

**SECOND ADDENDUM TO AGREEMENT
PROFESSIONAL ENGINEERING SERVICES**

Between City of Columbia, Missouri And Burns & McDonnell Engineering Company, Inc.

THIS ADDENDUM (hereinafter "Addendum") is made by and between the City of Columbia, Missouri, a municipal corporation (hereinafter "CITY"), and Burns & McDonnell Engineering Company, Inc., a Missouri Corporation of 9400 Ward Parkway, Kansas City, MO 64114 (hereinafter "ENGINEER") and is entered into on the date of the last signatory below. CITY and ENGINEER are each individually referred to herein as a "Party" and collectively as the "Parties."

WHEREAS, CITY and ENGINEER entered into a "Professional Engineering Services Agreement" dated July 8, 2016, as amended by the First Addendum dated January 6, 2017 (hereinafter "Original Agreement") for CITY to receive, and ENGINEER to provide, engineering support services for Remediation of More's Lake at the Municipal Power Plant; and

WHEREAS, both Parties wish to enter into a second addendum to the Original Agreement in order to expand the Scope of Services for CITY to receive, and CONTRACTOR to provide, engineering support services for groundwater assessment, monitoring and sampling; and

WHEREAS, CITY and ENGINEER now wish to amend the Original Agreement, consistent with Section 7.5 thereof;

NOW, THEREFORE, in consideration of the mutual covenants contained herein and for other good and valuable consideration, the Parties hereto agree as follows:

1. Amendments of Original Agreement

A. **General.** All terms and provisions of Original Agreement a copy of which is attached hereto as **Exhibit 2** and made a part of this Addendum, will remain in full force and effect on both Parties, except as amended in this Addendum.

B. **Amendments.** Both Parties agree to amend the Original Agreement in the following manner:

(i) *Amending Section 5 – Period of Service by replacing in entirety Section 5.3 as provided:*

5.3. Services shall be started and completed as provided in Attachment A – "Scope of Basic Services". CITY shall have the right to establish performance times for individual phases or elements of the PROJECT by delivering a written schedule setting out the performance times to the ENGINEER.

- (ii) *Amending Section 6 – Payments to Engineer by replacing in entirety Section 6.1.2 as provided:*

6.1.2. Total payment for Scope of Services and all other expenses and costs to the CITY under this Agreement and described herein shall not exceed \$800,142.35 as divided by the following services: for original Scope of Services, \$262,983.00; for Addendum 1 Scope of Services, \$340,505.00; and for Addendum 2 Scope of Services, \$196,654.35.

2. Expanded Scope of Services, Amendment 2

- A. **Expanded Services.** The Scope of Services in Original Agreement is expanded to include the additional work described in "Amendment No. 2 to Attachment A" attached hereto as **Exhibit 1** and made a part of this Addendum. This amendment is an addition to the rest of the Scope of Services of Original Agreement.
- B. **Budget Impact.** In consideration for these services, CITY agrees to increase project budget cost estimates to be paid to ENGINEER in the amount of \$196,654.35. This increase in budget is in addition to the rest of the project budget listed in the Original Agreement.

3. Agreement

The Parties hereby adopt, ratify and confirm the Original Agreement as it is amended by this Addendum. This Addendum shall be binding on, and inure to the benefit of, the Parties hereto.

[SIGNATURE PAGE TO FOLLOW]

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement by their duly authorized representatives as of the date of the last signatory to this Agreement.

CITY OF COLUMBIA, MISSOURI

By: _____
John Glascock, City Manager

Date: _____

ATTEST:

By: _____
Sheela Amin, City Clerk

APPROVED AS TO FORM:

By: _____
Nancy Thompson, City Counselor / ak *AK*

CERTIFICATION: I hereby certify that this contract is within the purpose of the appropriation to which it is to be charged, Account No. 37581310-604990 E0204, and that there is an unencumbered balance to the credit of such appropriation sufficient to pay therefor.

Janet Frazier, Director of Finance

**BURNS & MCDONNELL
ENGINEERING COMPANY, INC.**

BY: *TZ Corley*

TITLE: PRINCIPAL

DATE: 02 August 2019

ATTEST

BY: *Vanni Dahi*

TITLE: Executive Admin

**Amendment No. 2
To
Attachment A
More's Lake Remediation and Site Restoration
City of Columbia, Missouri
Water & Light Department
July 2, 2019**

This Amendment No. 2 document has been prepared to address additional regulatory requirements and developments associated with the More's Lake Remediation and Site Restoration Project, as described below.

According to the Federal Coal Combustion Residuals (CCR) rule, More's Lake is an inactive surface impoundment. The rule required operators of these units to implement groundwater monitoring programs and collect eight independent groundwater samples prior to April 17, 2019. Burns & McDonnell helped the City meet this requirement, receiving the last of the required data on April 15, 2019. Once this data is collected, operators must then determine, within 90 days, if a statistically significant increase (SSI) in constituent levels has occurred, and if so, enter into the assessment monitoring and reporting program (semi-annual groundwater monitoring and reporting), provide notice that an SSI has occurred and that the assessment monitoring program has been initiated, establish groundwater protection standards for detected constituents, and determine the nature and extent of the groundwater constituent exceedances. From the data collected and analyzed to date, indications are that SSIs for multiple constituents at More's Lake are highly likely. Therefore, the City of Columbia Water & Light Department (City) has requested that Burns & McDonnell provide a proposal for executing these next steps in CCR rule compliance.

Tasks 1.0 through Task 16.0 were included in the original agreement Attachment A and Amendment 1. Amendment 2 Tasks 17.0 through 21.0 presented below include a Scope of Work for the next steps of the CCR Rule.

Amendment No. 2 Scope of Work:

Task 17.0 – Prepare Notification of Assessment Monitoring Program and establish Groundwater Protection Standards

Burns & McDonnell will determine by July 14, 2019 whether an SSI above background levels has occurred, provide the City with the letter of notification required by the CCR rule that one or more SSIs above background has occurred and that the assessment monitoring program has been initiated. Groundwater protection standards (GWPS) will be established and included in the first annual Groundwater Monitoring report (Task 15.0) and will be provided to the City for posting in the facility operating record.

Task 18.0 – Perform Groundwater Assessment Monitoring Sampling, Analysis, and Reporting

Burns & McDonnell will perform three (3) groundwater sampling events in accordance with procedures in the Sampling and Analysis Plan. Groundwater sampling will include measuring water levels in twelve wells, low-flow groundwater purging and sampling using dedicated bladder pumps, and off-site laboratory sample analysis:

- Event 1: 'Subsequent' Assessment Trigger Event (per 40 CFR §257.95.(b), within 90 days of SSI

- determination) by October 12, 2019
- Event 2: Semi-Annual Assessment Monitoring Event (per 40 CFR §257.95.(d).(1), within 90 days of receipt of 'Subsequent' event data, and semi-annually thereafter) by January 10, 2020
- Event 3: Semi-Annual Assessment Monitoring Event (per 40 CFR §257.95.(d).(1)), June 2020

Groundwater samples will be analyzed for both Detection and Assessment Monitoring parameters listed in Appendix III and IV of the CCR Final Rule, respectively. Additional groundwater parameters will include those listed in MDNR's CCR Storage and Disposal in Missouri Division of Environmental Quality white paper.

Burns & McDonnell will compile field documentation and laboratory reports of the groundwater sampling event for preparing the second annual Groundwater Monitoring report required per the CCR Final Rule, due August 2020.

If any Appendix IV constituents are detected at statistically significant levels above the GWPS in any of the above events, the following tasks will be executed.

Task 19.0 – Provide Notification Identifying Constituents above GWPS

Within 30 days of identifying a statistically significant level above GWPS, Burns & McDonnell will provide the City with a letter notification stating the constituent levels exceeding the GWPS for the City's operating record to meet 40 CFR §257.95.(g).

Task 20.0 – Characterize the Nature and Extent of Groundwater Impact

Burns & McDonnell will develop a work plan to characterize the nature and extent of groundwater impacts per 40 CFR §257.95.g. and will execute the work plan. The work plan will be submitted to the City for review and comment. Subsequently the work plan will be submitted to the MDNR for review and comment.

Installation of three (3) additional groundwater monitoring wells is assumed to be required. Burns & McDonnell will subcontract drilling and well construction to a firm certified for well construction in Missouri. Burns & McDonnell will provide an on-site geologist to conduct field oversight and document monitoring well installation activities. The field geologist will log subsurface materials encountered during the advancement of boreholes drilled at each monitoring well location. In addition, the Burns & McDonnell geologist will oversee and document the well installation, construction, completion, and development activities for proper installation and suitability for inclusion into the groundwater monitoring system. Additional field activities will include air monitoring in the vicinity of the borehole during drilling activities, measurement and recording of well development field parameters, gauging of water levels in new and existing monitoring wells, and in-situ hydraulic conductivity testing (slug testing) at each newly installed monitoring well. It is assumed that the new wells will be constructed in the fall or winter of 2019.

An installation report will be prepared as an addendum to the 2018 Hydrogeologic Investigation Report. The report will be submitted to the City for review and comment and subsequently to the MDNR for review and comment. The new wells will then be included in the January 2020 sampling event.

Task 21.0 – Assessment of Corrective Measures

Within 90 days of identifying a statistically significant level above GWPS, Burns & McDonnell will initiate assessment of corrective measures in accordance with 40 CFR §257.96. The initiation will consist of assessing data collected to date, the nature and extent characterization, and corrective measures taken to date. The assessment will be summarized in the form of a technical memorandum. Burns & McDonnell personnel will participate in a public meeting to discuss the assessment with interested and affected parties

to meet 40 CFR §257.96.(e).

Compensation:

Based upon the Scope of Services and the Responsibilities of the City of Columbia as presented above, Burns & McDonnell will provide services on a time and material basis for a not to exceed fee of \$196,650 (One Hundred and Ninety-Six Thousand Six Hundred and Fifty Dollars).

