

ITEM 4.8

CITY MANAGER'S REPORT JULY 10, 2023 CITY COUNCIL REGULAR MEETING

ITEM: **APPROVE PROFESSIONAL SERVICES AGREEMENT WITH EKI ENVIRONMENT & WATER, INC., FOR PFAS IN GROUNDWATER STUDY FOR CIP PW 20-16 GROUNDWATER TREATMENT IMPROVEMENTS**

RECOMMENDATION: **Adopt Resolution Approving a Professional Services Agreement with EKI Environment & Water, Inc., for PFAS Characterization and Evaluation of Planned PFAS treatment for CIP PW 20-16 Groundwater Treatment Improvements**

SUMMARY:

Per- and Polyfluoroalkyl Substances (PFAS) are a large group of environmentally persistent manmade chemicals that are used in a wide range of products including fire-fighting foam, non-stick cookware and other products designed to be waterproof, non-stick or stain resistant. Due to their widespread use and persistence in the environment, most people in the United States have been exposed to PFAS. There is evidence that continued exposure above specific levels to certain PFAS may lead to adverse health effects.

PFAS were first detected in the City's groundwater supply wells in summer of 2019, and on October 14, 2019, Council approved the creation of CIP PW 20-16 Groundwater Treatment Improvements and approved the ratification of agreements with EKI to provide technical support services related to the detection of PFAS in the City's groundwater. Subsequently, in 2020 and 2022, additional studies have been performed by EKI and Carollo Engineers, Inc. (Carollo) related to the treatment and management of PFAS at the City's wells.

Well 9 has remained offline since 2019 as it has consistently shown PFAS levels that have exceeded the state drinking water Response Levels (RLs) that require removal or treatment of the source. Wells 6, 7, 8 and 10 have all shown PFAS exceeding state Notification Levels (NLs), but remain online as all of the observed PFAS concentrations in these wells have been significantly below the RLs.

In March 2023, the United States Environmental Protection Agency (US-EPA) released proposed federal Maximum Contaminant Levels (MCLs) for six PFAS compounds which exceed observed detections in all City wells for perfluorooctane sulfonate (PFOS). In addition, recent sampling results have shown an increase in Well 9, particularly in the doubling of previously observed PFOS concentrations.

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At the request of City staff, EKI has provided a proposal to evaluate the impacts of the higher concentrations of PFAS observed at Well 9, and the potential for these higher concentrations to migrate and affect the City's other drinking wells in the future. To complete the evaluation, EKI will evaluate the locations of potential PFAS sources, the current extent and distribution of PFAS contamination in groundwater, and characterization and behavior of the groundwater system in response to groundwater extraction.

Staff is requesting that Council approve a Professional Services Agreement (PSA) with EKI in the amount of \$69,600 to provide this evaluation.

BACKGROUND:

In 2019, in response to monitoring orders issued by the California State Water Resources Control Board Department of Drinking Water, the City, with technical support from EKI, began sampling for PFAS in its groundwater supply. Detections of PFOS and perfluorooctanoic acid (PFOA) in groundwater collected from Well 9 have consistently exceeded the state drinking water NLS and RLS enforced through the California State Water Resources Control Board and detections of PFOS have exceeded the NLS in groundwater collected from Wells 6, 7, 8, and 10. Detections of perfluorohexane sulfonic acid (PFHxS) have exceeded the NLS in Wells 6 through 9.

In 2020, EKI evaluated 11 alternatives for PFAS management and treatment at the City's wells and at the centralized Louise Avenue Treatment Facility (LAWTF) and conducted a bench-scale granular activated carbon (GAC) test to explore the performance treating the City's groundwater with GAC pressure vessels. In a March 2020 technical memorandum, EKI recommended that the City (1) restart wells 6, 7, 8, and 10, with Well 9 remaining offline as a standby well, (2) move forward with the depth-specific profiling of wells to determine if any low-cost alternatives are viable, and (3) postpone treatment until regulatory standards are established. Well 9 has remained offline since 2019. In 2022, the City contracted with Carollo to further study and develop the City's options for GAC treatment of only groundwater from Well 9 and blended groundwater from all the City's Wells (Well 6-10) at the LAWTF.

In March 2023, after completion of these studies, the US-EPA proposed federal MCLs for six PFAS compounds, which are anticipated to be promulgated by the end of 2023 and effective by the end of 2026. Detections of PFAS in groundwater collected from each of the City's wells exceed the proposed MCLs. In addition, recent sampling results found an increase in PFAS concentrations in Well 9, particularly the doubling of the observed PFOS concentrations

At the request of Staff, EKI provided a proposal to further characterize PFAS in the City's groundwater supply and evaluate planned PFAS Treatment.

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APPROVE PROFESSIONAL SERVICES AGREEMENT WITH EKI ENVIRONMENT & WATER, INC., FOR PFAS IN GROUNDWATER STUDY FOR CIP PW 20-16 GROUNDWATER TREATMENT IMPROVEMENTS

REASON FOR RECOMMENDATION:

In order to further address the presence of PFAS in the City's groundwater supply, staff is requesting Council to approve a Professional Service Agreement with EKI in the amount of \$69,600 for PFAS Characterization and Evaluation of Planned PFAS Treatment.

FISCAL IMPACT:


The total estimated time and materials cost of the PSA with EKI to provide the PFAS characterization and evaluation of planned PFAS treatment is \$69,600. The City has sufficient funds for this cost under CIP PW 20-16 Groundwater Treatment Improvements in the approved budget for Fiscal Year 2023-2024.

ATTACHMENTS:

- A. Adopt Resolution Approving a Professional Services Agreement with EKI Environment & Water, Inc., for PFAS Characterization and Evaluation of Planned PFAS treatment for CIP PW 20-16 Groundwater Treatment Improvements
- B. Professional Services Agreement with EKI Environment & Water, Inc., for PFAS Characterization and Evaluation of Planned PFAS treatment for CIP PW 20-16 Groundwater Treatment Improvements

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APPROVALS:



Greg Gibson
Senior Civil Engineer

06/20/2023
Date



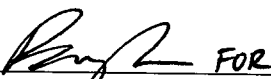
Brad Taylor
City Engineer

6/21/2023
Date



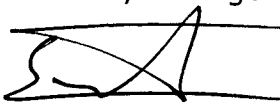
Cali James
Finance Director

6/26/23
Date

 FOR

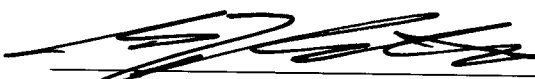
Michael King
Assistant City Manager

6/26/2023
Date



Salvador Navarrete
City Attorney

6.22.2023
Date



Stephen J. Salvatore
City Manager

7-5-23
Date

RESOLUTION NO. 23 -

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LATHROP APPROVING A PROFESSIONAL SERVICES AGREEMENT WITH EKI ENVIRONMENT & WATER, INC., FOR PFAS CHARACTERIZATION AND EVALUATION OF PLANNED PFAS TREATMENT FOR CIP PW 20-16 GROUNDWATER TREATMENT IMPROVEMENTS

