

**RESOLUTION NO. 1843**

**A RESOLUTION AUTHORIZING CLARIFICATIONS AND ADJUSTMENTS TO THE SCOPE OF WORK FOR OPERATION OF THE WATER TREATMENT PLANT.**

WHEREAS, the City of Wilsonville entered into a contract effective February 6, 2001, with U.S. Filter Operating Services to assist in performance testing and startup of the Willamette Water Treatment Plant, and to operate and maintain the facility once it came on line; and

WHEREAS, the scope of services defined in said contract was of necessity established at a time when design and construction of the facility was not yet complete; and

WHEREAS, performance testing, startup, operation and maintenance of the facility have been highly successful and wholly within the authorized budget; and

WHEREAS, information and experience gained in the course of startup and operation has revealed a few portions of the scope of work where clarifications and adjustments would be beneficial; and

WHEREAS, Section 17.3 of said contract affords the City of Wilsonville as owner of the water treatment facility the ability to propose discretionary changes to the scope of work; and

WHEREAS, Exhibit A describes such discretionary changes which the City believes are beneficial; and

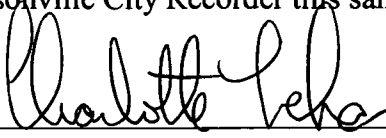
WHEREAS, Exhibit B shows the corresponding clarifications and adjustments to applicable portions of the scope of work; and

WHEREAS, these changes can be accomplished and implemented within the approved budget for fiscal year 2003-04;


NOW, THEREFORE, THE CITY OF WILSONVILLE RESOLVES AS FOLLOWS:

1. The City Council hereby authorizes the clarifications and adjustments to the scope of work for operation of the water treatment plant as indicated in Exhibit B.
2. This resolution becomes effective upon adoption.

ADOPTED by the City Council of the City of Wilsonville at a regular meeting thereof this 7th day of July, 2003, and filed with the Wilsonville City Recorder this same date.

  
\_\_\_\_\_  
CHARLOTTE LEHAN, Mayor

ATTEST:

  
\_\_\_\_\_  
Sandra C. King, CMC, City Recorder

SUMMARY OF VOTES:

Mayor Lehan	Yes
Councilor Helser	Yes
Councilor Kirk	Yes
Councilor Holt	Yes
Councilor Scott-Tabb	Yes

Resolution No. 1843: Exhibit A, Part 1

**MEMORANDUM**

**DATE:** JUNE 12, 2003

**TO:** OWEN BOE, U.S. FILTER AREA MANAGER  
(OPERATOR'S REPRESENTATIVE)

**CC:** MIKE GREENE, OPERATIONS MANAGER

**FROM:** JEFF BAUMAN, PUBLIC WORKS DIRECTOR  
(OWNER'S REPRESENTATIVE)

**RE:** SCOPE OF WORK ADJUSTMENTS/CLARIFICATIONS

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It is remarkable, and to everyone's credit, that the various and comprehensive items in our initial Operation and Maintenance Contract have worked so well and require so little revision. Now that the water treatment plant has been fully operational for more than a year, there are a few discretionary changes I believe are appropriate to pursue. In accordance with Section 17.3 of our Operation and Maintenance Contract, I am proposing the following adjustments and clarifications to the scope of work and corresponding compensation.

Staffing

Primarily for security reasons, I would like to assure that (at a minimum) U.S. Filter staff is on site during the following hours:

“Winter Season” September 16 to May 31  
weekdays 7:00 a.m. until 10:00 p.m.  
weekends 7:00 a.m. until 5:00 p.m.

“Summer Season” June 1 to September 15  
weekdays 6:00 a.m. until 10:00 p.m.  
weekends 7:00 a.m. until 7:00 p.m.

As part of general security, this includes serving as building monitor for the conference room, which the City is making available for use by eligible non-profit community organizations. Based on our discussions, it is my understanding that U.S. Filter will provide these extended staffing hours and services at a cost of \$18,000 (henceforth to be adjusted annually per the Contract's CPI factor). In your reply to this memo, please include the corresponding budget and staffing revisions to Attachment A-2 of the Contract. NOTE: The City will contract for night watchman services during the hours when U.S. Filter staff is not on site.

