

**PUBLIC WORKS AND UTILITIES
MEMORANDUM #08-17**

DATE: July 24, 2008
TO: Honorable Mayor Kathleen M. Novak and City Council Members
FROM: David Allen, Acting City Manager / Director of Public Works and Utilities *DA*
SUBJECT: CR-96 – Big Dry Creek Alluvium Feasibility Study

RECOMMENDATION:

Attached to this memorandum is a Resolution which, if approved, would authorize the Mayor to execute the Professional Services Agreement between the City of Northglenn and Camp Dresser and McKee, Inc. (CDM) to perform a geotechnical study along Big Dry Creek for an amount not to exceed \$50,000. Staff recommends approval of the proposed Resolution.

BACKGROUND:

In 2005, the City retained Camp Dresser and McKee, Inc. (CDM) to complete an Integrated Water Resources Plan (IWRP). The final IWRP report outlined several portfolios or options for the City to meet current and future water needs with a sustainable and reliable water supply. With the completion of the IWRP in May 2007, the City proceeded with the Implementation Plan as outlined in Section 8 of the IWRP.

Several of the portfolios, including the highest ranking portfolio A1, incorporated the construction of an alluvial well field near the South Platte River. Such a well field would allow the City to draw water from several wells and then pump the water back to a City treatment facility before being delivered to the City's customers. The City would use existing, as well as acquire new, South Platte water rights in exchange for the ability to pump this well water. The greatest benefit to pumping well water instead of taking it directly out of the stream, is the alluvium acts as a natural filter, which improves the overall water quality, thereby, reducing the cost of treatment and maintaining customer desirability.

One of the recommendations of the Implementation Plan was to conduct a feasibility study to determine if the soil characteristics of Big Dry Creek are similar to the South Platte River. While the South Platte River has been proven as suitable location for alluvial well fields, as evidence of the Aurora's Prairie Waters Project and East Cherry Creek Valley, both of which use the South Platte Alluvium on a much larger scale, City Staff is unaware of any studies that have been performed on the Big Dry Creek Alluvium. Completion of the alluvial study would provide better information and possible direction for Northglenn's future water supply system.

The project would consist of two phases. The initial phase of the study would involve drilling 5, 2 inch diameter, wells approximately 40 feet in depth, to gather information on the characteristics of the aquifer such as thickness and permeability. If the results from Phase 1 are favorable, Phase 2 would be implemented with the installation of a separate 6 inch test well to establish the recovery and recharge rates of the Alluvium. With the ability to demonstrate that

the Big Dry Creek Alluvium is as viable as the South Platte Alluvium, the City would be able to reduce both the initial capital and ongoing operating costs associated with these portfolios. Capital cost reductions would be realized by reducing the length of the pipeline by approximately 6.5 miles and reducing the size of the pumps that would be needed. With shorter distances to pump, the projected long term operating costs would also be reduced.

While this project was not included in the City's 2008 Capital Improvement Program, staff is recommending the use of funding from both the Reuse Planning Study and the Standley Lake Enlargement Study which were scheduled for 2008. The Reuse Planning Study was also included as part of the IWRP. However, since there are no immediate plans to develop Section 36 in the next several years, such a study would be more appropriate at a later date. Staff is anticipating reintroducing the Reuse Planning Study as part of the 2012 Capital Improvement Program. Furthermore, with a favorable determination from Phase 1 the alluvium study would become a higher priority than the Standley Lake Enlargement Study due to its higher probable success rate and lower estimated capital project cost. The approved budget for each study that will be deferred is \$25,000 for a total of \$50,000. The estimated cost to complete Phase 1 is \$32,000. If Phase 1 is successful, an additional \$11,000 would be spent to complete Phase 2. The remaining \$7,000 will be reserved for contingency for unexpected site conditions.

With the funds for this project coming from other projects already included in the 2008 Capital Improvement Budget, a budget appropriation amendment is not required.

BUDGET/TIME IMPLICATIONS:

There is no impact to the General Fund. Funds from the Reuse Study Project in the 2008 Capital Improvements Fund (account number 516.69275.000.3999.832) and a portion of the funds from the Standley Lake Enlargement Study also in the 2008 Improvements Fund (account number 516.69265.000.3999.933) would be used to pay for the Big Dry Creek Alluvial Study.

