CITY OF SACRAMENTO

(7)

DIVISION OF WATER AND SEWERS
927 10TH STREET SUITE #201 SACRAMENTO, CALIFORNIA 95814-2796 TELEPHONE (916) 449-5271

CITY MANAGER'S OFFICE
RECEIVED
FEB 16 1983

ROBERT C. BITTEN
MANAGER
ROBERT W. JOHNSTON
ASSISTANT MANAGER

February 8, 1983

City Council
Sacramento, California

APPROVED BY THE CITY COUNCIL
FEB 22 1983
OFFICE OF THE CITY CLERK

~~CO 82046~~ PO 05294

Honorable Members in Session:

SUBJECT: Purchase of New Filter Media for American River Water Treatment Plant

SUMMARY

Four bids for the subject project were opened on February 1, 1983. Each bid was below the consultant's estimate. It is recommended that Council award a contract to Neptune, Microfloc, Inc. for the purchase of filter Media A.

BACKGROUND

The Division of Water & Sewers Master Plan, prepared in 1974, recommended that an increase in water treatment plant capacity would be needed by 1985.

During the summer of 1981, the peak day water usage was 94.4 percent of present treatment plant capacity. To provide for continued water system reliability, the Division retained the firm of Culp/Wesner/Culp to prepare an engineering report on the operation and expansion of the Sacramento and American River Water Treatment Plants. Their report was submitted to the City during October, 1981.

This report first reviewed the water treatment plants operations for efficiency and effectiveness. It secondly presented methods for capacity expansion of the two treatment plants. These recommendations were broken down into two categories. The first was improvements in efficiency and capacity without major structural modifications for each plant. The second was expansion of the plants involving major construction.

One of the key recommendations under the first category was to convert the existing sand filters at the American River Water Treatment Plant to either a mixed media or dual media filter. This would allow the filters that currently operate at 3 gallons per minute per square foot, to operate at approximately 5 gallons per foot without structural modifications to the filters. This change would provide for around a 50 percent increase in capacity.

Culp/Wesner/Culp further recommended that pilot filter tests be performed. The Division staff completed the pilot filter study with the assistance of Culp/Wesner/Culp. The testing concluded that mixed media performed very well with dual media performance still acceptable.

On August 10, 1982 the Council authorized the City Manager to enter into a contract with the firm of Culp/Wesner/Culp for engineering services involving improvements at the American River Water Treatment Plant (Resolution No. 82-561). The engineering services were specifically to prepare plans and specifications for the replacement of existing sand filter media with a dual or mixed media, and for the construction of a polymer feed system. Separate plans and specifications for installation of turbidimeters on each filter are being developed by staff. Culp/Wesner/Culp prepared plans and specifications for the purchase and delivery of the dual or mixed media. Separate requests for bids are being initiated for media installation, polymer feed system construction, and turbidimeter installation.

On January 11, 1983, the City Council approved plans and specifications for new filter media. Bids were received and opened by the City Clerk in the City Council Chambers on February 1, 1983. Bids received are as follows:

	MEDIA TYPE			
Vendor	A	B	C	Amount
Neptune, Microfloc, Inc.	X			$385,211.00
The Turbitrol Company		X		$351,242.00
Sam Cal Corp.			X	$169,750.00
Rescue Engineers, Inc.			X	$195,525.00

Culp/Wesner/Culp was asked to review and evaluate the bids and to make a recommendation of award.

The table below is a life-cycle cost comparison using the evaluated bid prices for comparison of the three different media.

Media	Amortized Capital Cost/yr	Estimated Chemical Costs/yr	Total Yearly Costs
A	$ 46,225	$ 55,030	$101,255
B	56,232	63,150	119,382
C	36,458	72,160	108,618

Based upon the analysis above, Media A has the lowest life-cycle costs. Although Media C has a lower amortized captial cost, the additional costs of treatment chemicals required to meet the City's filtered water quality objectives result in a higher annual cost.