WHEREAS, Per-and Polyfluoroalkyl Substances (PFAS) are a large group of environmentally persistent manmade chemicals that are used in a wide range of products including fire- fighting foam, non-stick cookware and other products designed to be waterproof, non-stick or stain resistant; and

WHEREAS, due to their widespread use and persistence in the environment, most people in the United States have been exposed to PFAS. There is evidence that continued exposure above specific levels to certain PFAS may lead to adverse health effects; and

WHEREAS, PFAS were first detected in the City's groundwater supply wells in summer of 2019, and on October 14, 2019 Council approved the creation of CIP PW 20-16 Groundwater Treatment Improvements and approved the ratification of agreements with EKI to provide technical support services related to the detection of PFAS in the City's groundwater; and

WHEREAS, in 2020 and 2022, additional studies were performed by EKI and Carollo Engineers, Inc. (Carollo) related to the treatment and management of PFAS at the City's wells; and

WHEREAS, Well 9 has remained offline since 2019 as it has consistently shown PFAS levels that have exceeded the state drinking water Response Levels (RLs) that require removal or treatment of the source; and

WHEREAS, Wells 6, 7, 8 and 10 have all shown PFAS exceeding state Notification Levels (NLs), but remain online as all of the observed PFAS concentrations in these wells have been significantly below the RLs; and

WHEREAS, in March 2023, the United States Environmental Protection Agency (US-EPA) released proposed federal Maximum Contaminant Levels (MCLs) for six PFAS compounds which exceed observed detections in all City wells for perfluorooctane sulfonate (PFOS); and

WHEREAS, in addition, recent sampling results have shown an increase in Well 9, particularly in the doubling of previously observed PFOS concentrations; and

WHEREAS, at the request of City staff, EKI has provided a proposal to evaluate the impacts of the higher concentrations of PFAS observed at Well 9, and the potential for these higher concentrations to migrate and impact the City's other drinking wells in the future; and

WHEREAS, to complete the evaluation, EKI will evaluate the locations of potential PFAS sources, the current extent and distribution of PFAS contamination in groundwater, and characterization and behavior of the groundwater system in response to groundwater extraction; and

WHEREAS, in order to further address the presence of PFAS in the City's groundwater supply, staff is requesting Council to approve a Professional Service Agreement with EKI in the amount of \$69,600 for PFAS Characterization and Evaluation of Planned PFAS Treatment; and

WHEREAS, the City has sufficient funds for the \$69,600 cost for EKI's services for the PFAS Characterization and Evaluation of Planned PFAS Treatment under CIP PW 20-16 Groundwater Treatment Improvements in the approved budget for Fiscal Year 2023-2024.

NOW THEREFORE, BE IT RESOLVED, that the City Council of the City of Lathrop does hereby approve a Professional Service Agreement with EKI in the amount of \$69,600 for PFAS Characterization and Evaluation of Planned PFAS Treatment for CIP PW 20-16 Groundwater Treatment Improvements.

The foregoing resolution was passed and adopted this 10th day of July 2023, by the following vote of the City Council, to wit:

AYES:

NOES:

ABSENT:


ABSTAIN:

Sonny Dhaliwal, Mayor

ATTEST:

Teresa Vargas, City Clerk

APPROVED AS TO FORM:



Salvador Navarrete, City Attorney

CITY OF LATHROP

**AGREEMENT FOR PROFESSIONAL ENGINEERING CONSULTING SERVICES
WITH EKI ENVIRONMENT & WATER, INC.**

**TO CHARACTERIZE PFAS IN GROUNDWATER AND EVALUATE PLANNED PFAS
TREATMENT FOR CIP PW 20-16 GROUNDWATER TREATMENT IMPROVEMENTS**

THIS AGREEMENT, dated for convenience this **10th day of July 2023**, is by and between **EKI Environment & Water, Inc.** ("CONSULTANT") and the **City of Lathrop**, a California municipal corporation ("CITY");

RECITALS:

WHEREAS, CONSULTANT is specially trained, experienced, and competent to perform Professional Engineering Consulting Services, which are required by this agreement; and

WHEREAS, CITY selected the CONSULTANT pursuant to said qualifications; and

WHEREAS, CONSULTANT is willing to render such Professional Engineering Consulting Services, as hereinafter defined, on the following terms and conditions;

NOW, THEREFORE, CONSULTANT and the CITY agree as follows:

AGREEMENT

(1) Scope of Service

CONSULTANT agrees to perform Professional Engineering Consulting Services in accordance with the scope of work and fee proposal provided by CONSULTANT, attached hereto as Exhibit "A" and incorporated herein by reference. CONSULTANT represents it is prepared to and can diligently perform these services in accordance with the upmost standards of its profession and to CITY'S satisfaction. The fee proposal shall include all reimbursable costs required for the performance of the Scope of Services. Payment of additional reimbursable costs considered to be over and above those inherent in the original Scope of Services shall be approved of in advance and in writing, by the CITY.

(2) Compensation

CITY hereby agrees to pay CONSULTANT a sum not to exceed **\$69,600** for the Professional Engineering Consulting Services set forth in Exhibit "A". CONSULTANT shall be paid any uncontested sum due and payable within thirty (30) days of receipt of billings containing all information pursuant to Paragraph 5 below. Compensation for any task must be equal to or less than the percentage of task complete. In no event shall CONSULTANT be entitled to compensation for work not included in Exhibit "A", unless a written change order or authorization describing the extra work and payment terms has been executed by CITY's authorized representative prior to the commencement of the work. Payment is made based on a time and materials basis.

(3) Effective Date and Term

The effective date of this Agreement is **July 10, 2023** and it shall terminate no later than **June 30, 2024**

(4) Independent Contractor Status

It is expressly understood and agreed by both parties that CONSULTANT, while engaged in carrying out and complying with any of the terms and conditions of this Agreement, is an independent contractor and not an employee of the CITY. As an independent contractor, CONSULTANT is responsible for controlling the means and methods to complete the scope of work described in Exhibit "A" to City's reasonable satisfaction. CONSULTANT expressly warrants not to represent, at any time or in any manner, that CONSULTANT is an employee of the CITY.

(5) Billings

CONSULTANT shall submit invoices for completed work on a monthly basis, or as otherwise agreed, providing without limitation, details as to amount of hours, individual performing said work, hourly rate, and indicating to what aspect of the Scope of Services said work is attributable. CONSULTANT'S bills shall include a list of all tasks, a total amount due, the amounts previously billed, and the net amount due on the invoice. Except as specifically authorized by CITY, CONSULTANT shall not bill CITY for duplicate services performed by more than one person. In no event shall CONSULTANT submit any billing for an amount in excess of the rates or the maximum amount of compensation provided in section (2) for either task or for the entire Agreement, unless modified by a properly executed change order.

