City of Yakima/Yakima County
SOLE/SINGLE SOURCE JUSTIFICATION
Revised January 2018

Your Name	Jennifer Cleary	Your Department/Division	Wastewater
Your Phone	509-575-6133	Requisition Number	PR 36554
Requested Vendor	Agilent Technologies, Inc.	Cost Estimate (Including TAX)	111,252.64
Vendor's Address City, State & Zip	5301 Stevens Creek Boulevard	Vendor e-mail & Website	nancy.kawai@agilent.com www.agilent.com
Vendor Contact Name	Nancy Kawai	Vendor Phone	425-281-5516

1. ARE FEDERAL FUNDS BEING USED? ○ YES ◉ NO

If Federal Funds are bing used, a Cost Price Analysis, prior to requesting Sole Source, MUST also be attached. (See City /County Purchasing Manual for form).

2. What are you purchasing? Describe product, service or system. Attach all information (Quotes, etc.).

See Attachments.

***** Below are eligible reasons for sole source. Check all boxes below that apply to your sole source situation and attach any useful documents to justify the sole source. List who you contacted, what they said and how you verified their accuracy.**

☐ **Compatibility/Standardization to existing City/County standard or to existing equipment, inventory, systems, data, programs or service.** Describe. List efforts to find other sources (attach documentation, e.g. Internet Screenshots, etc.).

☐ **Patented Product.** Attach documentation to confirm propriety (patent letter, etc.) and describe why the patented features are critical to your operation.

☐ ***Only Authorized Service Provider, Repair and/or Warranty Services.*** *Attach proof in writing from the MANUFACTURER (not the vendor) confirming there is only one dealer authorized to sell/service in our area.*

☐ **Unique design:** Requires unique features that are essential, aesthetic requirements, or not possible to match to existing design or equipment. Document the unique specifications that are needed which drove the research in finding a product that fits the specific needs of your department. Explain why these features are critical to your operation.

Is written certification attached? ○ YES ○ NO

☐ **Special Market conditions:** Can be used to purchase items at auction (RCW 39.30.045) or other items that are offered at a very favorable price and will be sold before and entity will have a chance to complete the bidding process (e.g. a flood is coming and you must obtain sandbags immediately), or only one supplier can meet required delivery date (describe why the delivery date is critical and list efforts to find other suppliers to meet the delivery date).

☑ **Other** Please Describe
See attachment

Unique Combination of Performance Characteristics

The Agilent Technologies, Inc. 5800 ICP-OES offers a unique combination of features for high data quality, usability, and cost-efficiency.

Data Quality: The 5800 ICP-OES combines vertical torch position (for high matrix tolerance) and dual view capabilities (axial and radial, for wide dynamic range and low detection limits). The detector on the 5800 has 98% wavelength coverage from 167 – 785 nm; this is important for measure confirming wavelengths to achieve high data confidence.

Usability: The 5800 has a one-piece, permanently aligned torch that does not require realignment after installation. This ensures optimum and consistent signal collection. The operating software is easy to use, including Fitted Background Correction that enables more accurate peak integrations without repeated user intervention. The operating software includes a semi-quantitative function (i.e., IntelliQuant) that can measure all elements in every sample with no additional effort.

Operating Cost: The vertical torch position results in approximately 5X longer lifetime compared to a horizontally-mounted torch. The 5800 has the shortest run time for each sample (axial and radial in one method). The 5800 has a hermetically-sealed detector that does not require a constant purge of argon, even when the instrument is not in use. These features result in lower consumption of high-purity argon.

3. Is this product/service available only through one vendor? ○ YES ○ NO
If yes, attach documentation that supports the screening process you performed to confirm. (e.g. Internet Screenshots, etc.)
No. See attachments.

4. Is this a one-time purchase? ◉ YES ○ NO
If NO, explain.

5. Why is this a sole source vendor?
(tell the story).
See attachments.

6. What efforts were made to assure the City/County is receiving the lowest or best price possible?
Describe and attach a document showing due diligence.
See attachments.

STATEMENT OF NEED/CONFLICT OF INTEREST
My division's recommendation for sole source is based upon an objective review of the good/service being required and appears to be in the best interest of the City/County. I know of no conflict of interest on my part or personal involvement in any way with this request. No gratuities, favor, or compromising action have taken place. Neither has my personal familiarity with particular brands, types of equipment, materials or firms been a deciding influence on my request to sole source this purchase when there are

other known suppliers to exist.

Signature of Requester	Jennifer Cleary	Date	1/13/20
Signature of Division Manager	Michael A Pierce	Date	1/13/2020
Signature of Department Head		Date	1/15/20
Signature of approval by Purchasing Manager	Marci Mayhue	Date	1/16/20
Approval by Executive		Date	

Please complete entire form and forward to Purchasing.

1. Are federal funds being used?

No, federal funds are not being used.

2. What are you purchasing?

The WWTP Lab is purchasing an ICP-OES (Inductively Coupled Plasma-Optical Emission Spectrometry) instrument for trace metal analysis (see list below) on biosolids and Pretreatment industrial wastewater samples. Methods EPA 6010 D & EPA 200.7 Rev 4.4 will be used, respectively.

Antimony (Aq, S)	Chromium (Aq, S)	Manganese (S)	Silver (Aq, S)
Arsenic (Aq, S)	Copper (Aq, S)	Molybdenum (Aq, S)	Sodium (S)
Beryllium (Aq, S)	Iron (Aq, S)	Nickel (Aq, S)	Thallium (Aq, S)
Calcium (S)	Lead (Aq, S)	Potassium (S)	Zinc (Aq, S)
Cadmium (Aq, S)	Magnesium (S)	Selenium (Aq, S)	

ICP-OES is an analytical technique used for the detection of chemical elements. It is a type of emission spectroscopy that uses the inductively coupled plasma to produce excited atoms and ions that emit electromagnetic radiation at wavelengths characteristic of a particular element. The intensity of this emission is indicative of the concentration of the element within the sample.

