

**CITY OF PALMER ACTION MEMORANDUM No. 09-035**

**SUBJECT:** Authorize the City Manager to Enter into a Sole Source Procurement Arrangement and Execute a Contract with Wm. H. Reilly & Co. for the TrojanUV3000Plus™ Disinfection System at the Wastewater Treatment Plant in the Amount of \$270,600

**AGENDA OF: June 9, 2009**

<b>Council action:</b>  <div style="border: 1px solid red; padding: 2px; display: inline-block; color: red;">Authorized</div>
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**Approved for presentation by B. B. Allen, City Manager** *B. B. Allen*

Route To:	Department/Individual:	Initials/Date:	Remarks:
X	Originator – Director of Public Works	<i>BA</i> 04/15/2009	
X	City Clerk	<i>JR</i> 6/2/09	
X	City Attorney	<i>[Signature]</i> 6/2/09	
X	Director of Administration	<i>[Signature]</i> 5/20/09	
	Director of Community Development		
	Director of Community Services		
	Director of Public Safety		
	Director of Public Works		

**Attachment(s):** WM. H. Reilly & Co. Quote  
 Alaska Department of Environmental Conservation Sole Source Equipment Purchase Approval  
 Letter of Sole Source Explanation PW Director

**Certification of Funds:**

	No fiscal impact.	
X	Funds are budgeted from this account number:	02-00 00-1681
	Funds are not budgeted. Budget modification is required. Affected account number:	

Director of Administration Signature: *[Signature]*

**Summary statement:** The City is working to come in compliance with the current ADEC and EPA regulations and will need to purchase the second disinfection system at the Ultra Violet (UV) Disinfection building at the Wastewater Treatment Plant (WWTP). The existing facility concrete raceways constructed in the UV Disinfection building were specifically built for the TrojanUV3000Plus™ Disinfection System; the unit which needs to be purchased. Only one unit

has been operational since 2003. The existing unit was purchased in 2001 for \$169,500 and only has a single unit controller. During any maintenance of the unit the plant has no backup and staff can only do emergency repairs on an as needed basis. Fortunately, the unit has only needed minor repairs to date.

The TrojanUV3000Plus™ Disinfection System sterilizes the fecal colonies so they can't multiply. The system has eliminated the use of all chemicals including Sodium Hypochlorite and Sodium Bisulfite in the treatment process. The UV system is the only remaining disinfection means left at the facility.

Public Works received a quote from Wm.H. Reilly & Co. who is the exclusive representative for Trojan UV systems in Alaska. Attached is the quote for the TrojanUV3000Plus™ Disinfection System and additional parts which total \$270,600.

The City currently has money available to purchase this unit from the Alaska Department of Environmental Conservation (ADEC) grant 67107 for Wastewater Treatment Plant Expansion, Phase III. Attached is the approval letter from Mike Phillips, ADEC Project Engineer, for the sole source purchase of a second UV Disinfection Unit. The unit will cost \$270,600 and the City has two grants for this project which will cover \$147,071.69 with a city contribution of \$123,528.31.

Public Works asks the Council to grant a sole source purchase under the provisions in the PMC below.

3.21.230 Governmental and proprietary procurements.

A. The purchasing officer may contract, without the use of the competitive source selection procedures of this chapter, for the following supplies, services, professional services or construction:

1. For contracts, including reimbursable agreements, with federal, state or local units of government or utility provider where the city has a financial responsibility or beneficial interest in entering into an agreement.
2. For contracts issued pursuant to any federal, state, or local government contract where the city is an authorized user, or where the resulting contractor agrees to extend the same terms, conditions, and pricing to the city as those awarded under the original contract, all in accordance with PMC 3.21.240. Such agreements shall be limited to those contracts where the award is issued pursuant to a formally advertised solicitation.
3. **For contracts where the purchasing officer determines in writing that the city's requirements reasonably limit the source for the supplies, services, professional service or construction to one person.**

B. All contract awards under this section, and any amendments thereto, shall be subject to the applicable approval requirements of PMC 3.21.090 prior to execution.

C. No contractor may provide supplies, services, professional services, or construction to the city before the applicable requirements of this section are first satisfied. (Ord. 644 § 4, 2004)

**Administration recommendation:** Adopt action memorandum no. 09-035.

**STATE OF ALASKA**  
**DEPT. OF ENVIRONMENTAL CONSERVATION**

*SARAH PALIN, GOVERNOR*

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**DIVISION OF WATER**  
**MUNICIPAL GRANTS & LOANS PROGRAM**

April 20, 2009

Mr. Carter Cole, Director  
Department of Public Works  
City of Palmer  
231 W. Evergreen Ave.  
Palmer, AK 99645

**RE: Sole Source Equipment Purchase Approval**  
**Trojan UV System Disinfection Unit**  
Palmer - Wastewater Treatment Plant Expansion, Phase III  
ADEC Grant No. 67107

Dear Mr. Cole:

I have reviewed your request to use funds from the subject grant for the sole source purchase of a second UV Disinfection Unit at the Wastewater Treatment Plant to match the existing one and give approval. I acknowledge that the Trojan unit fits the already constructed raceway and that Wm. H. Reilly & Co. is the only supplier for Trojan Equipment in Alaska. As stated in the attached quote, the cost for the UV Module, UV Panels, and Miscellaneous Equipment is \$270,600.