(6) Advice and Status Reporting

CONSULTANT shall provide the CITY with timely reports, orally or in writing, of all significant developments arising during performance of its services hereunder, and shall furnish to CITY such information as is necessary to enable CITY to monitor the performance of this Agreement.

CONSULTANT shall submit to CITY such reports, diagrams, drawings and other work products developed pursuant to the Scope of Services.

(7) Auditing

CITY reserves the right to periodically audit all charges made by CONSULTANT to CITY for services under this Agreement. Upon request, CONSULTANT agrees to furnish CITY, or a designated representative, with necessary information and assistance needed to conduct such an audit.

CONSULTANT agrees that CITY or its delegate will have the right to review, obtain and copy all records pertaining to performance of this Agreement. CONSULTANT agrees to provide CITY or its delegate with any relevant information requested and shall permit CITY or its delegate access to its premises, upon reasonable notice, during normal business hours for the purpose of inspecting and copying such books, records, accounts, and other

material that may be relevant to a matter under investigation for the purpose of determining compliance with the requirement. CONSULTANT further agrees to maintain such records for a period of three (3) years after final payment under this agreement.

(8) Assignment of Personnel

CONSULTANT acknowledges that the CITY has relied on CONSULTANT's capabilities and on the qualifications of CONSULTANT's principals and staff as identified in its proposal to CITY. The services shall be performed by, or under the direct supervision, of CONSULTANT's Authorized Representative: **Jonathon Sutter, PE, Project Manager** CITY shall be notified by CONSULTANT of any change of its Authorized Representative, and CITY is granted the right of approval of all original, additional, and replacement personnel at CITY's sole discretion, and shall be notified by CONSULTANT of any changes of CONSULTANT's project staff prior to any change.

CONSULTANT shall assign only competent personnel to perform services pursuant to this Agreement. If CITY asks CONSULTANT to remove a person assigned to the work called for under this Agreement, CONSULTANT agrees to do so immediately, without requiring the City to process a reason or explanation for its request.

(9) Assignment and Subcontracting

It is recognized by the parties hereto that a substantial inducement to CITY for entering into this Agreement was, and is, the professional reputation and competence of CONSULTANT. Neither this Agreement nor any interest therein may be assigned by CONSULTANT without the prior written approval of CITY'S authorized representative. CONSULTANT shall not subcontract any portion of the performance contemplated and provided for herein, other than the subcontractors noted in the proposal, without prior written approval of the CITY'S authorized representative.

(10) Insurance

On or before beginning any of the services or work called for by any term of this Agreement, CONSULTANT, at its own cost and expense, shall carry, maintain for the duration of the Agreement, and provide proof thereof that is acceptable to the CITY the insurance specified in subsections (a) through (c) below with insurers and under forms of insurance satisfactory in all respects to the CITY. CONSULTANT shall not allow any subcontractor to commence work on any subcontract until all insurance required of the CONSULTANT has also been obtained for the subcontractor. Verification of this insurance shall be submitted and made part of this Agreement prior to execution.

- (a) Workers' Compensation. CONSULTANT shall, at CONSULTANT'S sole cost and expense, maintain Statutory Workers' Compensation Insurance and Employer's Liability Insurance for any and all persons employed directly or indirectly by CONSULTANT. Said Statutory Workers' Compensation Insurance and Employer's Liability Insurance shall be provided with limits of not less than one million dollars (\$1,000,000). In the alternative, CONSULTANT may rely on a self-insurance program to meet these requirements provided that the program of self-insurance complies fully with the provisions of the California Labor Code. The insurer, if insurance is

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provided, or the CONSULTANT, if a program of self-insurance is provided, shall waive all rights of subrogation against the CITY for loss arising from work performed under this Agreement.

- (b) Commercial General and Automobile Liability Insurance. CONSULTANT, at CONSULTANT'S own cost and expense, shall maintain commercial general and automobile liability insurance for the period covered by this Agreement in an amount not less than one million dollars (\$1,000,000) per occurrence, combined single limit coverage for risks associated with the work contemplated by this Agreement. If Commercial General Liability Insurance or an Automobile Liability form or other form with a general aggregate limit is used, either the general aggregate limit shall apply separately to the work to be performed under this Agreement or the general aggregate limit shall be at least twice the required occurrence limit. Such coverage shall include but shall not be limited to, protection against claims arising from bodily and personal injury, including death resulting therefrom, and damage to property resulting from activities contemplated under this Agreement, including the use of owned and non-owned automobiles.

Coverage shall be at least as broad as Insurance Services Office Commercial General Liability occurrence form CG 0001 (ed. 11/88) and Insurance Services Office Automobile Liability form CA 0001 (ed. 12/90) Code 1 (any auto).

Each of the following shall be included in the insurance coverage or added as an endorsement to the policy:

- (i) CITY, its officers, employees, agents, and volunteers are to be covered as insured with respect to each of the following: liability arising out of activities performed by or on behalf of CONSULTANT, including the insider's general supervision of CONSULTANT; products and completed operations of CONSULTANT; premises owned, occupied or used by CONSULTANT. The coverage shall contain no special limitations on the scope of protection afforded to CITY, its officers, employees, agents, or volunteers.
- (ii) The insurance shall cover on an occurrence or an accident basis, and not on a claim made basis.
- (iii) An endorsement must state that coverage is primary insurance and that no other insurance affected by the CITY will be called upon to contribute to a loss under the coverage.
- (iv) Any failure of CONSULTANT to comply with reporting provisions of the policy shall not affect coverage provided to CITY and its officers, employees, agents, and volunteers.
- (v) Insurance is to be placed with California-admitted insurers with a Best's rating of no less than A: VII.

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- (vi) Notice of cancellation or non-renewal must be received by CITY at least thirty days prior to such change.
- (c) Professional Liability. CONSULTANT, at CONSULTANT'S own cost and expense, shall maintain for the period covered by this Agreement professional liability insurance for licensed professionals performing work pursuant to this Agreement in an amount not less than Two Million Dollars (\$2,000,000) per claim made and per policy aggregate covering the licensed professionals' negligent errors and omissions, as follows:
- (i) Any deductible or self-insured retention shall not exceed \$150,000 per claim.
 - (ii) Notice of cancellation, material change, or non-renewal must be received by the CITY at least thirty days prior to such change shall be included in the coverage or added as an endorsement to the policy.
 - (iii) The policy must contain a cross liability or severability of interest clause.
 - (iv) The following provisions shall apply if the professional liability coverages are written on a claims made form:
 - 1. The retroactive date of the policy must be shown and must be before the date of the Agreement.
 - 2. Insurance must be maintained and evidence of insurance must be provided for at least five years after completion of the Agreement or the work, so long as commercially available at reasonable rates.
 - 3. If coverage is canceled or not renewed and it is not replaced with another claims made policy form with a retroactive date that precedes the date of this Agreement, CONSULTANT must provide extended reporting coverage for a minimum of three years after completion of the Agreement or the work. The CITY shall have the right to exercise at the CONSULTANT'S cost, any extended reporting provisions of the policy should the CONSULTANT cancel or not renew the coverage.
 - 4. A copy of the claim reporting requirements must be submitted to the CITY prior to the commencement of any work under this Agreement.
- (d) Deductibles and Self-Insured Retentions. CONSULTANT shall disclose the self-insured retentions and deductibles before beginning any of the services or work called for by any term of this Agreement. During the period covered by this Agreement, upon express written authorization of the CITY's authorized representative, CONSULTANT may increase such deductibles or self-insured retentions with respect to CITY, its officers, employees, agents, and volunteers. The CITY's authorized representative may condition approval of an