Nancy Kawai from Agilent Technologies, Inc. was contacted. She provided an initial quote for the ICP-OES ($94,552.78) and a second quote to compare the costs of replacing the two atomic absorption (AA) instruments currently in operation ($98,387.64). The advantage of the ICP-OES is that all elements are analyzed simultaneously versus one element at a time on the AAs. Since costs are no more than replacing both AA's and the ICP-OES will save a significant amount of analysis time, we chose to proceed forward with acquisition of an ICP-OES. The current quote of $111,252.64 from 11/22/2019 includes 5 total years of the Bronze Government/Academic Service plan.

Nancy has provided the Agilent 5800 ICP-OES unique design features below. In addition, the quote, email communications, brochures, application notes, references, and redacted quotes are attached.

Nancy T Kawai, PhD

Account Manager, Atomic Spectroscopy (WA, OR, ID, MT)

Life Science and Chemical Analysis

Agilent Technologies, Inc.

M: +1 425 281 5516 | www.agilent.com

"Other: Unique Combination of Performance Characteristics"

The 5800 ICP-OES offers a unique combination of features for high data quality, usability, and cost-efficiency.

Data Quality: The 5800 ICP-OES combines vertical torch position (for high matrix tolerance) and dual view capabilities (axial and radial, for wide dynamic range and low detection limits). The detector on the 5800 has 98% wavelength coverage from 167 – 785 nm; this is important for measure confirming wavelengths to achieve high data confidence.

Usability: The 5800 has a one-piece, permanently aligned torch that does not require realignment after installation. This ensures optimum and consistent signal collection. The operating software is easy to use, including Fitted Background Correction that enables more accurate peak integrations without repeated user intervention. The operating software includes a semi-quantitative function that can measure all elements in every sample with no additional effort.

Operating Cost: The vertical torch position results in approximately 5X longer lifetime compared to a horizontally-mounted torch. The 5800 has the shortest run time for each sample (axial and radial in one method). The 5800 has a hermetically-sealed detector that does not require a constant purge of argon, even when the instrument is not in use. These features result in lower consumption of high-purity argon.

3. Is this product/service available only through one vendor?

No. The lab has gathered information from four different vendors to compare features, options, and pricing. Other labs known to the City of Yakima have independently provided data sets and opinions on ICP-OES instruments. After thorough consideration, the Lab has decided that only the Agilent 5800 can provide the required combination of data quality, efficiency, and ease of use. Furthermore, Agilent has local service in the northwest and a large network for ongoing applications and instrument support.

4. Is this a one-time purchase?

Yes.

5. Why is this a sole source vendor?

The Agilent Technologies, Inc. 5800 ICP-OES offers the best combination of features and has the best reference recommendations when compared to ICP-OES instruments from Thermo Scientific, Perkin Elmer, and Teledyne Technologies. In addition to the unique combination of features described in #2 above, Agilent references had said that they received quality and responsive field service and support, which is often invaluable.

When comparing the Agilent 5800 to the iCAP 7400 by Thermo Scientific, the iCAP 7400 is equipped with a horizontal torch while the Agilent 5800 has a vertical torch. Horizontally oriented torches have an overall shorter life span. In addition, the required exhaust system must meet a minimum flow of 260 cubic feet per minute, which is much higher than the other systems. Later in 2020, Thermo Scientific will release the latest ICP-OES model that will have lower exhaust requirements, is smaller, and comes with semi-quantitative software. However, this model is not currently available. References also stated that Thermo Scientific's field service was not optimal.

Though the Avio 500 by Perkin Elmer has a vertical torch, the instrument is 360 lbs., which is about 120 lbs. more than the other instruments. This would potentially require adding additional support to the countertop where the instrument would be set up or purchasing an Avio bench quoted at $2,441.60. In addition, clean house air or a compressor is required. Since the lab is not equipped with clean house air, an additional compressor would need to be purchased. The torch is also in multiple pieces as shown in the comparison table. Agilent's 5800 ICP-OES is equipped with a torch that is one piece (Agilent Patent US 2013/0127324 A1) that is permanently aligned once in place. This means there are no time-consuming torch alignment routines or reassembling of gas connections and breakable quartz pieces as

with the Avio 500 by Perkin Elmer. A reference in Portland has stated that their previous Perkin Elmer ICP was terrible to work with. In addition, research has been more difficult since the local sales representative has not been as responsive as the other sales representatives.

The Prodigy 7 ICP-OES from Teledyne instruments has the largest footprint, being 4 feet in length. It also has the horizontal torch, which will not have as long as a lifespan. Though the Prodigy does not require an additional compressor, it does not offer the unique combination of features that the Agilent 5800 ICP-OES does. References were requested but none were provided, and thus it was difficult to determine if field service and support is optimal.

When comparing the features, options, pricing, and support service, the Agilent 5800 ICP-OES offers the best combination of performance characteristics while meeting the WWTP Lab's needs.

6. What efforts were made to assure the City/County is receiving the lowest for best price possible?

Four ICP-OES options were considered (Agilent Technologies, Inc., ThermoFisher Scientific, Perkin Elmer, & Teledyne Instruments, Inc.) Quotes were provided and references were contacted. A Comparison Table (see attached) summarizes the instrument features, quotes, and reference comments.

In addition, Agilent has provided three (3) redacted invoices for recent sales of their previous model, the 5110 ICP-OES, in the northwest. The discount offered to the City of Yakima is equal to or better than these comparable sales.