANY

CASE NO. WR-2000-281

PREPARED SURREBUTTAL TESTIMONY OF
CHARLES D. MORRIS, Ph.D., P.E.

May 25, 2000

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

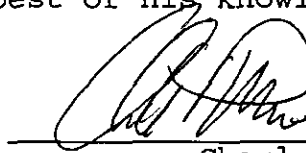
In the Matter of Missouri-American)
Water Company Tariff Sheets De-)
signed to Implement General Rate)
Increases for Water and Sewer Ser-)
vice provided to Customers in the)
Missouri Service Area of the Compa-)
ny)

WR-2000-281 et al.

AFFIDAVIT OF CHARLES D. MORRIS

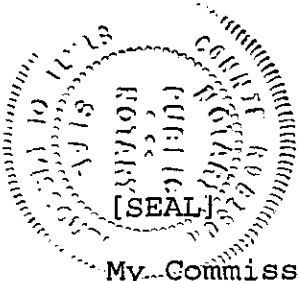
STATE OF MISSOURI)
) ss
COUNTY OF Phelps)

Charles D. Morris, of lawful age, on his oath states:
That he has reviewed the attached written testimony in question
and answer form, all to be presented in the above case, that the
answers in the attached written testimony were given by him; that
he has knowledge of the matters set forth in such answers; that
such matters are true to the best of his knowledge, information
and belief.



Charles D. Morris

Subscribed and sworn to before me this 18th day of May, 2000.


Notary Public

My Commission expires: 12-07-02

CONNIE ROBISON
NOTARY PUBLIC STATE OF MISSOURI
PHELPS COUNTY
MY COMMISSION EXP DEC. 7, 2002

PREPARED SURREBUTTAL TESTIMONY OF
CHARLES D. MORRIS

1 Q. Please state your name and business address.

2 A. My name is Charles D. Morris. My business address is De-
3 partment of Civil Engineering, 108 Butler-Carlton Hall, 1870
4 Miner Circle, University of Missouri-Rolla, Rolla, Missouri,
5 65409-0030.

6
7 Q. Are you the same Charles D. Morris who testified previously
8 in this matter?

9 A. Yes I am. My qualifications and my professional resume were
10 attached to that earlier testimony.

11
12 Q. What is the purpose of your Surrebuttal Testimony?

13 A. I will comment on the rebuttal testimony of Mr. John S.
14 Young Jr. on behalf of Missouri American Water Company, Mr.
15 James A. Merciel, Jr. on behalf of Missouri Public Service
16 Commission, Utility Operation Division, and Mr. James E.
17 Salser on behalf of Missouri American Water Company. My
18 decision not to address other portions of the testimony and
19 exhibits filed by these parties and others should not be
20 construed as an endorsement of their positions on these or
21 other issues before the Commission in this case.

22

1 Q. Please summarize your surrebuttal testimony.

2 A. 1) The evidence will show that the necessary renovation
3 and floodproofing of the existing water treatment plant
4 would have been much less costly than building a new
5 treatment plant with a new source of supply. Renovation
6 of the existing plant would include adding new compo-
7 nents, rehabilitation, expansion, and replacement, of
8 existing components of the existing water treatment
9 plant. A cost savings of approximately 50 percent to
10 produce the same quality and quantity of drinking water
11 reliably could have been realized by renovating the
12 existing plant.

13
14 2) The renovation of the existing water treatment plant
15 included the superpulsator clarifiers, chemical build-
16 ing, filter building/clearwell, and transfer/high
17 service pump station. The construction cost estimate
18 used for these facilities was \$26.6 million. This cost
19 was included in my direct testimony, line three, page
20 15. Because the lack of clear documentation in the
21 information provided by the company in response to data
22 requests and in Schedule CDM-1, it was assumed that
23 this amount reflected 1991 dollars. The \$26.6 million

1 construction cost now appears to be May 1993 cost as
2 per Mr. Young's rebuttal testimony. Nevertheless, Mr.
3 Young incorrectly stated, line 15, page 14 of his
4 rebuttal testimony that I did not use this number. The
5 truth is that I did use the \$26.6 million construction
6 cost estimate but I assumed it was 1991 dollars. As a
7 result, my cost estimate is lowered.

- 8
- 9 3) MAWC provided no detailed engineering or economic
10 justification for the decision to utilize the shallow,
11 alluvial ground water supply which is being directly
12 recharged by the Missouri River surface water. Mr.
13 Young's testimony only made reference to the superior
14 quality of the ground water supply resulting in both
15 operational advantages and cost advantages as compared
16 to surface water supply from the Missouri River. The
17 quality of the shallow, alluvial ground water supply,
18 which is being directly recharged by the Missouri River
19 surface water is not known. In fact, the quality will
20 change as the amount of water pumped from the aquifer
21 increases. The more water that is pumped from the
22 aquifer the more the water quality will resemble the
23 surface water supply. The less water that is pumped

1 from the aquifer the harder the water will be and more
2 treatment will be needed to soften the water.