A copy of their evaluation and recommendation is attached. Staff concurs with the recommendation to select filter Media A based upon a lower life-cycle cost and the superior performance of the media during pilot studies.

FINANCIAL DATA

The purchase of new filter media is part of an overall project which was budgeted in the 1982-83 FY Water Production Capital Improvements Budget, 4-13-3020-1533-4820, in the amount of $924,000. The enginer's estimates for the various types of filter media are included in the attachment. If the recommended filter media is purchased the overall project cost breakdown will be as follows:

PHASE	COST
Media Purchase	$385,211
Media Installation	255,000*
Turbidimeter Installation	30,000*
Polymer Feed System	130,000*

*Engineer's Estimate

RECOMMENDATION

Staff has reviewed and concurs with the recommendations as presented by Culp/Wesner/Culp. It is recommended that a contract be awarded to Neptunes, Microflow, Inc. for the purchase of Filter Media A.

Respectfully submitted,

Robert C. Bitten, Manager
Division of Water & Sewers

Recommendation Approved:

for Walter J. Slipe
City Manager

Attachment
14-B-010-35-0

February 15, 1983
All Districts

CULP / WESNER / CULP

P.O. BOX 518 3461 ROBIN LANE CAMERON PARK, CALIFORNIA 95682 TELEPHONE (916) 677-1695

February 7, 1983
676/C

Mr. Stephen F. Davis
Division of Water and Sewers
City of Sacramento
927 Tenth Street, Suite 201
Sacramento, CA 95814

SUBJECT: FILTER MEDIA BID EVALUATION AND RECOMMENDATION FOR AWARD
AMERICAN RIVER WATER TREATMENT PLANT EXPANSION

Dear Mr. Davis:

Bids for replacement filter media for the American River Water Treatment Plant have been received and evaluated. A summary of the bid results is presented in Table 1.

Four bids were received--one each for Filter Media A and B, as requested, and two for Filter Media C. All but one bid was responsive to the bidding documents. Sam Cal Corporation took exception to the requirement that all filter media be furnished in bags, and submitted a bid for bulk material. Prior to preparation of the specifications, it was decided by City staff and ourselves that contamination, storage and handling, all potential problems associated with bulk shipment, should be avoided by requiring that all materials must be furnished in bags.

Filter Media A established by pilot filter testing as the superior filtration media was bid by Neptune Microfloc, Inc., at a price of $385,211, which was approximately $110,000 less than our estimate of $495,000. Their price included a special 3-inch thick layer of high density gravel which is claimed to prolong the life of a filter bed by reducing the potential for underdrain upset by backwashing. The value of this material offered as a deduction by Neptune Microfloc was $94,362.

They also included 58 days of on-site services for technical direction of the installing contractors crew during media placement. We estimate the value of the service at $25,000.

Filter Media B was bid by the Turbitrol Company of $351,242. Their price included 4 days of on-site technical direction to instruct the contractor's crew in proper placement procedures. Additional on-site time would cost extra; however, no per diem rate was provided in their proposal. The City would have to be more closely involved in overseeing placement of Media B since the supplier was not required to provide full-time technical direction.

Filter Media C was bid by one responsive bidder at a price of $184,458. His price excludes technical direction. This service would have to be provided by the City or under contract to an outside consultant.

An evaluated bid price was established for all three media in order to have a common basis for bid comparison, both on a first-cost and a life-cycle cost basis. The evaluated bid price presented in Table 1 was obtained by adding the estimated cost of full-time media placement direction and Media A supplier's deduct price for the stabilizing gravel to Filter Media B and C. This evaluated bid comparison showed a narrower differential than the actual bid prices between Filter Media A and Filter Media C of $81,391. Adding these costs to Filter Media B increased the evaluated amount of their bid.

The table below is a life-cycle cost comparison using the evaluated bid prices for comparison of the three different media.

Media	Amortized Capital Cost/yr[1]	Estimated Chemical Costs/yr[2]	Total Yearly Costs
A	$46,225	$55,030	$101,255
B	56,232	63,150	119,382
C	36,458	72,160	108,618

[1] Amortized capital cost/yr @ 10% interest over 20 years on evaluated bid price of media.