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increase in deductible or self-insured retention levels upon a requirement that CONSULTANT procure a bond guaranteeing payment of losses and related investigations, claim administration, and defense expenses that is satisfactory in all respects to each of them.

- (e) Notice of Reduction in Coverage. In the event that any coverage required under subsections (a), (b), or (c) of this section of the Agreement is reduced, limited, or materially affected in any other manner, CONSULTANT shall provide written notice to CITY at CONSULTANT'S earliest possible opportunity and in no case later than five days after CONSULTANT is notified of the change in coverage.
- (f) In addition to any other remedies CITY may have if CONSULTANT fails to provide or maintain any insurance policies or policy endorsements to the extent and within the time herein required, CITY may, at its sole option:
- (i) Obtain such insurance and deduct and retain the amount of the premiums for such insurance from any sums due under the Agreement;
 - (ii) Order CONSULTANT to stop work under this Agreement or withhold any payment which becomes due to CONSULTANT hereunder, or both stop work and withhold any payment, until CONSULTANT demonstrates compliance with the requirements hereof;
 - (iii) Terminate this Agreement.

Exercise of any of the above remedies, however, is an alternative to other remedies CITY may have and is not the exclusive remedy for CONSULTANT'S breach.

(11) Indemnification - CONSULTANT'S Responsibility

Acceptance by CITY of the work performed under this Agreement does not operate as a release of said CONSULTANT from such professional responsibility for the work performed.

It is further understood and agreed that CONSULTANT is apprised of the scope of the work to be performed under this Agreement and CONSULTANT agrees that said work can and shall be performed in a fully competent manner in accordance with the standard of care applicable to CONSULTANT'S profession.

CONSULTANT shall indemnify, defend, and hold CITY, its officers, employees, agents, and volunteers harmless from and against any and all liability, claims, suits, actions, damages, and causes of action arising out of any personal injury, bodily injury, loss of life, or damage to property, or any violation of any federal, state, or municipal law or ordinance, to the extent caused by the willful misconduct or negligent acts or omissions of CONSULTANT, its employees, subcontractors, except for any such claim arising out of the negligence or willful misconduct of the CITY, its officers, employees, agents, or volunteers or any third parties for whom CONSULTANT is not legally liable. It is understood that the duty of CONSULTANT to indemnify and hold harmless includes the duty to defend as set forth in Section 2782.8 of the California Civil Code. Notwithstanding anything to the contrary in the Agreement, the CONSULTANT shall have no duty to hire counsel to defend the CITY, but at the time of any

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settlement or adjudication of a matter the CONSULTANT shall pay as damaged to CITY all reasonable attorney's fees and costs incurred by CITY to extent caused by the willful misconduct of negligent acts or omissions of CONSULTANT, its employees, subcontractors, or agents. Acceptance of insurance certificates and endorsements required under this Agreement does not relieve CONSULTANT from liability under this indemnification and hold harmless clause. This indemnification and hold harmless clause shall apply whether or not such insurance policies shall have been determined to be applicable to any of such damages or claims for damages.

(12) Licenses

If a license of any kind, which term is intended to include evidence of registration, is required of CONSULTANT, its employees, agents, or subcontractors by federal or state law, CONSULTANT warrants that such license has been obtained, is valid and in good standing, and CONSULTANT shall keep it in effect at all times during the term of this Agreement, and that any applicable bond has been posted in accordance with all applicable laws and regulations.

(13) Business Licenses

CONSULTANT shall obtain and maintain a CITY of Lathrop Business License until all Agreement services are rendered and accepted by the CITY.

(14) Termination

Either CITY or CONSULTANT may cancel this Agreement upon 30 days written notification to the other party. Upon termination, or completion of services and payment of all amounts owed to CONSULTANT under this Agreement, all information collected, work product and documents shall be delivered by CONSULTANT to CITY within ten (10) calendar days.

(15) Funding

CONSULTANT agrees and understands that renewal of this agreement in subsequent years is contingent upon action by the City Council consistent with the appropriations limits of Article XIII (B) of the California Constitution and that the Council may determine not to fund this agreement in subsequent years.

(16) Notices

All contracts, appointments, approvals, authorizations, claims, demands, Change Orders, consents, designations, notices, offers, requests and statements given by either party to the other shall be in writing and shall be sufficiently given and served upon the other party if (1) personally served, (2) sent by the United States mail, postage prepaid, (3) sent by private express delivery service, or (4) in the case of a facsimile transmission, if sent to the telephone FAX number set forth below during regular business hours of the receiving party and followed with two (2) Days by delivery of a hard copy of the material sent by facsimile transmission. Personal service shall include, without limitation, service by delivery and service by facsimile transmission.

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To City: City of Lathrop
City Clerk
390 Towne Centre
Lathrop, CA 95330

Copy to: City of Lathrop
Department of Public Works
390 Towne Centre
Lathrop, CA 95330
MAIN: (209) 941-7430
FAX: (209) 941-7449

To Consultant: EKI Environment & Water, Inc.
2001 Junipero Serra Blvd, Suite 300
Davis, CA 94014
Phone: (650) 292-9100

(17) Miscellaneous

- (a) Consent. Whenever in this Agreement the approval or consent of a party is required, such approval or consent shall be in writing and shall be executed by a person having the express authority to grant such approval or consent.
- (b) Contract Terms Prevail. All exhibits and this Agreement are intended to be construed as a single document. Should any inconsistency occur between the specific terms of this Agreement and attached exhibits, the terms of this Agreement shall prevail.
- (c) Controlling Law. The parties agree that this Agreement shall be governed and construed by and in accordance with the Laws of the State of California.
- (d) Definitions. The definitions and terms are as defined in these specifications.
- (e) Force Majeure. Neither party shall be deemed to be in default on account of any delay or failure to perform its obligations under this Agreement, which directly results from an Act of God or an act of a superior governmental authority.
- (f) Headings. The paragraph headings are not a part of this Agreement and shall have no effect upon the construction or interpretation of any part of this Agreement.
- (g) Incorporation of Documents. All documents constituting the Agreement documents described in Section 1 hereof and all documents which may, from time to time, be referred to in any duly executed amendment hereto are by such reference incorporated in the Agreement and shall be deemed to be part of this Agreement.
- (h) Integration. This Agreement and any amendments hereto between the parties constitute the entire Agreement between the parties concerning the Project and Work, and there are no other prior oral or written agreements between the parties that are not incorporated in this Agreement.