June 12, 2003  
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#### Natural Gas

The original agreed-upon estimate did not anticipate the large rate increases subsequently experienced in natural gas costs. Nor did the original estimate anticipate the higher air exchange rates in the laboratory and other portions of the plant. To operate the facility in accordance with the Owner's wishes and expectations, a more realistic estimate for the cost of natural gas is \$13,000 (henceforth to be adjusted annually per the Contract's CPI factor). In your reply to this memo, please include the corresponding budget revision to Attachment A-2 of the Contract.

#### Stormwater

The original agreed-upon estimate of \$2,400 for stormwater fees was not accurate. The correct amount should be \$4,500. In your reply to this memo, please include the corresponding budget revision to Attachment A-2 of the Contract.

#### Sewer Fees

At the time the original Contract was written, sewer fees were inadvertently omitted. Due to design changes along the way, it has been difficult to establish such fees. And it's conceivable they may vary as further design or operational changes occur. I therefore suggest that sewer fees be added as a line item in the category of "Pass Through Costs." For budgeting purposes I would suggest including \$9,000 for that line item. In your reply to this memo, please include the corresponding budget addition to Attachment A-2 of the Contract.

#### Finished Water Standards and Water Monitoring Frequencies

Tables E-1 and E-2 of the original Contract contain a few inconsistencies. Furthermore, there is a need to clarify standards for parameters that are continuously monitored versus parameters monitored by means of grab or composite samples. The specific items to be corrected/clarified are pointed out in the attached memo from Mike Greene to Jeff Bauman. I concur with the recommended changes. In your reply to this memo, please include copies of Table E-1 and E-2 as revised to incorporate those changes.

Within 15 business days, please send me your reply to the adjustments and clarifications I've described in this memo.



Michael Greene  
Project Manager  
USFilter Operating Services

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P.O. Box 653  
Wilsonville, OR 97070

TELEPHONE (503) 582-9655  
FACSIMILE (503) 582-9050

## MEMORANDUM

TO: Jeff Bauman, City of Wilsonville

From: Mike Greene, USFilter/OS

CC: Owen Boe, City of Wilsonville  
Kevin Batridge, USFilter/OS

Date: June 12, 2003

RE: CLARIFICATION – TABLE E-1 & E-2, O&M CONTRACT

The following are clarifications to Table E-1 and E-2:

### 1. Bromate

Bromate is listed in Table E-1 under disinfection by-products. It is not listed in Table E-2, which sets forth the contractual requirements for monitoring frequency. Bromate should be added to Table E-2 at a monitoring frequency of once per month.

### 2. Turbidity

Turbidity monitoring of each filter is performed continuously with in-line turbidimeters. Table E-1 shows a treated water goal of less than 0.1 NTU for each filter. To allow some flexibility for events such as instantaneous spikes and anomalous instrument readings this requirement should be qualified into the following range: less than 0.1 NTU 95% of the time the filter is on-line during a 24 hour day and no readings to exceed 0.3 NTU at any time.

### 3. pH

Similar to turbidity, pH is monitored continuously. To cover spikes and pH fluctuations resulting from hydraulic inefficiencies of process basins the following is a suggested pH parameter:  $\text{pH} \geq 7.5$ , 95% of daily (24 hour period) run time, and no readings below 7.0 at any time.

#### 4. Inorganic Chemicals (IOC)

As requested by the owner and to be consistent with historical water quality monitoring of the raw water intake the following (unregulated) inorganic chemicals will be included as additional analytes to the regulated IOC list:

- Aluminum
- Boron
- Manganese
- Silver
- Vanadium
- Zinc

#### 5. Synthetic Organic Chemicals (SOC)

Dioxin testing is not a regulatory requirement for the Willamette River WTP as determined by the Oregon Department of Human Services but will be included as an additional analyte in the SOC suite.