[2] Provided in our letter, "Criteria for Filter Media Selection" to Diversion of Water and Sewer, December 20, 1982.

Based upon the analysis above, Media A has the lowest life-cycle costs. Although Media C has a lower amortized capital cost, the additional costs of treatment chemicals required to meet the City's filtered water quality objectives result in a higher annual cost.

The above tangible benefits of Media A are also supplemented by numerous intangible benefits established in pilot testing which have been listed previously. These are as follows:

a. Greater resistance to breakthrough of particles, such as silt, bacteria and suspended organic material as measured by turbidity removed. The greater breakthrough resistance provides added protection of public health and permits better control of taste and odor.

b. Greater overall turbidity removal.

c. Longer filter runs with more water produced between filter backwashing.

d. Lower finished water turbidities at equivalent alum and polymer dosages or lower chemical requirement for equal filter performance.

e. Shorter lag time after backwashing before filter is producing water meeting turbidity goals.

f. Overall increased reliability and a greater safety factor in water purification.

It is our recommendation, based upon evaluation of tangible, as well as intangible benefits, that the City of Sacramento purchase and install Filter Media A in the American River Water Treatment Plant. The additional initial cost of Filter Media A will be more than offset by long-term savings in chemical costs. Further, a dollar value can not be assigned to intangible public health benefits related to the purity of the finished product.

Very truly yours,

Sigurd P. Hansen

Sigurd P. Hansen, P.E.

SPH:slz

cc: James Sequeira
Bill Hetland
Robert Johnston
Russell Culp

TABLE 1. FILTER MEDIA BID EVALUATION
AMERICAN RIVER WATER TREATMENT PLANT - CITY OF SACRAMENTO

Media	Bidder	Bid Price	Engrs. Estimate	Deduct or Adds	On-Site Tech Services	Estimated Value On-Site Services	Evaluated Bid Price[7]
A	Neptune Microfloc	$385,211[6]	$495,000	($94,362) deduct[3] ($ 3,600) deduct[4]	58 days, 9 trips	$25,000	$385,211
B	Turbitrol	$351,242[5]	$451,000	0	4 days, 1 trip	$ 2,000	$468,604
C	Rescue Engineers	$184,458[1]	$344,000	0	0	0	$303,820
D	Sam Cal Corporation	$169,750[2]	-	0	0	0	Non-responsive

[1]Price with tax excluded.
[2]Price for bulk material - nonresponsive to specification requirements.
[3]Deduct price for eliminating garnet gravel.
[4]Deduct to use magnetite in place of garnet.
[5]Exclusive of taxes, price firm only until February 28, 1983, specs require price to be held firm for 45 days.
[6]Price excludes taxes.
[7]Bid price plus garnets stabilizing gravel are full-time technical direction during media placement.

BID TABULATION

IMPROVEMENT OF FURNISHING FILTER MEDIA - AMERICAN RIVER WATER TREATMENT PLANT

RESOLUTION OF INTENTION NO. .....

DATE BIDS RECEIVED. FEBRUARY 1, 1983

ESTIMATE	LOW BID	COMPARISON
SEE ATTACHED LETTER		
495,000	385,211	22.2% Low

ESTIMATED QUANTITIES PER ITEM:

BID TOTALS	BIDDERS
FILTER MEDIA A	
$385,211.00	NEPTUNE MICROFLOC, INC.
FILTER MEDIA B	
$351,242.00	THE TURBITOL CO.
FILTER MEDIA C	
$184,458.00	RESCUE ENGINEERS, INC.
FILTER MEDIA C	
$169,750.00	SAM CAL CORP.