Thank you for your submittal, and please call me at 269-7615 if you have any questions or comments.

Sincerely,



Michael Phillips, P.E.  
Project Engineer

cc: Oran Woolley, Wastewater Discharge Program/ADEC/Wasilla





**Wm. H. Reilly & Co.**

April 9, 2009

John Berberich  
City of Palmer  
Palmer, AK

Re: Duplicate Trojan UV System  
City of Palmer, Alaska  
Quote #: WHR2009-105TRO

Dear John,

In response to your request, we are pleased to provide the following updated TrojanUV3000Plus™ proposal for the **Palmer - Second Channel** project. This is similar to the quote provided to you in January with the addition of some more spare parts. As before, this is the current model of the same configuration with some updates and improvements.

The amount of equipment being supplied and the installed configuration will be the same as the existing system on site. However, the System Control Panel will be similar but Trojan now uses a different controller manufacturer. The panel will look the same with an operator interface and will be wall mounted, however the processor will be a different model and the screen shots will be similar but not identical to your current model.

Some of the improvements include the module end caps, and level sensor.

The lamps, ballast, sleeves will be identical.

The proposal now contains 240 spare lamps, 20 sleeves, 20 wiper seals, 80 O-rings and 20 cup nut sleeves.

The price includes shipping and start-up, however it does not include any state or local taxes if applicable.

Please don't hesitate to contact me if you have any questions regarding this proposal. We look forward to working with you on this project.

Very truly yours,

William M. Reilly  
Wm. H. Reilly & Co.

<b>CHANNEL</b> (Please reference Trojan layout drawings for details.)	
Number of Channels:	<b>1</b>
<b>UV MODULES</b>	
Total Number of Banks:	<b>2</b>
Number of Modules per Bank:	<b>5</b>
Number of Lamps per Module:	<b>8</b>
Total Number of UV Lamps:	<b>80</b>
Maximum Power Draw:	<b>20 kW</b>
<b>UV PANELS</b>	
Power Distribution Center Quantity:	<b>2</b>
System Control Center Quantity:	<b>1</b>
<b>MISCELLANEOUS EQUIPMENT</b>	
Level Controller Quantity:	<b>1</b>
Type of Level Controller:	<b>Weighted Gate (ALC)</b>
Automatic Chemical / Mechanical Cleaning:	<b>Trojan ActiClean™</b>
Other Equipment:	<b>240 spare lamps, 20 sleeves, 20 wiper seals, 80 O-rings, and 20 cup nut sleeves</b>
<b>ELECTRICAL REQUIREMENTS</b>	
<ol style="list-style-type: none"> <li>1. Each Power Distribution Center requires an electrical supply of one (1) 480 Volts, 3 phase, 4 wire (plus ground), 12.8 kVA.</li> <li>2. The Hydraulic System Center requires an electrical power supply that is powered from the Power Distribution Center.</li> <li>3. Electrical disconnects required per local code are not included in this proposal.</li> </ol>	

**Total Price: \$270,600.00**

This price excludes any taxes that may be applicable and is valid for 90 days from the date of this letter.

**EQUIPMENT WARRANTIES**

1. Trojan Technologies warrants all components of the system (excluding UV lamps) against faulty workmanship and materials for a period of 12 months from date of start-up or 18 months after shipment, whichever comes first.
2. UV lamps purchased are warranted for 12,000 hours of operation or 3 years from shipment, whichever comes first. The warranty is pro-rated after 9,000 hours of operation. This means that if a lamp fails prior to 9,000 hours of use, a new lamp is provided at no charge.
3. Electronic ballasts are warranted for 5 years, pro-rated after 1 year.



WATER AND WASTEWATER PROCESS ENGINEERS

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## MEMORANDUM

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**PREPARED FOR:** Rick Koch/City of Palmer

**PREPARED BY:** Greg Jones and Lisa Woolard/GVJ&A

**COPIES:** Scott Hattenburg/LCMF

**DATE:** August 23, 2001

**SUBJECT:** Palmer Disinfection System – UV Equipment Solicitation History

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### Introduction

The City of Palmer has requested a summary of the ongoing efforts to identify a supplier of UV disinfection equipment for the Palmer sewage lagoon treatment facility. This memorandum provides a summary of those efforts.

