



City of Broken Arrow
Meeting Agenda
Broken Arrow Municipal Authority

Chairperson Craig Thurmond

Vice Chair Scott Eudey

Trustee Mike Lester

Trustee Johnnie Parks

Trustee Debra Wimpee

Tuesday, December 5, 2017

Council Chambers
220 S. 1st Street
Broken Arrow, OK

AMENDED AGENDA

TIME: Immediately following the City Council Meeting which begins at 6:30 p.m.

1. Call to Order

2. Roll Call

3. Consideration of Consent Agenda

- A. [17-1714](#) Approval of Broken Arrow Municipal Authority Meeting Minutes of November 21, 2017

Attachments: [11-21-2017 BAMA Minutes](#)

- B. [17-2935](#) Acknowledgement of Submittal to the Oklahoma Department of Environmental Quality (DEQ) a Notice of Intent to Revise Technically Based Local Limits (TBLL) for the City of Broken Arrow and Regional Metropolitan Utility Authority (RMUA) Industrial Pretreatment Program

Attachments: [Calculated Local Limits](#)
 [Applied Local Limits](#)
 [LL and HC TBLL NOI 2017](#)

- C. [17-2899](#) Approval of and authorization to execute Amendment No. 3 to Agreement for Professional Consulting Services between the Broken Arrow Municipal Authority and HDR Engineering, Inc. for Rehabilitation of the Headworks at Lynn Lane Wastewater Treatment Plant - Screening Improvements (Project No. 165420) and Grit Removal Improvements (Project No. 165423)

Attachments: [Contract Amendment no. 3 signed by legal and HDR](#)

- D. [17-2946](#) Ratification of Amendment No. 3 to Agreement for Professional Consultant Services with HDR Engineering, Inc. for on-call professional services at the Verdigris Water Treatment Plant

Attachments: [HDR Amendment No 3 - Water Treatment Plant on-call services](#)

- E. [17-2949](#) Approval of and authorization to accept the proposal from Pencco, Inc. to conduct a 45-day chemical addition pilot program for odor control along the County Line sewer trunk line

Attachments: [Pencco Proposal](#)

- F. [16-1600](#) Approval of the Broken Arrow Municipal Authority Claims List for December 05, 2017

Attachments: [12-05-17 BAMA CL](#)

4. Consideration of Items Removed from Consent Agenda

5. Public Hearings, Appeals, Presentations, Recognitions, Awards - - NONE

6. General Authority Business

- A. [17-2969](#) Consideration, discussion and possible implementation of a curbside recycling pilot program as proposed by the Citizen's Recycle Committee

Attachments: [November 20 presentation](#)

- B. [17-2947](#) Consideration, discussion and possible approval of and authorization to execute a Consulting Services Agreement with Black & Veatch Management Consulting to update the water, wastewater and stormwater financial plans for the City of Broken Arrow and the Broken Arrow Municipal Authority

Attachments: [Black & Veatch Agreement](#)

7. Executive Session - - NONE

8. Adjournment

NOTICE:

If you wish to speak at this evening's meeting, please fill out a "Request to Speak" form. The forms are available from the City Clerk's table or at the entrance door. Please turn in your form prior to the start of the meeting. Topics are limited to items on the currently posted agenda, or relevant business.

All cell phones and pagers must be turned OFF or operated SILENTLY during meetings.

Exhibits, petitions, pictures, etc., shall be received and deposited in case files to be kept at the Broken Arrow City Hall. If you are a person with a disability and need some accommodation in order to participate in this meeting, please contact the City Clerk at 918-259-2400 Ext. 5418 to make arrangements.

POSTED this ____ day of _____, _____, at _____
a.m./p.m.

City Clerk



City of Broken Arrow

Fact Sheet

File #: 17-1714, Version: 1

**Broken Arrow Municipal Authority
Meeting of: December 5, 2017**

To: Chairman and Authority Members
From: Office of the City Clerk
Title: Approval of Broken Arrow Municipal Authority Meeting Minutes of November 21, 2017

Background: Minutes recorded for the Broken Arrow Municipal Authority meeting.

Cost: \$0

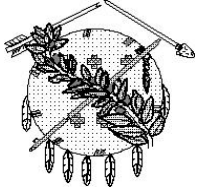
Prepared By: Lisa Blackford, City Clerk

Reviewed By: Russell Gale, Assistant City Manager of Administration
Beth Anne Childs, City Attorney

Approved By: Michael L. Spurgeon, City Manager

Attachments: Broken Arrow Municipal Authority minutes of November 21, 2017

Recommendation: Approval of the minutes of November 21, 2017 for the Broken Arrow Municipal Authority meeting



City of Broken Arrow
Minutes
Broken Arrow Municipal Authority

City Hall
220 S 1st Street
Broken Arrow OK
74012

Chairperson Craig Thurmond
Vice Chair Scott Eudey
Trustee Mike Lester
Trustee Johnnie Parks
Trustee Debra Wimpee

Tuesday, November 21, 2017

Council Chambers

1. Call to Order

Chairman Craig Thurmond called the meeting to order at approximately 7:25 p.m.

2. Roll Call

Present: 5 - Debra Wimpee, Johnnie Parks, Mike Lester, Scott Eudey, Craig Thurmond

3. Consideration of Consent Agenda

Chairman Thurmond asked if there were any items to remove from the Consent Agenda. There were none.

MOTION: A motion was made by Mike Lester, seconded by Debra Wimpee.

Move to approve the Consent Agenda

The motion carried by the following vote:

Aye: 5 - Debra Wimpee, Johnnie Parks, Mike Lester, Scott Eudey, Craig Thurmond

- A. 17-1711** **Approval of Broken Arrow Municipal Authority Meeting Minutes of November 7, 2017**
- B. 17-2876** **Acknowledgement of submittal of the Broken Arrow Municipal Authority's Water Supply Report for the month of October 2017**
- C. 17-2913** **Ratification of a second amendment to the Professional Services Agreement with Gersham, Brickner & Bratton, Inc. to provide additional services to the Citizen Recycle Committee**
- D. 17-2891** **Award the most advantageous bid to Kirby-Smith Machinery for the purchase of one (1) articulated vibratory trench roller to be used by Utilities crews for compacting pipe trenches excavated during the installation of water and sewer lines**
- E. 17-2889** **Award the most advantageous bid to OCT Equipment for the purchase of one (1) backhoe/loader and accessories to be used by Utilities crews for making water taps and installation of water lines**
- F. 17-2892** **Award the most advantageous bid to Premier Truck Group for the purchase of one (1) 5-6 cubic yard dump truck with a dump body, with tow hooks and accessories to be used by Utilities crews for hauling construction materials utilized for the installation and repair of water and sewer lines**

- G. 16-1597** **Approval of the Broken Arrow Municipal Authority Claims List for November 21, 2017**

4. Consideration of Items Removed from Consent Agenda

There were no items removed from the Consent Agenda. No action was required or taken.

5. Public Hearings, Appeals, Presentations, Recognitions, Awards

There were no Public Hearings, Appeals, Presentations, Recognitions, or Awards.

6. General Authority Business

There was no General Authority Business.

7. Executive Session

There was no Executive Session.

8. Adjournment

The meeting adjourned at approximately 7:26 p.m.

MOTION: A motion was made by Johnnie Parks, seconded by Scott Eudey.

Move to adjourn

The motion carried by the following vote:

Aye: 5 - Debra Wimpee, Johnnie Parks, Mike Lester, Scott Eudey, Craig Thurmond

Attest:

Chairman

Secretary



City of Broken Arrow

Fact Sheet

File #: 17-2935, Version: 1

**Broken Arrow Municipal Authority
Meeting of: 12-05-17**

**To: Chairman and Authority Members
From: Utilities Department
Title:**

Acknowledgement of Submittal to the Oklahoma Department of Environmental Quality (DEQ) a Notice of Intent to Revise Technically Based Local Limits (TBLL) for the City of Broken Arrow and Regional Metropolitan Utility Authority (RMUA) Industrial Pretreatment Program

Background:

The Oklahoma Pollutant Discharge Elimination System (OPDES) Program, governed by the Oklahoma DEQ, requires Publicly Owned Treatment Works (POTW) with an approved Pretreatment Program to develop and enforce specific limits to control contributions to the POTW by industrial users. In Broken Arrow, these limits were developed for Arsenic, Cadmium, Chromium, Copper, Cyanide, Lead, Mercury, Molybdenum, Nickel, Silver, and Zinc and were based upon federal pretreatment standards, Oklahoma Water Quality Limits, and wastewater treatment plant design capacity. The development of these limits is a specific requirement of the OPDES permits.

The Lynn Lane Wastewater Treatment Plant OPDES Permit No. OK0040053 was renewed effective October 1, 2017. The Haikey Creek Wastewater Treatment Plant OPDES Permit No. OK0034363 will expire on May 31, 2018. A requirement of the two permits is to submit to DEQ, within 60 days of the effective date of the permit, a written certification that a technical evaluation has been performed demonstrating that the existing technically based local limits (TBLL) are based upon the current state water quality standards and are adequate to prevent pass through of pollutants, inhibition of or interference with the treatment facility, worker health and safety problems, and sludge contamination **OR** submit a written notification that a technical evaluation revising the current TBLL and a draft sewer use ordinance which incorporates such revisions will be submitted within 12 months of the effective date of the permit.

The TBLL studies for Lynn Lane and Haikey Creek Wastewater Treatment Plants were originally done in 2001 by Operations Management International (OMI), a subsidiary of CH2M HILL. A separate study was done for each plant, with the intent of using the most stringent of the calculated limits for each of the 11 parameters as the applied local limit for both wastewater plants. However, the calculated limits for each plant were so high that OMI opted to use federal categorical pretreatment standards in all instances except for Mercury, which has a calculated limit of 0.43 mg/L and Molybdenum, which has a calculated limit of 33.8 mg/L. The federal categorical pretreatment standards were developed by the Environmental Protection Agency for metal finishers and since the majority of industrial users in Broken Arrow are metal finishers, these limits were believed to be

appropriate.

Attached is a page from each TBLL study showing the calculated limits for Lynn Lane and Haikey Creek Wastewater Treatment Plants. Also attached is a table showing the applied local limits for the wastewater treatment plants.

The City of Broken Arrow Utilities Department intends to perform a new TBLL study using the same strategy that was used in the 2001 study. A separate study will be performed for each plant and then the most stringent of the two calculated limits will be applied as the new local limit for Lynn Lane and Haikey Creek Wastewater Treatment Plants. City of Broken Arrow Utilities staff will then amend the local limits in Chapter 24, Article V of the City of Broken Arrow Municipal Code. We have submitted a request to DEQ to submit these items no later than May 31, 2019, which is based upon the Haikey Creek permit renewal date. Attached is a notice of intent letter to DEQ that was mailed on November 21, 2017. This item will be included on the next agenda for the RMUA and periodic updates will be given to both BAMA and RMUA.

Staff recommends that the Authority acknowledge submittal to DEQ a Notice of Intent to Revise Technically Based Local Limits for the City of Broken Arrow and RMUA Industrial Pretreatment Program.

Cost: \$0

Prepared By: Lauren Wilson, Pretreatment Coordinator

Reviewed By: Anthony Daniel, Director of Utilities Department
Legal Department
Kenneth D. Schwab, P.E., Assistant City Manager- Operations

Approved By: Michael Spurgeon, City Manager

Attachments: Haikey Creek and Lynn Lane Calculated Local Limits Pages
Applied Local Limits
Notice of Intent to DEQ to Revise TBLL

Recommendation:

Acknowledge submittal to DEQ a Notice of Intent to Revise Technically Based Local Limits for the City of Broken Arrow and RMUA Industrial Pretreatment Program.

FIGURE 2

Lynn Lane Local Limits page from TBLL Study

Figure 8 - Local Limits

Pollutant	MAHL, lb/d lbs/d	BKG, mg/l mg/l	BKG, lbs/d lbs/d	MAIL, lbs/d lbs/d	LOCAL LIMITS, mg/l
Arsenic	5.42	0.005	0.269	4.3390	9.72
Cadmium	6.00	0.001	0.054	5.0438	11.29
Chromium	54.21	0.010	0.538	45.5409	101.98
Copper	19.57	0.042	0.505	16.1255	36.11
Cyanide	5.42	0.015	0.815	3.7924	8.49
Lead	5.42	0.0050	0.269	4.3390	9.72
Mercury	0.229	0.00042	0.003	0.1915	0.4288
Nickel	54.21	0.010	0.538	45.5409	101.98
Silver	13.55	0.002	0.108	11.4121	25.55
Zinc	16.26	0.096	1.807	12.0166	26.91

MAIL = Maximum Allowable Industrial Loadings

MAIL = (1-SF)*MAHL - BKG

Local Limits = MAIL/(8.34*Q_c)

MAIL = Maximum Allowable Industrial Loadings

SF = Safety Factor, decimal = 0.15

MAHL = Maximum Allowable Headworks Loadings, see Figure 7

BKG, lbs/d = Background Loadings = BKG conc. * Q_b * 8.34'Q_b = Background flow, MGD = 6.45Q_c = Total Industrial Flow, MGD = 0.05**G. Recommendation:**

Local limit for **mercury**, at **0.43 mg/l**, is recommended to be incorporated in the local sewer use ordinance. With industrial loadings (Table 13) for each of the pollutants of concern less than 1% of the calculated MAIL (figure 8), federal limitations for categorical users are sufficient to control industrial discharges. However, the calculated maximum allowable headworks loadings (MAHL) should be observed and tracked on a regular basis and the maximum allowable industrial loadings (MAIL) should be considered in the permitting process when issuing or renewing industrial permits.

It is also recommended that the upper pH of 12.5 be incorporated in the sewer use ordinance. pH of 12.5 is indicative of hazardous waste discharge.

FIGURE 2

Haikey Creek Local Limits Page from TBLL Study

Figure 7 - Local Limits for Uniform Concentration

Pollutant	MAHL lbs/d	BKG (*) mg/l	BKG lbs/d	MAIL lbs/d	LOCAL LIMITS mg/l
Arsenic	8.18	0.005	0.4076	6.1343	23.51
Cadmium	5.67	0.001	0.0815	4.4574	17.08
Chromium	81.77	0.010	0.8151	64.6038	247.55
Copper	45.64	0.033	2.6940	33.8205	129.59
Cyanide	8.18	0.010	0.8423	5.6996	21.840
Lead	25.17	0.005	0.4076	19.7311	75.61
Mercury	0.9331	0.00012	0.0095	0.7370	2.8239
Molybdenum	12.0433	0.010	0.8151	8.8195	33.7944
Nickel	32.87	0.010	0.8151	25.4830	97.65
Selenium	6.29	0.016	1.2634	3.7710	14.45
Silver	14.50	0.004	0.3258	11.2760	43.21
Zinc	24.53	0.024	1.9672	17.6585	67.66

$$\text{MAIL} = ((1 - \text{SF}) * \text{MAHL}) - \text{BKG, lbs/d}$$

$$\text{LOCAL LIMITS} = \text{MAIL} / (8.34 * \text{Qc})$$

MAIL = Maximum Allowable Industrial Loadings

SF = Safety Factor, decimal =

0.20

MAHL = Maximum Allowable Headworks Loadings, see Fig. 6

BKG, lbs/d = Background Loadings = BKG conc.*Qb*8.34

Qb = Background flow, MGD =

9.77

MAIL = Maximum Allowable Industrial Loadings

Qc = Total Industrial Flow, MGD =

0.03

Example:

$$\text{MAIL, arsenic} = ((1 - 0.15) * 8.18) - 0.4076$$

$$\text{MAIL, arsenic} = 6.55 \text{ lbs/d (difference due to rounding)}$$

$$\text{Local limit, arsenic} = 6.1343 / (8.34 * 0.03)$$

$$\text{Local limit, arsenic} = 24.52 \text{ mg/l}$$

G. Recommendation

It is recommended that no local limitations for the pollutants in this study be published in the sewer use ordinance. Industrial loadings (Table 10) for each of the pollutants of concern are less than 1% of the calculated MAIL (Figure 7), therefore federal limitations for categorical users are sufficient to control industrial discharges. However, the calculated maximum allowable headworks loadings (MAHL) should be observed and tracked on a regular basis and the maximum allowable industrial loadings (MAIL) should be considered in the permitting process when issuing or renewing industrial permits.