#### 6. GAC Filter Media

Due to the typical absence of any atrazine concentration applied to the filters it would be impractical to develop an adsorption isotherm for that parameter. Instead, and as recommended by the GAC media manufacturer, the following analyses should be run on the media:

- Volatile matter and xylene moisture content (VM/VX)- as a measure of volatile matter adsorbed on the media's surface;
- Iodine number-A measure of remaining adsorptive capacity of the media's surface;
- Sieve Analysis – Used as an indicator of structural integrity of the media;
- Hardness – Used as an indicator of structural strength of the media.

The four tests shown above should be performed on the media each quarter. The condition of the media will be determined by reviewing test data trends over time.

#### 7. UV-254

UV-254 is shown in Table E-2 with a monitoring frequency of weekly for both raw and treated water. It (UV-254) is not shown in Table E-1, which establishes treatment goals and maximum acceptable concentration levels for the various test parameters. UV-254 penetration (ultraviolet wave at given frequency) is typically used as an indirect methodology to determine total organic carbon (TOC). However, since TOC is currently

being measured directly it is not necessary to conduct the UV-254 tests. For those reasons it is recommended that UV-254 be deleted from Table E-2.

#### 8. Taste & Odor Compounds

There are four parameters listed under Taste & Odor compounds in Table E-1. Each of the four parameters has an associated "treatment goal" or maximum acceptable concentration. However, of the four parameters only TON (threshold odor number) is listed in Table E-2 with a monitoring frequency (weekly). To rectify this inconsistency it is recommended that Geosmin be added to Table E-2 at a monitoring frequency of monthly and MIB should be deleted from Table E-1. Since the issue of "tastes" is a subjective matter with no quantifiable test, it is recommended that it remain in Table E-1. But in lieu of a test in Table E-2, monitoring frequency for this parameter would be based on verifiable complaints from customers, attributable to the treatment plant.

#### 9. Particles

Table E-1 shows a treated water goal for particle counts of less than 50 count/mL for particles greater than 3  $\mu\text{m}$  (micron) and monitored continuously at each filter. Particle counters installed at the WRWTP are calibrated to detect/count particles over 2  $\mu\text{m}$ . It is recommended that the treated water goal be changed to: Particles counts not to exceed 50 counts/mL  $>2 \mu\text{m}$  95% of the filter run time in a 24 hour period.

#### 10. Giardia and Cryptosporidium (Crypto)

Giardia and Crypto have a monitoring frequency, as listed in Table E-2, of monthly for both raw and treated water. The monitoring has been performed monthly since the April 2002 plant start-up with no positive results in the treated water. Because of the difficulties associated with testing and relatively small sample volumes (in comparison to plant flows), Federal and State drinking water regulations do not require direct testing of these parasites. Instead, the drinking water regulations require a demonstrated removal efficiency (99.9%, 3 log removal) which is continuously determined when the water plant is operational. In the context of the database assembled to date, coupled with concern for the industry recognized potential for false positives in treated water, it is recommended that monitoring of Crypto and Giardia in the treated water be discontinued. Instead, monthly monitoring for Crypto and Giardia will continue for raw water; and a minimum of 3 log removal will be continuously achieved when the plant is in operation.

Resolution No. 1843

Exhibit B, Part 1 (changes per Resolution No. 1843 noted by underlining)

Attachment A-2 (from original contract and updated to 7/1/03)

Willamette River Water Treatment Plant at Wilsonville  
Annual Budget Plan for 3 MGD Average Production