### Work Completed to Date

LCMF, Inc. (LCMF) and GV Jones and Associates, Inc. (GVJ&A) prepared a 20-year capital and operation and maintenance cost estimate that showed UV disinfection has the potential to be significantly less costly than the chlorine disinfection and dechlorination upgrade option the City was planning. The building footprint of a chlorine contact chamber is much larger than that of a UV system. Construction and facility O&M costs for the UV alternative are projected to be less than for the chlorination alternative.

It is our understanding the City of Palmer intends to operate their aerated lagoons as long as possible. Though the lagoons produce a relatively high quality effluent through the cold winter months, during warmer weather the lagoons “turn over” and with extended daylight, algae flourish. Lagoon turnover and algae seem to cause a marked increase in the total suspended solids (TSS) in the lagoon effluent. Ordinarily, high concentrations of TSS diminish the effectiveness of UV disinfection. However, limited experience with UV irradiation of lagoon effluents elsewhere indicates that while sludge and algae increases TSS concentration and reduces UV transmittance, UV inactivation of target organisms is still effective. This is believed to be

mostly due to the small particle size and discrete non-agglomerating nature the algae and the highly digested sludge at these locations.

A process to solicit competitive UV equipment proposals for the City of Palmer commenced in mid 2000. Several UV equipment suppliers were contacted to determine their interest in the project and their ability to provide equipment that would meet the performance requirements necessary to meet Palmer's EPA NPDES permit. UV equipment suppliers contacted included:

Aquionics Inc. (606-341-0710)  
 Capital Controls Co., Inc./Severn Trent (215-997-4000)  
 Trojan Technologies, Inc. (Victoria Falvo, fax 519-457-3030)  
 Wedeco Ideal Horizons (TR Gregg, fax 541-929-2488)  
 Infilco Degremont, Inc. (IDI) (Jacqueline Peak, fax 804-756-7643)  
 Suntec Environmental (Doug Reed, 905-669-4451)

Aquionics, Trojan and IDI performed UV testing in the winter of 2000. The suppliers measured characteristics of lagoon effluent that impact UV disinfection including: UV transmittance (UVT), particle size distribution (PSD), TSS, and UV dose demand (using a Collimated beam test) and used the information to develop preliminary equipment proposals for Palmer. Based on the results of their in house testing, Aquionics, having only low pressure low intensity lamp technology available, indicated they were not interested in the pursuing the project.

The above companies were contacted again in spring 2001 and invited to sample the Palmer lagoon effluent during the most challenging summer conditions. Trojan, Wedeco, IDI and Suntec each requested to be included in a solicitation from the City to participate in summer effluent testing and to provide an equipment and budget cost proposal.

On May 11, 2001, the City issued a letter inviting these four UV equipment suppliers to request samples and provide equipment and budget cost proposals. Of the four, Trojan, Wedeco and Suntec requested effluent samples. Based on the results of their effluent testing, Trojan and Wedeco submitted equipment and budget cost proposals to the City.

The invitation letter issued by the City required the UV equipment suppliers to meet the UV System Design Criteria listed below.

- UV system must be of modular design, use high intensity low pressure UV lamps, electronic ballasts with multiple power settings, and incorporate an automatic in-situ mechanical (and chemical, if applicable) cleaning system.
- The UV disinfection equipment shall disinfect Palmer's unfiltered aerated lagoon effluent at all times during the year to meet the requirements of the NPDES Permit (AK-002249-7) for fecal coliform as follows:
  - 100 FC/100 ml based on 30-day geometric mean
  - 200 FC/100 ml based on a 1 day Maximum of daily samples (grab)
  - Grab samples shall be taken in accordance with the Microbiology Sampling Techniques found in *Standard Methods for the Examination of Water and Wastewater, 19<sup>th</sup> Ed.*
- Effluent Limitations (EPA NPDES Permit (AK-002249-7)) are as follows:
  - Total Suspended Solids
    - 45 mg/l 30-day average
    - 65 mg/l 7-day average

- 5-day Biochemical Oxygen (BOD<sub>5</sub>)
  - 30 mg/l 30-day average
  - 45 mg/l 7-day average
  - 60 mg/l maximum day
- pH
  - 8.5 maximum, 6.5 minimum
- Design Criteria:
  - Number of UV banks (duty and redundant) 2 minimum
  - Current Average Daily Flow, mgd 0.44
  - Design Average Flow, mgd 1.0
  - Design Peak Hour Flow Capacity (w/lagoon attenuation), mgd 2.0
- Power supply: 480 volt 3 phase and 120 volt single phase.

**Discussion**

Though Trojan and Wedeco each submitted equipment and budget cost proposals to the City, Trojan’s proposal was the most responsive and indicated willingness to guarantee the performance of the UV disinfection system based on the performance requirements listed in the City’s May 11, 2001 letter and the results of testing Trojan had completed to date on the Palmer effluent.

Wedeco requested the City perform additional effluent testing at the City’s cost, which Wedeco would then use to finalize the sizing of their system and provide a guarantee of the performance of the UV disinfection system based on the performance requirements listed in the City’s May 11, 2001 letter.