SUCCESSFUL BIDDER: NEPTUNE, MICROFLOC, INC. $ 385,211

APPROVED: _____
City Engineer

CULP / WESNER / CULP

P.O. BOX 518 3461 ROBIN LANE CAMERON PARK, CALIFORNIA 95682 TELEPHONE (916) 677-1695

February 7, 1983
676/C

Mr. Stephen F. Davis
Division of Water and Sewers
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Filter Media A established by pilot filter testing as the superior filtration media was bid by Neptune Microfloc, Inc., at a price of $385,211, which was approximately $110,000 less than our estimate of $495,000. Their price included a special 3-inch thick layer of high density gravel which is claimed to prolong the life of a filter bed by reducing the potential for underdrain upset by backwashing. The value of this material offered as a deduction by Neptune Microfloc was $94,362.

They also included 58 days of on-site services for technical direction of the installing contractors crew during media placement. We estimate the value of the service at $25,000.

Filter Media B was bid by the Turbitrol Company of $351,242. Their price included 4 days of on-site technical direction to instruct the contractor's crew in proper placement procedures. Additional on-site time would cost extra; however, no per diem rate was provided in their proposal. The City would have to be more closely involved in overseeing placement of Media B since the supplier was not required to provide full-time technical direction.

Filter Media C was bid by one responsive bidder at a price of $184,458. His price excludes technical direction. This service would have to be provided by the City or under contract to an outside consultant.

An evaluated bid price was established for all three media in order to have a common basis for bid comparison, both on a first-cost and a life-cycle cost basis. The evaluated bid price presented in Table 1 was obtained by adding the estimated cost of full-time media placement direction and Media A supplier's deduct price for the stabilizing gravel to Filter Media B and C. This evaluated bid comparison showed a narrower differential than the actual bid prices between Filter Media A and Filter Media C of $81,391. Adding these costs to Filter Media B increased the evaluated amount of their bid.

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[1] Amortized capital cost/yr @ 10% interest over 20 years on evaluated bid price of media.

[2] Provided in our letter, "Criteria for Filter Media Selection" to Diversion of Water and Sewer, December 20, 1982.

Based upon the analysis above, Media A has the lowest life-cycle costs. Although Media C has a lower amortized capital cost, the additional costs of treatment chemicals required to meet the City's filtered water quality objectives result in a higher annual cost.

The above tangible benefits of Media A are also supplemented by numerous intangible benefits established in pilot testing which have been listed previously. These are as follows:

a. Greater resistance to breakthrough of particles, such as silt, bacteria and suspended organic material as measured by turbidity removed. The greater breakthrough resistance provides added protection of public health and permits better control of taste and odor.

b. Greater overall turbidity removal.

c. Longer filter runs with more water produced between filter backwashing.

d. Lower finished water turbidities at equivalent alum and polymer dosages or lower chemical requirement for equal filter performance.

e. Shorter lag time after backwashing before filter is producing water meeting turbidity goals.

f. Overall increased reliability and a greater safety factor in water purification.

It is our recommendation, based upon evaluation of tangible, as well as intangible benefits, that the City of Sacramento purchase and install Filter Media A in the American River Water Treatment Plant. The additional initial cost of Filter Media A will be more than offset by long-term savings in chemical costs. Further, a dollar value can not be assigned to intangible public health benefits related to the purity of the finished product.

Very truly yours,

Sigurd P. Hansen, P.E.

SPH:slz

cc: James Sequeira
Bill Hetland
Robert Johnston
Russell Culp

February 23, 1983

John Sinclair
Neptune Microfloc, Inc.
P.O. Box 612
Corvallis, OR 97339-0612

Dear Mr. Sinclair:

On February 22, 1983, the Sacramento City Council accepted your bid in the amount of $385,211 for New Filter Media for American River Water Treatment Plant.

The City Support Services Administrator will contact you concerning the necessary contract.

Sincerely,

Lorraine Magana
City Clerk

LM/emm/7
cc: Support Services Division

March 2, 1983

John Sinclair
Neptune Microfloc, Inc.
P.O. Box 612
Corvallis, OR 97339-0612

Dear Mr. Sinclair:

On February 23, 1983, you received a letter informing you that the Sacramento City Council had accepted your bid in the amount of $385,211 for New Filter Media for American River Water Treatment Plant.