Assumptions:

The following are our project scope of work assumptions:

- The City will be responsible for obtaining any required easements and access agreements to install new monitoring wells, should those wells be located offsite. Burns & McDonnell's professional land surveyor subcontractor can provide necessary exhibits for additional compensation, but these services are not included in this Scope of Work.
- The City will provide timely review, coordination, and support of tasks herein. Burns & McDonnell has included addressing one round of comments for each deliverable described herein.
- The City will coordinate facility orientations (as needed) and shall also assist in any coordination required with Burns & McDonnell, the well contractor, and any utility locating services.
- The City will be responsible for locating all utilities owned by the City.
- Burns & McDonnell has estimated the field work included in Task 20.0 will be complete in 10 working days (includes well development). If unforeseen conditions cause the actual field work duration to exceed the estimated duration, or if additional wells are required from the analysis completed herein, the compensation amount will increase. Burns & McDonnell will notify the City immediately if any such unforeseen conditions are encountered.
- Burns & McDonnell has assumed the following with respect to new groundwater monitoring well installation activities (Task 20.0):
 - Burns & McDonnell to provide field personnel for soil logging, air monitoring at drill rig, and well installation oversight
 - Includes well development and in-situ hydraulic conductivity testing (slug test) at new wells
 - Flush-mount surface completions at new monitoring wells
 - Burns & McDonnell will contract monitoring well staking and surveying
 - Burns & McDonnell to purchase and install dedicated bladder pump assemblies at newly installed monitoring wells
 - Each well will be a maximum of 40 feet in depth.
 - Two (2) days of low-flow groundwater development at 3 wells
- Burns & McDonnell has assumed the following with respect to groundwater monitoring activities (Task 18.0):
 - Fifteen (15) groundwater samples collected per sampling event (9 existing wells + 3 new wells + 1 duplicate + 1 matrix spike + 1 matrix spike duplicate)
 - One (1) surface water sample from pond
 - Groundwater and surface water laboratory analysis to include:
 - CCR Rule Appendix III constituents – Chloride, Fluoride, pH, TDS, Sulfate, Metals (Boron and Calcium)
 - CCR Rule Appendix IV constituents – Fluoride, Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Lead, Lithium, Mercury, Molybdenum, Selenium, Thallium, Mercury, Radium 226 and 228
 - MDNR additional constituents – Aluminum, Chromium III, Chromium IV, Copper, Iron, Magnesium, Manganese, Nickel, Silver, Sodium, Zinc, Total Organic Carbon (TOC), Total Organic Halogens (TOX), Chemical Oxygen Demand (COD), Hardness (as CaCO₃).

**Cost Estimate
on a per Task Basis**

(fill in green boxes)

**Columbia Water & Light
Amend. #2 - More's Lake Remediation
Columbia, MO**

Task No.	Task Description					REIMBURSABLE EXPENSES						
		Category	Hourly Rate	Hours	Fee	Item	Quantity	Unit	Fee per Unit	Bare Fee	Percent Markup	Total Fee
17.0	Assessment Notification and establish GWPS	Associate (16)	\$246.00									
		Associate (15)	\$241.00									
		Associate (14)	\$237.00	3	\$711.00							
		Senior (13)	\$228.00	13	\$2,964.00							
		Senior (12)	\$204.00									
		Staff (11)	\$183.00									
		Staff (10)	\$170.00									
		Assistant (9)	\$147.00	3	\$441.00							
		Assistant (8)	\$123.00									
		Assistant (7)	\$90.00									
		Technician (6)	\$78.00									
						Technology Charge	19	hour	\$9.95	\$189.05		\$189.05
Task Subtotals				19	\$4,116.00					\$189.05		\$189.05
Task Total												\$4,305.05
18.0	GW Assessment Monitoring and Reporting	Associate (16)	\$246.00			Meals & Lodging	6	day	\$150.00	\$900.00		\$900.00
	Includes GW sampling/analysis	Associate (15)	\$241.00			Truck	9	day	\$70.00	\$630.00		\$630.00
	Low-flow per SAP	Associate (14)	\$237.00	22	\$5,214.00	Miles	900	miles	\$0.34	\$306.00		\$306.00
	One GW Monitoring Report	Senior (13)	\$228.00	113	\$25,764.00							
	3 monitoring events	Senior (12)	\$204.00			Laboratory - GW	1	Lump	\$28,360.00	\$28,360.00		\$28,360.00
	GW Contour Maps - CAD	Staff (11)	\$183.00									
	Data summary tables and lab reports	Staff (10)	\$170.00	16	\$2,720.00							
	Data validation	Assistant (9)	\$147.00	192	\$28,224.00							
	Statistics - eval. SSI above GWPS	Assistant (8)	\$123.00	28	\$3,444.00	Equipment Rental	3	Ea	\$600.00	\$1,800.00		\$1,800.00
		Assistant (7)	\$90.00									
		Technician (6)	\$78.00									
						Technology Charge	371	hour	\$9.95	\$3,691.45		\$3,691.45
Task Subtotals				371	\$65,366.00					\$35,687.45		\$35,687.45
Task Total												\$101,053.45

**Cost Estimate
on a per Task Basis**

(fill in green boxes)

**Columbia Water & Light
Amend. #2 - More's Lake Remediation
Columbia, MO**

Task No.	Task Description					REIMBURSABLE EXPENSES						
		Category	Hourly Rate	Hours	Fee	Item	Quantity	Unit	Fee per Unit	Bare Fee	Percent Markup	Total Fee
19.0	Notification of SSI above GWPS	Associate (16)	\$246.00									
		Associate (15)	\$241.00									
		Associate (14)	\$237.00	4	\$948.00							
		Senior (13)	\$228.00	16	\$3,648.00							
		Senior (12)	\$204.00									
		Staff (11)	\$183.00									
		Staff (10)	\$170.00									
		Assistant (9)	\$147.00	4	\$588.00							
		Assistant (8)	\$123.00									
		Assistant (7)	\$90.00									
		Technician (6)	\$78.00									
							Technology Charge	24	hour	\$9.95	\$238.80	
Task Subtotals				24	\$5,184.00					\$238.80		\$238.80
Task Total												\$5,422.80
20.0	Characterize Groundwater Nature & Extent Work Plan Survey proposed well locations prior to d Install 3 new monitoring wells BMcD oversight and logging of borings BMcD air monitoring during drilling well development, WL gauging, slug tests Install dedicated sample pumps Flush mount surface completions MW surveying Installation Report	Associate (16)	\$246.00			Meals & Lodging	8	day	\$150.00	\$1,200.00		\$1,200.00
		Associate (15)	\$241.00	4	\$964.00							
		Associate (14)	\$237.00	6	\$1,422.00	Truck	9	day	\$70.00	\$630.00		\$630.00
		Senior (13)	\$228.00	72	\$16,416.00	Miles	900	miles	\$0.34	\$306.00		\$306.00
		Senior (12)	\$204.00									
		Staff (11)	\$183.00	111	\$20,313.00							
		Staff (10)	\$170.00	16	\$2,720.00	Dedicated MW Pumps	1	Lump	\$3,100.00	\$3,100.00		\$3,100.00
		Assistant (9)	\$147.00			MW Driller/Install Contractor	1	Lump	\$18,400.00	\$18,400.00		\$18,400.00
		Assistant (8)	\$123.00			MW Surveying	1	Lump	\$2,000.00	\$2,000.00		\$2,000.00
		Assistant (7)	\$90.00									
		Technician (6)	\$78.00			Equip. Rental	1	Lump	\$1,800.00	\$1,800.00		\$1,800.00
							Technology Charge	209	hour	\$9.95	\$2,079.55	
Task Subtotals				209	\$41,835.00					\$29,515.55		\$29,515.55
Task Total												\$71,350.55

**Cost Estimate
on a per Task Basis**

(fill in green boxes)

**Columbia Water & Light
Amend. #2 - More's Lake Remediation
Columbia, MO**

Task No.	Task Description					REIMBURSABLE EXPENSES						
		Category	Hourly Rate	Hours	Fee	Item	Quantity	Unit	Fee per Unit	Bare Fee	Percent Markup	Total Fee
21.0	Assessment of Corrective Measures	Associate (16)	\$246.00									
		Associate (15)	\$241.00									
		Associate (14)	\$237.00	6	\$1,422.00							
		Senior (13)	\$228.00	36	\$8,208.00							
		Senior (12)	\$204.00									
		Staff (11)	\$183.00									
		Staff (10)	\$170.00	16	\$2,720.00							
		Assistant (9)	\$147.00									
		Assistant (8)	\$123.00	12	\$1,476.00							
		Assistant (7)	\$90.00									
		Technician (6)	\$78.00									
Task Subtotals				70	\$13,826.00	Technology Charge	70	hour	\$9.95	\$696.50		\$696.50
Task Total												\$14,522.50
Project Total												\$196,654.35

**Cost Estimate
on a per Task Basis**

(fill in green boxes)

**Columbia Water & Light
Amend. #2 - More's Lake Remediation
Columbia, MO**

Task No.	Task Description					REIMBURSABLE EXPENSES						
		Category	Hourly Rate	Hours	Fee	Item	Quantity	Unit	Fee per Unit	Bare Fee	Percent Markup	Total Fee

Labor and Expense Summary

**Columbia Water & Light
Amend. #2 - More's Lake Remediation
Columbia, MO**

						REIMBURSABLE EXPENSES						
		Category	Hourly Rate	Hours	Cost	Item	Quantity	Unit	Cost per Unit	Bare Cost	Percent Markup	Total Cost
		Associate (16)	\$246.00	0	\$0.00	Meals & Lodging						
		Associate (15)	\$241.00	4	\$964.00							
		Associate (14)	\$237.00	41	\$9,717.00	Truck						
		Senior (13)	\$228.00	250	\$57,000.00	Miles						
		Senior (12)	\$204.00	0	\$0.00	Laboratory - soil						
		Staff (11)	\$183.00	111	\$20,313.00	Laboratory - GW						
		Staff (10)	\$170.00	48	\$8,160.00	Dedicated MW Pumps						
		Assistant (9)	\$147.00	199	\$29,253.00	MW Driller/Install Contractor						
		Assistant (8)	\$123.00	40	\$4,920.00	MW Surveying						
		Assistant (7)	\$90.00	0	\$0.00	GW Sample Contractor						
		Technician (6)	\$78.00	0	\$0.00	Equip. Rental						
				0	\$0.00							
				0	\$0.00	Technology Charge						
Project Subtotals				693	\$130,327.00					\$66,327.35		\$66,327.35
Project Total												\$196,654.35

FIRST ADDENDUM TO AGREEMENT
PROFESSIONAL ENGINEERING SERVICES

Between City of Columbia, Missouri And Burns & McDonnell Engineering Company, Inc.

THIS ADDENDUM (hereinafter "Addendum") is made by and between the City of Columbia, Missouri, a municipal corporation (hereinafter "CITY"), and Burns & McDonnell Engineering Company, Inc., a Missouri Corporation of 9400 Ward Parkway, Kansas City, MO 64114 (hereinafter "ENGINEER") and is entered into on the date of the last signatory below. CITY and ENGINEER are each individually referred to herein as a "Party" and collectively as the "Parties."

WHEREAS, CITY and ENGINEER entered into a "Professional Engineering Services Agreement" dated July 8, 2016 (hereinafter "Original Agreement") for CITY to receive, and ENGINEER to provide, engineering support services for Remediation of More's Lake at the Municipal Power Plant; and

WHEREAS, a change in the Scope of Services as set forth in Original Agreement is necessary due to changes in regulatory requirements which will require expanded support services and an increased project budget; and

WHEREAS, Section 7.5 of the Original Agreement permits the Parties to make changes within the general scope of ENGINEER's services upon execution of a mutually acceptable amendment; and

WHEREAS, CITY and ENGINEER now wish to amend the Original Agreement, consistent with Section 7.5;

NOW, THEREFORE, in consideration of the mutual covenants contained herein and for other good and valuable consideration, the Parties hereto agree as follows:

1. Amendments of Original Agreement

A. **General.** All terms and provisions of Original Agreement, a copy of which is attached hereto as **Exhibit 1** and made a part of this Addendum, will remain in full force and effect on both Parties, except as amended in this Addendum.