STAFF REFERENCE:

If Council Members have any comments or questions, they may contact David Allen at (303) 450-8783 or dallen@northglenn.org.

SPONSORED BY: MAYOR NOVAK

COUNCILMAN'S RESOLUTION

RESOLUTION NO.

No. CR-96
Series of 2008

Series of 2008

A RESOLUTION APPROVING A PROFESSIONAL SERVICES AGREEMENT BETWEEN THE CITY OF NORTHGLENN AND CAMP DRESSER AND MCKEE, INC. FOR THE BIG DRY CREEK ALLUVIUM FEASIBILITY STUDY

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF NORTHGLENN, COLORADO, THAT:

Section 1. The Professional Services Agreement between the City of Northglenn and Camp Dresser and McKee, Inc., attached hereto, in the amount of \$50,000.00 for the Big Dry Creek Alluvium Feasibility Study is hereby approved and the Mayor is authorized to execute same on behalf of the City of Northglenn.

DATED at Northglenn, Colorado, this ____ day of _____, 2008.

KATHLEEN M. NOVAK
Mayor

ATTEST:

JOHANNA SMALL, CMC
Acting City Clerk

APPROVED AS TO FORM:

COREY Y. HOFFMANN
City Attorney

AGREEMENT FOR PROFESSIONAL SERVICES

THIS AGREEMENT is made and entered into this ____ day of _____, 2008, by and between the City of Northglenn, State of Colorado (hereinafter referred to as the "City") and Camp Dresser & Mckee Inc. (CDM) (hereinafter referred to as "Consultant").

RECITALS:

A. The City requires professional services.

B. Consultant has held itself out to the City as having the requisite expertise and experience to perform the required work for the Project.

NOW, THEREFORE, it is hereby agreed for the consideration hereinafter set forth, that Consultant shall provide to the City, professional consulting services for the Project.

I. SCOPE OF SERVICES

Consultant shall furnish all labor and materials to perform the work and services required for the complete and prompt execution and performance of all duties, obligations, and responsibilities for the Project which are described or reasonably implied from **Exhibit A** which is attached hereto and incorporated herein by this reference.

II. THE CITY'S OBLIGATIONS/CONFIDENTIALITY

The City shall provide Consultant with reports and such other data as may be available to the City and reasonably required by Consultant to perform hereunder. No project information shall be disclosed by Consultant to third parties without prior written consent of the City or pursuant to a lawful court order directing such disclosure. All documents provided by the City to Consultant shall be returned to the City. Consultant is authorized by the City to retain copies of such data and materials at Consultant's expense.

III. OWNERSHIP OF WORK PRODUCT

The City acknowledges that the Consultant's work product is an instrument of professional service. Nevertheless, the products prepared under this Agreement shall become the property of the City upon completion of the work.

Such documents are not intended or represented to be suitable for reuse by City or others on extensions of the Project or on any other project. Any such reuse without written verification or adaptation by Consultant and Consultant's Subconsultants, as appropriate, for the specific purpose intended will be at City's sole risk and without liability or legal exposure to Consultant, or to Consultant's Subcontractors. Any such verification or adaptation will entitle Consultant to further compensation at rates to be agreed upon by City and Consultant.

Notwithstanding any other provision of this Agreement between Consultant and City or any provision of the scope of work, work assignments, work authorizations, or any amendment issued hereunder, all of Consultant's pre-existing or proprietary information, documents, materials, computer programs, or software developed by Consultant outside of this Agreement shall remain the exclusive property of Consultant.

IV. COMPENSATION

A. In consideration for the completion of the services specified herein by Consultant, the City shall pay Consultant an amount not to exceed fifty thousand dollars (\$50,000). Payment shall be made in accordance with the schedule of charges in **Exhibit B** which is attached hereto and incorporated herein by this reference. Invoices will be itemized and include hourly breakdown for all personnel and other charges. The maximum fee specified herein shall include all fees and expenses incurred by Consultant in performing all services hereunder.

B. Consultant may submit monthly or periodic statements requesting payment. Such request shall be based upon the amount and value of the work and services performed by Consultant under this Agreement except as otherwise supplemented or accompanied by such supporting data as may be required by the City.

