

REQUEST AUTHORIZATION FOR MAYOR AND FINANCE OFFICER TO SIGN PROFESSIONAL SERVICES AGREEMENT OR AMENDMENT

Date: February 18, 2013

Project Name & Number: WRF Trickling Filter and Effluent Solids Reduction Improvements- Evaluation Phase; Project No. 12-2031 **CIP #:** 50910

Project Description: Evaluation of the trickling filter system and effluent solids reduction at the Water Reclamation Facility. The evaluation will include immediate and long term improvements for these systems.

Consultant: HDR Engineering, Inc.

Original Contract Amount: \$74,069.00	Original Contract Date: Sept. 5, 2012	Original Completion Date: Jan. 4, 2013
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Addendum No: 1


Amendment Description: Assistance in evaluation of proposed new NPDES permit discharge limits and evaluation of ultraviolet (UV) disinfection system.

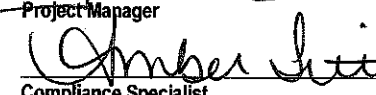
Current Contract Amount: \$74,069.00	Current Completion Date: Jan. 4, 2013
Change Requested: \$32,373.00	
New Contract Amount: \$106,442.00	New Completion Date: June 28, 2013

Funding Source This Request:


Amount	Dept.	Line Item	Fund	Comments
\$32,373.00	833	4223	604	
	Total			


Agreement Review & Approvals

 2-5-13
Project Manager Date

 2/5/13
Compliance Specialist Date

City Attorney Date

 2-5-13
Division Manager Date

 2-5-13
Department Director Date

ROUTING INSTRUCTIONS

Route two originals of the Agreement for review and signatures.
 Finance Office - Retain one original
 Project Manager - Retain second original for delivery to Consultant
 cc: Public Works
 Engineering
 Project Manager

FINANCE OFFICE USE ONLY

(Note to Finance: Please write date of Agreement in appropriate space in the Agreement document)

Date	Initials	Approved
8/7/2013	PW	<input checked="" type="radio"/> Y <input type="radio"/> N <input type="radio"/> Y <input checked="" type="radio"/> N
Appropriation		
Cash Flow		

AMENDMENT NO. 1 TO AGREEMENT

Project: Water Reclamation Facility Trickling Filter and Effluent Solids Reduction Improvements Evaluation Phase; Project No. 12-2031

Background Data: Effective Date of Agreement: September 5, 2012
Owner: City of Rapid City
Engineer: HDR Engineering, Inc.

Nature of Amendment: Assistance in evaluation of proposed new NPDES permit discharge limits and evaluation of ultraviolet (UV) disinfection system.

Current Contract Amount: \$ 74,069.00

Change Requested: \$ 32,373.00

New Contract Amount: \$106,442.00

Owner and Engineer hereby agree to modify the above referenced Agreement as set forth in this Amendment. All provisions of the Agreement not modified by this or previous Amendments remain in effect. The effective date of this Amendment is: February 18, 2013.

CITY OF RAPID CITY:

ENGINEER:

By: _____
Mayor

By: Steve H. Hoff
HDR Engineering, Inc.

Date Signed: _____

Date Signed: 2-5-2013

ATTEST:

By: _____
Finance Officer

Date Signed: _____

REVIEWED BY:

Dan Goon
Dan Goon, P.E. Project Manager



EXHIBIT A

SCOPE OF ENGINEERING SERVICES, AMENDMENT NO. 1
NPDES PERMIT REVIEW ASSISTANCE AND ADDITIONAL UV TESTING SERVICES

WATER RECLAMATION FACILITY
TRICKLING FILTER AND EFFLUENT SOLIDS REDUCTION IMPROVEMENTS
EVALUATION PHASE
PROJECT NO. 12-2031 CIP No. 50910

PROJECT BACKGROUND

The City of Rapid City is currently operating the Water Reclamation Facility (WRF) with a NPDES permit that has been expired for several years. Although the South Dakota Department of Natural Resources (SDDENR) has not renewed the permit, the City continues to operate the facility to meet the expired NPDES permit. The SDDENR has recently provided the City of Rapid City with new proposed ammonia limits based on new Water Quality Standards. The proposed ammonia limits initially appear to be significantly lower than the current permit under which the WRF is operating. One major component of this Amendment is to provide assistance to the City of Rapid City to review the basis for the proposed permit limits, review the data for the calculation of those limits, and assist the City with alternatives that may be appropriate for consideration by SDDENR for inclusion into a revised permit. The SDDENR has been contacted regarding the other permit parameters and has indicated there will not be significant changes for BOD, TSS and DO. The coliform measurement will likely change to another indicator.