City of Broken Arrow Local Limits

Specific pollutant limitations. No industry shall discharge wastewater or wastes to the POTW which contain pollutants, in solution or suspension, in concentrations which are toxic to biological wastewater treatment processes or which adversely affect sludge digestion or any other biochemical, biological or other wastewater treatment processes or which adversely affect the biota of the stream to which the effluent of the POTW discharges or which exceed the following limits with the analytical results to be expressed in terms of the elements indicated:

Toxic Substance	mg/l
Arsenic	2.0
Cadmium	0.5
Chromium	2.8
Copper	4.0
Cyanide (Total)	0.8
Lead	1.5
Mercury	0.43
Molybdenum	33.8
Nickel	5.0
Silver	0.5
Zinc	5.0



Monday, November 20, 2017

Roshini Nambiar, Municipal Pretreatment Coordinator
Oklahoma Department of Environmental Quality
Municipal Wastewater Enforcement Section
Water Quality Division
PO Box 1677
Oklahoma City, OK 73101-1677

Re: City of Broken Arrow and Regional Metropolitan Utility Authority (RMUA)
Industrial Pretreatment Program
Oklahoma Pollutant Discharge Elimination System (OPDES)
Lynn Lane Wastewater Treatment Plant OPDES Permit No. OK0040053
Haikey Creek Wastewater Treatment Plant OPDES Permit No. OK0034363
Notice of Intent to Revise Technically Based Local Limits

Dear Ms. Nambiar,

This letter is concerning Lynn Lane Wastewater Treatment Plant, OPDES Permit No. OK0040053, effective October 1, 2017, Part II, A. Contributing Industries and Pretreatment Requirements states: "the permittee shall, within 60 days of the effective date, submit a written certification that a technical evaluation has been performed demonstrating that the existing technically based local limits (TBLL) are based upon the current state water quality standards and are adequate to prevent pass through of pollutants, inhibition of or interference with the treatment facility, worker health and safety problems, and sludge contamination or submit a written notification that a technical evaluation revising the current TBLL and a draft sewer use ordinance which incorporates such revisions will be submitted within 12 months of the effective date of the permit."

As you are aware, the City of Broken Arrow is a joint owner of the Haikey Creek Wastewater Treatment Plant as a part of the Regional Metropolitan Utility Authority. City of Tulsa operates the wastewater treatment plant and Broken Arrow operates the Pretreatment Program per the interjurisdictional agreement. The technically based local limits are shared for both treatment basins. Haikey Creek Wastewater Treatment Plant OPDES Permit No. OK0034363 expires on May 31, 2018.

Please accept this letter as notification that a technical evaluation revising the current TBLL for Lynn Lane and Haikey Creek Wastewater Treatment Plants will be performed and a draft sewer use ordinance which will incorporate the revisions will be prepared. We would like to request permission to extend the 12-month deadline until May 31, 2019 to submit a uniform TBLL and draft ordinance for both plants. Please let me know if this is acceptable.

Thank you for your continued support of the City of Broken Arrow/RMUA Industrial Pretreatment Program. If you have any questions, please contact me at (918) 259-7000 ext. 7220 or lwilson@brokenarrowok.gov.



Sincerely,

Lauren Wilson

Lauren Wilson
Pretreatment Coordinator
City of Broken Arrow/RMUA

cc: Mayor Craig Thurmond, RMUA Chairman
Michael Spurgeon, City Manager, City of Broken Arrow
Kenneth Schwab, Assistant City Manager of Operations, City of Broken Arrow
Anthony Daniel, Utilities Director, City of Broken Arrow
Clayton Edwards, Water and Sewer Department Director, City of Tulsa
Cindy Cantero, Pretreatment Manager, City of Tulsa



City of Broken Arrow

Fact Sheet

File #: 17-2899, Version: 1

**Broken Arrow Municipal Authority
Meeting of: 12-5-2017**

To: Chairman and Authority Members
From: Engineering and Construction Department
Title:
Approval of and authorization to execute Amendment No. 3 to Agreement for Professional Consulting Services between the Broken Arrow Municipal Authority and HDR Engineering, Inc. for Rehabilitation of the Headworks at Lynn Lane Wastewater Treatment Plant - Screening Improvements (Project No. 165420) and Grit Removal Improvements (Project No. 165423)

Background:

The original Agreement for Professional Consulting Services was for the production of a Conceptual Design Memorandum that evaluated alternatives for the proposed rehabilitation project. Contract Amendment No. 1 was for the detailed design and production of bid documents for the selected alternative (a new combined headworks facility). Contract Amendment No. 2 added the detailed design of odor control facilities to the project. The construction contract for this project was awarded to Crossland Heavy Contractors, Inc. at the October 3, 2017 BAMA meeting. This Agreement for Professional Consulting Services Contract Amendment No. 3 adds Assistance During Construction Services (to include preparation of conformed contract documents, review of contractor submittals and change proposals, construction observation, site visits, Operations and Maintenance Manual preparation, plant operations training, startup/acceptance testing, and record drawings) for the project which will begin soon. The Engineer's work will be performed at the direction of the E&C Department staff on a cost-plus basis for labor and direct cost for reimbursable expenses. A fee of \$370,928.00 has been negotiated with the Engineer for assistance during Construction Services.

Funding for this agreement amendment is available in existing Oklahoma Water Resources Board (OWRB) Loan No. FAP-16-001L and Oklahoma Water Resources Board (OWRB) Financial Assistance Program Loan No. FAP-17-0004-L.

Cost:
\$ 370,928.00 (not to exceed) Amendment No. 3
\$ 71,376.00 Amendment No. 2
\$ 728,802.00 Amendment No. 1
\$ 98,774.00 Original Agreement
\$ 1,269,880.00 Total

Prepared By: Alex M. Mills, P.E., CFM, Engineering and Construction Director
Reviewed By: Utilities Department

**Finance Department
Assistant City Manager - Operations**

Approved By: Michael L. Spurgeon, City Manager

Attachments: Amendment No. 3 to Agreement for Professional Consulting Services

Recommendation:

Approve and authorize execution of Amendment No. 3 to Agreement for Professional Consulting Services with HDR Engineering, Inc.

**AMENDMENT NO. 3
TO
AGREEMENT FOR PROFESSIONAL CONSULTING SERVICES
BETWEEN
BROKEN ARROW MUNICIPAL AUTHORITY
AND
HDR ENGINEERING, INC.
FOR REHABILITATION OF THE HEADWORKS
AT LYNN LANE WASTEWATER TREATMENT PLANT
SCREENING IMPROVEMENTS 165420
GRIT REMOVAL IMPROVEMENTS 165423**

THIS **AMENDMENT NO. 3** made and entered into this _____ day of _____, 2017, by and between the BROKEN ARROW MUNICIPAL AUTHORITY, a municipal corporation of the State of Oklahoma, hereinafter referred to as "BAMA", and HDR Engineering, Inc., hereinafter referred to as "ENGINEER";

WITNESSETH:

WHEREAS, BAMA and ENGINEER entered into an Agreement dated October 6, 2015, for conceptual design services as set forth in said Agreement; and

WHEREAS, BAMA and ENGINEER entered into Amendment No. 1 dated May 3, 2016, for preliminary design, final design, and bidding services as set forth in said Agreement; and

WHEREAS, BAMA and ENGINEER entered into Amendment No. 2 dated August 16, 2016, for final design of odor control facilities; and

WHEREAS, BAMA and ENGINEER propose to amend said Agreement to expand the project scope and compensation to include services during construction; and

WHEREAS, the 2015 Agreement, First Amendment, Second Amendment and Third Amendment shall hereinafter collectively be referred to as the "Agreement"; and

WHEREAS, funding is now available for said additional services in Account Numbers 165420 and 165423; and

WHEREAS, ENGINEER is prepared to provide said additional services identified in this Amendment.

NOW THEREFORE, in consideration of the promises contained herein, the parties hereto agree to amend the Agreement as follows:

1. SCOPE OF SERVICES.

An amended Scope of Services as specified in Attachment A-3 is hereby incorporated by reference as part of this agreement.

2. ORGANIZATION OF SUBMITTAL DOCUMENTS.

The Organization of Submittal Documents as specified in Attachment B-3 is hereby incorporated by reference as part of this agreement.

3. BAMA'S RESPONSIBILITIES AND SPECIAL CONDITIONS.

BAMA's responsibilities related to this Amendment No. 3 are the same as defined in the agreement. No additional special conditions exist to this Amendment No. 3.

4. CHANGE IN CONTRACT AMOUNT.

As compensation for the additional work, BAMA shall pay ENGINEER in accordance with the terms specified in Attachment D-3, Amended Compensation and Additional Services, as a change in the contract amount as follows:

	Screening Improvements (165420)	Grit Removal Improvements (165423)	Total
Original Agreement Amount	\$ 44,113	\$ 54,661	\$ 98,774
Amendment No. 1	\$364,401	\$364,401	\$ 728,802
Amendment No. 2	\$ 35,688	\$ 35,688	\$ 71,376
Amendment No. 3	<u>\$185,464</u>	<u>\$185,464</u>	<u>\$ 370,928</u>
Revised Total Contract Amount	\$629,666	\$640,214	\$1,269,880

5. PROJECT SCHEDULE.

The project schedule related to this Amendment No. 3 is tied to the Construction Contractor's schedule and is not identified herein.

6. EFFECTIVE DATE AND AUTHORIZATION TO PROCEED.

This Amendment No. 3 is effective upon signature by both parties.

Except as amended hereby, all terms of the 2015 Agreement shall remain in full force and effect without modification or change.

IN WITNESS WHEREOF, the parties have executed this AMENDMENT, in multiple copies on the respective dates herein below reflected to be effective on the date executed by the City Manager of the City of Broken Arrow, Oklahoma.

BAMA:
Broken Arrow Municipal Authority

ENGINEER:
HDR Engineering, Inc.

Approved as to form:

By Lesli Myers
Assistant City Attorney

By [Signature]
Lucas A. Bathurst, Vice President

By _____
Michael L. Spurgeon, City Manager

(CORPORATE SEAL) if applicable

Date _____

Attest: Teresa Hanson
Secretary

Attest:

Secretary

Date 11-10-17

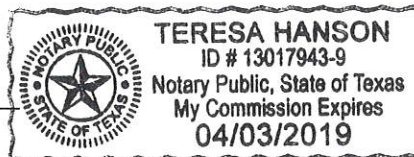
VERIFICATIONS (If not a corporation)

State of Texas)
~~Oklahoma~~)
County of Dallas) §
~~Tulsa~~)

Before me, a Notary Public, on this 10th day of November, 2017,
personally appeared Lucas A. Bathurst, known to be to be the
(President, Vice President, Corporate Officer, Member, Partner, or Other:
_____) of HDR Engineering, Inc., and to be the identical person who
executed the within and foregoing instrument, and acknowledged to me that he
executed the same as his free and voluntary act and deed for the uses and purposes
therein set forth.

My Commission Expires:

4-3-2019
Teresa Hanson
Notary Public



**ATTACHMENT A-3
TO
AMENDMENT NO. 3
TO AGREEMENT FOR PROFESSIONAL CONSULTING SERVICES
BETWEEN BROKEN ARROW MUNICIPAL AUTHORITY
AND HDR ENGINEERING, INC.
FOR REHABILITATION OF THE HEADWORKS
AT LYNN LANE WASTEWATER TREATMENT PLANT
SCREENING IMPROVEMENTS 165420
GRIT REMOVAL IMPROVEMENTS 165423**

SCOPE OF SERVICES

The following scope of services for Amendment No. 3 shall be made a part of the AGREEMENT:

1. PROJECT UNDERSTANDING

ENGINEER has completed the design of the new headworks facility for the Lynn Lane Wastewater Treatment Plant and BAMA has awarded the construction contract. The purpose of this Amendment No. 3 is to add engineering services during construction and project close-out tasks.

2. AMENDMENT SCOPE OF SERVICES

The below paragraphs describe the additional work that will be provided by the ENGINEER during construction of the Project.

2.6 CONSTRUCTION SERVICES PHASE: Upon written authorization from BAMA to proceed, the ENGINEER shall perform the following tasks:

2.6.1 General Administration of Construction Contract: Consult with BAMA and provide assistance to BAMA for administration of the Construction Contract. BAMA's Construction Administrator (CA) shall be the main point of contact for the CONTRACTOR. The CA shall receive and track all submittals from the CONTRACTOR; receive and review CONTRACTOR construction schedules and updates, including schedule impacts and delays due to Change Orders and Claims; receive, review, and approve Applications for Payment from Contractor; coordinate materials testing services; and provide funding agency coordination and reporting. ENGINEER shall have authority to act on behalf of BAMA in dealings with CONTRACTOR to

the extent provided in this Agreement and the Construction Contract except as otherwise provided in writing.

- 2.6.2 Pre-Construction Conference: Participate in a pre-construction conference prior to commencement of Work at the Site. BAMA will prepare for and lead the conference.
- 2.6.3 Prepare conformed Drawings and Specifications that incorporate and integrate the content of all Addenda. Provide four (4) copies to CONTRACTOR (2 full-size and 2 half-size) and ten (10) copies to OWNER (1 full-size and 9 half-size) as well as electronic PDF versions to both parties.
- 2.6.4 Schedules: BAMA will receive, review, and determine the acceptability of any and all schedules that CONTRACTOR is required to submit, including the Progress Schedule, Schedule of Submittals, and Schedule of Values.
- 2.6.5 Baselines and Benchmarks: As appropriate, establish baselines and benchmarks for locating the Work which in ENGINEER's judgment are necessary to enable CONTRACTOR to proceed.
- 2.6.6 Visits to Site and Observation of Construction: In connection with observations of CONTRACTOR's Work while it is in progress:
- Make visits to the Site at intervals appropriate to the various stages of construction to observe as an experienced and qualified design professional the progress of CONTRACTOR's executed Work. Such visits and observations by ENGINEER are not intended to be exhaustive or to extend to every aspect of the Work or to involve detailed inspections of the Work beyond the responsibilities specifically assigned to ENGINEER in this Agreement and the Construction Contract Documents, but rather are to be limited to spot checking, selective sampling, and similar methods of general observation of the Work based on ENGINEER's exercise of professional judgment. Based on information obtained during such visits and observations, ENGINEER will determine in general if the Work is proceeding in accordance with the Construction Contract Documents, and ENGINEER shall keep BAMA informed of the progress of the Work.

- The purpose of ENGINEER's visits to the Site will be to enable ENGINEER to better carry out the duties and responsibilities assigned to and undertaken by ENGINEER during the Construction Phase, and, in addition, by the exercise of ENGINEER's efforts as an experienced and qualified design professional, to provide for BAMA a greater degree of confidence that the completed Work will conform in general to the Construction Contract Documents and that CONTRACTOR has implemented and maintained the integrity of the design concept of the completed Project as a functioning whole as indicated in the Construction Contract Documents. ENGINEER shall not, during such visits or as a result of such observations of the Work, supervise, direct, or have control over the Work, nor shall ENGINEER have authority over or responsibility for the means, methods, techniques, sequences, or procedures of construction selected or used by any Constructor, for security or safety at the Site, for safety precautions and programs incident to any Constructor's work in progress, for the coordination of the Constructors' work or schedules, nor for any failure of any Constructor to comply with Laws and Regulations applicable to furnishing and performing of its work. Accordingly, ENGINEER neither guarantees the performance of any Constructor nor assumes responsibility for any Constructor's failure to furnish or perform the Work, or any portion of the Work, in accordance with the Construction Contract Documents.
- The fee associated with this task assumes a single ENGINEER staff member will visit the site on 28 occasions, including 18 monthly construction meetings and 10 other visits.

2.6.7 Defective Work: ENGINEER shall recommend to BAMA to reject Work if, on the basis of ENGINEER's observations, ENGINEER believes that such Work is defective under the terms and standards set forth in the Construction Contract Documents. Provide recommendations to BAMA regarding whether CONTRACTOR should correct such Work or remove and replace such Work, or whether BAMA should consider accepting such Work as provided in the Construction Contract Documents. However, neither ENGINEER's authority to reject Work nor ENGINEER's decision to exercise or not exercise such authority shall give

rise to a duty or responsibility of the ENGINEER to Contractors, Subcontractors, material and equipment suppliers, their agents or employees, or any other person(s) or entities performing any of the Work, including but not limited to any duty or responsibility for Contractors' or Subcontractors' safety precautions and programs incident to the Work.