1. All invoices, including Consultant's verified payment request, shall be submitted by Consultant to the City no later than the twenty-fourth (24th) day of each month for payment pursuant to the terms of this Agreement. In the event Consultant fails to submit any invoice on or before the twenty-fourth (24th) day of any given month, Consultant defers its right to payment pursuant to said late invoice until the twenty-fourth (24th) day of the following month.

2. Progress payments may be claimed on a monthly basis for reimbursable costs actually incurred to date as supported by detailed statements, including hourly breakdowns for all personnel and other charges. The amounts of all such monthly payments shall be paid within thirty (30) days after the timely receipt of invoice as provided by this Agreement.

C. The City has the right to ask for clarification on any Consultant invoice after receipt of the invoice by the City.

D. In the event payment for services rendered has not been made within forty-five (45) days from the receipt of the invoice for any uncontested billing, interest will accrue at the legal rate of interest. In the event payment has not been made within ninety (90) days from the receipt of the invoice for any uncontested billing, Consultant may, after giving seven (7) days written notice and without penalty or liability of any nature, suspend all work on all authorized services specified herein. In the event payment in full is not received within thirty (30) days of giving the seven (7) days written notice, Consultant may terminate this Agreement. Upon receipt of payment in full for services rendered, Consultant will continue with all authorized services.

E. Final payment shall be made within sixty (60) calendar days after all data and reports (which are suitable for reproduction and distribution by the City) required by this Agreement have been turned over to and approved by the City and upon receipt by the City of Consultant's certification that services required herein by Consultant have been fully completed in accordance with this Agreement and all data and reports for the Project.

V. COMMENCEMENT AND COMPLETION OF WORK

Within seven (7) days of receipt from the City of a Notice to Proceed, Consultant shall commence work on all its obligations as set forth in the Scope of Services or that portion of such obligations as is specified in said Notice. Except as may be changed in writing by the City, the Project shall be complete and Consultant shall furnish the City the specified deliverables as provided in Exhibit A.

VI. CHANGES IN SCOPE OF SERVICES

A change in the Scope of Services shall constitute any material change or amendment of services or work which is different from or additional to the Scope of Services specified in Section I of this Agreement. No such change, including any additional compensation, shall be effective, or paid unless authorized by written amendment executed by the City. If Consultant proceeds without such written authorization, then Consultant shall be deemed to have waived any claim for additional compensation, including a claim based on the theory of unjust enrichment, quantum merit or implied contract. Except as expressly provided herein, no agent, employee, or representative of the City shall have the authority to enter into any changes or modifications, either directly or implied by a course of action, relating to the terms and scope of this Agreement.

VII. PROFESSIONAL RESPONSIBILITY

A. Consultant hereby warrants that it is qualified to assume the responsibilities and render the services described herein and has all requisite corporate authority and professional licenses in good standing, required by law.

B. The work performed by Consultant shall be in accordance with generally accepted professional practices and the level of competency presently maintained by other practicing professional firms in the same or similar type of work in the applicable community.

C. Consultant shall be responsible for the professional quality, technical accuracy, timely completion, and the coordination of all designs, drawings, specifications, reports, and other services furnished by Consultant under this Agreement. Consultant shall, without additional compensation, correct or resolve any errors or deficiencies in his designs, drawings, specifications, reports, and other services, which fall below the standard of professional practice, and reimburse the City for construction costs caused by errors and omissions which fall below the standard of professional practice.

D. Approval by the City of drawings, designs, specifications, reports, and incidental work or materials furnished hereunder shall not in any way relieve Consultant of responsibility for technical adequacy of the work. Neither the City's review, approval or acceptance of, nor payment for, any of the services shall be construed to operate as a waiver of any rights under this Agreement or of any cause of action arising out of the performance of this Agreement, and Consultant shall be and remain liable in accordance with applicable performance of any of the services furnished under this Agreement.

E. The rights and remedies of the City provided for under this Agreement are in addition to any other rights and remedies provided by law.