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- (i) Modification of Agreement. This Agreement shall not be modified or be binding upon the parties unless such modification is agreed to in writing and signed by the parties.
- (j) Ownership of Documents. All documents, photographs, reports, analyses, audits, computer media, or other material documents or data, and working papers, whether or not in final form, which have been obtained or prepared under this Agreement, shall upon payment to CONSULTANT of all amounts owed under this Agreement be deemed the property of the CITY. Upon CITY's request, CONSULTANT shall allow CITY to inspect all such documents during the CONSULTANT's regular business hours.
- (k) Provision. Any agreement, covenant, condition, clause, qualification, restriction, reservation, term or other stipulation in the Agreement shall define or otherwise control, establish or limit the performance required or permitted or to be required of or permitted by either party. All provisions, whether covenants or conditions, shall be deemed to be both covenants and conditions.
- (l) Severability. The invalidity in whole or part of any provision of this Agreement shall not void or affect the validity of any other provision of this agreement. If a court of competent jurisdiction finds or rules that any provision of this Agreement is void or unenforceable, the provisions of this Agreement not so affected shall remain in full force and effect.
- (m) Status of CONSULTANT. In the exercise of rights and obligations under this Agreement, CONSULTANT acts as an independent contractor and not as an agent or employee of CITY. CONSULTANT shall not be entitled to any rights and benefits accorded or accruing to the City Council members, officers or employees of CITY, and CONSULTANT expressly waives any and all claims to such right and benefits.
- (n) Successors and Assigns. The provisions of this Agreement shall inure to the benefit of, and shall apply to and bind, the successors and assigns of the parties.
- (o) Time of the Essence. Time is of the essence of this Agreement and each of its provisions. In the calculation of time hereunder, the time in which an act is to be performed shall be computed by excluding the first Day and including the last. If the time in which an act is to be performed falls on a Saturday, Sunday or any Day observed as a legal holiday by CITY, the time for performance shall be extended to the following Business Day.
- (p) Venue. In the event that suit is brought by either party hereunder, the parties agree that trial of such action shall be vested exclusively in the state courts of California in the County of San Joaquin or in the United States District Court for the Eastern District of California.
- (q) Recovery of Costs. The prevailing party in any action brought to enforce the terms of this Agreement or arising out of this Agreement may recover its reasonable costs, including reasonable attorney's fees, incurred or expended in connection with such action against the non-prevailing party.

CITY OF LATHROP – EKI ENVIRONMENT & WATER, INC.
PROFESSIONAL ENGINEERING CONSULTING SERVICES TO CHARACTERIZE PFAS IN
GROUNDWATER AND EVALUATE PLANNED PFAS TREATMENT FOR CIP PW 20-16 GROUNDWATER
TREATMENT IMPROVEMENTS

- (r) Except as may be specifically allowed under this Agreement, nothing contained in this Agreement shall create a contractual relationship with, or a cause of action in favor of, a third party against either CITY or CONSULTANT. CONSULTANT's Services hereunder are being performed solely for the benefit of CITY.
- (s) In the event of any dispute between the parties arising under this Agreement, the parties shall first endeavor to settle such disputes through mediation. The parties shall bear their own attorney's fees and costs but shall share equally in the cost of the mediator. If the parties are unable to settle the dispute through mediation, the dispute shall be settled by recourse to litigation.

(18) Notice to Proceed

Prior to commencing work under this agreement, CONSULTANT shall receive a written "Notice to Proceed" from CITY. A Notice to Proceed shall not be issued until all necessary bonds and insurances have been received. City shall not be obligated to pay CONSULTANT for any services prior to issuance of the Notice to Proceed.

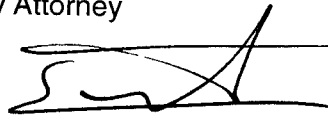
(19) Signatures

The individuals executing this Agreement represent and warrant that they have the right, power, legal capacity, and authority to enter into and to execute this Agreement on behalf of the respective legal entities of the CONSULTANT and the CITY. This agreement shall inure to the benefit of and be binding upon the parties hereto and their respective successors and assigns.

CITY OF LATHROP – EKI ENVIRONMENT & WATER, INC.
PROFESSIONAL ENGINEERING CONSULTING SERVICES TO CHARACTERIZE PFAS IN
GROUNDWATER AND EVALUATE PLANNED PFAS TREATMENT FOR CIP PW 20-16 GROUNDWATER
TREATMENT IMPROVEMENTS

Approved as to Form:

City of Lathrop
City Attorney



Salvador Navarrete

6-22-2023
② Date

Recommended for Approval:

City of Lathrop
Assistant City Manager

Michael King Date

Approved by:

City of Lathrop
390 Towne Centre Drive
Lathrop, CA 95330

Stephen J. Salvatore Date
City Manager

Consultant:

EKI Environment & Water, Inc.
2827 Spafford Street
Davis, CA 95618

Fed ID # _94-3087395
Business License # **20137**

Signature Date

Print Name and Title

8 June 2023

Gregory Gibson, PE
Senior Civil Engineer
City of Lathrop – Public Works Department
390 Towne Centre Drive
Lathrop, CA 95330

Subject: Proposal for to Characterize PFAS in Groundwater and Evaluate Planned PFAS Treatment (PW 20-16)
City of Lathrop, California
(EKI C3-168)

EKI Environment & Water, Inc. (EKI) is pleased to present to the City of Lathrop (Lathrop or City) this proposal for evaluating the City's groundwater for the presence, potential transport, and potential sources of per- and polyfluoroalkyl substances (PFAS) and proposed PFAS treatment options. The proposed work included herein aims to expand on studies completed previously by EKI and others to better understand (1) the extent of PFAS contamination, (2) if the elevated levels of PFAS detected in Well 9 or other locations will impact the City's other drinking water supply wells, and (3) how these potential impacts may impact planned PFAS treatment.

BACKGROUND AND PROJECT UNDERSTANDING

In 2019, in response to monitoring orders issued by the California State Water Resources Control Board Department of Drinking Water (DDW), the City, with technical support from EKI, began sampling for PFAS in its groundwater supply. Detections of perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) in groundwater collected from Well 9 have consistently exceeded the state drinking water notification levels (NLs) and response levels (RLs) enforced through the California State Water Resources Control Board (SWRCB) and detections of PFOS have exceeded the NLs in groundwater collected from Wells 6, 7, 8, and 10. Detections of perfluorohexane sulfonic acid (PFHxS) have exceeded the NLs in Wells 6 through 9.