B. **Amendments.** The following language shall modify and replace the respective subsections of the Original Agreement as designated herein:

(i) *Amending Section 5 – Period of Service*

5.3. Services shall be completed by July 31, 2019. CITY shall have the right to establish performance times for individual phases or elements of the PROJECT by delivering a written schedule setting out the performance times to the ENGINEER.

(ii) *Amending Section 6 – Payments to Engineer*

6.1.2. Total payment for Scope of Services and all other expenses and costs to the CITY under this Agreement and described herein shall **not exceed \$603,488.00**.

2. Expanded Scope of Services, Amendment 1

- A. **Expanded Services.** The Scope of Services in Original Agreement is expanded to include the additional work described in “Amendment No. 1 to Attachment A” attached hereto as **Exhibit 2** and made a part of this Addendum. This amendment is an addition to the rest of the Scope of Services of Original Agreement.
- B. **Budget Impact.** In consideration for these services, CITY agrees to increase project budget cost estimates to be paid to ENGINEER in the amount of \$340,505.00. This increase in budget is in addition to the rest of the project budget listed in the Original Agreement.

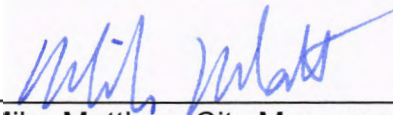
3. Agreement

The Parties hereby adopt, ratify and confirm the Original Agreement as it is amended by this Addendum. This Addendum shall be binding on, and inure to the benefit of, the Parties hereto.

[SIGNATURE PAGE TO FOLLOW]

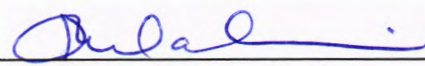
IN WITNESS WHEREOF, the Parties hereto have executed this Agreement by their duly authorized representatives as of the date of the last signatory to this Agreement.

CITY OF COLUMBIA, MISSOURI

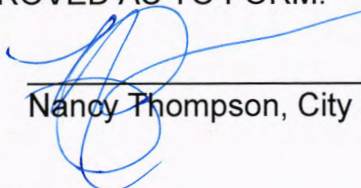
By: 
Mike Matthes, City Manager

Date: 1-6-17

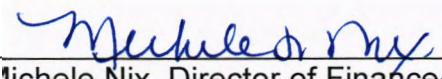
ATTEST:

By: 
Sheela Amin, City Clerk

APPROVED AS TO FORM:

By: 
Nancy Thompson, City Counselor

CERTIFICATION: I hereby certify that this contract is within the purpose of the appropriation to which it is to be charged, Account No. 37581310-60449 E0204, and that there is an unencumbered balance to the credit of such appropriation sufficient to pay therefor.


Michele Nix, Director of Finance **1517**

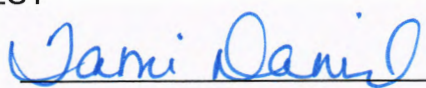
**Burns & McDonnell Engineering Company,
Inc.**

BY: 

TITLE: Vice President

DATE: 11/30/16

ATTEST

BY: 
TITLE: Executive Admin

TAMI DANIEL
Notary Public - Notary Seal
STATE OF MISSOURI
Platte County
My Commission Expires Aug. 2, 2019
Commission # 15420517

EXHIBIT 1

PROFESSIONAL ENGINEERING SERVICES AGREEMENT
City of Columbia, MO and Burns & McDonnell Engineering Company, Inc.

Dated July 8, 2016

022857

Permanent Record
Filed in Clerk's Office

Introduced by Treece
First Reading 6-20-16 Second Reading 7-5-16
Ordinance No. 022857 Council Bill No. B 149-16 A

AN ORDINANCE

authorizing an agreement for professional engineering services with Burns & McDonnell Engineering Company, Inc. for the More's Lake remediation and site restoration project at the Municipal Power Plant; and fixing the time when this ordinance shall become effective.


BE IT ORDAINED BY THE COUNCIL OF THE CITY OF COLUMBIA, MISSOURI, AS FOLLOWS:

SECTION 1. The City Manager is hereby authorized to execute an agreement for professional engineering services with Burns & McDonnell Engineering Company, Inc. for the More's Lake remediation and site restoration project at the Municipal Power Plant. The form and content of the agreement shall be substantially in the same form as set forth in "Exhibit A" attached hereto.


SECTION 2. This ordinance shall be in full force and effect from and after its passage.

PASSED this 5th day of July, 2016.

ATTEST:



City Clerk



Mayor and Presiding Officer

APPROVED AS TO FORM:



City Counselor

**AGREEMENT
For
PROFESSIONAL ENGINEERING SERVICES
Between**

**THE CITY OF COLUMBIA, MISSOURI
And
BURNS & MCDONNELL ENGINEERING COMPANY, INC.**

THIS AGREEMENT made as of 8th day of July, 2016, by and between the City of Columbia, Missouri (hereinafter called "CITY"), and **Burns & McDonnell Engineering Company, inc.** (hereinafter called "ENGINEER").

WITNESSETH, that whereas CITY intends to make improvements as described below, hereinafter called the PROJECT, consisting of the following:

Remediation of More's Lake at the Municipal Power Plant.

(Description of Project)

NOW, THEREFORE, in consideration of the mutual covenants set out herein the parties agree as follows:

ENGINEER shall serve as CITY's professional engineering contractor in those assignments to which this Agreement applies, and shall give consultation and advice to CITY during the performance of the services. All services shall be performed under the direction of a professional engineer registered in the State of Missouri and qualified in the particular field.

SECTION 1 - AUTHORIZATION OF SERVICES

1.1 ENGINEER shall not undertake to begin any of the services contemplated by this agreement until directed in writing to do so by CITY. CITY may elect to authorize the PROJECT as a whole or in parts.

1.2 Authorized work may include services described hereafter as Basic Services or as Additional Services of ENGINEER.

SECTION 2 - BASIC SERVICES OF ENGINEER

2.1 General

2.1.1 Perform professional engineering services as set forth in Attachment A - "Scope of Basic Services," dated **February 11, 2016** (hereinafter referred to as "Scope of Basic Services").

2.1.2 ENGINEER will designate the following listed individuals as its project team with responsibilities as assigned. ENGINEER shall dedicate whatever additional resources are necessary to accomplish the PROJECT within the specified time frame but will not remove these individuals from the assigned tasks for any reason within the control of ENGINEER without the written approval of CITY.

<u>Name and Title</u>	<u>Assignment</u>
Christopher J. Snider, PE, PG Department Manager	Project Manager

All of the services required hereunder will be performed by ENGINEER or under its supervision and all personnel engaged in the work shall be fully qualified and authorized or permitted under state and local law to perform such services.

None of the work or services covered by this Agreement shall be subcontracted without the prior written approval of CITY and any work or services so subcontracted shall be subject to the provisions of this Agreement.

2.2 ENGINEER shall furnish such periodic reports as CITY may request pertaining to the work or services undertaken pursuant to this Agreement, the costs and obligations incurred or to be incurred, and any other matters covered by this Agreement.

2.3 ENGINEER shall maintain accounts and records, including personnel, property and financial records, adequate to identify and account for all costs pertaining to the Agreement and any other records as deemed necessary by CITY to assure proper accounting for all project funds. These records must be available to CITY or its authorized representatives, for audit purposes, and must be retained for three (3) years after expiration or completion of this Agreement.

SECTION 3 - ADDITIONAL SERVICES OF ENGINEER

3.1 General

If authorized in writing by CITY, and agreed to in writing by ENGINEER, ENGINEER shall furnish or obtain from others Additional Services of the following types which are not considered normal or customary Basic Services. The scope of Additional Services may include:

3.1.1 Financial Consultation

Consult with CITY's fiscal agents and bond attorneys and provide such engineering data as required for any bond prospectus or other financing requirements.

3.1.2 Property Procurement Assistance

Provide consultation and assistance on property procurement as related to professional engineering services being performed.

3.1.3 Obtaining Services of Others

Provide through subcontract the services or data set forth in Scope of Basic Services.

3.1.4 Preliminary or final engineering design of capital facilities except as specifically identified herein.

3.1.5 Preparation of reports, data, application, etc., in connection with modifications to FEMA floodplain definition and/or mapping.

3.1.6 Extra Services

Services not specifically defined heretofore that may be authorized in writing by CITY.

SECTION 4 - RESPONSIBILITIES OF CITY

4.1 Provide full information as to CITY's requirements for the PROJECT.

4.2 Assist ENGINEER by placing at ENGINEER's disposal available information pertinent to the assignment including previous reports and other data relative thereto, including the items outlined in Scope of Basic Services.

4.3 Guarantee access to and make all provisions for ENGINEER to enter upon public and private property as required for ENGINEER to perform ENGINEER's services under this Agreement.

4.4 Examine all studies, reports, sketches, estimates, Bid Documents, Drawings, proposals and other documents presented by ENGINEER and render in writing decisions pertaining thereto.

4.5 Provide such professional legal, accounting, financial and insurance counseling services as may be required for the PROJECT.

4.6 Designate **Christian Johanningmeier, Power Production Superintendent**, as CITY's representative with respect to the services to be performed under this Agreement. Such person shall have complete authority to transmit instructions, receive information, interpret and define CITY's policies and decisions with respect to materials, equipment, elements and systems to be used in the PROJECT, and other matters pertinent to the services covered by this Agreement.

4.7 Give prompt written notice to ENGINEER whenever CITY observes or otherwise becomes aware of any defect in the PROJECT.

4.8 Furnish approvals and permits from all governmental authorities having jurisdiction over the PROJECT and such approvals and consents from others as may be necessary for completion of the PROJECT.

4.9 Furnish ENGINEER data such as probings and subsurface explorations, with appropriate professional interpretations; property, boundary, easement, right-of-way, topographic and utility surveys; zoning and deed restriction; and other special data or consultations, all of which ENGINEER may rely upon in performing his services under this Agreement.

SECTION 5 - PERIOD OF SERVICE

5.1 This Agreement will become effective upon the first written notice by CITY authorizing services hereunder.

5.2 This Agreement shall be applicable to all work assignments authorized by CITY subsequent to the date of its execution and shall be effective as to all assignments authorized.

5.3 Services shall be started within 10 calendar days of Notice to Proceed and completed within **550** calendar days from the issuance of the Notice to Proceed. CITY shall have the right to establish performance times for individual phases or elements of the PROJECT by delivering a written schedule setting out the performance times to the ENGINEER.

SECTION 6 - PAYMENTS TO ENGINEER

6.1 Amount of Payment

6.1.1 For services performed, CITY shall pay ENGINEER the sum of amounts determined as follows:

6.1.1.1 For time spent by personnel, payment at the hourly rates indicated in the "Schedule of Hourly Labor Billing Rates" (attached). Such rates include overhead and profit. The schedule is effective to **December 31, 2016**, and may be revised thereafter.