Fiscal Year is July to June		Budget (7)	Sub Totals
<b>Fixed Labor Component (1)</b>			
Labor and Benefits	6.5 FTE's	\$417,873	
OH Multiplier @	0.774	\$323,434	
<u>After Hrs Coverage (8) (9)</u>		\$18,000	
Sub Total			\$759,307
<b>Not to Exceed Costs (2)</b>			
Lab Services and Supplies		\$49,348	
Public Out Reach Services		\$5,237	
<u>Natural Gas (8)</u>		\$13,000	
Diesel Fuel		\$1,100	
<u>Storm water (8)</u>		\$4,500	
Other Permits and Fees		\$1,444	
Sub Total			\$74,629
<b>Pass Through Costs</b>			
Granular Activated Carbon (3)		\$60,358	
Chemicals			
Alum		\$9,326	
Ammonia		\$9,564	
HypoChlorite		\$5,982	
Polymers		\$6,784	
Caustic		\$9,846	
LOX		\$5,738	
Micro-sand		\$795	
Calcium Thio		\$1,607	
Other		\$0	
Electricity (i.e., paid directly by City)		\$0	
Sludge Hauling and Disposal		\$14,146	
Additional Monitoring/Testing (4)		\$41,894	
Letter of Credit (5)		\$0	
<u>Sewer Charges (8)</u>		\$9,000	
Telemetry		\$1,047	
Maintenance			
Routine		\$13,716	
Corrective		\$37,290	
Sub Total			\$227,093
Major Renewal and Replacement (6)		\$0	
Sub Total			\$0
<b>Total Estimated Annual Budget</b>		<b>\$1,061,029</b>	<b>\$1,061,029</b>

Notes:

- (1) Includes all office supplies, insurance, technical support for operations, training, safety, overtime, admin services, and profit for contractor
- (2) 75/25 : Owner/Operator Sharing of savings
- (3) 25/75 Owner/Operator Sharing of savings on unit price negotiations due to USF Carbon Facility
- (4) As directed by Owner for testing needs in addition to requirements in Exhibit E
- (5) As requested by Owner
- (6) None expected in first 5 years
- (7) This is a 12 month budget and is subject to indexing per Section 5 in Exhibit A.
- (8) Line item reflects adjustments per July 1, 2003
- (9) Additional labor component for part time employee; not subject to 0.774 multiplier



# Resolution No. 1843: Exhibit B, Part 2

(Changes per Resolution No. 1843 noted by underlining and by ~~strikethrough~~)

**Table E-1**  
**Finished Water Standards**  
 (Adjusted per 7/1/03 Clarifications)

Water Quality Parameter	Unit	Existing Regulations	Treated Water Goal
Total/fecal coliform	# /100 mL	<5% positive in system	0% positive leaving plant
Turbidity	NTU	<=0.3 <u>95% of time;</u> <u>Always ≤ 1.0</u>	<0.1 each filter <u>95% of filter run time (1); Always ≤0.3</u>
Particles ( <del>&gt;3µm</del> ) <u>&gt;2µm</u>	Count / mL	None	<50 <u>95% of filter run time (1)</u>
Pathogen Removal/Inactivation			
Viruses		4 logs	Provide multi-barrier: 2-log removal & 2-log inactivation
<i>Giardia</i>		3 logs	Provide multi-barrier: 3-log removal & >1-log inactivation
<i>Cryptosporidium</i>		2 logs	Provide multi-barrier: 3-log removal & 1-log inactivation
Disinfection By-product			
Trihalomethanes	µg/L	80	<40
Haloacetic Acids	µg/L	60	<30
Bromate	µg/L	5 to 15	<5
Synthetic Organic Chemicals <u>(include dioxin(2))</u>	µg/L	Varies	All non-detect
Volatile Organic Chemicals	µg/L	Varies	All non-detect
Inorganic Chemical + <u>unreg (Al, B, Mn, Ag, V, Zn) (2)</u>	µg/L	Varies	<50% MCL
Alkalinity	Mg/l CaCO3	None	>=20
PH	-	None	>=7.5 <u>95% of time (1);</u> <u>Always ≥ 7.0</u>

Arsenic	µg/L	2 to 10	<=2
Sulfate	Mg/L	250	<MCL
Taste & Odor Compounds			
Geosmin	Ng/l	None	<7
<b>MTB</b>	Ng/l	None	<b>&lt;8</b>
Odors	TON	3	<3
<b>Tastes</b>	-	None	<b>Non objectionable</b>

Total Organic Carbon	Mg/l	35% reduction in TOC if raw water in TOC is from 2-4 Mg/l 45% reduction in TOC if raw water TOC is from 4-8 Mg/l.	35% reduction in TOC if raw water in TOC is from 2-4 Mg/l. 45% reduction if raw water TOC is from 4-8 Mg/l.
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**Notes:**