In 2020, EKI evaluated 11 alternatives for PFAS management and treatment at the City's wells and at the centralized Louise Avenue Treatment Facility (LAWTF) and conducted a bench-scale granular activated carbon (GAC) test to explore the performance treating the City's groundwater with GAC pressure vessels. In a March 2020 technical memorandum,¹ EKI recommended that the City (1) restart wells 6, 7, 8, and 10, with Well 9 remaining offline as a standby well, (2) move forward with the depth-specific profiling of wells to determine if any low-cost alternatives are

¹ EKI, 2020. *Alternatives Evaluation for Use of Groundwater with Detections of Per- and Polyfluoroalkyl Substances (PFAS)*. 6 March 2020.

viable, and (3) postpone treatment until regulatory standards are established. Well 9 has remained offline since 2019. In 2022, the City contracted with Carollo Engineers (Carollo) to further study and develop the City's options for GAC treatment of only groundwater from Well 9 and blended groundwater from all the City's Wells (Well 6-10) at the LAWTF.²

In March 2023, after completion of these studies, the United States Environmental Protection Agency (EPA) proposed federal maximum contaminant levels (MCLs) for six PFAS compounds, which are anticipated to be promulgated by the end of 2023 and effective by the end of 2026. Detections of PFOS in groundwater collected from each of the City's wells exceed the proposed PFOS MCL; detections of PFOA and the mixture of perfluorononanoic acid (PFNA), PFHxS, perfluorobutane sulfonic acid (PFBS), and hexafluoropropylene oxide dimer acid (tradename GenX) compounds in Well 9 also exceed the proposed MCLs. In addition, recent sampling results found an increase in PFAS concentrations in Well 9, particularly the doubling of the observed PFOS concentrations.

The City has requested that EKI evaluate the (a) impacts of the higher concentrations of PFAS observed at Well 9, (b) the potential for these higher concentrations to migrate and impact the City's other drinking water supply wells in the future, and (c) the consequences of these potential impacts and updated PFAS regulations with respect to the proposed PFAS treatment options. To complete this evaluation, it is critical to understand (a) the locations of potential sources of PFAS, (b) the current extent and distribution of PFAS contamination in groundwater, and (c) the characteristics and behavior of the groundwater system in response to groundwater extraction. As described in the scope of work below, EKI will research available data and records to identify probable PFAS sources, model groundwater flow to establish upgradient sources and downgradient impacts, and provide suggestions for management and treatment of groundwater from Wells 6 through 10.

SCOPE OF WORK

EKI Proposes the following tasks as part of this scope of work to complete the PFAS evaluation.

Task 1 – Review PFAS Water Quality Data and Historical Pumping Operations

As an initial task, EKI will request from the City all the PFAS analytical data for groundwater collected from the City's wells after December 2019. EKI will additionally search for publicly available data through the SWRCB's GeoTracker PFAS map,³ the SWRCB's Groundwater Ambient Monitoring and Assessment Program (GAMA) Groundwater Information System,⁴ and the EPA's online PFAS Analytic Tool software.⁵ EKI will compile the City's and publicly available data and

² Carollo, 2022. *Technical Memorandum 1: PFAS Centralized Treatment Feasibility Study*, Carollo Engineers, June 2022.

³ https://geotracker.waterboards.ca.gov/map/pfas_map

⁴ <https://gamagroundwater.waterboards.ca.gov/gama/gamamap/public/Default.asp>

⁵ <https://echo.epa.gov/trends/pfas-tools>

update tables and figures included in EKI's March 2020 technical memorandum tracking trends in PFAS concentrations in each of the City's wells. These updated tables and figures will be used to evaluate recent trends and distribution of PFAS concentrations in groundwater.

As part of this task, EKI will also request and review information related to the following:

- Records of the City's recent pumping operations for each of its water supply wells.
- Records of other relevant groundwater pumping operations including the groundwater extraction system operated by Occidental Chemical Corporation at the J.R. Simplot Site.
- Recent studies or efforts related to Well 9 completed by the City after 2019.

This information will help inform subsequent tasks.

Deliverables:

- Updated Table and Figure showing PFAS distribution and trends in each of the City's groundwater supply wells (electronic format).

Assumptions:

- Task 1 includes a kickoff meeting in which EKI will identify initial data needs.
- Findings from this task will be summarized in the technical memorandum prepared as part of Task 4.

Task 2 – Identify Potential Sources of PFAS

EKI will identify locations of potential sources of PFAS⁶ surrounding the City's wells. In combination with the trends and distribution of PFAS in groundwater from Task 1 and groundwater flow directions from Task 3, this information will help to determine whether possible zones of high concentrations of PFAS in groundwater could migrate and impact the City's other drinking water supply wells in the future.

Developing the list of potential PFAS sources to groundwater will involve: 1) utilizing groundwater flow data from Task 3 to establish the upgradient direction compared to PFAS-impacted wells; 2) conducting a thorough search of current and historical possible sources, focusing on the wellhead protection areas (WHPAs) for the City of Lathrop supply wells identified in Task 3; and 3) evaluating and comparing the type and concentration (i.e., fingerprint) of PFAS in the City's wells and of the potential PFAS sources. Both current and historical records must be investigated to develop a list and timeline of potential users of PFAS, and to use this timeline to better

⁶ There are many potential sources that could contribute to PFAS impacted groundwater including wastewater treatment plants (WWTPs), airports and military bases, landfills, and industrial users/producers of PFAS.

understand how the area's zones of high PFAS concentration have migrated in the past and how they will continue to migrate near the City's wells.

Records and data review will include:

- Reviewing available historical land use information for the area surrounding the well locations (Site), adjoining properties, and surrounding area, e.g., historical Sanborn maps, historical aerial photographs, historical USGS topographic maps, and historical City Directories, provided by Environmental Data Resources, Inc. (EDR);
- Purchasing and reviewing an environmental regulatory agency database report for the Site and surrounding area prepared by EDR (referred to as an EDR Radius Map Report);
- Purchasing and reviewing an Environmental Lien Search report for the Site, prepared by EDR;
- Searching for environmental reports for the Site and selected nearby upgradient reported chemical release sites on the SWRCB GeoTracker and California Department of Toxic Substances Control (DTSC) EnviroStor database websites, and reviewing available files; and
- Reviewing, downloading, and analyzing publicly available PFAS data through resources mentioned in Task 1.

Probable PFAS sources identified through the database search will be mapped with well locations and groundwater flow directions. Simultaneously, the types and concentrations of PFAS at the wells and these probable upgradient locations will be compared using unsupervised hierarchical clustering to identify correlations in PFAS signatures (i.e., fingerprints) between the wells and sources. These correlations will help identify the most probable sources contributing to the PFAS-impacted wells. Examples of possible PFAS sources include wastewater treatment facilities, industrial facilities, landfills, airports, and military bases.