VIII. ILLEGAL ALIENS

A. Certification. By entering into this Agreement, Consultant hereby certifies that, at the time of this certification, it does not knowingly employ or contract with an illegal alien and that Consultant has participated or attempted to participate in the basic pilot program administered by the U.S. Department of Homeland Security in order to confirm the employment eligibility of all employees who are newly hired for employment in the United States.

B. Prohibited Acts. Consultant shall not:

(1) Knowingly employ or contract with an illegal alien to perform work under this Agreement; or

(2) Enter into a contract with a subcontractor that fails to certify to Consultant that the subcontractor shall not knowingly employ or contract with an illegal alien to perform work under this Agreement.

C. Verification.

(1) Consultant has confirmed or attempted to confirm the employment eligibility of all employees who are newly hired for employment in the United States through participation in the basic pilot program administered by the U.S. Department of Homeland Security and, if Consultant is not accepted into the basic pilot program prior to entering into this Agreement, Consultant shall apply to participate in the basic pilot program every three (3) months until Consultant is accepted or this Agreement has been completed, whichever is earlier.

(2) Consultant shall not use basic pilot program procedures to undertake pre-employment screening of job applicants while this Agreement is being performed.

(3) If Consultant obtains actual knowledge that a subcontractor performing work under this Agreement knowingly employs or contracts with an illegal alien, Consultant shall:

a. Notify the subcontractor and the City within three (3) days that Consultant has actual knowledge that the subcontractor is employing or contracting with an illegal alien; and

b. Terminate the subcontract with the subcontractor if within three (3) days of receiving the notice required pursuant to subparagraph (a) hereof, the subcontractor does not stop employing or contracting with the illegal alien; except that Consultant shall not terminate the contract with the subcontractor if during such three (3) days the subcontractor provides information to establish that the subcontractor has not knowingly employed or contracted with an illegal alien.

D. Duty to Comply with Investigations. Consultant shall comply with any reasonable request by the Colorado Department of Labor and Employment made in the course of an investigation conducted pursuant to C.R.S. § 8-17.5-102(5)(a) to ensure that Consultant is complying with the terms of this Agreement.

E. If Consultant does not currently employ any employees, Consultant shall sign the Affidavit attached hereto.

IX. INDEMNIFICATION

Consultant agrees to indemnify and hold harmless the City, its officers, employees, and insurers, from and against all liability, claims, and demands, on account of injury, loss, or damage, including without limitation claims arising from bodily injury, personal injury, sickness, disease, death, property loss or damage, if such injury, loss, or damage is caused in whole or in part by, or is claimed to be caused in whole or in part by, the negligent act, omission, error, professional error, mistake, negligence, or other fault of Consultant, any subcontractor of Consultant, or any officer, employee, representative, or agent of Consultant or of any subcontractor of Consultant, or which arise out of any workmen's compensation claim of any employee of Consultant or of any employee

of any subcontractor of Consultant. Consultant agrees to investigate, handle, respond to, and to provide defense for and defend against any such liability, claims or demands at the sole expense of Consultant, or at the option of the City, agrees to pay the City or reimburse the City for the defense costs incurred by the City in connection with, any such liability, claims, or demands. Consultant also agrees to bear all other costs and expenses related thereto, including court costs and attorney fees, whether or not any such liability, claims, or demands alleged are groundless, false, or fraudulent. If it is determined by the final judgment of a court of any competent jurisdiction that such injury, loss, or damage was caused in whole or in part by the act, omission, or other fault of the City, its officers, or its employees, the City shall reimburse Consultant for the portion of the judgment attributable to such act, omission, or other fault of the City, its officers, or employees.

X. INSURANCE

A. Consultant agrees to procure and maintain, at its own cost, a policy or policies of insurance sufficient to insure against all liability, claims, demands, and other obligations assumed by Consultant pursuant to Section IX, above. Such insurance shall be in addition to any other insurance requirements imposed by this Agreement or by law. Consultant shall not be relieved of any liability, claims, demands, or other obligations assumed pursuant to Section IX, above, by reason of its failure to procure or maintain insurance, or by reason of its failure to procure or maintain insurance in sufficient amounts, durations, or types.