2.6.8 Compatibility with Design Concept: If ENGINEER has express knowledge that a specific part of the Work that is not defective under the terms and standards set forth in the Construction Contract Documents is nonetheless not compatible with the design concept of the completed Project as a functioning whole, then ENGINEER shall inform BAMA of such incompatibility, and provide recommendations for addressing such Work.

2.6.9 Clarifications and Interpretations: BAMA will accept from CONTRACTOR submittal of all matters in question concerning the requirements of the Construction Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Construction Contract Documents. When requested by BAMA, ENGINEER will render a written clarification, interpretation, or decision on the issue submitted, with reasonable promptness.

- The fee associated with this task assumes that up to 50 RFIs will be reviewed by the ENGINEER.

2.6.10 Non-reviewable Matters: If a submitted matter in question concerns the ENGINEER's performance of its duties and obligations, or terms and conditions of the Construction Contract Documents that do not involve (1) the performance or acceptability of the Work under the Construction Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then ENGINEER will promptly give written notice to BAMA and CONTRACTOR that ENGINEER will not provide a decision or interpretation.

2.6.11 Field Orders: BAMA will prepare and issue Field Orders requiring minor changes in the Work. When requested by BAMA, ENGINEER will provide information to assist in preparation of Field Orders.

- The fee associated with this task assumes the ENGINEER will provide information for up to 10 Field Orders.

2.6.12 Change Proposals, Change Orders and Work Change Directives: BAMA will prepare Change Orders and Work Change Directives as required. ENGINEER will provide review and supporting information upon request.

- The fee associated with this task assumes the ENGINEER will provide information and/or review for up to 10 Change Orders.

2.6.13 Differing Site Conditions: BAMA will respond to any notice from CONTRACTOR of differing site conditions, including conditions relating to underground facilities such as utilities, and hazardous environmental conditions. ENGINEER will provide review and supporting information upon request.

2.6.14 Shop Drawings, Samples, and Other Submittals: BAMA will receive and track all submittals. Upon request, ENGINEER will review and approve or take other appropriate action with respect to Shop Drawings, Samples, and other required CONTRACTOR submittals, but only for conformance with the information given in the Construction Contract Documents and compatibility with the design concept of the completed Project as a functioning whole as indicated by the Construction Contract Documents. Such reviews and approvals or other action will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions and programs incident thereto. ENGINEER shall meet any CONTRACTOR's submittal schedule that ENGINEER has accepted.

- The fee associated with this task assumes the ENGINEER will review and approve up to 75 original submittals and 50 re-submittals.

2.6.15 Substitutes and "Or-equal": Assist BAMA in evaluating and determining the acceptability of substitute or "or-equal" materials and equipment proposed by CONTRACTOR.

2.6.16 Inspections and Tests: BAMA will receive and review all certificates of inspections, tests, and approvals required by Laws and Regulations or the Construction Contract Documents.

2.6.17 Change Proposals and Claims: BAMA will review and respond to Change Proposals and Claims. (a) If requested by BAMA, ENGINEER will review technical matters pertaining to Change Proposals. (b) If requested by BAMA, ENGINEER will provide information or data to BAMA regarding engineering or technical matters pertaining to Claims.

- The fee associated with this task assumes the ENGINEER will provide review and/or information for up to 10 Change Proposals or Claims.

2.6.18 Applications for Payment: BAMA will review and approve applications for payment from the CONTRACTOR.

2.6.19 CONTRACTOR's Completion Documents: BAMA will receive from CONTRACTOR maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance required by the Construction Contract Documents, certificates of inspection, tests and approvals, and Shop Drawings, Samples, and other data.

2.6.20 Substantial Completion: Promptly after notice from CONTRACTOR that CONTRACTOR considers the entire Work ready for its intended use, in company with BAMA and CONTRACTOR, visit the Site to review the Work and determine the status of completion. BAMA will follow the procedures in the Construction Contract regarding the preliminary certificate of Substantial Completion, punch list of items to be completed, notice to CONTRACTOR, and issuance of a final certificate of Substantial Completion. Assist BAMA regarding any remaining engineering or technical matters affecting BAMA's use or occupancy of the Work following Substantial Completion.

2.6.21 Final Completion and Performance Testing: Conduct a final visit to the Project to determine if the Work is complete and acceptable so that ENGINEER may recommend, in writing, final payment to CONTRACTOR.

2.6.22 Standards for Certain Construction-Phase Decisions: ENGINEER will render decisions regarding the requirements of the Construction Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth in the Construction Contract for initial

interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, ENGINEER will not show partiality to BAMA or CONTRACTOR, and will not be liable to BAMA, CONTRACTOR, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

2.7 PROJECT CLOSE-OUT: Upon receiving the written Notice to Proceed, the Consultant shall perform the following tasks:

2.7.1 Prepare an Operations & Maintenance (O&M) Manual for the new Headworks facility. Using the O&M manuals received from the CONTRACTOR's equipment vendors, develop procedures for control of the operation and maintenance of, and record keeping for, Project equipment and systems. Submit three draft copies of the O&M Manual to BAMA for review and comment. Make corrections and/or additions as directed by BAMA and submit three final copies along with one electronic copy (both Word and PDF formats) to BAMA. Also submit three final copies to ODEQ. The manual shall include:

- Facility and equipment descriptions, including photos, design drawings, and design criteria
- An operations narrative for the facility which will describe the functions and controls of the system processes. Guidelines for cost-effective daily operation will be included along with typical operating schematics and valve arrangements. The narrative will serve as a guide to facility operators.
- Preventive maintenance recommendations and schedules
- Process trouble-shooting techniques and emergency response procedures.
- A compilation of controls and instrumentation available for the processes, detailing degree of control and anticipated range of operational parameters.

2.7.2 Provide up to 16 hours of classroom and hands-on training to familiarize BAMA's plant operational staff with the operation and maintenance of the new facilities. The training

will be conducted over a two-day period assuming eight hours of training each day to accommodate staff schedules. Prepare course outline and lesson plans. Provide video recording of the training to BAMA on storage media.

- 2.7.3 Assist BAMA in startup and acceptance testing of the new headworks facility. Observe appropriate portions of the initial startup of the Project and make recommendations for corrections of perceived problems. Four man-days are assumed for startup.
- 2.7.4 Incorporate changes into the drawings and produce Record Drawings based on red-lined Drawings provided by BAMA. Submit Record Drawings on electronic media (AutoCAD and PDF formats)

**ATTACHMENT B-3
TO
AMENDMENT NO. 3
TO AGREEMENT FOR PROFESSIONAL CONSULTING SERVICES
BETWEEN BROKEN ARROW MUNICIPAL AUTHORITY
AND HDR ENGINEERING, INC.
FOR REHABILITATION OF THE HEADWORKS
AT LYNN LANE WASTEWATER TREATMENT PLANT
SCREENING IMPROVEMENTS 165420
GRIT REMOVAL IMPROVEMENTS 165423**

ORGANIZATION OF SUBMITTAL DOCUMENTS

The following list of submittal documents for Amendment No. 3 shall be made a part of the AGREEMENT:

The following documents shall be submitted as deliverables for the project:

- Conformed Drawings and Specifications
- RFI responses
- Shop Drawing reviews
- Substantial Completion punch list
- O&M Manual
- Training documentation
- Record Drawings

**ATTACHMENT D-3
TO
AMENDMENT NO. 3
TO AGREEMENT FOR PROFESSIONAL CONSULTING SERVICES
BETWEEN BROKEN ARROW MUNICIPAL AUTHORITY
AND HDR ENGINEERING, INC.
FOR REHABILITATION OF THE HEADWORKS
AT LYNN LANE WASTEWATER TREATMENT PLANT
SCREENING IMPROVEMENTS 165420
GRIT REMOVAL IMPROVEMENTS 165423**

COMPENSATION AND ADDITIONAL SERVICES

The following compensation for Amendment No. 3 shall be made a part of the AGREEMENT.

1. BASIC COMPENSATION

The basic compensation for the Professional Consultant to perform all duties and responsibilities associated with the Scope of Services as described in Attachment A-3 shall be in accordance with the following payment breakdown:

- 1.1 Construction Services Phase Payment: BAMA shall pay the ENGINEER on a Time and Materials basis with a not to exceed amount of \$247,354 for the completion of the Construction Services Phase. ENGINEER shall be paid an amount equal to Direct Labor Costs times a factor of 3.2, Reimbursable Expenses times a factor of 1.0, and ENGINEER's subconsultant charges times a factor of 1.1.
- 1.2 Project Close-out Phase Payment: BAMA shall pay the ENGINEER on a Time and Materials basis with a not to exceed amount of \$123,574 for the completion of the Project Close-out Phase. ENGINEER shall be paid an amount equal to Direct Labor Costs times a factor of 3.2, Reimbursable Expenses times a factor of 1.0, and ENGINEER's subconsultant charges times a factor of 1.1.

2. ADDITIONAL SERVICES BASED ON TIME

Any additional services, if authorized in writing, will be compensated on an hourly rate basis at raw salary rate times a multiplier of 3.2 plus incurred expenses for reproduction, travel and direct costs.

3. ADJUSTMENT CLAUSE

The rates and costs described in this AGREEMENT shall not be revised annually, unless mutually agreed upon by both parties.



City of Broken Arrow

Fact Sheet

File #: 17-2946, Version: 1

**Broken Arrow Municipal Authority
Meeting of: 12-05-2017**

**To: Chairman and Authority Members
From: Utilities Department
Title:**

**Ratification of Amendment No. 3 to Agreement for Professional Consultant Services with
HDR Engineering, Inc. for on-call professional services at the
Verdigris Water Treatment Plant**

Background:

HDR Engineering Inc. provided design and construction support services for the Verdigris Water Treatment Plant. The plant was tested, commissioned and brought on line on April 10th, 2014. Since the start up, plant staff has contacted with HDR Engineering on as needed basis to discuss and seek assistance to resolve treatment issues centered around the plant's operation and performance. It is common to seek additional treatment services from outside agencies, specifically the design engineering firm, when bringing on-line new treatment facility with emerging technologies like microfiltration membrane units.

After running the daily operation for nearly 4 complete years, Staff has learned a substantial amount about the emerging treatment technologies and processes, but from time to time still relies upon experts to review and analyze specific situations and circumstances that occur with running the plant. Funding is available in the operational budget of the Water Treatment Plant.

Cost: \$50,000

Prepared By: Anthony C. Daniel, Utilities Director

**Reviewed By: Finance Department
Assistant City Manager-Operations
Legal Department**

Approved By: Michael L. Spurgeon, City Manager

Attachments: Amendment No. 3-Water Treatment Plant on-call services.

Recommendation:

Ratify the Amendment No.3 to Agreement for Professional Consultant Services with HDR Engineering Inc. for on call professional services at the Verdigris Water Treatment Plant.

**AMENDMENT NO. 3
TO
AGREEMENT FOR PROFESSIONAL CONSULTING SERVICES
BETWEEN
BROKEN ARROW MUNICIPAL AUTHORITY
AND
HDR ENGINEERING, INC.
FOR
WATER TREATMENT PLANT ON-CALL SERVICES**

THIS **AMENDMENT NO. 3** made and entered into this ____ day of _____, 2017, by and between the BROKEN ARROW MUNICIPAL AUTHORITY, a municipal corporation of the State of Oklahoma, hereinafter referred to as "BAMA", and HDR Engineering, Inc., hereinafter referred to as "ENGINEER";

WITNESSETH:

WHEREAS, BAMA and ENGINEER entered into an Agreement dated September 16, 2014, for one year of on-call services as set forth in said Agreement; and

WHEREAS, BAMA and ENGINEER entered into Amendment No. 1 dated November 9, 2015, to extend the on-call services through June 30, 2016, as set forth in said Agreement; and

WHEREAS, BAMA and ENGINEER entered into Amendment No. 2 dated August 24, 2016, to extend the on-call services through June 30, 2017, as set forth in said Agreement; and

WHEREAS, BAMA and ENGINEER propose to amend said Agreement to extend the on-call services through June 30, 2018; and

WHEREAS, the 2014 Agreement, First Amendment, Second Amendment and Third Amendment shall hereinafter collectively be referred to as the "Agreement"; and

WHEREAS, funding is now available for said services in Account Number 0205405434 3087; and

WHEREAS, ENGINEER is prepared to provide said services identified in this Amendment.

NOW THEREFORE, in consideration of the promises contained herein, the parties hereto agree to amend the Agreement as follows:

1. SCOPE OF SERVICES.

The Scope of Services related to this Amendment No. 3 are the same as defined in the original Agreement.

2. BAMA'S RESPONSIBILITIES AND SPECIAL CONDITIONS.

BAMA's responsibilities related to this Amendment No. 3 are the same as defined in the original Agreement.

3. CONTRACT AMOUNT.

As compensation for the work related to this Amendment No. 3, BAMA shall pay ENGINEER in accordance with the terms specified in the original Agreement a not-to-exceed amount of \$50,000.

4. PROJECT SCHEDULE.

The project time period related to this Amendment No. 3 is from July 1, 2017, to June 30, 2018.

5. EFFECTIVE DATE AND AUTHORIZATION TO PROCEED.

This Amendment No. 3 is effective upon signature by both parties.

Except as amended hereby, all terms of the 2014 Agreement shall remain in full force and effect without modification or change.

IN WITNESS WHEREOF, the parties have executed this AMENDMENT, in multiple copies on the respective dates herein below reflected to be effective on the date executed by the City Manager of the City of Broken Arrow, Oklahoma.

BAMA:
Broken Arrow Municipal Authority

ENGINEER:
HDR Engineering, Inc.

Approved as to form:

By *Lesli Myers*
Assistant City Attorney

By *[Signature]*
Ramon F. Miguez, Vice President

By *Michael L. Spurgeon*
Michael L. Spurgeon, City Manager

(CORPORATE SEAL) if applicable

Date *11/14/17*

Attest: *[Signature]*
Secretary

Attest:

Secretary

Date *10/31/17*

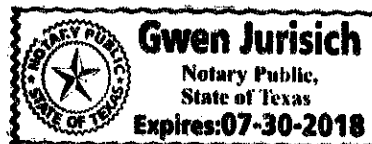
VERIFICATIONS (If not a corporation)

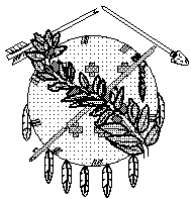
Texas
State of ~~Oklahoma~~)
Dallas) §
County of ~~Tulsa~~)

Before me, a Notary Public, on this *31st* day of *October*, 20*17*,
personally appeared *Ramon F. Miguez*, known to be to be the (President,
Vice President, Corporate Officer, Member, Partner, or Other: _____)
of HDR Engineering, Inc., and to be the identical person who executed the within and
foregoing instrument, and acknowledged to me that he executed the same as his free and
voluntary act and deed for the uses and purposes therein set forth.

My Commission Expires:

07/30/2018
[Signature]
Notary Public





City of Broken Arrow

Fact Sheet

File #: 17-2949, Version: 1

**Broken Arrow Municipal Authority
Meeting of: 12-05-2017**

**To: Chairman and Authority Members
From: Utilities Department
Title:**

Approval of and authorization to accept the proposal from Pencco, Inc. to conduct a 45-day chemical addition pilot program for odor control along the County Line sewer trunk line

Background:

The 36" diameter concrete cylinder sewer pipe along County Line Road conveys about 90% of the wastewater flow to the Lynn Lane Wastewater Treatment Plant. Several segments of the sewer line were constructed with drop manholes due to changes in elevation. At each drop manhole sewer gases are released as the flow drops down to a lower elevation in the manhole. The sewer gas generated at each drop manhole gets vented to the atmosphere through the corroded concrete manholes and cracks in the pipes. The release of sewer gas primarily Hydrogen Sulfide has become a major concern to the residents in the vicinity of the sewer trunk line and along County Line Road.