6.1.1.2 For outside expenses incurred by ENGINEER, such as authorized travel and subsistence, commercial services, and incidental expenses, the cost to ENGINEER.

6.1.1.3 For reproduction, printing, long-distance telephone calls, company vehicle usage, testing apparatus, computer services and computer-assisted drafting (CAD), amounts will be charged according to the ENGINEER's standard rates in effect at the time service is provided.

6.1.1.4 For professional services rendered by others as subcontractor(s) to ENGINEER such as surveying, real property descriptions, soil borings, subsurface investigations, laboratory testing, field quality control tests, progress photos, or other activities required or requested by CITY, will be billed at the cost to ENGINEER.

6.1.1.5 For time spent by outside individual professional consultants employed by ENGINEER in providing services to CITY, the cost to ENGINEER. Expenses incurred by such outside consultants in service to CITY shall be reimbursable in accordance with 6.1.1.2 above.

6.1.2 Total payment for Scope of Basic Services and all other expenses and costs to CITY under this Agreement and described herein **shall not exceed \$262,983.**

6.2 Payments

6.2.1 ENGINEER shall submit an invoice for services rendered to CITY not more than once every month. Upon receipt of the invoice and progress report, CITY will, as soon as practical, pay ENGINEER for the services rendered, provided CITY does not contest the invoice, to the extent of ninety-five percent (95%) of the uncontested amount earned. Upon completion and acceptance of the final plans by CITY, the five percent (5%) of these services retained by CITY will be paid to ENGINEER.

SECTION 7 - GENERAL CONSIDERATIONS

7.1 Insurance

7.1.1 ENGINEER'S INSURANCE: ENGINEER agrees to maintain, on a primary basis and at its sole expense, at all times during the life of this contract the following insurance coverages, limits, including endorsements described herein. The requirements contained herein, as well as CITY's review or acceptance of insurance maintained by ENGINEER is not intended to and shall not in any manner limit or qualify the liabilities or obligations assumed by ENGINEER under this contract

Commercial General Liability ENGINEER agrees to maintain Commercial General Liability at a limit of liability not less than **\$2,000,000** combined single limit for any one occurrence covering both bodily injury and property damage, including accidental death. Coverage shall not contain any endorsement(s) excluding nor limiting Contractual Liability or Cross Liability. If the contract involves any underground/digging operations, the general liability certificate shall include X, C and U (Explosion, Collapse and Underground) coverage.

Professional Liability ENGINEER agrees to maintain Professional (Errors & Omissions) Liability at a limit of liability not less than **\$2,000,000** per claim and **\$2,000,000** aggregate. For policies written on a "Claims-Made" basis, ENGINEER agrees to maintain a Retroactive Date prior to or equal to the effective date of this contract. In the event the policy is canceled, non-renewed, switched to an Occurrence Form, retroactive date advanced; or any other event triggering the right to purchase a Supplemental Extended Reporting Period (SERP) during the life of this contract, ENGINEER agrees to purchase a SERP with a minimum reporting period not less than

two (2) years. The requirement to purchase a SERP shall not relieve ENGINEER of the obligation to provide replacement coverage.

Business Automobile Liability ENGINEER agrees to maintain Business Automobile Liability at a limit of liability not less than **\$2,000,000** combined single limit for any one occurrence and not less than \$150,000 per individual, covering both bodily injury, including accidental death, and property damage, to protect themselves from any and all claims arising from the use of the ENGINEER's own automobiles, and trucks; hired automobiles, and trucks; and automobiles both on and off the site of work. Coverage shall include liability for Owned, Non-Owned & Hired automobiles. In the event ENGINEER does not own automobiles, ENGINEER agrees to maintain coverage for Hired & Non-Owned Auto Liability, which may be satisfied by way of endorsement to the Commercial General Liability policy or separate Business Auto Liability policy.

Workers' Compensation Insurance & Employers' Liability ENGINEER agrees to take out and maintain during the life of this contract, Employers' Liability and Workers' Compensation Insurance for all of their employees employed at the site of the work, and in case any work is sublet, the ENGINEER shall require the subcontractor similarly to provide Workers' Compensation Insurance for all the latter's employees unless such employees are covered by the protection afforded by the ENGINEER. Workers' Compensation coverages shall meet Missouri statutory limits. Employers' Liability minimum limits shall be \$500,000 each employee, \$500,000 each accident and \$500,000 policy limit. In case any class of employees engaged in hazardous work under this contract is not protected under the Workers' Compensation Statute, the ENGINEER shall provide and shall cause each subcontractor to provide Employers' Liability Insurance for the protection of their employees not otherwise protected.

Excess/Umbrella Liability The above liability limits may be satisfied by any combination of primary and excess/umbrella liability policies.

Additional Insured ENGINEER agrees to endorse CITY as an Additional Insured with a CG 2026 Additional Insured – Designated Person or Organization endorsement, or similar endorsement, to the Commercial General Liability. The Additional Insured shall read "City of Columbia."

Waiver of Subrogation ENGINEER agrees by entering into this contract to a Waiver of Subrogation for each required policy herein except professional liability. When required by the insurer, or should a policy condition not permit ENGINEER to enter into an pre-loss agreement to waive subrogation without an endorsement, then ENGINEER agrees to notify the insurer and request the policy be endorsed with a Waiver of Transfer of Rights of Recovery Against Others, or its equivalent. This Waiver of Subrogation requirement shall not apply to any policy, which includes a condition specifically prohibiting such an endorsement, or voids coverage should ENGINEER enter into such an agreement on a pre-loss basis.

Certificate(s) of Insurance ENGINEER agrees to provide CITY with Certificate(s) of Insurance evidencing that all coverages, limits and endorsements required herein are maintained and in full force and effect. Said Certificate(s) of Insurance shall include a minimum thirty (30) day endeavor to notify due to cancellation or non-renewal of

coverage. The Certificate(s) of Insurance shall name the City as additional insured in an amount as required in this contract and contain a description of the project or work to be performed.

Right to Revise or Reject CITY reserves the right, but not the obligation, to review and revise any insurance requirement, not limited to limits, coverages and endorsements based on insurance market conditions affecting the availability or affordability of coverage; or changes in the scope of work / specifications affecting the applicability of coverage. Additionally, CITY reserves the right, but not the obligation, to review and reject any insurance policies failing to meet the criteria stated herein or any insurer providing coverage due of its poor financial condition or failure to operating legally.

7.1.2 **HOLD HARMLESS AGREEMENT:** To the fullest extent not prohibited by law, ENGINEER shall indemnify and hold harmless the City of Columbia, its directors, officers, agents and employees from and against all claims, damages, losses and expenses (including but not limited to attorney's fees) arising by reason of any negligent act or failure to act, or willful misconduct, of ENGINEER, of any subcontractor (meaning anyone, including but not limited to consultants having a contract with ENGINEER or a subcontractor for part of the services), of anyone directly or indirectly employed by ENGINEER or by any subcontractor, or of anyone for whose acts ENGINEER or its subcontractor may be liable, in connection with providing these services except as provided in this Agreement. This provision does not, however, require ENGINEER to indemnify, hold harmless or defend the City of Columbia from its own negligence, except as set out herein.

7.2 Professional Responsibility

7.2.1 ENGINEER will exercise reasonable skill, care, and diligence in the performance of its services and will carry out its responsibilities in accordance with customarily accepted good professional engineering practices. If ENGINEER fails to meet the foregoing standard, ENGINEER will perform at its own cost, and without reimbursement from CITY, the professional engineering services necessary to correct errors and omissions which are caused by ENGINEER's failure to comply with above standard, and which are reported to ENGINEER within one year from the completion of ENGINEER's services for the PROJECT.

7.2.2 In addition, ENGINEER will be responsible to CITY for damages caused by its negligent conduct during its activities at the PROJECT site or in the field.

7.2.3 Professional Oversight Indemnification

ENGINEER understands and agrees that CITY has contracted with ENGINEER based upon ENGINEER's representations that ENGINEER is a skilled professional and fully able to provide the services set out in this Agreement. In addition to any other indemnification set out in this Agreement, ENGINEER agrees to defend, indemnify and hold and save harmless CITY from any and all claims, settlements and judgments whatsoever arising out of CITY's alleged negligence in hiring or failing to properly

supervise ENGINEER. ENGINEER agrees to provide CITY with Certificate(s) of Insurance evidencing that all coverages, limits and endorsements are maintained and in full force and effect.

7.3 Estimates and Projections

Estimates and projections prepared by ENGINEER relating to construction costs and schedules, operation and maintenance costs, equipment characteristics and performance, and operating results are based on ENGINEER's experience, qualifications and judgment as a design professional. Since ENGINEER has no control over weather, cost and availability of labor, material and equipment, labor productivity, construction contractor's procedures and methods, unavoidable delays, construction contractor's methods of determining prices, economic conditions, competitive bidding or market conditions and other factors affecting such estimates or projections, ENGINEER does not guarantee that actual rates, costs, performance, schedules, etc., will not vary from estimates and projections prepared by ENGINEER.

7.4 On-Site Services

PROJECT site visits by ENGINEER during construction shall not make ENGINEER responsible for construction means, methods, techniques, sequences or procedures; for construction safety precautions or programs; or for any construction contractor(s)' failure to perform its work in accordance with the plans and specifications.

7.5 Changes

CITY shall have the right to make changes within the general scope of ENGINEER's services, with an appropriate change in compensation and/or schedule, upon execution of a mutually acceptable amendment or change order signed by an authorized representative of CITY and the President or any Vice President of ENGINEER.

7.6 Suspension of Services

Should CITY fail to fulfill its responsibilities as provided under Section 4 to the extent that ENGINEER is unduly hindered in ENGINEER's services or if CITY fails to make any payment to ENGINEER on account of its services and expenses within ninety (90) days after receipt of ENGINEER's bill therefor, ENGINEER may, after giving seven (7) days' written notice to CITY, suspend services under this Agreement until CITY has satisfied his obligations under this Agreement.

7.7 Termination

Services may be terminated by the CITY at any time and for any reason, and by ENGINEER in the event of substantial failure to perform in accordance with the terms hereof by CITY through no fault of ENGINEER, by ten (10) days' notice. If so terminated, CITY shall pay ENGINEER all uncontested amounts due ENGINEER for all services properly rendered and expenses incurred to the date of receipt of notice of termination.

7.7.1 In the event of CITY's termination of this Agreement pursuant to the above section, all finished or unfinished documents, data, studies, surveys, drawings, maps, models, photographs and reports prepared under this Agreement, shall at the option of CITY become its property.

Further, ENGINEER shall not be relieved of any liability to CITY for any damages sustained by CITY by virtue of any breach of this Agreement by ENGINEER and CITY may withhold any payments due ENGINEER for the purpose of set-off until such time as the exact amount of damages to CITY, if any, is determined.