B. Consultant shall procure and maintain, and shall cause any subcontractor of Consultant to procure and maintain, the minimum insurance coverages listed below. Such coverages shall be procured and maintained with forms and insurers acceptable to the City. All coverages shall be continuously maintained to cover all liability, claims, demands, and other obligations assumed by Consultant pursuant to Section IX, above. In the case of any claims-made policy, the necessary retroactive dates shall be renewed so as to maintain such continuous coverage.

1. Workmen's compensation insurance to cover obligations imposed by applicable laws for any employee engaged in the performance of work under this Agreement, and Employer's Liability insurance with minimum limits of five hundred thousand dollars (\$500,000) each accident, one million dollars (\$1,000,000) disease - policy limit, and one million dollars (\$1,000,000) disease - each employee. Evidence of qualified self-insured status may be substituted for the workmen's compensation requirements of this paragraph.

2. Commercial general liability insurance with minimum combined single limits of six hundred thousand (\$600,000) each occurrence and one million dollars (\$1,000,000) general aggregate. The policy shall be applicable to all premises and operations. The policy shall include coverage for bodily injury, broad form property damage (including completed operations), personal injury (including coverage for contractual and employee acts), blanket contractual, products, and completed operations. The policy shall contain a severability of interests provision.

3. Professional liability insurance with minimum limits of six hundred thousand dollars (\$600,000) each claim and one million dollars (\$1,000,000) general aggregate.

C. The policy required by paragraph 2. above shall be endorsed to include the City and the City's officers, employees, and consultants as additional insureds. Every policy required above shall be primary insurance, and any insurance carried by the City, its officers, its employees, or its consultants shall be excess and not contributory insurance to that provided by Consultant. No

additional insured endorsement to the policy required by paragraph 1. above shall contain any exclusion for bodily injury or property damage arising from completed operations. Consultant shall be solely responsible for any deductible losses under any policy required above.

D. The certificate of insurance provided for the City shall be completed by Consultant's insurance agent as evidence that policies providing the required coverages, conditions, and minimum limits are in full force and effect, and shall be reviewed and approved by the City prior to commencement of the Agreement. No other form of certificate shall be used. If the City is named as an additional insured on any policy which does not allow for the automatic addition of additional insureds, the Consultant's insurance agent shall also provide a copy of all accompanying endorsements recognizing the City as an additional insured. The certificate shall identify this Agreement and shall provide that the coverages afforded under the policies shall not be cancelled, terminated or materially changed until at least thirty (30) days prior written notice has been given to the City. The completed certificate of insurance shall be sent to:

City of Northglenn
Attn: Eve Craven
11701 Community Center Drive
Northglenn, Colorado 80233-8061

E. Failure on the part of Consultant to procure or maintain policies providing the required coverages, conditions, and minimum limits shall constitute a material breach of agreement upon which the City may immediately terminate this Agreement, or at its discretion, the City may procure or renew any such policy or any extended reporting period thereto and may pay any and all premiums in connection therewith, and all monies so paid by the City shall be repaid by Consultant to the City upon demand, or the City may offset the cost of the premiums against any monies due to Consultant from the City.

F. The City reserves the right to request and receive a certified copy of any policy and any endorsement thereto.

G. The parties hereto understand and agree that the City, its officers, and its employees, are relying on, and do not waive or intend to waive by any provision of this Agreement, the monetary limitations (presently one hundred fifty thousand dollars (\$150,000) per person and six hundred thousand dollars (\$600,000) per occurrence) or any other rights, immunities, and protections provided by the Colorado Governmental Immunity Act, Colo. Rev. Stat. §24-10-101 et seq., Colo. Rev. Stat., as from time to time amended, or otherwise available to the City, its officers, or its employees.

XI. NON-ASSIGNABILITY

Neither this Agreement, nor any of the rights or obligations of the parties hereto, shall be assigned by either party without the written consent of the other.

XII. TERMINATION

This Agreement shall terminate at such time as the work in Section I is completed and the requirements of this Agreement are satisfied, or upon the City's providing Consultant with seven (7) days advance written notice, whichever occurs first. In the event the Agreement is terminated by the City's issuance of said written notice of intent to terminate, the City shall pay Consultant for all work previously authorized and completed prior to the date of termination. If, however, Consultant

has substantially or materially breached the standards and terms of this Agreement, the City shall have any remedy or right of set-off available at law and equity. If the Agreement is terminated for any reason other than cause prior to completion of the Project, any use of documents by the City thereafter shall be at the City's sole risk, unless otherwise consented to by Consultant.

