Weaver
CONSTRUCTION MANAGEMENT
3679 S Huron Street, Suite 404 Englewood, Colorado 80110
Phone: (303) 789-4111 FAX: (303) 789-4310

SUBMITTAL TRANSMITAL

June 7, 2012
Submittal No: 11210-001.B

PROJECT: **Harold Thompson Regional WRF**
Birdsall Rd.
Fountain, CO 80817
Job No. 2908

ENGINEER: **GMS, Inc.**
611 No. Weber St., #300
Colorado Springs, CO 80903
719-475-2935 Roger Sams

OWNER: **Lower Fountain Metropolitan Sewage Disposal District**
901 S. Santa Fe Ave.
Fountain, CO 80817
719-382-5303 James Heckman

CONTRACTOR: **Ozonia North America**
600 Willow Tree Road
Leonia, NJ 07605
201-676-2525

SUBJECT: UV Disinfection System - Response to submittal 11210-001.A review comments dated May 7, 2012.

SPEC SECTION: 11210

PREVIOUS SUBMISSION DATES: 4/27/12

DEVIATIONS FROM SPEC: ___ YES _X_ NO

CONTRACTOR'S STAMP: This submittal has been reviewed by Weaver Construction Management and, unless indicated otherwise, has been found to be in conformance with the intent of the contract documents.

Contractor's Stamp:	Engineer's Stamp:
Date: 6/7/12 Reviewed by: John Jacob ( ) Reviewed Without Comments (X) Reviewed With Comments	

ENGINEER'S COMMENTS:_____
_____

Project: HDTWRF Project

Location: Fountain, CO

Supplier: Ozonia

Date: 6/7/12

Submittal 11210-001.B. UV Equipment

WCM additional Submittal Review Comments:

1.b. WCM will execute a change order for this work.

1.c. WCM is still in discussion regarding Ozonia's cost for the level control weir. WCM request that GMS review and approve (assuming submittal is acceptable) all other portions of the submittal with the exception of the level control weir. The intent is to approve the UV equipment so we can proceed with fabrication.

1.h. WCM is coordinating with MWI to ensure proper cable length.

2.d. WCM is coordinating with MWI to ensure proper cable length

2.e. WCM is coordinating with MWI to ensure proper cable length

2.m. WCM is coordinating with MWI to ensure proper cable length

End of review. John Jacob

Date: Wednesday, May 30, 2012

To: John Jacob, Weaver Construction

From: James Nekus, Ozonia North America

Subject: Responses to Submittal 11210-001A Comments dated May 7, 2012

Below are responses in **RED** font to your recent submittal comments. Please note that based on the submittal comments, Ozonia is not required to revise any submittal drawings or documents.

1. The items below are in reference to the resubmittal comments provided in the Ozonia response letter dated April 12, 2012 included in the resubmittal.
    a. Response No.1. Acknowledged
    ONA Response: No action required by Ozonia

    b. Response No. 2 regarding the wireway, Ozonia has removed it from the resubmittal package. Ozonia also recommended that the power and data cables for the UV modules be installed completely in rigid conduit if the wireway is deleted. WCMI shall coordinate properly with its electrical subcontractor to ensure the installation is in accordance with the Ozonia recommendations in order to preserve all warranties. It is acknowledged that a cost reduction of $1,000 will be provided to the project for the deletion of the wireway. In following the approach of rigid conduit installation in lieu of a wireway, Ozonia has not changed the size or quantity of conduits on the submitted drawings. Should Ozonia see the need to change conduit sizing for the data and power cables, Ozonia shall be responsible for advising WCMI and its subcontractors as to the conduit sizing Ozonia would recommend for the proper operation of their disinfection system on this project. In complying with Ozonia's recommendations on this issue, we trust that the above described rigid conduit approach will not void or affect in any way the Ozonia warranty provided for this system.
    ONA Response: Ozonia will need an executed change order to delete the wireway from Ozonia's scope of work.

    Ozonia is not responsible for the sizing or design of the field conduit. Ozonia provided minimum recommended conduit diameter information on the Ozonia layout drawing for reference only. Ozonia shall also not be responsible for the informing WCMI or its subcontractors of any changes to the conduit design requirements, as field conduit design and sizing is not in Ozonia's scope of work.

    c. Response No. 3 regarding the revision to the level control weir, we have had correspondence with WCMI and Ozonia on this matter. We will continue to work with John Jacob at WCMI to resolve this issue. In the meantime, we are providing the comments on the remainder of the resubmittal package in order to expedite the fabrication and delivery of other components of the UV disinfection equipment.
    ONA Response: Ozonia submitted pricing to Weaver Construction on 4/25/12 for the revised level control weir design requested. An executed change order will need to be provided for Ozonia to proceed with fabrication of the level control weirs.

    d. Response No. 4: We acknowledge revision of the submittal documents for deletion of the wireway, refer to previous Comment 1.b. above for additional information.
    ONA Response: No action required by Ozonia