7.8 Publications

Recognizing the importance of professional development on the part of ENGINEER's employees and the importance of ENGINEER's public relations, ENGINEER may prepare publications, such as technical papers, articles for periodicals, and press releases, pertaining to ENGINEER's services for the PROJECT. Such publications will be provided to CITY in draft form for CITY's advance review. CITY will review such drafts promptly and will provide comments to ENGINEER. CITY may require deletion of proprietary data or confidential information from such publications but otherwise will not unreasonably withhold its approval. The cost of ENGINEER's activities pertaining to any such publication shall be paid entirely by ENGINEER.

7.9 Nondiscrimination

During the performance of this Agreement, ENGINEER agrees to the following:

7.9.1. ENGINEER shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, age, national origin, ancestry, marital status, disability, sexual orientation or gender identity. ENGINEER shall take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard to their race, color, religion, sex, age, national origin, ancestry, marital status, disability, sexual orientation or gender identity. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training including apprenticeship. ENGINEER agrees to post notices in conspicuous places, available to employees and applicants for employment.

7.9.2 ENGINEER shall, in all solicitation or advertisements for employees placed by or on behalf of ENGINEER, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, age, national origin, ancestry, marital status, disability, sexual orientation or gender identity.

7.9.3 ENGINEER shall comply with all provisions of State and Federal Laws governing the regulation of Equal Employment Opportunity including Title VI of the Civil Rights Act of 1964.

7.10 Successor and Assigns

CITY and ENGINEER each binds himself and his successors, executors, administrators and assigns to the other party of this Agreement and to the successors, executors, administrators and assigns of such other party, in respect to all covenants of this Agreement; except as above, neither CITY nor ENGINEER shall assign, sublet or transfer his interest in the Agreement without the written consent of the other.

7.11 Rights and Benefits

ENGINEER's services will be performed solely for the benefit of the CITY and not for the benefit of any other persons or entities.

7.12 Compliance with Local Laws

ENGINEER shall comply with all applicable laws, ordinances and codes of the state and city.

7.13 Law; Submission to Jurisdiction Governing

This Agreement shall be governed by, interpreted and enforced in accordance with the laws of the State of Missouri and/or the laws of the United States, as applicable. The venue for all litigation arising out of, or relating to this Agreement, shall be Boone County, Missouri or the United States Western District of Missouri. The parties hereto irrevocably agree to submit to the exclusive jurisdiction of such courts in the State of Missouri and waive any defense of forum non conveniens

7.14 Employment of Unauthorized Aliens Prohibited

7.14.1 ENGINEER agrees to comply with Missouri State Statute section 285.530 in that they shall not knowingly employ, hire for employment, or continue to employ an unauthorized alien to perform work within the state of Missouri.

7.14.2 As a condition for the award of this Agreement, ENGINEER shall, by sworn affidavit and provision of documentation, affirm its enrollment and participation in a federal work authorization program with respect to the employees working in connection with the contracted services. ENGINEER shall also sign an affidavit affirming that it does not knowingly employ any person who is an unauthorized alien in connection with the contracted services.

7.14.3 ENGINEER shall require each subcontractor to affirmatively state in its contract with ENGINEER that the subcontractor shall not knowingly employ, hire for employment or continue to employ an unauthorized alien to perform work within the state of Missouri. ENGINEER shall also require each subcontractor to provide ENGINEER with a sworn affidavit under the penalty of perjury attesting to the fact that the subcontractor's employees are lawfully present in the United States.

7.15 No Waiver of Immunities

In no event shall the language of this Agreement constitute or be construed as a waiver or limitation for either party's rights or defenses with regard to

each party's applicable sovereign, governmental, or official immunities and protections as provided by federal and state constitutions or laws.

In the event of a conflict between the terms and conditions of this Agreement and any attachment hereto, the terms contained in this Agreement shall prevail and the terms contained in any attachment shall subsequently prevail in the order attached hereto.


7.16 Entire Agreement

This Agreement represents the entire and integrated Agreement between ENGINEER and CITY relative to the Scope of Basic Services herein. All previous or contemporaneous agreements, representations, promises and conditions relating to ENGINEER's services described herein are superseded.


[SIGNATURES ON FOLLOWING PAGE]

CITY OF COLUMBIA, MISSOURI

By:


Mike Matthes, City Manager

ATTESTED BY:


Sheela Amin, City Clerk

APPROVED AS TO FORM:


Nancy Thompson, City Counselor

CERTIFICATION:

I hereby certify that the above expenditure is within the purpose of the appropriation to which it is charged, Account No. **551-7110-881.49-90 EL0204**, and that there is an unencumbered balance to the credit of such appropriation sufficient to pay therefor.

By:


Director of Finance

**BURNS & MCDONNELL ENGINEERING
COMPANY INC.**

By:



Date:

6/3/16

ATTEST:

By: _____

Name: _____

NOTICE TO VENDORS

Section 285.525 – 285.550 RSMo Effective January 1, 2009

Effective January 1, 2009 and pursuant to RSMo 285.530 (1), No business entity or employer shall knowingly employ, hire for employment, or continue to employ an unauthorized alien to perform work within the state of Missouri.

As a condition for the award of any contract or grant in excess of five thousand dollars by the state or by any political subdivision of the state to a business entity, or for any business entity receiving a state administered or subsidized tax credit, tax abatement, or loan from the state, the business entity shall, by sworn affidavit and provision of documentation, affirm its enrollment and participation in a federal work authorization program with respect to the employees working in connection with the contracted services. Every such business entity shall sign an affidavit affirming that it does not knowingly employ any person who is an unauthorized alien in connection with the contracted services. [RSMO 285.530 (2)]

An employer may enroll and participate in a federal work authorization program and shall verify the employment eligibility of every employee in the employer's hire whose employment commences after the employer enrolls in a federal work authorization program. The employer shall retain a copy of the dated verification report received from the federal government. Any business entity that participates in such program shall have an affirmative defense that such business entity has not violated subsection 1 of this section. [RSMO 285.530 (4)]

For vendors that are not already enrolled and participating in a federal work authorization program, E-Verify is an example of this type of program. Information regarding E-Verify is available at:
http://www.dhs.gov/xprevprot/programs/gc_1185221678150.shtm.

**CITY OF COLUMBIA, MISSOURI
WORK AUTHORIZATION AFFIDAVIT
PURSUANT TO 285.530 RSMo
(FOR ALL BIDS IN EXCESS OF \$5,000.00)**

County of Jackson)
State of Missouri) ss.

My name is Megan Perdue. I am an authorized agent of Burns & McDonnell (Bidder). This business is enrolled and participates in a federal work authorization program for all employees working in connection with services provided to the City of Columbia. This business does not knowingly employ any person who is an unauthorized alien in connection with the services being provided. **Documentation of participation in a federal work authorization program is attached to this affidavit.**

Furthermore, all subcontractors working on this contract shall affirmatively state in writing in their contracts that they are not in violation of Section 285.530.1 RSMo and shall not thereafter be in violation. Alternatively, a subcontractor may submit a sworn affidavit under penalty of perjury that all employees are lawfully present in the United States.

Megan Perdue
Affiant

Megan Perdue
Printed Name



Personally appeared before me, a Notary Public, within and for the County of Jackson,

State of Missouri, the person whose signature appears above, PERSONALLY AND KNOWN TO ME AND ACKNOWLEDGED, that signed the foregoing Affidavit for the purposes therein stated.

Subscribed and sworn to me this 13th day of May, 2016.
My Commission expires February 28, 2020.

Lourdes Weise
(Notary Public)

Attachment A
More's Lake Remediation and Site Restoration
City of Columbia, Missouri
Department of Public Works
February 11, 2016

The More's Lake Remediation and Site Restoration project involves the removal of coal combustion residuals (CCR) from the existing CCR ash impoundment and restoration of the site. More's Lake has historically been used as a settling pond for CCR, receiving sluiced bottom ash, fly ash, boiler blowdown, cooling tower blowdown, and stormwater runoff from the Plant. The Site ceased receipt of CCR by October 14, 2015 allowing it to be classified as an inactive CCR surface impoundment as defined by 40 CFR 257.53.

The Site must now be closed in accordance with the closure standards outlined by 40 CFR 257.100 for inactive surface impoundments. All More's Lake closure activities must be completed no later than April 17, 2018 to meet applicable Environmental Protection Agency (EPA) regulations.

This scope of work includes the creation of construction bid documents, construction phase services, and project reporting associated with the clean closure of More's Lake. The site restoration component of the project may include the conversion of the site into a passive park.

Park design concepts will be developed and park-associated project costs will be estimated as part of this scope of Work to enable CITY to determine if More's Lake and the surrounding site should be converted to a passive park. Park design concepts and a summary of probable costs will be provided to CITY at the 30 percent design stage to enable a decision regarding the conversion of the site into a passive park. Park amenities will be limited to a low maintenance seeding and tree planting plan, pedestrian bridge, trail and site furniture along the trail. In addition a lighted parking lot, fencing will be provided to prohibit public access to the power plant. No facilities are planned at this time.

The following is a summary of the More's Lake Remediation and Site Restoration project Scope of Work.

Task 1.0 – Project Kick-Off

ENGINEER will prepare for and attend one project kick-off meeting in Columbia. The purpose of the meeting is to discuss the work to be accomplished under the project Scope of Work. Items to be discussed in the kick-off meeting includes project organization and management, schedule, technical approach, points of contact, and cooperative efforts between ENGINEER and CITY.

Task 2.0 – Construction Documents: Project Manual and Construction Drawings

ENGINEER will prepare construction documents consisting of drawings and technical specifications necessary to seek public bid offerings for the More's Lake Remediation and Site Restoration project. We understand the drawings and technical specification will be delivered to CITY for CITY to administer the bidding process. ENGINEER will provide bid form content to facilitate bidding. The following general project requirements, technical specifications, and drawings will be provided:

a. General Project Requirements

ENGINEER will prepare the following general requirements specification documents:

- Summary of Work
- Project Coordination and Meetings
- Construction, Progress Schedules and Reports
- Submittals
- Definitions and Standards
- Field Offices and Sheds
- Temporary Barriers and Controls
- Temporary Utilities and Facilities
- Equipment and Materials
- Construction Layout and Surveying
- Contract Closeout
- Warranties

b. *Project Technical Specifications*

The following technical specification documents are anticipated to be completed for the More's Lake construction project. Some of the Technical Specifications listed below will be specified on the Construction Drawings where practicable:

- Site Preparation and Earthwork
- Seeding and Plant Materials
- Concrete and Reinforcement
- General Electrical Requirements
- Conduit, Fittings, and Accessories
- Wire, Cable, and Accessories
- Pavement
- Pedestrian Bridge
- Site Amenities for Park Redevelopment

c. *Anticipated construction drawings include:*

- Cover-Index
- General Notes, Legend, and Abbreviations
- Existing Conditions and Construction Laydown Areas
- Grading Plan
- Erosion & Sediment Control Plan Phase I
- Erosion & Sediment Control Plan Phase II
- Erosion and Sediment Control Details
- Pedestrian Bridge Foundation Plan and Details*
- Island Handrail Plan and Details*
- Parking Lot Plan and Details*
- Fencing Plan and Details*
- Electrical Legend*
- Electrical Site Plan*
- Electrical Site Plan II*
- Electrical Details*
- Landscaping Plan
- Landscaping Details I*
- Landscaping Details II*
- Landscaping Notes and Schedule*

Drawings marked with an asterisk will be prepared only upon written direction by the CITY that the park development option has been selected.