A community meeting was held on October 12, 2017 at the Grace Community Church at the corner of 91st and County Line. The purpose of the meeting was to meet with residents and address their concerns pertaining to the sewer odor emanating from the County Road trunk line. In attendance at the meeting were residents, city staff and Vice Mayor Scott Eudey.

At the meeting staff shared the progress being made on the proposed trunk line replacement project at an estimated cost of about \$23 million. In the interim to mitigate the generation and release of sewer odor, the possibility of feeding a chemical into the sewer line to minimize the formation and release of sewer gas was discussed. Staff was directed to explore the chemical feed option.

The Utilities Director contacted Pencco, Inc who supplies and manages iron feed systems for odor control at several large cities in Texas, Arizona and California. The Director had worked with Pencco on a similar sewer odor problem elsewhere.

Pencco, Inc field representative and a chemical engineer were on site on October 26 and 27, 2017. Sewer utilities crew joined Pencco representatives and walked the entire line segment, taking Hydrogen Sulfide gas level readings for both dissolved and in air. Odor loggers were left overnight at several locations and retrieved the next day. Pencco representatives made a formal presentation to city staff and shared their findings.

The findings reported are as follows:

- High Sulfide generation occurs in the pipe along County Line Road before the drop manhole at 101st

and County Line Road

- Stripping of Hydrogen Sulfide formed occurred at the 101st St manhole due to the high velocity and about 10-15 foot drop manhole. The sewer gas is released to the atmosphere and some remains in solution.
- Dissolved oxygen absorbed from the drop structure and the remaining Hydrogen Sulfide in solution is carried down the line by the wastewater.
- More Hydrogen Sulfide is generated past the Turnpike due to lack of oxygen in the pipe and the wastewater becomes septic.
- High levels of Hydrogen Sulfide production occurs along 185th E Ave and continues to increase past Jasper and towards the wastewater plant.

Based on the findings, Pencco's recommendation is as follows:

- Set up a bulk chemical feed system to feed the SULFeND chemical solution treatment for Hydrogen Sulfide control. This ferrous salt binds the Hydrogen Sulfide into non-gaseous ferrous sulfide and keeps it in solution till the wastewater reaches the treatment plant.
- The bulk chemical tank and feeds pumps will be located at a manhole along County Line Road.
- Pencco's field technician will install and commission the feed system. The chemical feed rate and hydrogen sulfide levels will be monitored remotely.
- Pencco will provide program reports to staff during the 45 day test period. Upon completion of the test, Pennco will meet with city staff to discuss results.

Funding is available in the operational budget of the Sewer Repair and Construction Division.

Cost: \$40,122

Prepared By: Anthony C. Daniel, Utilities Director

Reviewed By: Finance Department
Assistant City Manager-Operations
Legal Department

Approved By: Michael L. Spurgeon, City Manager

Attachments: Proposal from Pencco for chemical addition for Hydrogen Sulfide control along County Line Road sewer trunk line

Recommendation:

Approve and accept the proposal from Pencco, Inc. to conduct a 45 day chemical addition pilot program for odor control along the County Line sewer.



PO Box 600 San Felipe, Texas 77473
(979) 885-0005 Fax: (979) 885-3208

November 21, 2017

Anthony Daniel
Director of Utilities
City of Broken Arrow
485 N Poplar Avenue
Broken Arrow, OK 74013
Email: adaniel@brokenarrowok.gov

Subject: SULFeND® Pilot Study for Sulfide Control on the County Line Road Sewer Interceptor

Dear Anthony,

Thank you for inviting Pencco Inc. to evaluate the critical hydrogen sulfide odor concern emanating from the County Line wastewater line. Pencco Inc. recognizes this odor concern is a high priority for the Broken Arrow as the County Line Road line segment produces high sulfide loadings and odor complaints to the area of the city near 101st and County Line.

Pencco Inc. is pleased to provide Broken Arrow with the following proposal for a 45 day pilot study SULFeND® program to control odors along the County Line Road line.

Prior to this proposal, Pencco Inc. conducted an extensive sulfide field survey on the County Line Road line to fully understand the sulfide loadings. Based on our findings, vapor levels along the County Line Road segment exceed over 180 ppm vapor H₂S and liquid sulfide loadings over 138 lbs/day. Based on the sulfide levels measured, we estimate a target feed of 180-210 gallons per day of SULFeND® for complete control during the summer and winter seasons to achieve 25 ppm on daily average for vapor H₂S and < 0.5 mg/L for dissolved sulfide. The target usage was derived from our sampling data and extrapolated for the year based on normal conditions. In similar applications, we have observed seasonal fluctuations which can be utilized for optimization of chemical usage, with winter and spring generally requiring less treatment. The proposal is comprehensive in nature and include full-service delivery of the chemicals, equipment, labor and services required to reliably and safely apply the technology or the duration of the pilot project, excluding any required dose site civil work or improvements. The tentative start of the program is the week of February 18, 2018.

The attached diagram shows dosing and monitoring points on the County Line Road line.

Program Cost

Cost for the 45 day SULFeND® pilot program at the city of Broken Arrow:

- Mobilization Fee: \$4,000.00
 - SULFeND Price per gallon: \$2.47 (3 loads of 4200 gallons)
 - \$5,000 demobilization fee in the event that the program is successful and the City does not elect to go forward
 - Total Cost \$40,122.00 plus applicable tax
-

SULFeND® Technology

SULFeND® is a manufactured chemistry that combines an oxidizer with ferrous ion to provide the highest level of removal per gallon of any product. The SULFeND® program combines the highest removal technology with advanced equipment that allows Pencco to match the chemical addition to the production level of hydrogen sulfide at any part of the day. The chemistry works as follows:

Ferrous Salts – Ferrous is an immediate reacting iron ion that ties up sulfide into a non-gaseous form, ferrous sulfide. The concentration of this ion can be adjusted to provide the right amount of immediate removal to meet hydrogen sulfide goals at the addition point of the SULFeND™.

Low Redox Oxidants - Oxidants are especially good at total control of hydrogen sulfide in wastewater. The typical problem is that they are so strong and react so fast that side reactions occur and consume the majority of the product that is being added. In addition, the product is considered very hazardous and as an oxidizer. Pencco has developed a manufacturing technique to add several different low grade oxidants to SULFeND™. Each reactant has a different resonance time of reaction and each are completely or predominantly sulfide ion specific. The advantages to low grade oxidizers are:

- Safety – The solution is not considered an oxidizer
- Sulfide Ion Specific reactions
- SULFeND™ oxidation reactions occur at a negative Redox potential
 - No VFA (volatile fatty acid) Destruction/possible VFA production
 - No side oxidation reactions
 - Complimentary to Biological Nutrient Removal
- The oxidizers continuously react with sulfide that frees up the ferrous to react further with side streams that contain hydrogen sulfide reducing the number of dose stations
- Low grade oxidizers can last up to hours in a line

Combination of Iron and Oxidizers – By combining the best of iron salts with low grade oxidizers, SULFeND™ contains more active ingredients per gallon than any other product on the market. This means that gallon for gallon; SULFeND™ will remove more pounds of hydrogen sulfide. This allows less dose stations, smaller tanks, and fewer deliveries. In addition, several of our formulations are less hazardous than either the iron salts or the oxidizers that they replace

Equipment Provided

- (1) 6000 gallon high density polyethylene tank (see attached drawing)
- Ultrasonic level transmitter and high fill switch
- (1) 16.5' by 16.5' Poly lined Steel Containment with steps for ingress and egress
- Leak Detection System for Containment
- (1) NEMA 4 Fiberglass Enclosure including:
 - 500 ml Calibration System
 - Pump Mounting Shelf
 - Dual Fan Cooling System
 - Double Pole Power Switch Box
 - Power Outlet for Pumps
 - Leak Detection System

- Drain to Containment
- Chemical Inlet and Outlet
- Field Connection Enclosure
- Control Panel Mount
- Stainless Steel Frame mount for Panel and Piping
- Alarm Light on Panel
- (1) NEMA 4 Polycarbonate Control Panel including:
 - Touchscreen Monitor and Controls
 - Independent Cooling System
 - Sierra Wireless LS300 Programmable Modem for Web monitoring and control which includes the City having daily access to dose rates and hydrogen sulfide gas readings.
- PLC Control System with
 - 48 point Curve Fit
 - 48 point modified flow pace capability with customer flow signal
 - Spare discrete and analog inputs and outputs for custom communication to customer system
- (2) Blue White A2V Variable Speed Peristaltic Pumps (up to 14.7 gph)
- Portable Eye Wash and Shower System
- Solar Power 120v power set-up
- RTX OdaLogs for testing and optimization
- Delivery to Site
- Complete assembly and installation on prepared site
- Start-up, Calibration, and testing

The scope includes the following service:

Service Provided by Pencco

1. Mobilization and Installation of storage and feed system, Start-up, and Optimization
2. SULFeND® Solution
3. Sampling and data collection/Reporting. Once every other week.
4. Program management
5. Emergency Service

Work Provided by Broken Arrow

- Gravel 12'x12' pad with concrete curb
- Fencing for security
- 120v service @ 15 amps (only 3 amps are required for normal operation)

Program Report

Pencco will provide ongoing progress reports and data throughout the 45 day test period. Upon completion of the test:

1. Pencco will submit five draft final reports for Broken Arrow Staff review.
2. A follow-up meeting and presentation of the results will be scheduled and executed.
3. Pencco will issue five copies and an electronic copy of the Final Report

Program Goals at Final Control Point (on map below @ Jasper):

- <25 ppm average H₂S in vapor
- <0.5 mg/L Dissolved Sulfide in liquid

SULFeND® Program

Upon successful completion, the City of Broken Arrow can elect to continue the program. The standard SULFeND program includes:

- The SULFeND System deployed for the test
- Monthly Service
 - Mechanical System check and wear part replacement
 - An RTX OdaLog placed at the terminal control point
 - Liquid Sampling Check
- Program Engineer Overview
 - Routine reviewing of data
 - Maintaining the Website
 - Inventory Management
- Web Cellular service
 - Complete access by Customer – monitoring and control
 - Future web upgrades
- Emergency Service
- Priority Access to our survey team for future odor and corrosion control situations

Cost for Program if the City decides to continue beyond the pilot

1. SULFeND Price per gallon: \$2.47 (locked until January 1, 2019)
2. Program Fees: \$1,450.00 per month

Notes:

1. Pricing does not include applicable tax
2. Proposal is valid for 90 days
3. Terms are Net 30
4. SULFeND pricing is locked until January 1, 2019, price adjustments are based on our documented cost changes for raw materials and manufacturing costs
5. In the event that the program is successful and the City does not elect to go forward, there is a \$5,000 demobilization fee.

We appreciate the opportunity and look forward to serving you and the City.

If approved, please sign below and return.

Sincerely,

Vince Marano

Vincent Marano
Pencco, Inc.
951-970-9106

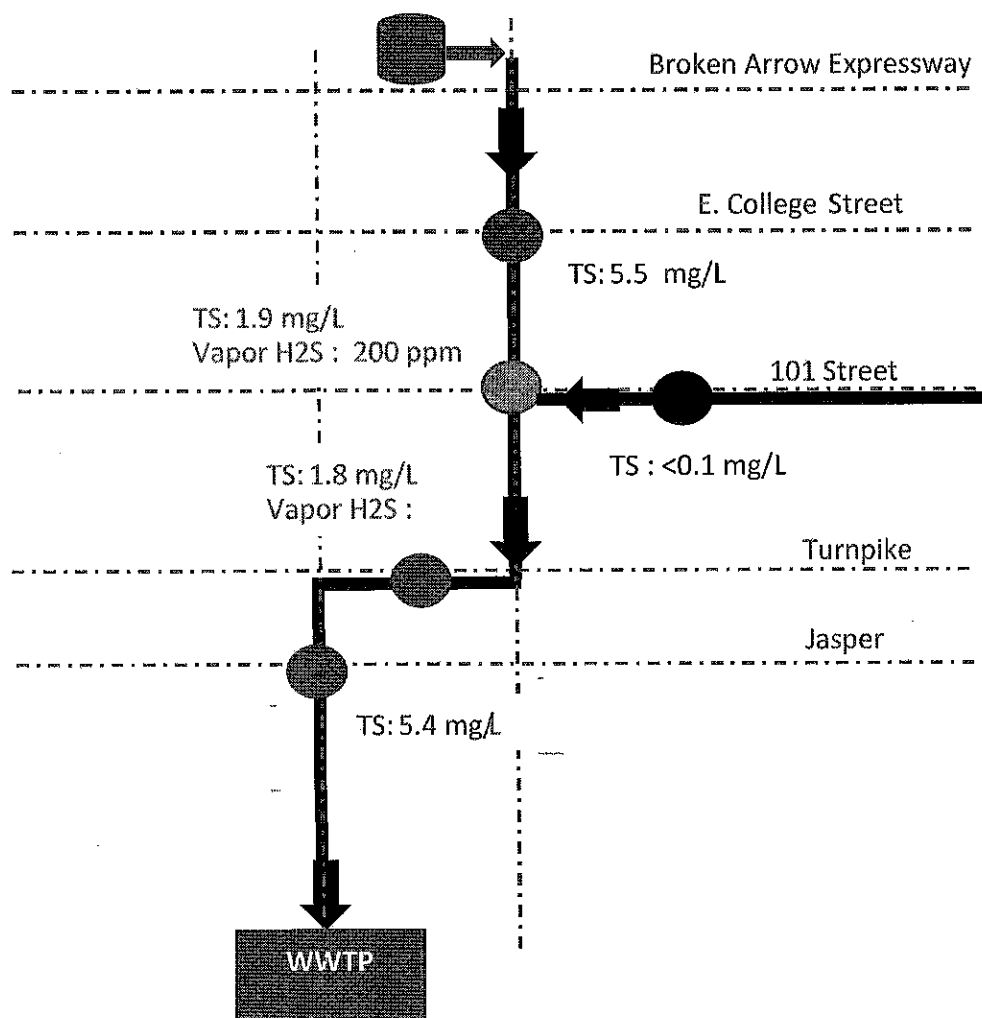
Read and Approved by: _____ (please print)