Ozonia North America LLC
600 Willow Tree Rd. | Leonia | NJ 07605 | USA
Tel : +1 201 676 2525 | Fax : +1 201 346 5460 | www.ozonia.com

e. Response No. 5 regarding revision to the level control weir, refer to previous Comment No.1.c.
ONA Response: See comment response 1.c above

f. Response No. 6.a., level control weir, refer to previous Comment No. 1.c.
ONA Response: See comment response 1.c above

g. Response No. 6.b. Revisions for the wireway deletion acknowledge, refer to previous Comment No. 1.b.
ONA Response: See comment response 1.b above

h. Response No. 6.c. The low level switch shall be installed upstream of the channel isolation gate as indicated on the submittal drawings. WCMI shall coordinate with their electrical subcontractor to provide the proper conductor routing to accommodate this installation. Refer to Comment 2.m. for additional requirements.
ONA Response: Coordination requested by Weaver and its subcontractors

i. Response No. 6.d. We acknowledge the requirement of tag numbers 1 and 2 for the UV modules. Response No. 6.e. Regarding the Ozonia response suggesting the adjustment of the location of the utility chase portals, that is not possible. As was explained in the original design coordination with Ozonia, the utility chase and portals are cast in the channel concrete construction which was completed with the building foundation. Regarding the position of the UV module within the UV channel, the Ozonia response indicated an optimum position of UV module 1 to be 5 feet from the channel isolation slide gate. The original review comment, as well as the original submittal drawings, indicated the position of UV module 1 relative to the end of the channel wall, rather than the isolation slide gate indicated in the response. Please verify the correct reference point for the required 5-foot dimensional placement of UV module 1.
ONA Response: The suggestion about adjust the location of the utility chase was in order to facilitate the installation of the cables to the modules. Power and data cables must be free of obstructions that could damage the equipment. Regarding the position of the UV module drawing 18253-770201 sheet 2 of 4 in revisions (–) and (A) show the same distance of 5 ft from module #1 to the concrete groove, in revision (A) it is explicit that this groove is the location of the slide gate. Section A-A' does not show internal part of the channel wall.

j. Response No. 6.f. Acknowledged
ONA Response: No action required by Ozonia

k. Response No. 6.g. Acknowledged
ONA Response: No action required by Ozonia

l. Response No. 7.a. Acknowledged, see previous Comment 1.b. regarding the wireway.
ONA Response: No action required by Ozonia. See response to comment 1.b above.

m. Response No. 7.b. Acknowledged, see previous Comment 1.h. regarding the low level switch.
ONA Response: No action required by Ozonia. See response to comment 1.h above.

n. Response No. 7.c. Acknowledged
ONA Response: No action required by Ozonia.

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o. Response No. 7.d. Refer to previous Comment 1.i. regarding the 5'-0" dimensional placement of UV module 1.
ONA Response: See response to comment 1.i above.

p. Response No. 7.e. Acknowledged, UV module tags to remain as the number 1 and the number 2.
ONA Response: No action required by Ozonia.

q. Response No. B.a. Acknowledged
ONA Response: No action required by Ozonia

r. Response No. B.b. Refer to previous Comment No. 1.c. regarding the level control weir.
ONA Response: See response to comment 1.c above.

s. Response No. B.c. Acknowledged
ONA Response: No action required by Ozonia.

t. Response No. g.a. Acknowledged
ONA Response: No action required by Ozonia.

2. The items below are in reference to the resubmittal comments provided in the Ozonia response letter dated April 25, 2012 included in the resubmittal.
   a. Response No. 1. Acknowledged
   ONA Response: No action required by Ozonia.

   b. Response No.2. Refer to previous comments regarding the level control weir.
   ONA Response: See response to comment 1.c above.

   c. Response No. 3.a. Acknowledged, see previous comments regarding level control weir.
   ONA Response: See response to comment 1.c above.

   d. Response No. 3.b. As requested in the previous review letter, WCMI shall verify the data cable length submitted is sufficient for the proposed installation. In addition, refer to previous comments regarding the wireway.
   ONA Response: Coordination requested by Weaver. Ozonia will need written confirmation that cable lengths are sufficient as submitted in order to proceed with fabrication of the data cables.

   e. Response No. 3.c. As requested in the previous review letter, WCMI shall verify the power cable length submitted is sufficient for the proposed installation. In addition, refer to previous comments regarding the wireway.
   ONA Response: Coordination requested by Weaver. Ozonia will need written confirmation that cable lengths are sufficient as submitted in order to proceed with fabrication of the power cables.

   f. Response No. 4.a. Acknowledged, as stated in the response, we will anticipate a complete database form of available disinfection system information for communication to the facility's SCADA system in subsequent submittals following approved shop drawings. Please note, it appears a new Subsection 7 under Section C has been added to this resubmittal package. Please verify whether or not this is intended to be the previously mentioned communication database, and whether or not this is in its final complete form.