XIII. CONFLICT OF INTEREST

The Consultant shall disclose any personal or private interest related to property or business within the City. Upon disclosure of any such personal or private interest, the City shall determine if the interest constitutes a conflict of interest. If the City determines that a conflict of interest exists, the City may treat such conflict of interest as a default and terminate this Agreement.

XIV. VENUE

This Agreement shall be governed by the laws of the State of Colorado, and any legal action concerning the provisions hereof shall be brought in the County of Adams, State of Colorado.

XV. INDEPENDENT CONTRACTOR

Consultant is an independent contractor. Notwithstanding any provision appearing in this Agreement, all personnel assigned by Consultant to perform work under the terms of this Agreement shall be, and remain at all times, employees or agents of Consultant for all purposes. Consultant shall make no representation that it is the employee of the City for any purposes.

XVI. NO WAIVER

Delays in enforcement or the waiver of any one or more defaults or breaches of this Agreement by the City shall not constitute a waiver of any of the other terms or obligation of this Agreement.

XVII. ENTIRE AGREEMENT

This Agreement and the attached Exhibits A and B is the entire Agreement between Consultant and the City, superseding all prior oral or written communications. None of the provisions of this Agreement may be amended, modified, or changed, except as specified herein.

XVIII. SUBJECT TO ANNUAL APPROPRIATION

Consistent with Article X, Section 20 of the Colorado Constitution, any financial obligations the City not to be performed during the current fiscal year are subject to annual appropriation, and thus any obligations of the City hereunder shall extend only to monies currently appropriated and shall not constitute a mandatory charge, requirement or liability in any ensuing fiscal conflicting provisions in the Agreement establishing any monetary obligation beyond the current fiscal year.

XIX. NOTICE

Any notice or communication between Consultant and the City which may be required, or which may be given, under the terms of this Agreement shall be in writing, and shall be deemed to have been sufficiently given when directly presented or sent pre-paid, first class United States Mail, addressed as follows:

The City: City of Northglenn
11701 Community Center Drive
Northglenn, Colorado 80233-8061

Consultant: Camp Dresser & McKee Inc. (CDM)
555 17th Street, Suite 1100
Denver, Colorado 80202

IN WITNESS WHEREOF, the parties hereto each herewith subscribe the same in duplicate.

CITY OF NORTHGLENN, COLORADO

By: _____
Kathleen M. Novak, Mayor

ATTEST:

Johanna Small, Acting City Clerk

APPROVED AS TO FORM:

Corey Y. Hoffmann, City Attorney

CONSULTANT:

By: _____
Todd Shafer

Todd Shafer, PE

Print Name

Client Service Manager **7/14/2008**

Title Date

ATTEST:

By: _____
Robert E. Armstrong

Print Name

Vice President *7/14/08*

Title Date

City's Contract # _____
Cory Peterson
Project Manager

Attached is **EXHIBIT A “SCOPE OF SERVICES”** and **EXHIBIT B “AMOUNT OF COMPENSATION”**

EXHIBIT A – SCOPE OF SERVICES

City of Northglenn, Colorado

Big Dry Creek Alluvial Well Testing

Background

The City of Northglenn Integrated Resources Plan (IRP, CDM, May 25, 2007) recommends conducting various feasibility studies for potential City water sources. One of the studies identified involves Alluvial Well testing along the Big Dry Creek in order to determine the hydraulic characteristics of the aquifer in this location to evaluate the feasibility of extracting recharged treated effluent as a supplemental source of supply. Current knowledge of the hydrogeologic setting in the vicinity of the proposed project is very limited. Site-specific aquifer thickness and permeability data are not available for the Big Dry Creek alluvial aquifer in the vicinity of the City's wastewater treatment plant nor for areas downstream.