Site-specific data will be compared with publicly available neighboring data and California-wide data to identify any anomalies in PFAS signatures (e.g., comparing California-wide WWTPs PFAS data with the local WWTPs). Additionally, if any temporal data is available, these will be reviewed to help determine fate, transport, and possible transformation of precursor PFAS to products including PFOS and PFHxS, all of which will assist in the understanding of the sources and the timing of the PFAS contamination.

Deliverables:

- Written summary of findings from historical records from EDR.
- As needed, data tables/figures showing PFAS concentrations from surrounding potential sources.

- Map showing potential PFAS sources compared to well locations and groundwater flow direction.
- Figures depicting the PFAS signature/fingerprint of the Site and surrounding potential sources.

Assumptions:

- Findings from this task will be summarized in the technical memorandum prepared as part of Task 4.
- Task includes one status meeting with the City to present preliminary findings from Task 2.

Task 3 – Model the Groundwater Transport to Evaluate Future Water Quality Impacts

Task 3 will employ a numerical groundwater-flow model to map the WHPAs for City of Lathrop supply wells. A WHPA is the area from which groundwater flows to the water supply well within a specified time. It can delineate the area where land surface activities contribute dissolved constituents to groundwater (i.e., PFAS sources) and influence the quality of water produced by the well. The extent and shape of the WHPA is controlled by the geologic framework of the aquifer and the spatial distribution, rate and duration of recharge and pumping.

In 2004, Source Group, Inc. (SGI) developed the numerical model of the groundwater system beneath the City of Lathrop and adjacent areas. In 2018, the SGI model was updated by GHD⁷ and finalized in 2019.⁸ The final model simulates the spatial distribution of groundwater-flow paths and time-of-travel for water to move from recharge areas to the water supply wells. The following list of subtasks is designed to quantify the spatial and temporal variability in past water supply well extractions, likely projected extraction rates for the future, and the resulting distribution of WHPAs and time-of-travel for groundwater and dissolved constituents to move from areas of recharge to the well screens.

1. Summarize historical pumping records and projected future pumping rates for City water supply wells.
2. Summarize groundwater-flow paths and time-of-travel estimates reported by GHD representative of historical pumping rates to infer WHPA's for City wells and assess their uncertainty owing to the timing and duration of changes in the well pumping rates.

⁷ GHD, 2018. "Refinement of SGI 3D Groundwater Flow Model Former OCC Lathrop Facility, Lathrop, California." November 7, 2018.

⁸ GHD, 2019. "Finalization of Groundwater Flow Model J.R. Simplot Facility, Lathrop, California," May 8, 2019.

3. Overlay and quantitatively compare the WHPA's and potential source areas identified above under Task 2 to prioritize likely potential PFAS sources consistent with groundwater hydraulics and water quality forensics (fingerprinting).
4. Update groundwater model to represent projected future conditions:
 - a. Decommissioning of percolation basin 1 (PB-1);
 - b. Remedial actions implemented at the Simplot site; and,
5. Utilize the updated model to quantify changes in the WHPA's and time-of-travel estimates. The results shall be utilized to infer potential future water quality impacts to Well 10 and other City water supply wells.

Deliverables:

- Map showing inferred historical WHPA's for City wells based on GHD's 2019 analyses and potential PFAS sources identified under Task 2.
- Groundwater model input data files for projected future conditions.
- Map showing inferred WHPA's for City wells based on modeled projections and potential PFAS sources identified under Task 2.

Assumptions:

- City will provide monthly (or at least annual) values of historical pumpage for each well operated by the City.
- Findings from this task will be summarized in the technical memorandum prepared as part of Task 4.
- Task includes one status meeting with the City to present preliminary findings from Task 3.

Task 4 – Recommendations for the Management of PFAS-Impacted Groundwater

Using the most probable PFAS sources in Task 2 with the groundwater modeling in Task 3, EKI will summarize the findings in a technical memorandum, complete with relevant figures, maps, and/or data tables. This memorandum will include recommended next steps for the management of Wells, 6, 7, 8, and 10, with the potential of using Well 9 as an emergency well; recommendations for additional information gathering as needed (e.g., water age analysis and/or shallow groundwater or soil PFAS sampling); and EKI's opinion on treatment options of the impacted wells.

As part of Task 4, EKI will evaluate whether the design criteria or other planning assumptions assumed by Carollo in their 2022 Feasibility Study should be updated based on the findings of this study. For example, if particularly high concentrations PFAS source upgradient of the City's wells indicate that PFAS concentrations in the City's groundwater supply are likely to increase in the future, the design criteria for the treatment system would have to be adapted. These

adaptations could include the volume of GAC utilized, vessel size, frequency of backwashing and/or media replacement, etc. and resulting capital and operational cost implications.

Deliverables:

- Draft and Final technical memorandum summarizing findings from Tasks 1-3, and an analysis of how findings from Tasks 1-3 could impact the City’s future groundwater management and the proposed PFAS Centralized Treatment System.
- Presentation materials (PowerPoint slides) summarizing results of the study.

Assumptions:

- EKI will present findings of the evaluation prior to the final technical memorandum’s completion at one status meeting.
- The City will provide a consolidated set of comments on the draft technical memorandum.

COMPENSATION

We propose that compensation for consulting services by EKI be on a time and expense reimbursement basis in accordance with our Schedule of Charges, dated 1 January 2023. (Attachment A). Based on the Scope of Work described above, we propose a budget of \$69,600, as outlined in Table 1 below and detailed in Attachment B. EKI will charge against this budget and will advise if additional budget becomes necessary.

Table 1 – Cost Estimate by Task

Task	Cost
Task 1 – Review PFAS Water Quality Data and Historical Pumping Operations	\$10,500
Task 2 – Identify Potential Sources of PFAS	\$18,300
Task 3 – Model the Groundwater Transport to Evaluate Future Water Quality Impacts	\$19,500
Task 4 – Recommendations for the Management of PFAS-Impacted Wells	\$21,300
Total	\$69,600

PROJECT SCHEDULE

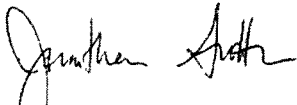
EKI is available to initiate work upon receiving authorization from the City. EKI anticipates that the above scope of work can be completed within approximately four (4) months of authorization.

TERMS AND CONDITIONS

Except as specifically modified above, all other terms of our 11 April 2022 Agreement shall remain in full force and effect. If this proposal meets with your approval, please send us an Agreement Amendment to review and execute.

We are excited about the opportunity to work with you on this project. Please call if you have any questions or wish to discuss this proposal in greater detail.

Very truly yours,
EKI Environment & Water, Inc.