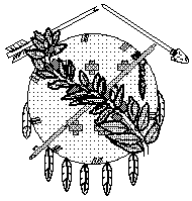
Position with the City _____

Signed: _____ Date: _____

Approved as to form *Lesli Myers*
Asst. City Attorney

County Line Road Line Diagram





City of Broken Arrow

Fact Sheet

File #: 16-1600, **Version:** 1

FUND	020 BAMA DATE DUE	VENDOR NO	VENDOR NAME	VOUCHER NO	I NVOI CE NO	ACCOUNT NO	AMOUNT
	7/ 12/ 2017	6626	REXEL	PI 1688	S115622203003	020- 5405- 434. 60- 45 7/ 12/ 2017 TOTAL - CUMULATI VE TOTAL -	1, 916. 00- 1, 916. 00- 1, 916. 00-
	8/ 21/ 2017	10283	FERGUSON ENTERPRISES, INC	PI 6179	6522731	020- 5405- 434. 60- 45 8/ 21/ 2017 TOTAL - CUMULATI VE TOTAL -	187. 68 187. 68 1, 728. 32-
	9/ 20/ 2017	7786	TRAFFIC ENGINEERING CONSULTANT	PI 6337	11425	020- 5205- 419. 70- 16 9/ 20/ 2017 TOTAL - CUMULATI VE TOTAL -	3, 189. 60 3, 189. 60 1, 461. 28
	10/ 02/ 2017	6375	ATWOODS DISTRIBUTING	PI 5905	001270	020- 5305- 438. 60- 10 10/ 02/ 2017 TOTAL - CUMULATI VE TOTAL -	97. 56 97. 56 1, 558. 84
	10/ 03/ 2017	42	ARROW SAFE AND LOCK INC	PI 5904	70927	020- 5400- 434. 60- 23 10/ 03/ 2017 TOTAL - CUMULATI VE TOTAL -	24. 75 24. 75 1, 583. 59
	10/ 08/ 2017	6375	ATWOODS DISTRIBUTING	PI 5910	001275	020- 5125- 436. 60- 10 10/ 08/ 2017 TOTAL - CUMULATI VE TOTAL -	119. 99 119. 99 1, 703. 58
	10/ 19/ 2017	7786	TRAFFIC ENGINEERING CONSULTANT	PI 6341	11469	020- 5205- 419. 70- 16	6, 805. 80
	10/ 19/ 2017	8019	HDR, INC	PI 5970	1200080786	020- 5410- 435. 70- 16	2, 205. 00
				PI 5971	1200080515	020- 5410- 435. 70- 16	2, 205. 00
						10/ 19/ 2017 TOTAL - CUMULATI VE TOTAL -	11, 215. 80 12, 919. 38
	10/ 20/ 2017	6375	ATWOODS DISTRIBUTING	PI 5914	001285	020- 5305- 438. 60- 10 10/ 20/ 2017 TOTAL - CUMULATI VE TOTAL -	79. 99 79. 99 12, 999. 37
	10/ 24/ 2017	7304	BIG RED FASTENERS	PI 5945	156807	020- 5405- 434. 60- 23	101. 04
	10/ 24/ 2017	8679	CORE & MAIN	PI 5938	H986956	020- 0000- 141. 00- 00	8, 988. 00
						10/ 24/ 2017 TOTAL - CUMULATI VE TOTAL -	9, 089. 04 22, 088. 41
	10/ 25/ 2017	5290	HOLLOWAY, UPDIKE AND BELLEN INC	PI 5976	2	020- 5400- 434. 70- 16	8, 400. 00
	10/ 25/ 2017	6626	REXEL	PI 5814	S118292793001	020- 5410- 435. 60- 45	881. 36
						10/ 25/ 2017 TOTAL - CUMULATI VE TOTAL -	9, 281. 36 31, 369. 77
	10/ 26/ 2017	90	NAPA AUTO PARTS	PI 6187	2210883807	020- 5405- 434. 60- 20 10/ 26/ 2017 TOTAL - CUMULATI VE TOTAL -	116. 33 116. 33 31, 486. 10
	10/ 27/ 2017	8019	HDR, INC	PI 5975	1200080519	020- 5405- 434. 70- 16	48, 790. 00
	10/ 27/ 2017	10903	THE SCHEMMER ASSOCIATES INC	PI 6377	070420015	020- 5205- 419. 70- 16	1, 350. 00
						10/ 27/ 2017 TOTAL - CUMULATI VE TOTAL -	50, 140. 00 81, 626. 10

FUND 020 BAMA	DATE DUE	VENDOR NO	VENDOR NAME	VOUCHER NO	I NVOI CE NO	ACCOUNT NO	AMOUNT
	10/31/2017	204	FENSCO INC	PI 6245	50987	020-0000-141.00-00	1,125.00
	10/31/2017	6375	ATWOODS DISTRI BUTING	PI 6246	51064	020-0000-141.00-00	3,000.00
	10/31/2017	10417	KIMLEY-HORN & ASSOCIATES INC.	PI 5919	001294	020-5125-436.60-10	125.00
				PI 6338	0612923001017	020-5400-434.70-16	12,361.00
						10/31/2017 TOTAL -	16,611.00
						CUMULATIVE TOTAL -	98,237.10
	11/01/2017	42	ARROW SAFE AND LOCK INC	PI 5930	70973	020-5400-434.60-23	33.00
	11/01/2017	244	GREEN ACRE SOD FARMS DBA	PI 5983	107932	020-5400-434.70-15	150.00
	11/01/2017	5941	LOWES	PI 6001	01893/	020-5305-438.60-23	3.79
						11/01/2017 TOTAL -	186.79
						CUMULATIVE TOTAL -	98,423.89
	11/02/2017	244	GREEN ACRE SOD FARMS DBA	PI 5984	107830	020-5400-434.70-15	225.00
	11/02/2017	327	HACH COMPANY	PI 5985	107933	020-5400-434.70-15	225.00
				PI 6263	10702043	020-5410-435.60-34	53.36
						11/02/2017 TOTAL -	503.36
						CUMULATIVE TOTAL -	98,927.25
	11/03/2017	327	HACH COMPANY	PI 6264	10703942	020-5410-435.60-34	685.66
	11/03/2017	5371	PREMIER TRUCK GROUP	PI 6317	125214291	020-5125-436.60-20	246.08
	11/03/2017	8679	CORE & MAIN	PI 5940	1004152	020-0000-141.00-00	1,432.80
						11/03/2017 TOTAL -	2,364.54
						CUMULATIVE TOTAL -	101,291.79
	11/04/2017	420	APAC-CENTRAL, INC	PI 5923	7001041266	020-5305-438.60-27	86.52
				PI 5924	7001041266	020-5415-435.60-27	382.96
				PI 5934	7001041280	020-5400-434.60-80	153.25
						11/04/2017 TOTAL -	622.73
						CUMULATIVE TOTAL -	101,914.52
	11/06/2017	399	LOCKE SUPPLY COMPANY	PI 6054	3284940500	020-5400-434.60-38	4.82
	11/06/2017	1059	SOUTHERN TIRE MART	PI 6332	45367447	020-0000-141.00-00	297.00
	11/06/2017	5042	H G FLAKE SUPPLY CO	PI 5992	0350567	020-5405-434.60-23	699.94
	11/06/2017	5941	LOWES	PI 6004	02297	020-5400-434.60-23	28.40
				PI 6005	20053	020-5415-435.60-40	51.95
						11/06/2017 TOTAL -	1,082.11
						CUMULATIVE TOTAL -	102,996.63
	11/07/2017	8	BRENNTAG SOUTHWEST INC	PI 5958	BSW003759	020-5405-434.60-34	35,229.15
	11/07/2017	90	NAPA AUTO PARTS	PI 6192	2210884769	020-5120-437.60-23	102.58
	11/07/2017	244	GREEN ACRE SOD FARMS DBA	PI 5986	107915	020-5305-438.60-23	150.00
	11/07/2017	370	AIRGAS USA LLC	PI 5921	9069514319	020-5410-435.60-23	76.10
	11/07/2017	5371	PREMIER TRUCK GROUP	PI 6330	125215584	020-5125-436.60-20	490.18
	11/07/2017	9569	TWIN CITIES READY MIX INC	PI 6353	155770	020-5305-438.60-27	228.25
	11/07/2017	11083	POWER EQUIPMENT & ENGINEERING	PI 6315	8117261	020-5410-435.60-45	3,339.64
						11/07/2017 TOTAL -	39,615.90
						CUMULATIVE TOTAL -	142,612.53
	11/08/2017	90	NAPA AUTO PARTS	PI 6196	2210884849	020-5305-438.60-20	165.20
				PI 6198	2210884873	020-5120-437.60-20	23.25

FUND 020 BAMA	DATE DUE	VENDOR NO	VENDOR NAME	VOUCHER NO	INVOICE NO	ACCOUNT NO	AMOUNT
11/08/2017	1581	MID CONTINENT CONCRETE CO	PI 6199	2210884873	020-5120-437.60-20	23.25	
			PI 6231	1590687	020-5305-438.60-27	225.25	
			PI 6233	1590689	020-5305-438.60-27	225.25	
11/08/2017	5371	PREMIER TRUCK GROUP	PI 6329	12532192	020-5125-436.40-20	315.74	
11/08/2017	5941	LOWES	PI 6013	02604	020-5415-435.60-41	23.36	
11/08/2017	10502	CHEMTRADE CHEMICALS US LLC	PI 6270	92232005	020-5405-434.60-34	3,700.00	
					11/08/2017 TOTAL -	4,654.80	
					CUMULATIVE TOTAL -	147,267.33	
11/09/2017	90	NAPA AUTO PARTS	PI 6161	2210884932	020-0000-141.00-00	9.87	
			PI 6162	2210884932	020-0000-141.00-00	22.38	
			PI 6163	2210884932	020-0000-141.00-00	31.28	
			PI 6203	2210884948	020-5410-435.60-20	608.93	
11/09/2017	173	TULSA AUTO SPRING	PI 6360	00347186	020-5305-438.60-20	98.34	
11/09/2017	244	GREEN ACRE SOD FARMS DBA	PI 5987	107988	020-5400-434.60-80	75.00	
			PI 5988	107990	020-5305-438.60-23	15.00	
			PI 6260	107989	020-5400-434.60-80	75.00	
11/09/2017	1581	MID CONTINENT CONCRETE CO	PI 6236	1590878	020-5305-438.60-27	450.50	
11/09/2017	4997	HARRIS CORPORATION PSPC	PI 5966	93275227	020-0000-141.00-00	205.63	
11/09/2017	5371	PREMIER TRUCK GROUP	PI 6318	125214476	020-5125-436.60-20	128.23	
			PI 6325	125214580	020-5125-436.60-20	210.80	
11/09/2017	5941	LOWES	PI 6016	01646	020-5305-438.60-23	30.34	
			PI 6018	01718/	020-5305-438.60-23	17.06	
			PI 6020	02734	020-5305-438.60-23	40.93	
					11/09/2017 TOTAL -	2,019.29	
					CUMULATIVE TOTAL -	149,286.62	
11/10/2017	1530	INDUSTRIAL WELDING & TOOLS SUP	PI 5967	33791148	020-0000-141.00-00	1,065.52	
11/10/2017	3031	ECONOLITE CONTROL PRODUCTS	PI 5939	139260	020-0000-141.00-00	15,644.00	
11/10/2017	8679	CORE & MAIN	PI 5941	1057880	020-0000-141.00-00	240.00	
			PI 5942	1057880	020-0000-141.00-00	2,149.20	
					11/10/2017 TOTAL -	19,098.72	
					CUMULATIVE TOTAL -	168,385.34	
11/11/2017	420	APAC-CENTRAL, INC	PI 5926	7001043671	020-5400-434.60-27	245.06	
			PI 5927	7001043671	020-5400-434.60-80	373.93	
			PI 5936	70011043673	020-5400-434.70-15	243.54	
					11/11/2017 TOTAL -	862.53	
					CUMULATIVE TOTAL -	169,247.87	
11/13/2017	8	BRENNTAG SOUTHWEST INC	PI 5959	BSW903930	020-5410-435.60-34	793.63	
11/13/2017	90	NAPA AUTO PARTS	PI 6164	2210885275	020-0000-141.00-00	13.79	
			PI 6165	2210885275	020-0000-141.00-00	9.12	
			PI 6166	2210885275	020-0000-141.00-00	14.54	
			PI 6204	2210885223	020-5400-434.60-20	67.49	
			PI 6206	2210885246	020-5400-434.60-20	67.49	
11/13/2017	176	TIMMONS OIL COMPANY INC	PI 6333	W05184	020-0000-141.00-00	98.50	
11/13/2017	225	SUMMIT TRUCK GROUP	PI 6373	411149586	020-0000-141.00-00	87.89	
			PI 6394	CM411149563	020-5125-436.60-20	219.03	
			PI 6395	411149563	020-5125-436.60-20	219.03	
11/13/2017	251	SHERWIN WILLIAMS CO	PI 6380	35503	020-5405-434.60-23	55.98	

FUND 020 BAMA	DATE DUE	VENDOR NO	VENDOR NAME	VOUCHER NO	INVOICE NO	ACCOUNT NO	AMOUNT
11/13/2017	356	INDUSTRIAL SPLICING & SLING LL	PI 6327	174707	020-5405-434.60-23	257.40	
11/13/2017	377	KIMS INTERNATIONAL	PI 6065	0101514	020-5125-436.60-20	14.07	
11/13/2017	452	GELCO UNIFORMS & SHOES INC	PI 5980	00207711	020-5115-437.60-10	107.99	
11/13/2017	951	HOLLIDAY SAND & GRAVEL CO	PI 5989	363076	020-5305-438.60-27	78.33	
			PI 5990	363076	020-5400-434.60-80	159.94	
11/13/2017	4311	UNITED FORD	PI 6344	2967828	020-5415-435.60-20	180.90	
11/13/2017	5371	PREMIER TRUCK GROUP	PI 6319	CM125214476	020-5125-436.60-20	128.23	
			PI 6320	125215139	020-5125-436.60-20	166.53	
11/13/2017	5941	LOWES	PI 6025	01664	020-5405-434.60-23	9.09	
11/13/2017	11057	RADIATOR DEPOT	PI 6328	92193076	020-5125-436.60-20	725.00	
11/13/2017	11097	GUTERMANN INC	PI 6271	1318	020-5400-434.70-04	23,535.00	
11/13/2017	11104	CHROMALOX	PI 5964	1514264	020-5405-434.60-45	240.02	
					11/13/2017 TOTAL -	26,554.47	
					CUMULATIVE TOTAL -	195,802.34	
11/14/2017	90	NAPA AUTO PARTS	PI 6211	2210885359	020-5125-436.60-20	34.78	
			PI 6212	2210885378	020-5405-434.60-20	10.00	
			PI 6213	2210885380	020-5125-436.60-20	17.28	
11/14/2017	101	WELDON PARTS TULSA	PI 6357	198732500	020-5125-436.60-20	185.52	
11/14/2017	225	SUMMIT TRUCK GROUP	PI 6396	411149614	020-5125-436.60-20	195.07	
11/14/2017	377	KIMS INTERNATIONAL	PI 6066	0101534	020-5125-436.60-20	4.22	
11/14/2017	1444	HEATWAVE SUPPLY COMPANY	PI 6322	C75521001	020-5405-434.60-45	92.94	
11/14/2017	4854	SEAL COMPANY ENT., INC.	PI 6372	698772	020-0000-141.00-00	135.15	
11/14/2017	5371	PREMIER TRUCK GROUP	PI 6321	CM125214291	020-5125-436.60-20	166.53	
11/14/2017	5941	LOWES	PI 6034	11763	020-5120-437.60-23	12.50	
11/14/2017	8304	THERMO FISHER SCIENTIFIC	PI 6356	0030461	020-5405-434.60-34	405.96	
11/14/2017	9213	HITCH IT TRAILERS, PARTS, SERV	PI 5978	12409CS	020-5305-438.60-20	174.99	
			PI 5979	12411CS	020-5305-438.60-20	26.00	
11/14/2017	9892	GOODYEAR COMMERCIAL TIRE	PI 5997	2541009779	020-5125-436.60-19	729.80	
11/14/2017	10233	PETROLEUM TRADERS CORP	PI 6280	1194769	020-0000-141.00-00	15,535.55	
					11/14/2017 TOTAL -	17,373.23	
					CUMULATIVE TOTAL -	213,175.57	
11/15/2017	8	BRENNTAG SOUTHWEST INC	PI 5960	BSW904834	020-5405-434.60-34	3,598.73	
11/15/2017	90	NAPA AUTO PARTS	PI 6167	2210885397	020-0000-141.00-00	67.57	
			PI 6168	2210885397	020-0000-141.00-00	65.53	
			PI 6169	2210885438	020-0000-141.00-00	169.90	
			PI 6215	2210885425	020-5405-434.60-20	18.00	
11/15/2017	225	SUMMIT TRUCK GROUP	PI 6374	411149704	020-0000-141.00-00	58.84	
			PI 6398	411149707	020-5125-436.60-20	86.52	
11/15/2017	240	GRAINGER	PI 5998	961722419	020-5405-434.60-23	186.64	
11/15/2017	5042	H G FLAKE SUPPLY CO	PI 5993	0351676	020-5405-434.60-23	17.49	
			PI 6265	0351813	020-5405-434.60-23	172.96	
11/15/2017	5371	PREMIER TRUCK GROUP	PI 6326	125214791	020-5125-436.60-20	65.77	
11/15/2017	5936	CONTINENTAL BATTERY CO	PI 5943	15321115171020	020-0000-141.00-00	225.75	
11/15/2017	5941	LOWES	PI 6036	01077	020-5410-435.60-23	21.58	
			PI 6037	02947	020-5415-435.60-40	8.72	
			PI 6038	02985	020-5405-434.60-23	113.02	
			PI 6039	11930	020-5305-438.60-24	28.38	
			PI 6040	13264	020-5415-435.60-23	24.29	
			PI 6041	13324	020-5400-434.60-23	73.51	