3
4 REBUTTAL TESTIMONY OF JOHN S. YOUNG, JR.

5
6 Q. At page 14 of his Rebuttal, Mr. Young states that "the
7 Company provided the Consultant's complete cost estimate to
8 Dr. Morris in response to Morris's data requests" Is this a
9 correct statement?

10 A. No, it is not.

11
12 Q. What did your data requests in this regard request?

13 A. We tendered to MAWC a series of data requests. Data Request
14 No. 36 requested the following:

15 Please identify the earliest date on which
16 Missouri-American Water Company determined
17 that the existing water treatment facility in
18 St. Joseph, Missouri was inadequate.

19 Data Request No. 37 requested the following:

20 With respect to your response to data request
21 no. 36, please identify specifically every
22 document including internal memoranda and e-
23 mail discussing re referencing such determi-
24 nation or the need to make such determina-
25 tion. With respect to each document so iden-
26 tified provide the date, author, recipient
27 and intended distribution of such document.

28 And Data Request No. 38 was as follows:

1 Provide a legible copy of each document iden-
2 tified in your response to data request No.
3 37.

4 In addition, we had earlier asked Data Request No. 4 which
5 requested data be provided by the company for our review as
6 follows:

7 Re Page 6, Lines 4 and 5 [of John Young Direct in Cases
8 WA-97-46/WF-97-241], please describe in detail all the
9 other water supply and treatment alternatives consid-
10 ered for the St. Joseph service area by the Company,
11 and provide all documents and comparative cost analyses
12 that support the claim that "this project scope was
13 selected as the most cost-effective, feasible project
14 to reliably supply the St. Joseph service area."

15
16 Q. Were you provided for your review the May, 1993 Gannett
17 Fleming report entitled (and which Mr. Young refers to as)
18 "Construction cost estimates for the project which included
19 Superpulsator clarifiers, chemical buildings, filter
20 building/clear well, and transfer/high service pumps sta-
21 tion"?

22 A. No. Despite the foregoing requests, I was not provided this
23 report. I only became aware of it when I received and
24 reviewed the rebuttal testimony of Mr. Young.

25
26 Q. What reports did you receive and review pursuant to these
27 data requests?

1 A. I have reviewed the feasibility report, dated, February
2 1996, entitled "St. Joseph Water Treatment Plant, Economic
3 Evaluation of Improvement Alternatives". I have reviewed
4 the MAWC's "Design of Filter Improvements BP 91-12, Evalua-
5 tion of Alternatives, May 21, 1991" (1991 Report).

6
7 Q. What were the conclusions you reached?

8 A. The total cost in the document I reviewed (and which I
9 attached as Schedule CDM-1 to my direct testimony) was
10 estimated to be \$26.6 million. Applying a reasonable infla-
11 tion rate (Engineering News Record and my experience with
12 construction cost, 1991-1996 - 13.2%) to this amount I ob-
13 tained the \$30.1 million cost figure for renovation of the
14 treatment plant.

15
16 Q. Then the information you reviewed, the total cost in this
17 supposed 1991 document, that was estimated to be \$26.6 mil-
18 lion was in fact from the May 1993 report according to Mr.
19 Young?

20 A. Yes.

21
22 Q. What effect, if any, does this have on your conclusions?

1 A. It reduces the amount of my estimated cost of old plant
2 renovation.

3
4 Q. Please explain.

5 A. In using what I had been advised were 1991 cost estimate
6 numbers, I adjusted them upward to account for the effect of
7 inflation. Since I, in fact, used the 1993 numbers, but
8 assumed that they were from the 1991 period, the period, and
9 thus the effect of inflation, would be reduced. In making
10 my original calculations, I used the inflation rate based on
11 data from Engineering News Record and my experience with
12 construction costs for the period of 1991 to 1996 of 13.2
13 percent. If the data was in fact 1993 numbers it was, by
14 definition, already reflective of inflation to that point,
15 so my remaining calculation would only reflect a period from
16 1993 to 1996. This would have reduced the estimated amount
17 of \$30.1 million for renovation of the treatment plant.

18
19 q. By how much would it reduce your original \$30.1 million
20 estimate?

21 A. My \$30.1 million estimate would have been reduced by \$2.1
22 million, resulting in an estimate of \$28.7 million.