Drawings and cost opinions will be provided at the following completion stages:

- 30% completion stage with cost opinion – separate totals will be provided for remediation and park development categories
- 90% completion stage with updated cost opinion, bid form, and technical specifications
- 100% complete contract bid documents

ENGINEER will design a pedestrian bridge to connect the former island in More's Lake to the east or southern bank of the lake. ENGINEER will prepare a performance bid specification for the pedestrian bridge. Detailed design and layout plans for the bridge foundation will be prepared by ENGINEER.

ENGINEER will design lighting for the parking area should the City decide to proceed with a passive park. Lighting along the planned trail will be designed should the City decide to proceed with a passive park.

Task 2.1 – Pre-Construction Survey and Construction Phase Surveying

A ground survey will be performed by ENGINEER's subconsultant (ES&S) for the purposes of providing a current topographic, boundary, and utility survey for use in preparing the design and construction bid documents. ENGINEER's subconsultant will update current survey already on file. The survey will show any utilities which can be located by the Missouri One Call locate system and available records.

A ground survey of the inactive CCR pond will be completed immediately prior to bidding for the purpose of estimating the quantity of CCR in place that will be removed by the successful bidding contractor. This task also includes construction phase surveying. If necessary, surveying will be completed during construction for the purposes of tracking material quantities. One as-built survey will be completed for use in the preparation of a construction quality assurance report (Task 5).

Task 2.2 - Geotechnical Investigation

ENGINEER will subcontract a geotechnical investigation to support the engineering design development. The geotechnical investigation will support the design for the pedestrian bridge foundation, parking lot, and sidewalks. Three borings will be advanced to 20 feet or auger refusal, whichever occurs first. Soils will be tested for standard engineering properties. ENGINEER's subconsultant will provide a report summarizing the findings, foundation recommendations, pavement design recommendations, construction considerations, and the soil profile.

Task 3.0 – Inactive CCR Pond Test Pit Investigation

ENGINEER will conduct a test pit investigation in More's lake (when it's dewatered) for the purpose of evaluating the thickness of ash that remains in the dewatered Lake. The purpose of the investigation is to assist with the ash quantity estimate and to evaluate and characterize the underlying subsoils for excavation constructability purposes. ENGINEER has assumed CITY will excavate the test pits in the presence of ENGINEER. The location of the test pits will be surveyed by ENGINEER'S subcontract surveyor. A brief ash test pit investigation memorandum will be prepared summarizing the test pit investigation. Photo documentation will be included in the brief report. The brief test pit investigation report will be included in the bid package not as a contract document but for bidding information purposes only. ENGINEER will

make inquiries to local earthwork contractors and include on the bid form and within the technical requirements an option to beneficially use the CCR material off-site in accordance with the CCR rule and avoid landfill disposal.

Task 4.0 – Assistance With Bidding

ENGINEER will provide assistance with bidding, including preparation of a pre-bid meeting agenda, attending a pre-bid meeting, answering bidders' questions, issuing required addenda, and assisting the CLIENT with the contractor selection process.

Prior to bidding, ENGINEER will prepare an opinion of probable construction cost for the bid package.

Task 5.0 – Construction Phase Services

ENGINEER will provide construction phase services during construction. Construction phase services include the following:

- a. *Furnish Issued For Construction Project Documents and SWPPP/CSW-NOI*
ENGINEER will update the Issued for Bid Contract Drawings and technical specification based modifications identified in required addenda. ENGINEER will prepare a construction Storm Water Pollution Prevention Plan (SWPPP) and complete a Notice of Intent to discharge construction stormwater form (NOI) for submittal to the Missouri Department of Natural Resources.
- b. *Submittal Review*
ENGINEER will review the Project material and construction submittals. Submittals generally include material and equipment submittals, shop drawings including pre-engineered bridge drawings, proposed installation procedures, and laboratory construction material testing results.
- c. *Construction Meetings and Field Observation:*
ENGINEER will attend and facilitate a preconstruction meeting. In addition, ENGINEER and ENGINEER's subcontractor will conduct periodic site visits (see assumptions) for the purpose of observing and documenting the progress of the work.
- d. *Laboratory and Field Quality Assurance Testing*
ENGINEER designated subconsultant will provide field and laboratory testing services during construction. ENGINEER has assumed no more than 3 proctor samples and a total of 20 hours of testing time.

Task 6.0 – CQA Report

After completion of the construction observation services, ENGINEER will prepare a CQA Report for the Project. As part of this task, ENGINEER will organize pertinent construction data and submittals into a report format. The construction documentation report will include:

- Project introduction/background;
- List of organizations and responsibilities;
- Field activities reports;
- Earthwork compaction and soil material test reports;
- Existing and final grade as-constructed surveys;

Deliverables:

The following is a summary of project deliverables:

- Test pit investigation memorandum
- 30% completion stage with cost opinion – with a separate total for the park option
- 90% completion stage with updated cost opinion, bid form, and technical specifications
- 100% complete contract bid documents
- CQA Report

Assumptions:

The following are our project scope of work assumptions:

- ENGINEER has assumed CITY will excavate the test pits.
- ENGINEER has assumed the construction duration will be six months.
- CITY will dewater More's Lake and maintain lake in a dewatered condition.
- ENGINEER has assumed no dewatering design will be required.
- ENGINEER has assumed no water treatment design will be required.
- CITY will remove the existing fuel oil storage tanks on the site.
- ENGINEER has assumed the total construction duration will be no more than 6 months
- ENGINEER will visit the site no more than 9 times total
- ENGINEER's Subconsultant will visit the site no more than 8 times per month over a 6 month duration
- Field and laboratory compaction testing assumes 3 proctor samples and 20 hours of testing
- Foundation observation for the pedestrian bridge assumes 8 hours of observation time.

Schedule of Hourly Professional Service Billing Rates

Position Classification	Classification Level	Hourly Billing Rate
Technician *	6	\$74.00
Assistant *	7	84.00
	8	116.00
	9	135.00
Staff *	10	151.00
	11	164.00
Senior	12	182.00
	13	201.00
Associate	14	210.00
	15	222.00
	16	227.00
	17	231.00

NOTES:

1. Position classifications listed above refer to the firm's internal classification system for employee compensation. For example, "Associate", "Senior", etc., refer to such positions as "Associate Engineer", "Senior Architect", etc.
2. For any nonexempt personnel in positions marked with an asterisk (*), overtime will be billed at 1.5 times the hourly labor billing rates shown.
3. Project time spent by corporate officers will be billed at the Level 17 rate plus 25 percent.
4. For outside expenses incurred by Burns & McDonnell, such as authorized travel and subsistence, and for services rendered by others such as subcontractors, the client shall pay the cost to Burns & McDonnell plus 10%.
5. A technology charge of \$9.95 per labor hour will be billed for normal computer usage, computer aided drafting (CAD) long distance telephone, fax, photocopy and mail services. Specialty items (such as web and video conferencing) are not included in the technology charge.
6. Monthly invoices will be submitted for payment covering services and expenses during the preceding month. Invoices are due upon receipt. A late payment charge of 1.5% per month will be added to all amounts not paid within 30 days of the invoice date.
7. The services of contract/agency personnel shall be billed to Owner according to the rate sheet as if such contract/agency personnel is a direct employee of Burns & McDonnell.
8. The rates shown above are effective for services through December 31, 2016, and are subject to revision thereafter.

EXHIBIT 2

Amendment No. 1 to Attachment A

Dated November 21, 2016

**Amendment No. 1
To
Attachment A
More's Lake Remediation and Site Restoration
City of Columbia, Missouri
Water & Light Department
November 21, 2016**

This Amendment No. 1 document has been prepared to address regulatory requirements and developments associated with the More's Lake Remediation and Site Restoration Project, as described below.

In June 2016, a United States Court of Appeals granted a settlement between utility industry and environmental groups that removed the effects of the "early closure" provisions for inactive surface impoundments under the United States Environmental Protection Agency's (USEPA) Coal Combustion Residual rule (40 CFR 257). With this rule change making the "early closure" provision no longer applicable, all inactive CCR surface impoundments must now comply with all of the rule requirements applicable to existing/active CCR surface impoundments.

The rule requires operators to implement groundwater monitoring programs prior to April 17, 2019 that are capable of detecting releases to shallow groundwater. To meet this requirement, owners must install well networks and conduct eight (8) rounds of background monitoring prior to April 17, 2019.

The City of Columbia Water & Light Department (City) has requested that Burns & McDonnell Engineering Company, Inc. provide a proposal for completing a review of the existing groundwater monitoring network for their inactive CCR surface impoundment (locally known as More's Lake) at the City's Municipal Power Plant in Columbia, Missouri and provide implementation of groundwater management activities to support compliance with the federal CCR rule. The City has also requested Burns & McDonnell include a task for preparing a Fugitive Dust Control Plan, also required by the federal CCR rule.

Tasks 1.0 through Task 6.0 were included in the original agreement Attachment A.

Amendment No. 1 Scope of Work:

Task 7.0 – Prepare Fugitive Dust Control Plan

Burns & McDonnell will prepare a Fugitive Dust Control Plan for the Site. The plan will present project information and describe methods to control dust before, during, and after closure activities. A draft plan will be submitted to the City for review and the City's comments will be addressed and incorporated into the document before submitting a final revision for City approval.

Task 8.0 – Existing Data and Document Review and Regulatory Meeting

Burns & McDonnell will review available documentation concerning existing hydrogeological site conditions including subsurface lithology, groundwater elevation measurements, hydraulic conductivity estimates, and potentiometric surface depictions. Available field measurements and laboratory analytical results will also be reviewed. The results of this data and literature review will be used to select monitoring well locations and develop the Monitoring Well Installation Work Plan as described in Task

9.0 below.

A regulatory kickoff meeting will be scheduled with Missouri Department of Natural Resources (MDNR), the City, and BMcD to assist in preparing the site characterization scope of work to be included in the Monitoring Well Installation Work Plan. Representatives from the following MDNR divisions will be contacted to attend the project kickoff meeting:

- Water Protection Program (WPP)
- Hazardous Waste Program
- Missouri Geological Survey, Environmental Geology Section
- Voluntary Cleanup Program (VCP)
- Solid Waste Management Program (SWMP)

Following the regulatory kickoff meeting, a MDNR VCP Application will be prepared and submitted to MDNR for review to incorporate the closure of the inactive CCR surface impoundment (More's Lake) as part of MDNR's VCP.