FUND 020 BAMA	DATE DUE	VENDOR NO	VENDOR NAME	VOUCHER NO	INVOICE NO	ACCOUNT NO	AMOUNT
11/15/2017	7418		MATTHEWS FORD	PI 6043	13388	020-5405-434.60-23	34.17
11/15/2017	9892		GOODYEAR COMMERCIAL TIRE	PI 6243	F4CS207047	020-5305-438.40-20	77.95
11/15/2017	10233		PETROLEUM TRADERS CORP	PI 5968	2541009789	020-0000-141.00-00	1,102.84
11/15/2017	10699		KUBOTA CENTER WEST TULSA	PI 6281	1195088	020-0000-141.00-00	14,642.89
11/15/2017	10953		STRONGHAND LLC	PI 6076	P13965	020-5400-434.60-20	58.05
				PI 6385	2	020-5400-434.70-15	22,067.00
						11/15/2017 TOTAL -	42,950.10
						CUMULATIVE TOTAL -	256,125.67
11/16/2017	35		A & N TRAILER PARTS INC	PI 5929	00297889	020-5305-438.60-20	132.89
11/16/2017	90		NAPA AUTO PARTS	PI 6170	2210885497	020-0000-141.00-00	9.87
				PI 6171	2210885497	020-0000-141.00-00	4.33
				PI 6172	2210885497	020-0000-141.00-00	83.87
				PI 6173	2210885497	020-0000-141.00-00	3.40
				PI 6174	2210885497	020-0000-141.00-00	51.48
				PI 6175	2210885497	020-0000-141.00-00	63.57
				PI 6176	2210885540	020-0000-141.00-00	5.26
				PI 6216	2210885478	020-5200-419.60-20	134.12
				PI 6219	2210885517	020-5305-438.60-20	18.06
11/16/2017	120		CINTAS CORPORATION	PI 5957	5009304075	020-5305-438.60-23	127.21
11/16/2017	179		TRANS CONTINENTAL SUPPLY INC	PI 6334	1028704	020-0000-141.00-00	49.10
				PI 6335	1028704	020-0000-141.00-00	65.42
11/16/2017	357		INLAND TRUCK PARTS & SERVICE	PI 5999	1527686	020-5415-435.60-20	151.50
11/16/2017	377		KIMS INTERNATIONAL	PI 6067	0101597	020-5400-434.60-20	73.97
11/16/2017	1581		MID CONTINENT CONCRETE CO	PI 6311	1591845	020-5305-438.60-27	195.00
11/16/2017	5936		CONTINENTAL BATTERY CO	PI 6247	10931116171134	020-0000-141.00-00	225.75
11/16/2017	5941		LOWES	PI 6046	10439	020-5415-435.60-41	31.26
				PI 6047	72499/2041	020-5305-438.60-23	117.84
11/16/2017	7835		UNITED ROTARY BRUSH CORP.	PI 6336	CI 211068	020-0000-141.00-00	352.31
11/16/2017	9892		GOODYEAR COMMERCIAL TIRE	PI 5969	2541009799	020-0000-141.00-00	478.40
						11/16/2017 TOTAL -	2,374.61
						CUMULATIVE TOTAL -	258,500.28
11/17/2017	90		NAPA AUTO PARTS	PI 6177	2210885579	020-0000-141.00-00	114.75
				PI 6178	2210885579	020-0000-141.00-00	37.43
				PI 6226	2210885614	020-5120-437.60-23	175.24
11/17/2017	225		SUMMIT TRUCK GROUP	PI 6375	411149832	020-0000-141.00-00	337.04
				PI 6376	411149833	020-0000-141.00-00	55.93
				PI 6400	411149823	020-5125-436.60-20	482.02
11/17/2017	5941		LOWES	PI 6050	11505	020-5415-435.60-41	6.88
11/17/2017	6822		TULSA WINNELSON COMPANY	PI 6350	02849300	020-5410-435.60-23	583.54
11/17/2017	9700		ADVANCED INDUSTRIAL SOLUTIONS	PI 6248	233325	020-0000-141.00-00	462.70
11/17/2017	9892		GOODYEAR COMMERCIAL TIRE	PI 6000	2541009811	020-5125-436.60-20	180.00
11/17/2017	9919		E. H. WACHS	PI 6275	INV142224	020-5400-434.60-24	245.35
11/17/2017	11091		STEWART MARTIN EQUIPMENT	PI 6366	12456	020-5410-435.70-02	12,099.50
						11/17/2017 TOTAL -	14,780.38
						CUMULATIVE TOTAL -	273,280.66
11/18/2017	4730		DELL MARKETING L.P.	PI 6276	10203417639	020-5401-434.60-24	280.79
						11/18/2017 TOTAL -	280.79
						CUMULATIVE TOTAL -	273,561.45

FUND	020 BAMA	DATE DUE	VENDOR NO	VENDOR NAME	VOUCHER NO	INVOICE NO	ACCOUNT NO	AMOUNT
11/19/2017		1147		AARON FENCE COMPANY	PI 6269	132975	020-5305-438.40-28	3,992.00
11/19/2017		5941		LOWES	PI 6051	11240	020-5405-434.60-23	19.14
							11/19/2017 TOTAL -	4,011.14
							CUMULATIVE TOTAL -	277,572.59
11/20/2017		8		BRENNTAG SOUTHWEST INC	PI 6259	BSW06244	020-5410-435.60-34	793.63
11/20/2017		257		SAFETY KLEEN CORP	004416	75077746	020-5120-437.40-33	100.00
11/20/2017		370		AIRGAS USA LLC	004333	9948964235	020-5120-437.40-33	136.49
					004334	9948964235	020-5115-437.40-33	38.82
					004335	9948964235	020-5130-437.40-33	30.38
					004336	9948964235	020-5305-438.40-33	38.82
					004337	9948964235	020-5400-434.40-33	22.78
					004338	9948964235	020-5410-435.40-33	414.00
					004365	9948964235	020-5410-435.40-33	30.38
11/20/2017		501		CHAMBER OF COMMERCE	004370	41989	020-0302-413.30-11	30.00
					004380	41271	020-5200-419.30-11	575.00
11/20/2017		556		OFFICE TEAM	004407	49597735	020-0302-413.50-37	580.06
					004408	49638436	020-0302-413.50-37	364.55
11/20/2017		1057		TULSA WORLD	004420	409531-0920	020-5130-437.50-05	115.62
					004421	409538-0920	020-5130-437.50-05	113.16
					004422	409544-0920	020-5130-437.50-05	115.62
					004423	411741-0927	020-5130-437.50-05	115.62
					004424	411743-0927	020-5130-437.50-05	120.54
					004425	411748-0927	020-5130-437.50-05	120.54
					004426	411758-0927	020-5130-437.50-05	120.54
					004427	416565-1011	020-5130-437.50-05	118.08
11/20/2017		3694		ARROW EXTERMINATORS INC	004342	556476	020-5305-438.40-07	32.50
					004344	554933	020-5100-437.40-07	105.00
					004345	556480	020-5100-437.40-07	65.00
11/20/2017		4462		REGIONAL METROPOLITAN UTILITY	004415	412861	020-5410-435.40-45	100,208.12
11/20/2017		5042		H G FLAKE SUPPLY CO	PI 6266	0351823	020-5405-434.60-45	185.17
11/20/2017		5410		UNITED RENTALS, INC	004429	151381120001	020-5410-435.40-32	1,428.28
11/20/2017		5941		LOWES	PI 6296	01207	020-5305-438.60-23	84.10
					PI 6297	01215	020-5400-434.60-23	28.40
11/20/2017		6454		WASTE MANAGEMENT QUARRY LANDFI	004430	004886421850	020-5410-435.40-30	18,386.71
					004431	004878121856	020-5125-436.40-30	3,837.37
					004432	004887421859	020-5125-436.40-30	13,499.00
					004433	004878821851	020-5125-436.40-30	303.71
					004434	004887921858	020-5125-436.40-30	378.43
11/20/2017		7367		BOKF N.A.	004367	600814222	020-0503-415.50-28	2,815.01
11/20/2017		9916		WASTE ZERO INC	004435	29545	020-5125-436.60-25	15,862.56
					004436	29547	020-5125-436.60-25	12,935.54
					004437	29546	020-5125-436.60-25	13,407.64
					004438	29543	020-5125-436.60-25	29,081.36
11/20/2017		10039		COVANTA ENERGY LLC	004383	140144CVTUL	020-5125-436.40-30	37,817.16
11/20/2017		10127		FUELMAN	004390	BG2183727	020-5305-438.60-21	2.50
11/20/2017		10214		TULSA'S GREEN COUNTRY STAFFING	004428	58038	020-5125-436.50-37	4,235.40
11/20/2017		10360		JAVA DAVES EXECUTIVE COFFEE SE	004395	123132	020-5205-419.60-23	68.31
							11/20/2017 TOTAL -	258,861.90
							CUMULATIVE TOTAL -	536,434.49

FUND 020 BAMA	DATE DUE	VENDOR NO	VENDOR NAME	VOUCHER NO	I NVOI CE NO	ACCOUNT NO	AMOUNT
11/21/2017	5941	LOWES	PI 6301	02057		020-5305-438.60-23	36.59
11/21/2017	8616	GEODECA LLC	PI 6302	02102		020-5405-434.60-23	46.77
			PI 6363	1708054A		020-5415-435.70-15	14,593.00
						11/21/2017 TOTAL -	14,676.36
						CUMULATI VE TOTAL -	551,110.85
11/22/2017	90	NAPA AUTO PARTS	PI 6282	2210885965		020-0000-141.00-00	90.74
			PI 6283	2210885965		020-0000-141.00-00	59.90
			PI 6284	2210885965		020-0000-141.00-00	13.95
			PI 6285	2210885965		020-0000-141.00-00	4.14
			PI 6286	2210885965		020-0000-141.00-00	111.41
11/22/2017	7786	TRAFFI C ENGI NEERI NG CONSULTANT	PI 6369	11503		020-5205-419.70-16	10,678.10
						11/22/2017 TOTAL -	10,958.24
						CUMULATI VE TOTAL -	562,069.09
11/24/2017	4730	DELL MARKETI NG L. P.	PI 6273	10204666910		020-5415-435.70-19	4,749.37
						11/24/2017 TOTAL -	4,749.37
						CUMULATI VE TOTAL -	566,818.46
11/26/2017	90	NAPA AUTO PARTS	PI 6229	2210884793		020-5400-434.60-20	26.92
						11/26/2017 TOTAL -	26.92
						CUMULATI VE TOTAL -	566,845.38
11/27/2017	9822	MORTON SALT I NC	PI 6312	5401442312		020-5405-434.60-34	5,667.73
						11/27/2017 TOTAL -	5,667.73
						CUMULATI VE TOTAL -	572,513.11
11/28/2017	11003	KBC CONSTRUCTI ON I NC	PI 6314	190		020-5415-435.40-29	6,488.00
						11/28/2017 TOTAL -	6,488.00
						CUMULATI VE TOTAL -	579,001.11
11/29/2017	133	UTI LITY SUPPLY	PI 6365	110049		020-5415-435.60-24	4,795.00
11/29/2017	501	CHAMBER OF COMMERCE	004542	41989		020-5205-419.30-11	30.00
11/29/2017	556	OFFI CE TEAM	004568	49691667		020-0302-413.50-37	578.28
11/29/2017	574	SUPERI ON, LLC	004578	145943		020-0503-415.50-28	767.43
11/29/2017	2673	ACCURATE ENVI RONMENTAL LLC	004539	7K06013		020-5410-435.30-34	60.00
11/29/2017	4019	MCA FEE & TAFT	004558	524615		020-1700-419.30-08	152.50
11/29/2017	6776	SODER MECHAN I CAL I NC	004575	61250		020-5405-434.40-55	1,268.00
11/29/2017	9151	CLEAN THE UNI FORM CO OKLAHOMA	004455	50853329		020-5200-419.40-31	13.04
			004456	50853332		020-5115-437.40-31	46.01
			004458	50854409		020-5200-419.40-31	13.04
			004459	50854410		020-5100-437.40-33	4.00
			004460	50854411		020-5400-434.40-31	153.62
			004461	50854411		020-5406-434.40-31	48.53
			004462	50854412		020-5415-435.40-31	52.66
			004463	50854413		020-5115-437.40-31	46.01
			004465	50854415		020-5130-437.40-31	3.86
			004466	50854416		020-5120-437.40-31	104.66
			004467	50854417		020-5125-436.40-31	196.38
			004468	50854418		020-5120-437.40-33	29.00
			004471	50854850		020-5305-438.40-31	155.70

FUND	020 BAMA	DATE DUE	VENDOR NO	VENDOR NAME	VOUCHER NO	INVOICE NO	ACCOUNT NO	AMOUNT
					004473	50854851	020-5305-438.40-33	2.60
					004475	50854859	020-5405-434.40-28	8.10
					004476	50854857	020-5405-434.40-31	77.09
					004477	50853781	020-5410-435.40-31	14.20
					004478	50853782	020-5410-435.40-28	4.00
					004479	50854860	020-5410-435.40-31	14.20
					004485	50855512	020-5400-434.40-31	153.62
					004486	50855512	020-5406-434.40-31	48.53
					004487	50855513	020-5415-435.40-31	52.66
					004488	50855514	020-5115-437.40-31	46.01
					004491	50855516	020-5130-437.40-31	3.86
					004492	50855517	020-5120-437.40-31	104.66
					004493	50855518	020-5125-436.40-31	196.38
					004494	50855519	020-5100-437.40-31	19.00
					004495	50855519	020-5120-437.40-33	25.00
11/29/2017	9916			WASTE ZERO INC	004596	29587	020-5125-436.60-25	6,042.88
11/29/2017	10909			DUSTIN NORWOOD	004514	11/14/17	020-5400-434.30-11	97.50
11/29/2017	10949			ROUTEWARE INC.	004572	98788	020-5125-436.40-55	12,343.47
11/29/2017	11111			STONE CREEK INVESTORS OF	004608	2164/544	020-1700-419.50-89	8,359.79
							11/29/2017 TOTAL -	36,131.27
							CUMULATIVE TOTAL -	615,132.38
12/05/2017	113			WAGONER COUNTY RURAL WATER #4	000305	68500	020-5415-435.50-23	13.43
12/05/2017	309			OKLAHOMA NATURAL GAS CO	000025	220544536	020-5415-435.50-24	26.60
					000026	253747127	020-5415-435.50-24	41.19
					000027	254035382	020-5415-435.50-24	28.65
					000111	253867927	020-5415-435.50-24	25.57
					000572	257659209	020-5415-435.50-24	43.93
					001676	111356527	020-5305-438.50-24	90.85
					002728	253747127	020-5415-435.50-24	.64
					002729	254035382	020-5415-435.50-24	.48
					003802	253868218	020-5415-435.50-24	41.67
					004047	110016445	020-5120-437.50-24	140.22
					004444	220544536	020-5415-435.50-24	.41
					004445	257659209	020-5415-435.50-24	.64
					004446	257977409	020-5415-435.50-24	59.65
					004451	253867927	020-5415-435.50-24	.39
					006136	179009782	020-5100-437.50-24	161.93
12/05/2017	442			AMERICAN ELECTRIC POWER	000683	9588213380	020-5405-434.50-25	41,427.20
					001663	9509512540	020-5400-434.50-25	47.16
					001664	9520400250	020-5400-434.50-25	51.30
					001665	9529037750	020-5400-434.50-25	245.37
					001666	9535827230	020-5400-434.50-25	742.80
					001667	9525157130	020-5400-434.50-25	52.05
					001668	9572008130	020-5400-434.50-25	185.16
					001669	9579897130	020-5400-434.50-25	50.75
					001670	9579957130	020-5400-434.50-25	64.58
					003775	9521969410	020-5305-438.50-25	114.66
					003776	9562295260	020-5305-438.50-25	40.57
					003777	9568940540	020-5305-438.50-25	153.27
					005109	9553052871	020-5405-434.50-25	8,655.45

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 PROGRAM GM314L
 CITY OF BROKEN ARROW