1 Q. At page 38, line 20 of Mr. Young's rebuttal testimony, he
2 states that project costs do not include allowance for funds
3 used during construction (AFUDC). Should AFUDC be included
4 in the cost in the project?

5 A. Not for comparative purposes. The feasibility studies and
6 estimates which I used did not include AFUDC. Therefore, to
7 be able to properly compare the cost I estimated to the cost
8 in the 1996 feasibility study it should also not include
9 AFUDC. Also, because the renovation of the existing plant
10 would involve staged construction of various components of
11 the existing water treatment plant with appropriate account-
12 ing and ratemaking treatment at and near the time those
13 various components were brought on line, AFUDC should not
14 have a significant impact on the project cost.

15
16 Q. How did the ground water alternatives impact the selection
17 of the treatment plant alternative?

18 A. At page 43, line 17 of Mr. Young's rebuttal testimony, he
19 states that if the ground water alternatives had not been
20 available, the company would have continued on the original
21 path of renovating the existing plant at the same site since
22 the surface water plant at a remote site alternative was
23 significantly more costly. Based on this statement I be-

1 lieve that the company never seriously considered the devel-
2 opment of the ground water alternative **at or near the exist-**
3 **ing treatment plant.** It is my opinion the ground water
4 option could have been developed in the shallow, alluvial
5 ground water supply, which is being directly recharged by
6 the Missouri River surface water at or near the existing
7 treatment plant. With this option it would have been unnec-
8 essary to run several miles of a redundant raw water line,
9 construct an entirely new water source (alluvial ground
10 water could have been used to supplement the surface water
11 supply), and then construct several miles of a redundant
12 finish water line in order to tie the existing water distri-
13 bution system into the new water treatment plant site.

14
15 **REBUTTAL TESTIMONY OF MR. JAMES A. MERCIEL, JR.**
16

17 **Q. Mr. Merciel's rebuttal testimony asserts that there are**
18 **significant quality enhancements from a shallow, alluvial**
19 **ground water supply, which is being directly recharged by**
20 **the Missouri River surface water? Are his assertions cor-**
21 **rect?**

22 **A. It is unknown. And it will only become known after the**
23 **alluvial ground water wells have been pumped for a signifi-**

1 cant number of years. The water quality will change depend-
2 ing on the amount of water pumped from the aquifer, i.e.,
3 sourced from the river, and on river level and river water
4 quality conditions. The more water that is pumped from the
5 aquifer the more the raw water quality will resemble the
6 surface water supply. The less water that is pumped from
7 the aquifer the harder the water will be and the more treat-
8 ment that will be needed to soften the water.
9

10 Q. Can the quality of water that is pumped be controlled by
11 MAWC?

12 A. Only indirectly. Significant controlling factors will be
13 the level of the river and the demand for finished water.
14 The very purpose of the alluvial wells is to "draw" water
15 from the river toward the main collection well. If the
16 river level is low, less will be drawn and, in fact, less
17 may be available to draw. In this context, it bears note
18 that with the abandonment of the old plant, the "low river
19 intake," which MAWC personnel advised me had served ade-
20 quately during such periods was also discontinued or aban-
21 doned.
22

1 Q. Does this mean that the new water sourcing arrangements are
2 less reliable than those associated with the old plant?

3 A. It is presently uncertain. The irony is that, while react-
4 ing -- I contend overreacting -- to a threat of flooding,
5 the company may have diminished its options to supply water
6 to St. Joseph during more common periods of low water on the
7 river. The real point is that the new plant, just like the
8 old, remains dependent on the level of the river to provide
9 consistent, reliable and quality service to the St. Joseph
10 community.

11
12 Q. Should one consider the ever-changing drinking water stan-
13 dards in evaluation of various alternatives?

14 A. Beyond staying abreast of requirements as they currently
15 change, I do not believe so. It is impossible to take into
16 consideration possible future changes in water standards
17 because those changes are not known and would be pure specu-
18 lation.

19
20 REBUTTAL TESTIMONY OF MR. JAMES E. SALSER

21
22 Q. At page 3, line 1 of his rebuttal testimony, MAWC Witness
23 Salser states that there were extraordinary factors that led

1 to MAWC's decision to relocate the plant and utilize the
2 ground water source. Were there such extraordinary factors
3 present?

4 A. No. The problems faced by MAWC at the existing facility
5 were no more extraordinary than those faced by the hundreds
6 of riverside water treatment plants throughout the nation.
7 As in those situations, improvements can be made to address
8 the problems of flooding and extreme low water in the river
9 and its effects on the treatment facilities.

10
11 Q. Does this complete your surrebuttal testimony at this time?

12 A. Yes.

44232