This proposed scope of work involves conducting exploratory drilling to characterize aquifer materials, installation of a pumping well and an observation well, and conducting alluvial well testing. This information will be used to obtain site-specific data regarding yield of the Big Dry Creek alluvial aquifer and to estimate the number of wells and conceptual-level costs associated with using this aquifer as a source of storage and supply. If results from this exploratory field program suggest that the aquifer has sufficient yield, CDM recommends additional field evaluations to more fully characterize the aquifer, identify optimal locations for extraction wells and outline requirements prior to full-scale implementation.

Scope of Work

The tasks outlined below summarize CDM's recommended approach to the Big Dry Creek Alluvial Well Testing.

Task 1: Field Planning

This task involves collection and review of available information pertaining to the work, and development of a testing protocol to implement the testing. The following activities are included in this task:

- **Kickoff Meeting** – This task will include a 1-hour meeting between CDM and the Northglenn project managers to discuss project goals, detail the field and analysis programs, and discuss locations for the exploratory wells.
- **Well siting and field preparation**– This task will include a visit to the proposed aquifer testing location. A CDM field geologist or engineer and the appropriate City staff will conduct the site visit and stake potential well locations. CDM will request a utility locate and call to the Utility Notification Center of Colorado (UNCC). Any on-site meetings required for underground utility location will be performed by City staff with remote CDM involvement. In the event that underground utilities in the vicinity of the proposed wells exist but cannot be identified by UNCC or City facility management staff, the City will be responsible for utility location using a third-party locating firm. A well permit for a test well will be submitted to the State Division of Water Resources. CDM also will

contract a qualified drilling and well pumping subcontractor who will undertake well drilling and construction and assist in performing an aquifer pumping test.

Task 2: Well Installation and Aquifer Testing

This task includes the field work associated with the project, as well as the following activities:

- Well drilling & construction – This task will include installation of an exploratory boring to bedrock. Samples will be collected continuously from ground surface to the aquifer total depth to characterize the soil column lithology, assist in evaluating how the materials currently above the water table will perform as a storage reservoir once artificial recharge has raised the water table, and evaluate the presence of strata which may prevent percolation of water from the ground surface to the underlying aquifer. CDM anticipates bedrock in the vicinity is present approximately 30 to 40 feet below ground surface (bgs) however site-specific data are required to confirm this. The depth to bedrock is a critical data element and in the event the boring and subsequent well must be installed deeper than 40 feet to reach bedrock, additional work will be performed at unit hourly and footage-based rates. This exploratory test hole will be completed with a 2-inch diameter casing and will serve as an observation well for the aquifer pumping test.
- A second well will be installed with 6-inch diameter screen well casing, located within approximately 50 feet of the exploratory test well. There will be no lithologic sampling conducted during drilling of this well. It will be equipped with a temporary pump used in the aquifer pumping test.
- Wells will be constructed with Division of Water Resources well construction standards. They will be equipped with locking water-tight caps and secured with either flush-mount or above-ground locking well completions depending on the well-site requirements. Following installation of the wells, development will be performed to optimize hydraulic communication with the adjacent aquifer.
- Aquifer Testing – This task will include a 6-hour step-drawdown test to evaluate the appropriate discharge rate for a constant-rate aquifer performance pumping test. Following the step-drawdown test the well will be allowed to recover for up to 12 hours, or until aquifer water levels recover to within 95 percent of pre-test levels, and then a 24-hour constant rate aquifer pumping test will be performed followed by a recovery test. CDM assumes that water can be conveyed via temporary piping/hose to a stream channel or drainage located within approximately 300 feet of the pumping well and that no permits will be required to discharge water produced during well development and testing. In the event additional work is required to convey pumped water further than 300 feet from the well location, the City will provide staff and equipment or additional CDM labor and subcontractor costs will be billed at hourly rates.

Task 3: Data Analysis and Reporting

This task includes the analysis and reporting associated with the project. The basic analysis and reporting includes the following activities:

- Aquifer test analysis – Using industry standard graphical calculation techniques, the data collected during the pumping and recovery phases of constant-rate discharge test will be analyzed to determine the aquifer transmissivity, specific yield, and the permeability of the aquifer.

Letter report – Following analysis and evaluation of the aquifer test, a brief letter report (2 – 4 pages) will be prepared. This will include a summary of aquifer test results, an estimate of the water supply that might be anticipated from alluvial wells installed in the Big Dry Creek alluvial aquifer, and attachments containing well permits and analytical results.