ACCOUNTS PAYABLE BY FUND/ DUE DATE

PAGE 18

FUND	020 BAMA						
DATE		VENDOR	VENDOR	VOUCHER	I NVOI CE	ACCOUNT	
DUE		NO	NAME	NO	NO	NO	AMOUNT
12/05/2017	888		PREFERRED BUSI NESS SYSTEMS	009439	9525931030	020-1700-419.50-25	825.33
				000661	077479	020-5406-434.40-33	134.00
				000663	077409	020-5405-434.40-33	191.85
				001523	077508	020-5205-419.40-33	205.00
				001788	077532	020-5130-437.40-33	90.42
				001789	077532	020-5100-437.40-33	90.42
				001790	077532	020-5120-437.40-33	35.75
				001796	077532	020-0503-415.40-33	90.42
12/05/2017	7724		W NDSTREAM	006940	2598040	020-5100-437.50-22	184.48
				007568	4513524	020-5415-435.50-22	80.09
				007570	3572491	020-5415-435.50-22	82.41
12/05/2017	8512		AT&T MOBI LITY	000654	6446493	020-5200-419.50-22	65.27
				000655	6446494	020-5200-419.50-22	65.27
				000656	6930623	020-5200-419.50-22	65.27
				000657	6989325	020-5200-419.50-22	65.27
				000658	6989326	020-5200-419.50-22	65.27
				000659	8570323	020-5200-419.50-22	65.27
				000660	8920616	020-5200-419.50-22	65.27
				000661	8092689	020-5205-419.50-22	65.27
				000665	6931161	020-5120-437.50-22	32.27
				000666	7981029	020-5405-434.50-22	32.27
				000667	9369042	020-5410-435.50-22	32.27
				000687	6932991	020-5400-434.50-22	32.27
				000688	6933102	020-5400-434.50-22	32.27
				000689	5653832	020-5415-435.50-22	32.27
				000690	8923683	020-5415-435.50-22	32.27
				002439	7201588	020-5205-419.50-22	56.88
				003456	4026912	020-5400-434.50-54	44.00
				003457	4039359	020-5400-434.50-54	43.60
				003459	6303341	020-5200-419.50-54	41.00
				008701	8570944	020-5115-437.50-22	32.27
				008977	2825651	020-5200-419.50-54	43.00
				008978	2825682	020-5200-419.50-54	43.00
				008979	2825684	020-5200-419.50-54	43.00
				008980	2825686	020-5200-419.50-54	43.00
				008981	2825697	020-5200-419.50-54	43.00
				009376	5100835	020-5406-434.50-54	40.00
				009377	5109132	020-5406-434.50-54	40.00
				009378	7285048	020-5400-434.50-54	40.80
				009379	7285116	020-5400-434.50-54	40.00
						12/05/2017 TOTAL -	55,858.34
						FUND 020 TOTAL -	670,990.72

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PROGRAM GM314L
CITY OF BROKEN ARROW

ACCOUNTS PAYABLE BY FUND/ DUE DATE

PAGE 19

FUND	021	BAMA	SALES TAX				
DATE		VENDOR		VOUCHER	I NVOI CE	ACCOUNT	AMOUNT
DUE		NO	VENDOR	NO	NO	NO	
			NAME				
12/05/2017		1211	BANK OF OKLAHOMA N A	000651	FAP-16-0001-L	021-5410-473.80-01	70,764.21
				000652	FAP-11-0002-L	021-5400-471.80-01	123,969.42
				000653	FAP-17-0004-L	021-5410-473.80-01	72,407.71
				000654	FAP-17-0003-L	021-5410-473.80-01	29,244.58
12/05/2017		6597	BANK OF OKLAHOMA N. A.	004598	5101314	021-5410-475.83-02	500.00
						12/05/2017 TOTAL -	296,885.92
						FUND 021 TOTAL -	296,885.92



City of Broken Arrow

Fact Sheet

File #: 17-2969, Version: 1

**Broken Arrow Municipal Authority
Meeting of 12-5-2017**

To: Chairman and Authority Members

From: General Services Department

Title:

Consideration, discussion and possible implementation of a curbside recycling pilot program as proposed by the Citizen's Recycle Committee

Background:

At the November 7, 2017 meeting the Authority members reviewed the staff's recommendations regarding implementation of the pilot projects recommended by the Citizens Recycle Committee. The staff advised that \$125,000 had been budgeted in the FY 2017-18 budget to complete a recycle pilot project. Kate Vasquez, Senior Consultant with Gershman, Brickner and Bratton Inc. reported that two pilots of 1,000 participants each was estimated to cost \$445,000. Based on the limited funding and estimated costs, the staff's and GGB's recommendation was to complete one pilot rather than two and to limit the size of the pilot to 500 participants. After much discussion the Authority members directed that the item be sent back to the Citizens Committee for their input.

On November 20, 2017 the Citizens Recycle Committee met with the staff and the consultant and reviewed the recommendations. Ms. Vasquez provided additional cost estimates and advised the committee that two 500 participants pilots would cost approximately \$300,000. After discussion the Committee voted unanimously to maintain their recommendation that two pilots be completed concurrently. However, to address funding concerns the Committee recommended that each pilot be limited to 500 participants. The committee also advised that they would remain engaged as the pilot project program evolves to provide its analysis and recommendations on implementation.

The staff has reviewed the General Services budget in the Broken Arrow Municipal Authority and has determined that based on savings from capital projects that have already been completed and the deferment of one project regarding the Maintenance Center water runoff project, funding is available in the BAMA budget to cover the estimated cost of \$300,000 so that two 500 participant pilot projects would be competed. The deferment of the above referenced project will not have a significant impact on operations. The staff is prepared to move forward on the pilot project at the Authority's direction.

Funds for this professional service are available in the BAMA Capital project identified for refuse cost of service and recycling analysis.

Cost: \$300,000

Prepared By: Lee Zirk, General Services Department

Reviewed By: Finance Department

Legal Department

Assistant City Manager, Administration

Approved By: **Michael L. Spurgeon, City Manager**

Attachments: **GBB presentation from the November 7, 2017 Authority meeting**
GBB presentation from November 20 Recycle Committee meeting

Recommendation: Direct the staff to proceed with implementing a dual curbside recycling pilot program as proposed by the Citizen's Recycle Committee

Requested Information

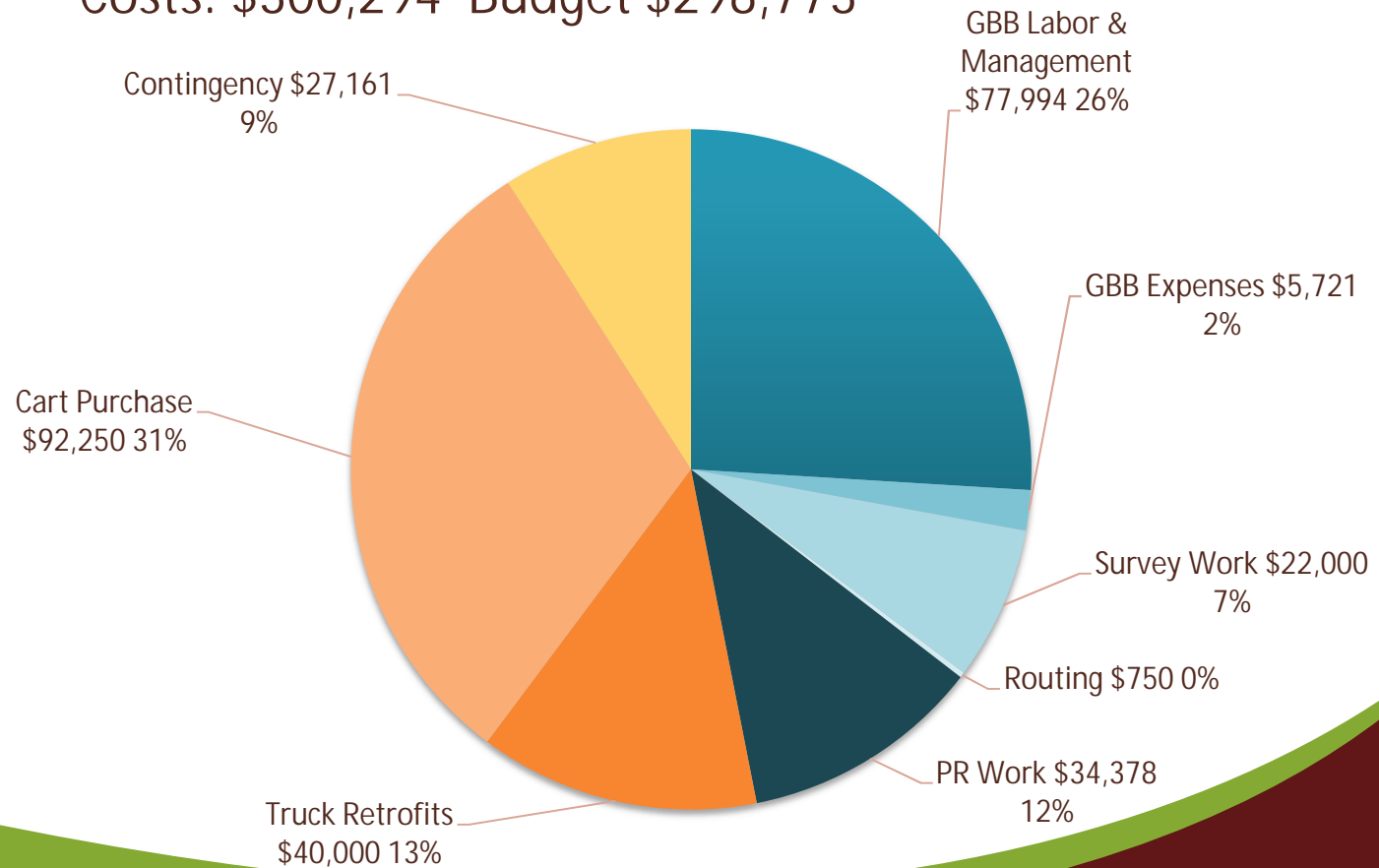
- Clarifying Questions for the Committee
- Examination of budget line items
- Timeline for pilot project



SOLID WASTE
MANAGEMENT
CONSULTANTS

Cost Centers: 500 + 500 Dual Pilot

Costs: \$300,294 Budget \$298,773



**SOLID WASTE
MANAGEMENT
CONSULTANTS**

The difference between Costs and Budget is the revenue from recyclables

Scope: Solid Waste Consulting

- Constitutes 28% of costs
- Services include procurement assistance; Pilot planning, implementation and evaluation; on-site support; reporting
- Includes all meetings, project management, travel, and expenses



GBB

SOLID WASTE
MANAGEMENT
CONSULTANTS

Scope: Professional Services

- Combined <20% of Costs
 - Survey: long-format opinion survey to ask about participation and engagement with the three changes
 - Routing: Draws from Citywide data to create efficient routes
 - Public Relations: initial survey; craft and implement 2 professional messages and supporting activity

Capital Costs: Carts and Trucks

- Combined 44% of Costs
- Possibly mitigated by grant funding
- All can continue to be used beyond the period of the pilot

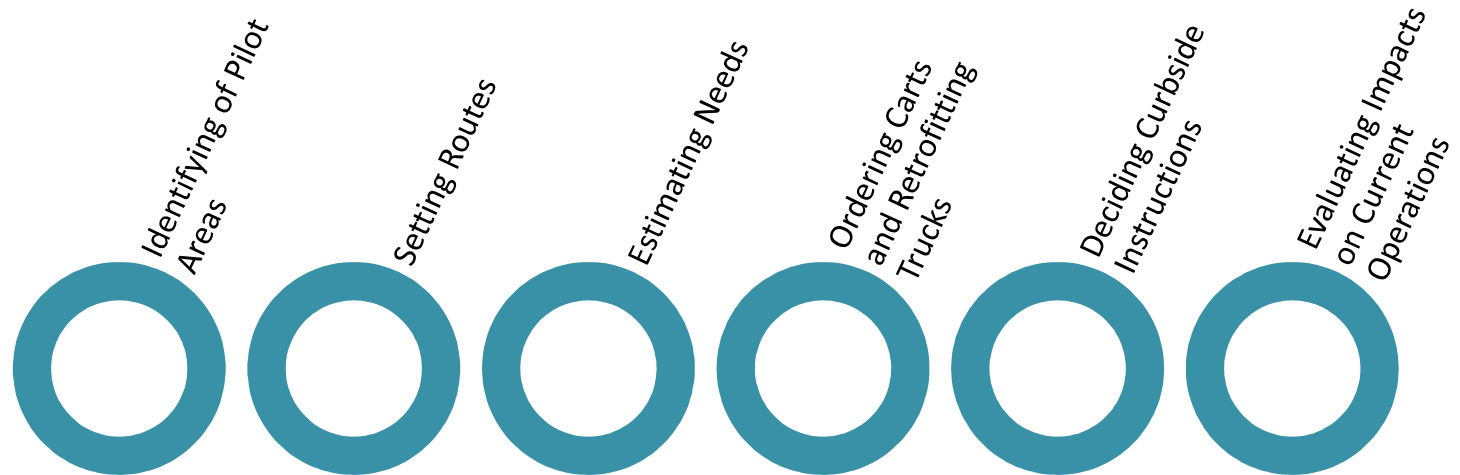


SOLID WASTE
MANAGEMENT
CONSULTANTS

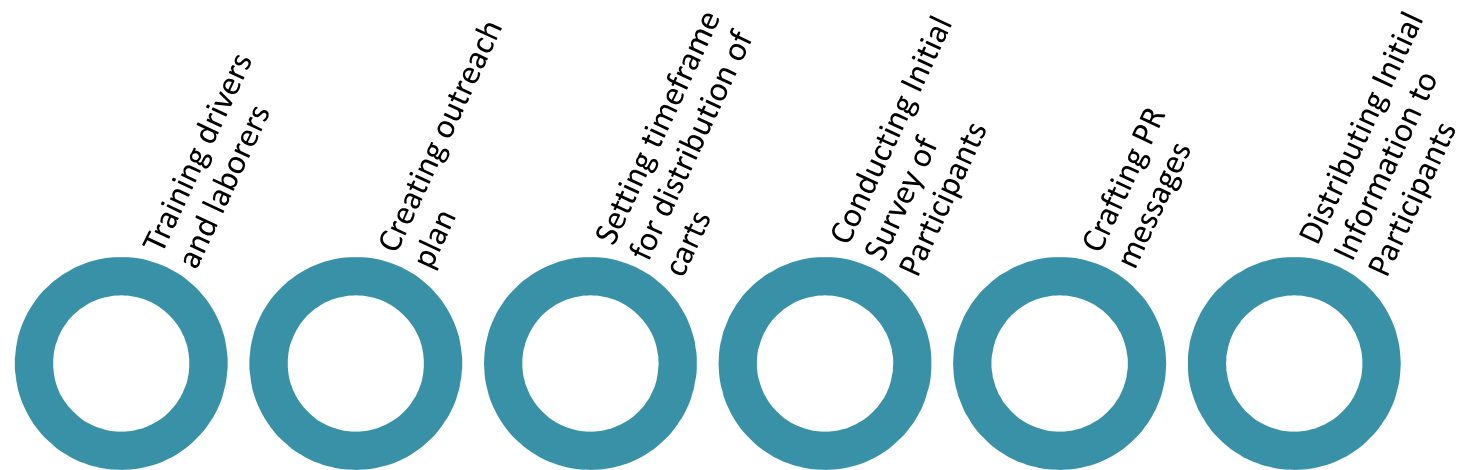
Project Contingency

- Contingency budgeting allowed for unexpected cost overruns, project delays, or unforeseen circumstances
- For this budget, the contingency is 10% on the entire project value

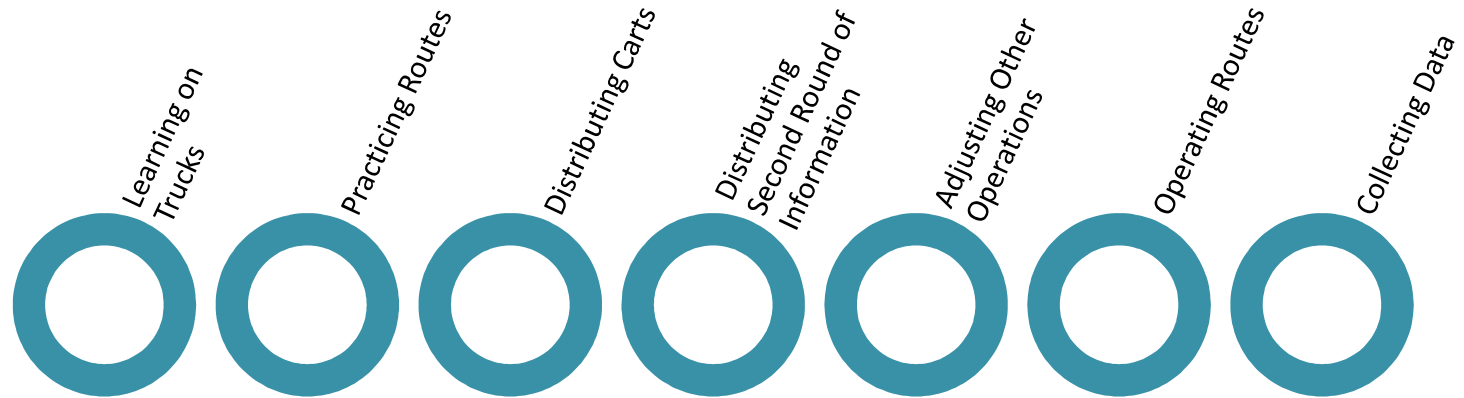
Planning Phase: Kickoff



Planning Phase: Preparations



Implementation Phase

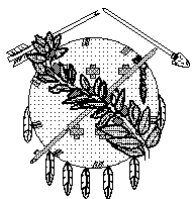


GBB

SOLID WASTE
MANAGEMENT
CONSULTANTS

Evaluation Phase





City of Broken Arrow

Fact Sheet

File #: 17-2947, Version: 1

**Broken Arrow Municipal Authority
Meeting of: 12-05-2017**

To: Chairman and Authority Members

From: Utilities Department

Title:

Consideration, discussion and possible approval of and authorization to execute a Consulting Services Agreement with Black & Veatch Management Consulting to update the water, wastewater and stormwater financial plans for the City of Broken Arrow and the Broken Arrow Municipal Authority

Background:

In December of 2015, BAMA entered into a contract with Black & Veatch to review and update the current water, wastewater and stormwater rates and project revenue requirements for the next 5-year period.