1. **Within a 24 hour period from midnight to midnight**
2. **Added analytes per Owners request**

Resolution No. 1843: Exhibit B, Part 3  
 (Changes per Resolution No. 1843 noted by underlining and by ~~strikethrough~~)

**Table E-2**  
**WATER TREATMENT MONITORING FREQUENCIES**  
 (Adjusted per 7/1/03 clarifications)

Parameter	Treated Water Monitoring Frequency	Raw Water Monitoring Frequency
<b>HYDRAULIC PARAMETERS</b>		
Treatment Facility Total Production	Daily	
Treatment Facility Flow	Continuous	
<b>PHYSICAL/CHEMICAL/INORGANIC/PARAMETERS</b>		
Conductivity	Weekly	
Temperature	Continuous	Continuous
Total Alkalinity	Weekly	Weekly
Total Hardness	Weekly	Weekly
Calcium Hardness	Weekly	Weekly
Total Organic Carbon (TOC)	Weekly	Weekly
Iron	Monthly	Monthly
Turbidity	Continuous, each filter	Continuous
Particles	Continuous, each filter	Continuous
Color	Weekly	Weekly
PH	Continuous	Continuous
<del>UV 254</del>	<del>Weekly</del>	<del>Weekly</del>
Chlorine Residual	Continuous	
Total Dissolved Solids	Weekly	
<b>MICROBIOLOGICAL/ORGANIC PARAMETERS</b>		
Total Coliform	Daily	Daily
E. coli	Daily	Daily
Viruses	Quarterly	Quarterly
Giardia	<del>Monthly</del>	Monthly
Cryptosporidium	<del>Monthly</del>	Monthly
Total Trihalomethanes	Monthly	
Haloacetic Acids	Monthly	
Regulated VOC's/SOC's ( <u>+dioxin</u> )	Quarterly	Quarterly
Regulated IOC's ( <u>+Al, B, Mn, Ag, V, Zn</u> )	Quarterly	Quarterly
TON	Weekly	Weekly
<u>Geosmin</u>	<u>Monthly</u>	<u>Monthly</u>
<b>Parameter for Granular Activated Carbon Filters</b>		
	Filter	Monitoring Frequency
Iodine Number	Each Filter	Quarterly
<del>Atrazine Isoterm</del>	<del>Each Filter</del>	<del>Semi-annually at time of Iodine number</del>
<del>TOC Isoterm</del>	<del>Each Filter</del>	<del>Semi-annually at time of Iodine number</del>
<u>VM/VX</u>	<u>Each Filter</u>	<u>Quarterly</u>
<u>Sieve Analysis</u>	<u>Each Filter</u>	<u>Quarterly</u>
<u>Hardness #</u>	<u>Each Filter</u>	<u>Quarterly</u>

# MEMORANDUM

**DATE:** JULY 7, 2003

**TO:** HONORABLE MAYOR AND CITY COUNCIL

**FROM:** JEFF BAUMAN, PUBLIC WORKS DIRECTOR

**RE:** RESOLUTION NO. 1843  
WATER TREATMENT PLANT OPERATIONS

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## SUMMARY

Resolution No. 1843 authorizes minor changes to the scope of work for operation of the water treatment plant. These are discretionary City-initiated clarifications and adjustments to the initial scope of work, which was established more than a year before the water treatment plant was placed in service.

## RECOMMENDATION

City staff recommends Council adoption of Resolution No. 1843.

## DISCUSSION

In late 2000, the City selected an experienced firm (U.S. Filter Operating Services) to operate the new water treatment plant. In making this decision, the City contracted for these services well before the facility came on line. This afforded the personnel who would eventually operate the water treatment plant to become an integral part of design, construction, performance testing and startup aspects of the project. As a consequence, and of necessity, the scope of work for the contract with U.S. Filter had to be established before design and construction were complete. Thus far, the scope has served us well. Now, with benefit of information and experience gained during the first full year of operation, a few clarifications and adjustments to the scope of work are desirable and mutually agreeable. Although there are costs to the City associated with some of these changes, the work can be accomplished within the overall allocation for this program approved in the FY '03-04 Budget.