Task 4 (Optional): Water quality sampling

Sampling for general chemistry (major ions, metals, nutrients including phosphate and bacteriological parameters). The sample will be collected during the aquifer pumping test. CDM's project budget assumes that the analytical lab will be chosen and directly contracted by the City. CDM will summarize results in the letter report.

Task 5 (Optional): Additional reporting and meeting

If the potential for implementing an artificial recharge project does not appear to be a feasible alternative for the City, the project will conclude with Task 3 above, with the letter report summarizing the testing and analysis for the project. If the aquifer results appear promising in terms of being able to provide a sufficient yield to make an alluvial wellfield cost-effective, additional analysis will be conducted to identify a potential wellfield layout and provide approximate costs for the wellfield and develop a cost estimate and workplan for additional aquifer characterization.

Task 6 (Optional): Additional meeting

An additional meeting will be held with the City to present results of the additional analyses and to provide recommendations for further evaluation.

EXHIBIT B – AMOUNT OF COMPENSATION

Level of Effort and Fee

In consideration of the tasks outlined above, the proposed level of effort and fee are presented below in the “Basic Services” column. Optional tasks are also included with detail provided in the second table below.

COST SUMMARY	Basic Services	With Optional Tasks
Level of Effort (Total Hours)	112	190
Total Labor Cost	\$12,620	\$23,050
Cost of Subcontractors	\$18,375	\$18,375
Total, Other Direct Costs (ODCs)	\$980	\$1,630
Total Task Order Cost	\$31,975	\$43,055

Optional Tasks

The following optional tasks have been budgeted separately for the City’s consideration.

OPTIONAL TASK COST SUMMARY	Hours	ODCs	Budget
(4) Water Quality Sampling	18	\$250	\$2,650
(5) Full Reporting if Results Look Promising	40	\$200	\$5,220
(6) Additional Meeting if Results Look Promising	20	\$200	\$3,210
Total Optional Task Cost	78	\$650	\$11,080

- (4) Assumes 18 hours of coordination, review, and presentation for water quality sampling.
- (5) Assumes 40 hours of additional report preparation required.
- (6) Assumes 20 hours to prepare for and conduct one additional meeting.

Schedule

A proposed schedule for the work is provided below. Upon receiving feedback from City staff, the schedule can be revised to accommodate the specific schedule needs for this effort. As indicated, it is anticipated that the work will occur over approximately 15 to 18 weeks, depending on whether the City elects to perform the optional tasks.

SCHEDULE (WEEKS)		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Notice To Proceed	⊙																		
Field Planning																			
Kickoff Meeting			■																
Well siting and field preparation		■	■	■															
Well Installation and Aquifer Testing																			
Well drilling & construction					■	■	■	■											
Aquifer Testing																			
Data Analysis and Reporting																			
Aquifer test analysis										■	■								
Evaluation of results																			
Letter report																			
Optional Tasks																			
Full reporting																			
Additional meeting																			
Water quality sampling																			

City Review

**PROSPECTIVE CONSULTANT'S CERTIFICATE REGARDING EMPLOYING OR
CONTRACTING WITH AN ILLEGAL ALIEN**

FROM: **Camp Dresser & McKee Inc.**
(Prospective Consultant)

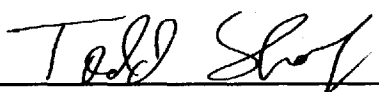
TO: City of Northglenn
PO Box 330061
11701 Community Center Drive
Northglenn, CO 80233

Project Name **Big Dry Creek Alluvial Well Testing**

Bid Number _____ Project No. _____

As a prospective Consultant for the above-identified bid, I (we) do hereby certify that, as of the date of this certification, I (we) do not knowingly employ or contract with an illegal alien and that I (we) have confirmed or attempted to confirm the employment eligibility of all employees who are newly hired for employment in the United States through participation in the basic pilot program administered by the United States Department of Homeland Security.

Executed this **14th** day of **July** , 2008.

Prospective Consultant 

By: **Todd Shafer, PE**

Title: **Client Service Manager**

Finance Dept Use Only
Initials _____
Date _____
PO # _____