This proposal is to review the existing water, wastewater and stormwater rates and project the revenue requirements for the next 5 year period. The revenue requirements shall take into consideration the operation and maintenance expense, debt service on existing and proposed Oklahoma Water Resources Board State Revolving Fund loans, transfers to the General Fund and the 5 year Capital Improvement Program (CIP). Following the development of the revenue requirements, Black & Veatch will develop a 5 year cash flow analysis to determine the level of revenue adjustment needed for the water, wastewater and stormwater utilities for each year of the study period. Funding is available in the operational budget of BAMA.

Cost: Not to exceed \$49,000

Prepared By: Anthony C. Daniel, Utilities Director

Reviewed By: Finance Department

Assistant City Manager-Operations

Legal Department

Approved By: Michael L. Spurgeon, City Manager

Attachments: Professional Services Proposal for Water, Wastewater and Stormwater Rate Study

Recommendation: Approve and authorize execution of a Consulting Services Agreement with Black & Veatch Management Consulting to update the water, wastewater and stormwater financial plans.

CONSULTING SERVICES AGREEMENT

This Agreement, effective December 5, 2017 is between the CITY OF BROKEN ARROW ("Client") and BLACK & VEATCH MANAGEMENT CONSULTING, LLC ("Consultant"). Consultant shall perform Services in accordance with written Requests for Services (Requests) issued by Client and agreed to by Consultant during the term of this Agreement, which shall be attached as separate Exhibits A. Consultant shall accept or decline a Request as promptly as practicable under the circumstances.

1. Consultant will perform the Services in accordance with the standards of care and diligence normally practiced by recognized consulting companies in performing services of a similar nature. If, during the six-month period following the earlier of termination or completion of the Services under the applicable Request for Service, it is shown there is an error in the Services caused solely by Consultant's failure to meet such standards, and Client has promptly notified Consultant in writing of any such error within that period, Consultant shall perform, at Consultant's cost, such corrective consulting services within the original Request for Service as may be necessary to remedy such error. The obligations and representations contained in this Article 3 are Consultant's sole warranty and guarantee obligations and Client's exclusive remedy in respect of quality of the Services. ***EXCEPT AS PROVIDED IN THIS ARTICLE, CONSULTANT MAKES NO OTHER WARRANTIES OR GUARANTEES, EXPRESS OR IMPLIED, RELATING TO CONSULTANT'S SERVICES AND CONSULTANT DISCLAIMS ANY IMPLIED WARRANTIES OR WARRANTIES IMPOSED BY LAW INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.*** This Article governs, modifies, and supersedes any other terms in this Agreement which may be construed to address warranties or guarantees or the quality of the Services.
2. Reports and other documents which Consultant prepares and delivers to Client pursuant to this Agreement shall become the property of Client when Consultant has been compensated for Services rendered. Nothing contained in this Section shall be construed as limiting or depriving Consultant of its rights to use its basic knowledge and skills to design or carry out other projects or work for itself or others, whether or not such other projects or work are similar to the work to be performed pursuant to this Agreement. Consultant shall have the right to retain and use copies of drawings, documents, and other data furnished or to be furnished by Consultant and any non-confidential information contained therein. At all times, each party shall retain all of its rights in its drawing details, designs, specifications, databases, models, computer software, copyrights, trade and service marks, patents, trade secrets, and any other proprietary property. Rights to intellectual property developed, utilized, or modified in the performance of the Services shall remain the property of Consultant. Client shall not acquire any rights to any of Consultant's, its subcontractors' or vendors' proprietary computer software that may be used in connection with the Services except as expressly provided in the Request or as may be separately agreed. Files delivered in electronic medium may not work on systems and software different than those with which they were originally produced. Consultant makes no warranty as to the compatibility of these files with any other system or software. Because of the potential degradation of electronic medium over time, in the event of a conflict between any specifications, reports, or other documents and electronic files, the original will govern.
3. Documents, including, but not limited to, drawings, specifications, reports, electronic files, and computer software prepared by Consultant pursuant to this Agreement, are instruments of service in respect to the project. They are not intended or represented to be suitable for reuse by Client or others on extensions of the project or on any other project. Any reuse without prior written approval, and verification or adaptation by Consultant for the specific purpose intended will be at Client's sole risk and without liability or legal exposure to Consultant. Client shall defend, indemnify, and hold harmless Consultant against all claims, losses, damages, injuries, and expenses, including attorneys' fees, arising out of or resulting from such reuse. Any approval, and verification or adaptation of documents will entitle Consultant to additional compensation at rates customarily charged by Consultant for such services. No documents or any information contained therein, or otherwise supplied by Consultant in connection with the Services, shall be released or used by Client in connection with any proxy, proxy statement, proxy soliciting material, prospectus, official statement, offering memorandum, Securities Registration Statement, or any sales or due diligence or similar document without the express written approval of Consultant, except as may be required by law. Consultant may include its standard commercial third-party disclaimers in its Report. Any information shared with the Client prior to the release of the Report is superseded by the Report. As such, Client may not rely on, or distribute to third-parties, any emails, drafts, or oral statements made prior to the issuance of the Report. Client's distribution of the Report to a third party shall be at its own risk, and Client agrees to indemnify and hold Consultant harmless against any and all claims Consultant receives from any such third party based upon its access to, or reliance upon, Consultant's Report.
4. Consultant shall maintain in force, during the period that Services are performed, workers' compensation insurance in accordance with the laws of the states having jurisdiction over Consultant's employees who are engaged in the Services and employer's liability insurance with a limit of \$100,000 each occurrence and in the aggregate. Consultant also shall maintain commercial general liability insurance with a limit of \$1,000,000 per occurrence and in the aggregate; automobile liability insurance with combined single limit of \$1,000,000; and professional liability insurance with per claim in the aggregate limits of \$1,000,000.
5. Consultant shall indemnify Client against any and all claims, demands and causes of action for bodily injury to or death of persons or for damage to or destruction of property (other than property of Client or construction work in progress, for which Client shall have responsibility) resulting solely from any and all negligent physical acts of Consultant while at Client's facility. The parties waive all claims for property damage, and shall require their insurers to waive subrogation rights against the other party under any applicable policy of property insurance.

6. In performance of the Services, it is acknowledged that Consultant may be supplied with certain information and/or data by Client and/or others, and that Consultant will rely on such information. Therefore, the accuracy of such information is not within Consultant's control and Consultant shall not be liable for its accuracy, nor for its verification unless otherwise provided in the Request. Since Consultant has no control over the cost of labor, materials, or equipment furnished by others, or over the resources provided by others (including Client) to meet project schedules, Consultant's opinion of probable costs and of project schedules shall be made on the basis of experience and qualifications as a professional consultant. Consultant does not guarantee that proposals, bids, revenues, costs, and other cash requirements, or actual operating and project costs will not vary from Consultant's estimates or that actual schedules will not vary from Consultant's projected schedules.
7. Client may, with or without cause, terminate the Services at any time upon 10 working days written notice to Consultant. In such case, Consultant shall be paid costs incurred and fees earned to the date of termination and through demobilization and neither party shall be entitled to any other compensation or damages from the other. At all times, each party shall retain all of its rights in its drawing details, designs, specifications, databases, computer software, copyrights, trade and service marks, patents, trade secrets, and any other proprietary property.
8. Client may audit and inspect Consultant's records and accounts covering fees and reimbursable costs for a period of six months following the completion of Consultant's Services. The purpose of any such audit shall be only for verification of such costs. Consultant shall not be required to keep records of or provide access to those of its costs expressed as fixed rates, a lump sum, or as a percentage of other costs.
9. Neither party shall be liable to the other party for loss of profits or revenue; loss of use; loss of opportunity; loss of goodwill; cost of substitute facilities, goods or services; cost of capital; cost of replacement power; governmental and regulatory sanctions; and claims of customers for such damages; or for any special, consequential, incidental, indirect or exemplary damages whether a claim for any such loss arises out of breach of contract, warranty, tort (including negligence), strict liability, indemnity, or another theory. Except for an obligation to make payments, neither party shall be in default to the extent any nonperformance is caused by a circumstance beyond such party's reasonable control. The warranties, obligations, liabilities and remedies of the parties, as provided herein, are exclusive and in lieu of any others available at law or in equity. Consultant's total aggregate liability under this Agreement shall not exceed the compensation received by Consultant under the applicable Request for Services. To the fullest extent allowed by law, releases from, and limitations of liability shall apply notwithstanding the breach of contract, tort including negligence, strict liability or other theory of legal liability of the party released or whose liability is limited. Consultant may subcontract portions of the Services to its related entities.
10. During the term of this Agreement, and for a period of six months following any termination or expiration hereof, Client agrees that it will not, hire, or solicit any employee of Consultant who performed services hereunder, to become employees or independent contractors of Client or such other person or entity, excluding employees who are responding to a general solicitation for employment advertised by Client. If Client does hire a Consultant employee as prohibited herein, Client shall be liable to Consultant for 60% of such employee's first-year salary (including any signing bonuses or reimbursable relocation costs). Client shall be obligated to disclose such amounts to Consultant and Consultant shall immediately invoice Client for such amount to be paid by Client within 10 business days of receipt of Consultant's invoice. Failure to pay such amount when due shall be considered a breach of this Agreement by Client and entitle Consultant to any and all remedies available under this contract, at law or in equity.
11. Client understands that Consultant will not provide legal or tax advice or opinions, and Client will seek such advice and opinions from its attorneys and tax advisors.

This Agreement and the attached Exhibits constitute the entire Agreement. No other representations of any kind, oral or otherwise, shall have any effect. This Agreement shall be governed by the laws of the state of Oklahoma, notwithstanding the operation of any conflict or choice of law statutes or decisional law to the contrary.

CITY OF BROKEN ARROW, OKLAHOMA

BLACK & VEATCH MANAGEMENT CONSULTING, LLC

By: _____

By: _____

By: _____
(Printed)

By: _____
(Printed)

Title: _____

Title: _____

APPROVED AS TO FORM:

Lesli Myers
December 31, 2008
ASSISTANT CITY ATTORNEY

Legal
Approved _____
Reviewed _____
Date _____

PM
Approved _____
Date _____

EXHIBIT A
REQUEST FOR SERVICES

CONSULTING SERVICES AGREEMENT

Between

City of Broken Arrow, Oklahoma ("Client")

And

Black & Veatch Management Consulting, LLC ("Consultant")

Pursuant to the terms and conditions of the Consulting Services Agreement executed and made effective as of the 5th day of December, 2017, between the City of Broken Arrow, Oklahoma ("Client") and Black & Veatch Management Consulting ("Consultant"), Client hereby requests Consultant perform and Consultant agrees to perform the following Services:

Effective Date: This Exhibit A will be effective on December 5, 2017.

A. Requested Services:

Black & Veatch will update the City's water, wastewater and stormwater 5-year financial plans. The scope of service includes update the existing rate models with historical data for the most recent fiscal year, and developing a financial plan for the 5-year study period (FY 2018-2022). One work session will be held with utility staff and management to review the draft results and one work session will be held with the member of the Broken Arrow Municipal Authority (BAMA) to present to preliminary results. The final study results will be presented to BAMA at a regularly scheduled meeting and a letter report will be provided.

B. Commencement Date:

December 5, 2017.

C. Billing Basis:

Time and material, not to exceed.

Invoices are due within 30 days of receipt.

D. Estimated Cost of the Services:

A fee of \$49,000 is authorized for the payment of service to be provided under the terms of this Agreement. Client will be billed only for requested services actually provided, in accordance with the above stated basis of charges. Consultant will provide no services under this agreement that will result in cumulative billable fees in excess of the above fee authorization without additional authorization by Client.

E. Estimated Completion Date:

March 5, 2017.

F. Monthly Billing:

Commencing on or about the first day of the calendar month following execution of this Agreement, and monthly thereafter, Consultant shall furnish Client with an invoice covering the Reimbursable Costs and Fee for services provided during the previous month and any interest due under this Agreement. Invoices may be submitted electronically by email to adaniel@brokenarrowok.gov. In such event, the electronic copy of the invoice will be considered the official invoice and will not be followed by a hard copy invoice. Notwithstanding any other provision of the above-referenced Agreement, or this Exhibit A, Consultant is under no obligation to submit any deliverable if any invoice is more than 45 days outstanding.

G. Method of Payment: Payments to be made to Consultant under this Agreement shall be electronically transferred either by ACH, specifically in CCD+ or CTX format, or wire transfer to the bank account and in accordance with the bank instructions identified in Consultant's most recent invoice in immediately available funds no later than the payment due date. Invoice number and project name shall be referenced in the bank wire reference fields or the ACH addenda information.

H. Disputes: In the event Client disputes any invoice item, Client shall give Consultant written notice of such disputed item within 10 days after receipt of such invoice and shall pay to Consultant the undisputed portion of the invoice according to the provisions hereof. If Client fails to pay any invoiced amounts when due, interest will accrue on each unpaid amount at the rate of eighteen percent per annum, or the maximum amount allowed by law if less, from the date due until paid according to the provisions of this Agreement. Interest shall not be charged on any disputed invoice item which is finally

resolved in Client's favor. Payment of interest shall not excuse or cure any default or delay in payment of amounts due. In the event Consultant refers this Agreement to a third party for collection or enforcement of its terms, Consultant shall be entitled to reimbursement for all costs and expenses incurred, including a reasonable attorneys' fee. In the event that Client has an unpaid invoice over 50 days past due, Consultant may, in addition to all other remedies available at law and equity, terminate this Request for Services.

This Request for Services and the above-referenced Agreement constitute the complete understanding of the parties with respect to the Services specified herein. Terms and conditions contained in purchase orders, work orders, or other documents issued by Client with respect to the Services shall be of no force and effect.

IN WITNESS WHEREOF, the parties have executed this Request for Services on the date(s) indicated below.

CITY OF BROKEN ARROW, OKLAHOMA

BLACK & VEATCH MANAGEMENT CONSULTING, LLC

By: _____

By: _____

By: _____
(Printed)

By: _____
(Printed)

Title: _____

Title: _____

Date: _____

Date: _____

Legal
Approved _____
Reviewed _____
Date _____

PM
Approved _____
Date _____

APPROVED AS TO FORM:

Leshi Myers
ASSISTANT CITY ATTORNEY