Task 9.0 – Hydrogeological Investigation and Monitoring Well Installation Work Plan & Health and Safety Plan

In order to support compliance with groundwater monitoring requirements published in the CCR rule, Burns & McDonnell will prepare a well installation work plan for the inactive CCR bottom ash pond (identified as Mores Lake). This work plan will summarize existing site conditions, identify proposed groundwater monitoring well locations, present monitoring well construction details, and establish procedures for well installation. The work plan will also include procedures and protocols for soil sampling and analysis (physical and chemical testing), well development, in-situ hydraulic conductivity testing (slug tests), and well surveying. A draft work plan will be submitted to the City for review and the City's comments will be addressed and incorporated into the document before submitting a final revision for City and MDNR approval.

During preparation of the work plan, a site-specific Health and Safety Plan (HASP) will be developed to be implemented at the site during field activities.

Task 10.0 – Hydrogeological Investigation, Well Installation Field Work, and Oversight

Burns & McDonnell will provide an on-site geologist to conduct field oversight and document hydrogeological investigation and monitoring well installation activities. The field geologist will log subsurface materials encountered during the advancement of boreholes drilled at each monitoring well location and collect soil samples for both laboratory chemical analysis and index testing. In addition, the Burns & McDonnell geologist will oversee and document the well installation, construction, completion, and development activities to ensure the wells are properly installed and suitable for inclusion into the groundwater monitoring system. Additional field activities will include air monitoring in the vicinity of the borehole during drilling activities, measurement and recording of well development field parameters, gauging of water levels in new and existing monitoring wells, and in-situ hydraulic conductivity testing (slug testing) at each newly installed monitoring well.

Burns & McDonnell will purchase and install dedicated bladder pumps in both new and existing monitoring wells planned for sampling in the groundwater monitoring system. Groundwater sampling/analysis and reporting will be covered in Tasks 12.0, 13.0 and 14.0.

The proposed monitoring wells will be used to satisfy groundwater monitoring requirements for closure of the inactive surface impoundment in accordance with the CCR rule. A Burns & McDonnell representative will be on-site to manage the monitoring network installation and confirm the monitoring

wells are installed and constructed as designed. A Burns & McDonnell professional engineer will certify the groundwater system meets the CCR rule requirements (See Task 16.0).

Task 11.0 – Monitoring Well Installation and Hydrogeological Report

Burns & McDonnell will prepare a monitoring well installation report following the conclusion of field activities. The report will contain the results of the monitoring well installation activities including description of work, field documentation, drill logs and well construction information, groundwater depths and elevations, potentiometric surface map, slug test data and calculated hydraulic conductivities, well location map, and generalized geologic cross-sections. A draft Report will be submitted to the City for review and City's comments will be addressed and incorporated into the document before submitting a final revision to MDNR. Burns & McDonnell will compile drill logs and well construction information for the new monitoring wells in an appropriate format for incorporation into the facility's operating record.

Burns & McDonnell will subcontract the monitoring well network surveying to a licensed surveyor. The top of casing and ground surface will be surveyed using the same coordinate system used for engineering drawings.

Task 12.0 – Groundwater Monitoring Program and Sampling and Analysis Plan

Burns & McDonnell will prepare a CCR Groundwater Monitoring Program (GMP) and Sampling and Analysis Plan (SAP) to include groundwater monitoring at the inactive CCR surface impoundment (More's Lake). The GMP/SAP will provide the approach and procedures for compliance groundwater monitoring at the facility's inactive CCR unit (to be clean closed). A draft GMP/SAP will be submitted to the City for review and City's comments will be addressed and incorporated into the document before submitting a final revision to MDNR for approval.

Task 13.0 – Groundwater Sampling and Analysis

Burns & McDonnell will subcontract a local groundwater sampling consultant to perform eight (8) groundwater sampling events in accordance with procedures in the SAP (see Task 12.0). Groundwater sampling will include measuring water levels, low-flow groundwater purging and sampling using dedicated bladder pumps, and off-site laboratory sample analysis.

Groundwater samples will be analyzed for both Detection and Assessment Monitoring parameters listed in Appendix III and IV of the CCR Final Rule, respectively. Additional groundwater parameters will include those listed in MDNR's CCR Storage and Disposal in Missouri Division of Environmental Quality white paper.

Groundwater samples will be collected following stabilization of field parameters during low-flow purging. Field parameters will be measured using a flow-through cell equipped with multi-parameter sensors. At a minimum, one duplicate, one matrix spike (MS), and one matrix spike duplicate (MSD) will be obtained for each sampling event.

The subcontracted groundwater sampling consultant will provide Burns & McDonnell with field documentation and laboratory reports of the groundwater sampling event for preparing memorandum and report (see Tasks 14.0 and 15.0).

Task 14.0 – CCR Groundwater Monitoring Technical Memorandum

Burns & McDonnell will prepare a CCR Groundwater Monitoring Technical Memorandum summarizing the field activities and laboratory results following the first four (4) groundwater sampling events. Data validation and statistical analysis will be performed for the first four sampling events as part of this task. The memorandum will contain the results of the first four (4) groundwater sampling events including

description of work, summary of groundwater depths and elevations, potentiometric surface map, summary of laboratory results, and limited statistical analysis. A draft letter report will be submitted to the City for review and City's comments will be addressed and incorporated into the document before submitting a final revision to the City.

It is important to note, this technical memorandum is intended to serve as an initial summary of groundwater monitoring results for preliminary evaluation of groundwater quality at the site. This technical letter will be submitted to the City of internal review. The final CCR Groundwater Monitoring Report will be prepared in Task 15.0 of this proposal following completion of eight (8) groundwater sampling events to provide a final assessment of groundwater quality at the site.

Task 15.0 – CCR Groundwater Monitoring Report

Burns & McDonnell will prepare a CCR Groundwater Monitoring Report summarizing the field activities and laboratory results from eight (8) groundwater sampling events (see Task 13.0). Data validation and statistical analysis will be performed for the last four sampling events as part of this task. The report will contain the results of the groundwater sampling events including description of work, field documentation, summary of groundwater depths and elevations, potentiometric surface map, and summary of laboratory results. A draft Report will be submitted to the City for review and City's comments will be addressed and incorporated into the document before submitting a final revision to MDNR.

Groundwater monitoring results will be reviewed to assess potential groundwater impacts related to the inactive CCR unit (More's Lake). Depending on the results of the groundwater assessment and review by MDNR, continued groundwater monitoring, which is outside this scope of work, may be necessary at a reduced frequency (i.e., semi-annual) or groundwater monitoring may be discontinued (with MDNR approval).

Task 16.0 – CCR Groundwater Monitoring System Certification

Burns & McDonnell will prepare a CCR Groundwater Monitoring System Certification letter as required by the CCR Rule. Certification will be from a qualified professional engineer (PE) that the groundwater monitoring system has been designed and constructed to meet the requirements of the CCR Rule (40 CFR §257.91(f)).

Compensation:

Based upon the Scope of Services and the Responsibilities of the City of Columbia as presented above, Burns & McDonnell will provide services on a time and material basis for a not to exceed fee of \$340,505.

Deliverables:

The following is a summary of project deliverables:

- Fugitive Dust Control Plan
- Hydrogeological Investigation and Monitoring Well Installation Work Plan
- Monitoring Well Installation and Hydrogeological Report
- Groundwater Monitoring Program and Sampling and Analysis Plan
- CCR Groundwater Monitoring Technical Memorandum
- CCR Groundwater Monitoring Report
- CCR Groundwater Monitoring System Certification

Assumptions:

The following are our project scope of work assumptions:

- City shall provide timely review, coordination, and support of tasks herein.
- The City will coordinate facility orientations (as needed) and shall also assist in any coordination required with Burns & McDonnell, the well contractor, the groundwater sampling contractor, and any utility locating services.
- The City will be responsible for locating all utilities owned by the City.
- Burns & McDonnell has estimated the field work included in Task 10.0 will be complete in 29 working days. If unforeseen conditions cause the actual field work duration to exceed the estimated duration, the compensation amount may increase. Burns & McDonnell will notify the City immediately if any such unforeseen conditions are encountered.
- Burns & McDonnell has assumed the following with respect to groundwater monitoring network installation activities (Task 10.0):
 - Burns & McDonnell to provide field personnel for soil logging, air monitoring at drill rig, and well installation oversight
 - 15 total soil borings continuously sampled
 - Five (5) deep borings – estimated 115 ft bgs (core 15 feet into bedrock)
 - 10 shallow borings – estimated 45 ft bgs (install 10 monitoring wells)
 - Collection of CCR and subsurface soil samples for geotechnical index testing parameter – atterberg limits, moisture content, and grain size
 - Assumes one (1) composite CCR sample
 - Assumes 22 subsurface soil samples (2 per boring at 10 borings; plus 2 contingency)
 - Assume six (6) subsurface soil samples for permeability (Shelby Tube)
 - Collection of CCR and subsurface soil samples for chemical parameters – Chloride, Sulfate, RCRA 8 Metals (total), and SPLP RCRA 8 Metals + Boron
 - Assume two (2) composite CCR samples
 - Assume 33 subsurface soil samples (3 per boring at 10 borings with 3 duplicates)
 - One (1) packer test in one (1) deep soil boring within bedrock
 - Includes well development and in-situ hydraulic conductivity testing (slug test) at new wells
 - Flush-mount surface completions at new monitoring wells
 - Well contractor to provide soil boring and monitoring well surveying
 - Burns & McDonnell to install dedicated bladder pump assemblies at newly installed monitoring wells
- Burns & McDonnell has assumed the following with respect to groundwater monitoring activities:
 - Two (2) days of low-flow groundwater purging/sampling at 10 wells (per sampling event)
 - Thirteen (13) groundwater samples collected per sampling event (10 wells + 1 duplicate + 1 matrix spike + 1 matrix spike duplicate)
 - Groundwater laboratory analysis to include:
 - CCR Rule Appendix III constituents – Chloride, Fluoride, pH, TDS, Sulfate, Metals (Boron and Calcium)
 - CCR Rule Appendix IV constituents – Fluoride, Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Lead, Lithium, Mercury, Molybdenum, Selenium, Thallium, Mercury, Radium 226 and 228
 - MDNR additional constituents – Aluminum, Chromium III, Chromium IV, Copper, Iron, Magnesium, Manganese, Nickel, Silver, Sodium, Zinc, Total Organic Carbon (TOC), Total Organic Halogens (TOX), Chemical Oxygen Demand (COD), Hardness (as CaCO₃).