This letter was in error as it stated that the Support Services Administrator would contact you.

Please note that the City Engineer will contact you concerning the necessary bond and contract, not Support Services.

If we can be of any further assistance to you please feel free to call on us.

Sincerely,

Lorraine Magana
City Clerk

LM/emm/7
cc: Engineering Department

CITY OF SACRAMENTO

OFFICE OF THE CITY CLERK
915 I STREET
CITY HALL ROOM 203
SACRAMENTO, CALIFORNIA 95814
TELEPHONE (916) 449-5426

LORRAINE MAGANA
CITY CLERK

February 23, 1983

John Sinclair
Neptune Microfloc, Inc.
P.O. Box 612
Corvallis, OR 97339-0612

Dear Mr. Sinclair:

On February 22, 1983, the Sacramento City Council accepted your bid in the amount of $385,211 for New Filter Media for American River Water Treatment Plant.

The City Support Services Administrator will contact you concerning the necessary contract.

Sincerely,

Lorraine Magana
City Clerk

LM/emm/7
cc: Support Services Division

February 2, 1983

Unifilt Corporation
P.O. Box 97
Zelienople, Penna., 16063

Gentlemen:

Enclosed please find your bid proposal for Furnishing Filter Media-American River Water Treatment Plant.

Your bid was not received in this office prior to the deadline of 10:30 a.m., February 1, 1983. Please note the time and date of 11:20 a.m., February 1, 1983 stamped on your bid envelope which has not been opened.

Sincerely,

Anne Mason
Assistant City Clerk

LM/mlt

Enclosure: Your unopened bid envelope.

Anthracite
Filter
Media

ZELIENOPLE JAN 28 82 PA

RETURN TO:

UNIFILT CORPORATION
P. O. BOX 97
ZELIENOPLE, PENNA. 16063
412/452-5008

RECEIVED
CITY CLERK'S OFFICE
CITY OF SACRAMENTO
FEB 1 11 20 AM '83

FEB 1 11 20 AM '83

UNACCEPTABLE BID
THIS BID SUBMITTED
AFTER THE ESTABLISHED
DEADLINE OF 10:00 A.M.
TIME 11:20 AM
DATE 2-1-83
EMP. INITIALS
OFFICE OF THE
CITY CLERK

SEALED PROPOSAL FOR

FURNISHING FILTER MEDIA
AMERICAN RV WATER TREATMENT
PLANT CC 1533

DATE TO BE RECEIVED: 2-1-83
prior to 10:30 am

CITY CLERK
915 I STREET ROOM 203
SACRAMENTO, CALIFORNIA 95814

February 28, 1983

Rescue Engineers Inc
P.O. Box 293
Rescue CA 95672

Gentlemen:

This is to inform you that you were not the successful bidder for the New Filter Media for American River Water Treatment Plant. The said bid having been awarded by the City Council at the regular meeting of February 22, 1983 to Neptune Microfloc Inc., in the amount of $385,211.00.

No bid security was required on the above bid.

Sincerely,

Lorraine Magana
City Clerk

LM/mlt/7

February 28, 1983

The Turbitrol Company
P.O. Box 12047
Atlanta GA 30355

Gentlemen:

This is to inform you that you were not the successful bidder for the New Filter Media for American River Water Treatment Plant. The said bid having been awarded by the City Council at the regular meeting of February 22, 1983 to Neptune Microfloc Inc., in the amount of $385,211.00.

No bid security was required on the above bid.

Sincerely,

Lorraine Magana
City Clerk

LM/mlt/7

February 28, 1983

Sam Cal Corporation
515 E. Walnut Avenue
Fullerton CA 92632

Gentlemen:

This is to inform you that you were not the successful bidder for the New Filter MEDIA FOR American River Water Treatment Plant. The said bid having been awarded by the City Council at the regular meeting of February 22, 1983 to Neptune Microfloc Inc., in the amount of $385,211.00.

No bid security was required on the above bid.

Sincerely,

Lorraine Magana
City Clerk

LM/mlt/7