In addition, services are included to perform additional testing on the plant effluent to verify the ability of the UV system to adequately treat the effluent to meet permit conditions. Collimated beam test (CB) is the preferred test for determining the adequate sizing for UV systems for trickling filter effluent.

Amendment No. 1 Anticipated Schedule

Amendment No. 1 Approval	February 2013
Low Flow and Ammonia limit confirmation	March 2013
Stream reclassification potential	March 2013
Low Flow Alternatives Strategies	April 2013
UV System Sampling	February/March 2013
Evaluation of initial UV sampling	March 2013
Follow-up UV sampling after algae bloom	June-July 2013
Project meetings	Through June 2013

The Consultant shall allow 10 working days for City review of any of the submitted reports.

SCOPE OF SERVICES –

Task 1. NPDES Permit Assistance

1. Project Management and Administration. Confirm that Project elements are being completed, quality control is conducted, and coordination with the City of Rapid City on Project progress and deliverables. Conduct general project management tasks. Includes development of project initiation forms including monthly invoicing, progress reporting, and project close out activities, quality control, and other administration project activities.
2. Kick-off Conference: The consultant shall meet with City staff to detail project concept and scope. The consultant shall prepare an agenda, take minutes, and distribute minutes.
3. Compile & Review Background Information: The SDDENR has available the database for the basis of the permit conditions. This information includes flow information and sampling information for Rapid Creek at the WRF. The SDDENR has also compiled the flow data impact for the WRF on Rapid Creek in the current determination of the 7Q25 value. In the task, HDR will coordinate with the SDDENR to compile this information, review the information and determine the adequacy of the information. One area that may require additional data from the City is the plant flow records back further than currently included in the SDDENR database.
4. Review of Flow Information. This task will review the flow information provided by the SDDENR in the determination of the Qu included in the proposed permit. The task will include an independent calculation of the proposed Qu based on the same data set provided by the SDDENR. HDR will use an established program, different from the SDDENR's selected program that has been accepted by other regional states for the calculation of the Qu value. This task will also include effort to update the data base for any historical WRF flow information that is not included in the SDDENR data base.
5. Review of Sampling Information. This task will review the sampling information from Rapid Creek provided by the SDDENR in the determination of the pH and Temperature to calculate the proposed ammonia conditions based on the 2009 adopted Water Quality standards. The task will include an independent calculation of the proposed ammonia limits based on the same data set provided by the SDDENR. This task will also include a compilation of the City of Rapid City Discharge Monitoring Reports (DMRs) compared to the proposed ammonia limits to determine the ability of the current treatment process to comply with the proposed ammonia limits. This task would also include a summary of the DMRs back to the startup of the activated sludge system upgrade. A summary report will be prepared with this information.
6. Stream Classification Review. The receiving stream, Rapid Creek, is classified as a warm water permanent fishery. As a result, the required minimum flow as determined by the SDDENR is 7Q25. The EPA criteria for similar streams would be a less restrictive 7Q10. The task will review the regulations and provide a discussion on the potential to reclassify the stream as a warm water intermittent, which would change the low flow criteria to 7Q5. The current SDDENR proposed low flow is 0.8 cfs, which could potentially impact the fishery during the extreme conditions.