Jonathan Sutter, PE
Project Manager



Michael T. Steiger, PE
Principal-In-Charge

City of Lathrop

(Authorized Representative)

(Date)

Attachments

- A. 2023 Schedule of Charges
- B. Budget Estimate for Proposed Scope of Work

Client/Address: Gregory Gibson, PE
City of Lathrop – Public Works Department
 390 Towne Centre Drive
 Lathrop, CA 95330



Proposal/Agreement Date: 8 June 2023

EKI Proposal/Project # C3-168

2 January 2023

SCHEDULE OF CHARGES FOR EKI ENVIRONMENT & WATER, INC.

<u>Personnel Classification</u>	<u>Hourly Rate</u>
Officer and Chief Engineer-Scientist	332
Principal Engineer-Scientist	320
Supervising I, Engineer-Scientist	309
Supervising II, Engineer-Scientist	298
Senior I, Engineer-Scientist	286
Senior II, Engineer-Scientist	275
Associate I, Engineer-Scientist	264
Associate II, Engineer-Scientist	248
Engineer-Scientist, Grade 1	231
Engineer-Scientist, Grade 2	218
Engineer-Scientist, Grade 3	200
Engineer-Scientist, Grade 4	178
Engineer-Scientist, Grade 5	157
Engineer-Scientist, Grade 6	138
Project Assistant	130
Technician	125
Senior GIS / Database Analyst	162
CADD Operator / GIS Analyst	144
Senior Administrative Assistant	159
Administrative Assistant	124
Secretary	104

Direct Expenses

Reimbursement for direct expenses, as listed below, incurred in connection with the work will be at cost plus ten percent (10%) for items such as:

- a. Maps, photographs, reproductions, printing, equipment rental, and special supplies related to the work.
- b. Consultants, soils engineers, surveyors, drillers, laboratories, and contractors.
- c. Rented vehicles, local public transportation and taxis, travel, and subsistence.
- d. Special fees, insurance, permits, and licenses applicable to the work.
- e. Outside computer processing, computation, and proprietary programs purchased for the work.

A Communication charge for e-mail access, web conferencing, cellphone calls, messaging and data access, file sharing, local and long distance telephone calls and conferences, facsimile transmittals, standard delivery U.S. postage, and incidental in-house copying will be charged at a rate of 4% of labor charges. Large volume copying of project documents, e.g., bound reports for distribution or project-specific reference files, will be charged as a project expense as described above.

Reimbursement for company-owned automobiles, except trucks and four-wheel drive vehicles, used in connection with the work will be at the rate of sixty cents (\$0.60) per mile. The rate for company-owned trucks and four-wheel drive vehicles will be seventy-five cents (\$0.75) per mile. There will be an additional charge of thirty dollars (\$30.00) per day for vehicles used for field work. Reimbursement for use of personal vehicles will be at the federally allowed rate plus fifteen percent (15%).

CADD and other specialized software computer time will be charged at twenty dollars (\$20.00) per hour. In-house material and equipment charges will be in accordance with the current rate schedule or special quotation. Excise taxes, if any, will be added as a direct expense.

Rate for professional staff for legal proceedings or as expert witnesses will be at a rate of one and one-half times the Hourly Rates specified above.

The foregoing Schedule of Charges is incorporated into the Agreement for the Services of EKI Environment & Water, Inc. and may be updated annually.

Budget Estimate for Proposed Scope of Work
 Evaluation of Groundwater with Detections of PFAS
 City of Lathrop, California

TASKS	EKI Labor							TOTAL EKI Labor, including 4% Comm. Charge (1)	Expenses		TOTAL (3)
	CAD/ GIS	G2 Staff Engineer - EKC	Asst II ENG - CMC	Associate I ENG/SCI - CL	Sup I - Jon Sutter	PRIN - John Flo	PRIN - MTS		CAD/GIS Charge (per hour)	TOTAL EXPENSES (1)	
	144	218	248	264	309	320	320	(\$)	\$20	(\$)	(\$)
Task 1											
Review and compile recent data and information		8	4	2	2	2	1	\$5,036	\$0	\$0	\$5,036
Kick off meeting (prep, mtg, and followup)		2	2		2	1		\$1,945	\$0	\$0	\$1,945
Update table, figure, from Tech Memo	4	4	2		1			\$2,343	\$80	\$80	\$2,583
Project management and communications					2		1	\$976	\$0	\$0	\$976
Subtotal	4	14	8	2	7	3	2	\$10,299	\$80	\$80	\$10,500
Task 2: Investigate potential sources of PFAS											
Establish basic hydrogeology for up/downgradient				6	1	2		\$2,634	\$0	\$0	\$2,634
Historical data/records search (i.e., EDR)		8	8					\$3,877	\$0	\$0	\$3,877
EDR reports								\$0	\$0	\$0	\$550
PFAS Fingerprinting analysis and figures		2	8					\$2,517	\$0	\$0	\$2,517
Maps, data tables, figures with analyses	6	4	4		2		1	\$3,813	\$120	\$120	\$4,173
Status meeting (prep, mtg, followup)		4	3	2	2	2		\$3,538	\$0	\$0	\$3,538
Project management and communications					2		1	\$976	\$0	\$0	\$976
Subtotal	6	18	23	8	7	4	2	\$17,354	\$120	\$120	\$18,300
Task 3: Model groundwater transport											
Map wellhead protection areas				24		8		\$9,252	\$0	\$0	\$9,252
Establish time of travel for groundwater				24		8		\$9,252	\$0	\$0	\$9,252
Project management and communications					2	1		\$976	\$0	\$0	\$976
Subtotal	0	0	0	48	2	17	0	\$19,479	\$0	\$0	\$19,500
Task 4: Management of PFAS impacted wells											
Analysis of data, trends, treatment impacts, and recommendations		16	12		6	2	2	\$9,982	\$0	\$0	\$9,982
Memo drafting	4	8	6		4	2	2	\$6,577	\$80	\$80	\$6,817
Memo revising based on Client comments	1	4	2		2		1	\$2,548	\$20	\$20	\$2,608
Project management and communications					5		1	\$1,940	\$0	\$0	\$1,940
Subtotal	5	28	20	0	17	4	6	\$21,046	\$100	\$100	\$21,300
TOTAL:	15	60	51	58	33	28	10	\$68,179	\$300	\$300	\$69,600

Notes:

(1) A communications charge of 4% of labor costs covers e-mail access, web conferencing, cellphone calls, messaging and data access, file sharing, local and long distance telephone calls and conferences, facsimile transmittals, standard delivery U.S. postage, and incidental in-house copying.

(2) "Other Direct Costs" includes direct expenses, as listed below, incurred in connection with the work and will be reimbursed at cost plus ten percent (10%) for items such as:

- a. Maps, photographs, reproductions, printing, equipment rental, and special supplies related to the work.
- b. Consultants, soils engineers, surveyors, drillers, laboratories, and contractors.
- c. Rented vehicles, local public transportation and taxis, travel and subsistence.
- d. Special fees, insurance, permits, and licenses applicable to the work.
- e. Outside computer processing, computation, and proprietary programs purchased for the work.

(3) Subtotals and Total rounded to the nearest hundred dollars.