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ONA Response: The database included within Section C, Tab 7 can be used by the plant to determine what UV system information will be "pulled" by SCADA. The database is not in its final form, and is subject to change prior to start-up.

g. Response No. 4.b. We acknowledge the nameplate revisions described.
ONA Response: No action required by Ozonia.

h. Response No. 4.c. Acknowledged
ONA Response: No action required by Ozonia.

i. Response No. 5.a. Acknowledged, refer to previous comments regarding wireway.
ONA Response: No action required by Ozonia. See response to comment 1.b above.

j. Response No. 5.b. Acknowledged, refer to previous comments regarding level control weir.
ONA Response: See comment response 1.c above

k. Response No. 5.c. Acknowledged, refer to previous comments regarding wireway.
ONA Response: No action required by Ozonia. See response to comment 1.b above.

l. Response No. 5.d. Acknowledged, refer to previous comments regarding level control weir.
ONA Response: See comment response 1.c above

m. Response No. 5.e. As requested in the previous review comments, WCMI shall verify the length of low level switch cable required to satisfy the installation. Note that the location of the switch is upstream of the channel isolation gate as described in previous comments.
ONA Response: The length of the low level switch cable is 50 ft, per the submittal drawings. Ozonia will need written confirmation that level switch cable length is sufficient as submitted in order to proceed with fabrication of the low level switch.

n. Response No. 5.f. Acknowledged
ONA Response: No action required by Ozonia

3. The previous submittal package included Ozonia responses to WCMI review comments. Those responses included two attachments, the first being a customer price list for replacement parts and the second being a recent ballast harmonic analysis report. Those two attachments do not appear in this resubmittal package. Please include them in the submittal response to the comments contained in this letter.
ONA Response: Requested attachments are included herein.

Please do not hesitate to contact me if you have any questions.

For OZONIA NORTH AMERICA
James Nekus, PMP
Project Manager

Enclosure: Customer Price List
40HO Ballast Harmonic Test Report

CC: Mark Morton, GMS, Inc.

Ozonia North America LLC
600 Willow Tree Rd. | Leonia | NJ 07605 | USA
Tel : +1 201 676 2525 | Fax : +1 201 346 5460 | www.ozonia.com

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OZONIA NORTH AMERICA, LLC
600 Willow Tree Road
Leonia, NJ 07605
Tel: 201-676-252
Fax: 201-346-5460

Customer Price List

40HO Replacement Parts

Book Pricing 2011

Updated: 04/16/2011

Qty listed below are for ONE (1) 40HO Module

Qty	Part number	Description		List Price	
40	X0016-H09	UV Lamp 40HO		$42.00	
40	X0015-H13	Quartz Jackets 40HO		$30.50	
40	X0027-H01	Jacket Seal Assembly 40HO		$9.60	
80	X0031-G03	Spacer Clips 40HO		$1.50	
4	X0029-H01	Ballasts 40HO		$301.65	
1	X0017-H06	UV Sensors 40HO		$1,222.08	
1	X0056-H01	LCA 40HO		$344.63	
1	X0057-H01	DCA 40HO		$539.38	
1	X0024-G29	Cooling Fan 40 HO		$216.15	
40	X0031-G01	Gromments, Cup 40HO		$3.24	
1	X0028-H01	Interlock 40HO		$339.00	
40	X0025-G03	Cleaning Wiper 40HO		$9.08	
1	X0002-G27	Wiper Motor 40HO		$213.60	
3	X0002-G24	Bearings 40HO		$56.68	
3	X0002-G17	Seals 40HO		$7.24	

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40HO Ballast Harmonic Test Report (Rev. A)

Test Performed By: Hemant Gore
Test Witnessed By: Luis Lu
Date: Sept 9th, 2010, Time: 9:00 AM EST
Location: Ozonia Workshop
Equipment Used: 1> 40HO UV Module with 3 ballast and 6 UV lamps.
2> Hyoki Power Meter, Model# 3196

Parameters: Input Voltage: Ph 1:- 231.1 VAC, Ph 2:- 232.1 VAC, Ph 3:- 229.6 VAC
Input Current: Ph 1:- 1.26 A, Ph 2:- 1.34 A, Ph 3:- 1.6 A

This revised test was conducted to measure harmonics for 3 ballasts (6 UV lamps) connected to 3 phases of a transformer. The transformer used was a Rex 480 Pri Delta to 400/230 Sec Wye, 2KVA. The ballasts were connected between each phase and neutral, which was left floating, to get 230 VAC. The Hyoki meter was connected in parallel with the ballasts to measure voltage and the CT's were placed on each phase. Following data was noted:

Harmonic #	I (1,2,3) (Amps)
1	1.31
2	0
3	0.01
4	0
5	0.07
6	0
7	0.03
8	0
9	0.02
10	0
11	0.01
12	0
13	0.01
14	0
15	0
16	0
17	0

18	0
19	0
20	0
21	0
22	0
23	0
24	0
25	0
26	0
27	0
28	0
29	0
30	0
31	0
32	0
33	0
34	0
35	0
36	0
37	0
38	0
39	0
40	0
41	0
42	0
43	0
44	0
45	0
46	0
47	0
48	0
49	0
50	0