7. Low Flow Alternatives. This task will include the preparation of the calculations and impacts of alternatives that may impact the low flow in Rapid Creek. The City of Rapid City will provide the information on available water rights and storage rights for Rapid Creek. This task will include a discussion on how the available rights might be utilized for NPDES compliance.
8. Project Meetings. This task includes project meetings for the purpose of discussing permit issues with the City/Stakeholders. This task includes a total of 2 meetings attended either in Rapid City or Pierre SD. Meetings could include SDDENR, and /or other state agencies. .
9. Deliverables. The following is a list of anticipated deliverables:
 - a) Meetings minutes from conference calls and any project meetings
 - b) Low Flow Calculation Confirmation Report
 - c) Ammonia Limit Confirmation Report including DMR results
 - d) Stream Classification Review Potential Report
 - e) Low Flow Alternatives Report.
10. Each of these reports will incorporate final City Comments and will be consolidated into a single report. Three (3) copies and one electronic file (.PDF) of each report will be submitted.

Task 2, Additional UV Testing Assistance

1. UV System Sampling and Evaluation. In this task HDR will work with Plant staff to collect data on the UV system such as ultraviolet transmittance (UVT) and total suspended solids and also to send samples to HDR's UV validation lab for collimated beam testing (CB). The CB test will provide a dose/response curve to demonstrate the actual effect of various dosages on the plant effluent. This test is typically used for sizing UV systems for use on trickling filter effluents, rather than transmittance only, as was apparently used for sizing the system at the WRF. It is proposed to do two CB tests in February/March about one week apart. A report on HDR's opinion of the sizing of the UV reactor will be based upon the test results collected in February/March. HDR will provide recommended parameters, frequency and duration for City staff to collect samples to assist in this evaluation. The concurrent tests to be performed by the City for the February/March testing will likely consist only of TSS sample analyses for a two-week daily sampling series. Depending upon the results of the February/March CB testing, as an optional service, the City may desire to conduct additional tests after the algae bloom peaks in June or July. This task has been included as an optional service and is included as a separate cost item on Exhibit B. During the June testing, the UV system will be operating and the concurrent tests to be performed by the City will likely consist UVT, fecal coliform (City current test method) and TSS sample analyses for a two-week daily sampling series. A revision to the report would then be able to address the impact of algae on the disinfection system by comparing it to the low algae concentration CB testing proposed for collection now to the results of the CB test after the algae blooms.

Deliverables: UV Sampling Results and System Sizing Evaluation Report and updated Evaluation Report following the June testing (if performed).

EXHIBIT B

**CITY OF RAPID CITY - WATER RECLAMATION FACILITY TRICKLING FILTER
AND EFFLUENT SOLIDS REDUCTION IMPROVEMENTS
AMENDMENT NO. 1, AMMONIA LIMIT REVIEW AND UV TESTING SERVICES FEE ESTIMATE
PROJECT NO. 12-2031 / CIP NO. 50910**

	Total Hours	Labor Total	Expense Total	Task Total
Amendment 1				
Task 1 NPDES Assistance				
1 Project Management and Administration	8	\$1,060	\$230	\$1,290
2 Kick-off Conference	8	\$864	\$230	\$1,094
3 Compile & Review Background Information	18	\$2,112	\$67	\$2,179
4 Review of Flow Information	24	\$2,983	\$189	\$3,172
5 Review of Sampling Information	16	\$1,863	\$59	\$1,922
6 Stream Classification Review	29	\$3,707	\$107	\$3,814
7 Low Flow Strategy Alternatives	20	\$2,392	\$74	\$2,466
8 Project Meetings	44	\$5,840	\$163	\$6,003
9 Project Reports	27	\$3,264	\$100	\$3,364
Subtotal Hours Task 1	194	\$24,085	\$1,218	\$25,303
Task 2 UV Testing assistance				
2.1 UV Testing assistance (Feb/March testing)	15	\$2,234	\$3,056	\$5,290
UV Testing assistance (June testing) - Optional	2	\$280	\$1,500	\$1,780
Subtotal Hours Task 2	17	\$2,514	\$4,556	\$7,070
SUBTOTAL HOURS	211	\$26,599	\$5,773	\$32,372

AMENDMENT TOTAL	
TOTAL LABOR	\$26,599
TOTAL EXPENSES	\$5,773
SUBCONSULTANT	\$0
TOTAL NOT TO EXCEED FEE	\$32,372