**Cost Estimate
on a per Task Basis**

(fill in green boxes)

**City of Columbia
More's Lake Amendment 1
Columbia, Missouri**

Task No.	Task Description					EXPENSES						
		Category	Hourly Rate	Hours	Cost	Item	Quantity	Unit	Cost per Unit	Bare Cost	Percent Markup	Total Cost
7.0	Fugitive Dust Control Plan	Associate (15)	\$222.00									
		Associate (14)	\$210.00									
	- Prepare Draft Plan	Associate (22)	\$227.00									
	- Address Comments	Senior (13)	\$201.00									
	- Finalize Plan	Senior (12)	\$182.00	4	\$728.00							
		Staff (11)	\$164.00									
		Staff (10)	\$151.00	20	\$3,020.00							
		Assistant (9)	\$135.00									
		Assistant (8)	\$116.00									
		Assistant (7)	\$84.00									
		Technician (6)	\$74.00									
						Reprographics	1	Lump	\$50.00	\$50.00		\$50.00
						Technology Charge	24	hour	\$9.95	\$238.80		\$238.80
Task Subtotals				24	\$3,748.00					\$288.80		\$288.80
Task Total												\$4,036.80
8.0	Existing Data/Document Review	Associate (15)	\$222.00	8	\$1,776.00							
	Meeting with MDNR:	Associate (14)	\$210.00									
	- Water Protection Program (WPP)	Associate (22)	\$227.00			Car	1	day	\$75.00	\$75.00		\$75.00
	- Hazardous Waste Program	Senior (13)	\$201.00	4	\$804.00							
	- Missouri Geological Survey (Env. Geology)	Senior (12)	\$182.00	16	\$2,912.00							
	- Voluntary Cleanup Program	Staff (11)	\$164.00			Mileage	280	mile	\$0.36	\$100.80		\$100.80
	- Solid Waste Management Program (SWM)	Staff (10)	\$151.00									
		Assistant (9)	\$135.00	4	\$540.00							
	Prepare and Submit VCP Application to MDNR	Assistant (8)	\$116.00	2	\$232.00							
		Assistant (7)	\$84.00									
		Technician (6)	\$74.00									
						Technology Charge	34	hour	\$9.95	\$338.30		\$338.30
Task Subtotals				34	\$6,264.00					\$514.10		\$514.10
Task Total												\$6,778.10

**Cost Estimate
on a per Task Basis**

(fill in green boxes)

**City of Columbia
More's Lake Amendment 1
Columbia, Missouri**

Task No.	Task Description					EXPENSES						
		Category	Hourly Rate	Hours	Cost	Item	Quantity	Unit	Cost per Unit	Bare Cost	Percent Markup	Total Cost
9.0	Monitoring Well Install Work Plan	Associate (15)	\$222.00	2	\$444.00							
		Associate (14)	\$210.00									
	Prepare Pos - driller, lab, rental equip	Associate (22)	\$227.00									
		Senior (13)	\$201.00	4	\$804.00							
	Prepare HASP	Senior (12)	\$182.00	48	\$8,736.00							
		Staff (11)	\$164.00									
		Staff (10)	\$151.00	20	\$3,020.00							
	CAD	Assistant (9)	\$135.00									
		Assistant (8)	\$116.00	8	\$928.00							
		Assistant (7)	\$84.00									
		Technician (6)	\$74.00									
Task Subtotals				82	\$13,932.00	Reprographics	1	Lump	\$100.00	\$100.00		\$100.00
Task Total						Technology Charge	82	hour	\$9.95	\$815.90		\$815.90
										\$915.90		\$915.90
												\$14,847.90
10.0	Hydro Investigation and MW Install Field W	Associate (15)	\$222.00			Meals & Lodging	29	day	\$150.00	\$4,350.00		\$4,350.00
	BMcD Field Oversight	Associate (14)	\$210.00									
	Install 10 new MWs	Associate (22)	\$227.00									
	Five (5) deep boring - install shallow wells	Senior (13)	\$201.00	8	\$1,608.00	Truck	6	Week	\$350.00	\$2,100.00		\$2,100.00
	- packer testing in one deep boring	Senior (12)	\$182.00	16	\$2,912.00							
	Soil sampling (SPLP RCRA 8 metals)	Staff (11)	\$164.00			Mileage	2430	mile	\$0.36	\$874.80		\$874.80
		Staff (10)	\$151.00	290	\$43,790.00	Field Supplies/Equipment	1	Lump	\$2,800.00	\$2,800.00		\$2,800.00
	includes drilling and well install oversight	Assistant (9)	\$135.00	8	\$1,080.00	Bladder Pump Assembly	10	each	\$1,000.00	\$10,000.00		\$10,000.00
	slug testing monitoring wells	Assistant (8)	\$116.00			Well Contractor	1	Lump	\$66,000.00	\$66,000.00		\$66,000.00
		Assistant (7)	\$84.00			Soil Geotech Testing	1	Lump	\$7,500.00	\$7,500.00		\$7,500.00
	purchase and install dedicated well pumps	Technician (6)	\$74.00			Soil Chemical Testing	1	lump	\$4,100.00	\$4,100.00		\$4,100.00
	Assume 10 MWs in sampling network											
	well contractor - estimate 25 dyas					Technology Charge	322	hour	\$9.95	\$3,203.90		\$3,203.90
Task Subtotals				322	\$49,390.00					\$100,928.70		\$100,928.70
Task Total												\$150,318.70

**Cost Estimate
on a per Task Basis**

(fill in green boxes)

**City of Columbia
More's Lake Amendment 1
Columbia, Missouri**

Task No.	Task Description					EXPENSES								
		Category	Hourly Rate	Hours	Cost	Item	Quantity	Unit	Cost per Unit	Bare Cost	Percent Markup	Total Cost		
11.0	MW Install and Hydrogeological Report	Associate (15)	\$222.00	4	\$888.00									
	Work Performed Results Data Summary Tables Well Location Map Potentiometric Surface Map X-Sections Soil Data Validation	Associate (14)	\$210.00											
		Associate (22)	\$227.00											
		Senior (13)	\$201.00										16	\$3,216.00
		Senior (12)	\$182.00										58	\$10,556.00
		Staff (11)	\$164.00											
		Staff (10)	\$151.00										20	\$3,020.00
		Assistant (9)	\$135.00										32	\$4,320.00
		Assistant (8)	\$116.00											
		Assistant (7)	\$84.00											
		Technician (6)	\$74.00											
						Reprographics	7	Lump	\$100.00	\$700.00		\$700.00		
						Technology Charge	130	hour	\$9.95	\$1,293.50		\$1,293.50		
Task Subtotals				130	\$22,000.00					\$1,993.50		\$1,993.50		
Task Total												\$23,993.50		
12.0	CCR GMP/SAP	Associate (15)	\$222.00											
	Groundwater Monitoring Program and Sampling and Analysis Plan CAD	Associate (14)	\$210.00											
		Associate (22)	\$227.00											
		Senior (13)	\$201.00										8	\$1,608.00
		Senior (12)	\$182.00										36	\$6,552.00
		Staff (11)	\$164.00											
		Staff (10)	\$151.00											
		Assistant (9)	\$135.00										4	\$540.00
		Assistant (8)	\$116.00											
		Assistant (7)	\$84.00											
		Technician (6)	\$74.00											
													Reprographics	2
						Technology Charge	48	hour	\$9.95	\$477.60		\$477.60		
Task Subtotals				48	\$8,700.00					\$677.60		\$677.60		
Task Total												\$9,377.60		

**Cost Estimate
on a per Task Basis**

(fill in green boxes)

**City of Columbia
More's Lake Amendment 1
Columbia, Missouri**

Task No.	Task Description					EXPENSES						
		Category	Hourly Rate	Hours	Cost	Item	Quantity	Unit	Cost per Unit	Bare Cost	Percent Markup	Total Cost
13.0	Groundwater Sampling and Analysis	Associate (15)	\$222.00	8	\$1,608.00	GW Laboratory	8	lump	\$7,266.00	\$58,128.00		\$58,128.00
8 sampling events subcontract local sampling consultant subcontracted tech will provided field and lab results for BMcD to prepare report	Associate (14)	\$210.00										
	Associate (22)	\$227.00										
	Senior (13)	\$201.00										
	Senior (12)	\$182.00										
	Staff (11)	\$164.00										
	Staff (10)	\$151.00										
	Assistant (9)	\$135.00										
	Assistant (8)	\$116.00										
	Assistant (7)	\$84.00										
	Technician (6)	\$74.00										
					GW Sampling Sub	8	Lump	\$3,000.00	\$24,000.00		\$24,000.00	
					Reprographics	4	Lump	\$100.00	\$400.00		\$400.00	
					Technology Charge	36	hour	\$9.95	\$358.20		\$358.20	
Task Subtotals				36	\$6,516.00					\$82,886.20		\$82,886.20
Task Total												\$89,402.20
14.0	Groundwater Technical Memo	Associate (15)	\$222.00	20	\$4,020.00							
Letter report After first 4 sampling events Data validation Data summary tables and lab reports Initial Stats - time series, box & whisker, trend tests	Associate (14)	\$210.00										
	Associate (22)	\$227.00										
	Senior (13)	\$201.00										
	Senior (12)	\$182.00										
	Staff (11)	\$164.00										
	Staff (10)	\$151.00										
	Assistant (9)	\$135.00										
	Assistant (8)	\$116.00										
	Assistant (7)	\$84.00										
	Technician (6)	\$74.00										
					Technology Charge	78	hour	\$9.95	\$776.10		\$776.10	
Task Subtotals				78	\$13,152.00					\$776.10		\$776.10
Task Total												\$13,928.10

**Cost Estimate
on a per Task Basis**

(fill in green boxes)

**City of Columbia
More's Lake Amendment 1
Columbia, Missouri**

Task No.	Task Description					EXPENSES						
		Category	Hourly Rate	Hours	Cost	Item	Quantity	Unit	Cost per Unit	Bare Cost	Percent Markup	Total Cost
15.0	CCR Groundwater Monitoring Report	Associate (15)	\$222.00	4	\$888.00							
		Associate (14)	\$210.00	4	\$840.00							
	8 groundwater sampling events	Associate (22)	\$227.00									
		Senior (13)	\$201.00	28	\$5,628.00							
	Data summary tables and lab reports	Senior (12)	\$182.00	48	\$8,736.00							
		Staff (11)	\$164.00									
	Data Validation	Staff (10)	\$151.00	28	\$4,228.00							
		Assistant (9)	\$135.00	32	\$4,320.00							
	Statistics	Assistant (8)	\$116.00									
	Potentiometric Surface Maps	Assistant (7)	\$84.00									
		Technician (6)	\$74.00									
	CAD					Reprographics	2	Lump	\$100.00	\$200.00		\$200.00
						Technology Charge	144	hour	\$9.95	\$1,432.80		\$1,432.80
Task Subtotals				144	\$24,640.00					\$1,632.80		\$1,632.80
Task Total												\$26,272.80
16.0	CCR Groundwater Monitoring Certificaiton	Associate (15)	\$222.00									
		Associate (14)	\$210.00									
		Associate (22)	\$227.00									
	Memo / letter report	Senior (13)	\$201.00	4	\$804.00							
		Senior (12)	\$182.00	2	\$364.00							
		Staff (11)	\$164.00									
		Staff (10)	\$151.00	2	\$302.00							
		Assistant (9)	\$135.00									
		Assistant (8)	\$116.00									
		Assistant (7)	\$84.00									
		Technician (6)	\$74.00									
						Technology Charge	8	hour	\$9.95	\$79.60		\$79.60
Task Subtotals				8	\$1,470.00					\$79.60		\$79.60
Task Total												\$1,549.60
Project Total												\$340,505.30