

**AGREEMENT FOR
PROFESSIONAL ENGINEERING SERVICES
BETWEEN KENTUCKY AMERICAN WATER
AND HAZEN AND SAWYER FOR
RICHMOND ROAD FILTER BUILDING REPLACEMENT**

TASK ORDER NO. KY-14-HS-01

Article II – Scope of Services shall be to develop the Design (including CT Basin and Backwash Pump Station), Permitting, Bidding and Record Drawings of the Filter Building Replacement for the Kentucky American Water Company Richmond Road Station Water Treatment Facility.

Article III – Engineer’s Representative in charge of the services is Bret M. Casey, P.E. who may be contacted at (614) 781-9655. Owner’s Representative in charge of the services is Zachery B. Dukes, P.E., who may be contacted at (859) 537-0750 or via email at Zachery.dukes@amwater.com.

Article IV – The Services performed within the Task Order shall commence on or about January 30, 2014, and shall be complete on or before April 30, 2016.

Article VIII – Payment shall be amended by a lump sum amount of [REDACTED] Disbursed between the work items of [REDACTED] for the Design (including CT Basin and Backwash Pump Station), [REDACTED] for the CM at Risk Bidding Services and [REDACTED] for Record Drawings.

All other articles of the February 10, 2014 AGREEMENT FOR LIMITED PROFESSIONAL SERVICES remain the same.

INVOICING INSTRUCTIONS: All invoices shall be submitted in duplicate and addressed to: American Water, c/o Shared Services Center, Attn: Zachery B. Dukes (Zachery.dukes@amwater.com), P.O. Box 5610, Cherry Hill, NJ 08034.

PREPARED BY: Zachery B. Dukes, P.E. Date February 10, 2014
(Owner Representative)

**CONSULTANT
HAZEN SAWYER**

**OWNER
KENTUCKY AMERICAN WATER COMPANY**

By: 
Title: VICE PRESIDENT
Date: 2-21-2014

By: 
Title: Director of Engineering
Date: February 10, 2014

**AGREEMENT FOR
LIMITED PROFESSIONAL SERVICES
BETWEEN KENTUCKY-AMERICAN WATER COMPANY AND
HAZEN AND SAWYER FOR
RICHMOND ROAD FILTER BUILDING REPLACEMENT**

THIS AGREEMENT, made and entered into this 10th day of February 2014 by and between **KENTUCKY-AMERICAN WATER COMPANY**, with its principal office at 2300 Richmond Road, Lexington, KY 40507, hereinafter referred to as "OWNER", and ***HAZEN AND SAWYER*** providing professional services with its principal office at 444 Lewis Hargett Circle, Lexington, KY 40503 hereinafter referred to as "CONSULTANT":

WHEREAS, OWNER desires to receive the professional services related to OWNER'S Richmond Road Filter Building Replacement (the "Project") as set forth in OWNER'S Request for Proposal dated November 2013 and *CONSULTANT'S* Proposal for Professional Services dated December 19, 2013 ("Proposal") presented in Appendix A in abbreviated form. Owner and CONSULTANT agree that the scope of work set forth in CONSULTANT'S Proposal shall constitute the scope of work for the Project; and

WHEREAS, OWNER is desirous of engaging the services of said CONSULTANT to perform or furnish said services. WHEREAS, CONSULTANT has available and offers to provide personnel and facilities necessary to accomplish said services in a timely manner. NOW, THEREFORE, said OWNER and said CONSULTANT, for the considerations hereinafter set forth, mutually agree as follows:

Article I - Professional Engagement

OWNER hereby engages *CONSULTANT*, as an independent contractor, to perform or furnish the services hereinafter more particularly described in Appendix A, commencing on the date of this Agreement.

CONSULTANT hereby agrees to perform or furnish as an independent contractor professional and related services as set forth herein. CONSULTANT may retain qualified subconsultants to assist in the performance of professional services. OWNER shall be notified prior to CONSULTANT subcontracting such services and sufficient time shall be provided to allow OWNER to review the subconsultant's qualification. Should OWNER, based upon reasonable cause, not accept any such subcontractor or subconsultant for use on the Project, OWNER shall so notify CONSULTANT within five (5) days following OWNER's receipt of such notice from CONSULTANT, and CONSULTANT shall not subcontract with any such subcontractor or subconsultant for the Project. OWNER shall have the right at any time to revoke its acceptance (whether given affirmatively or by its failure to object within said five (5) day period) of any subcontractor or subconsultant on the basis of reasonable cause, in which case CONSULTANT shall submit an acceptable substitute and, if necessary and agreed to by the parties, a Task Order equitably adjusting CONSULTANT'S compensation will be issued. No acceptance of any subcontractor or subconsultant shall waive: (1) OWNER's right not to accept defective services performed or furnished for CONSULTANT by said subcontractor or subconsultant; or (2) any other right or remedy OWNER has under this Agreement, including but not limited to its rights to suspend or terminate services under this Agreement.

CONSULTANT is an independent contractor and is not and shall not be deemed to be an employee, agent, servant, partner or joint venturer of OWNER. CONSULTANT shall have the exclusive supervision, direction and control of all employees, subconsultants, subcontractors, suppliers, materials, equipment and facilities, employed, contracted with, or used by, CONSULTANT in performing or furnishing services under this Agreement.

Article II - Scope of Services

The scope of services performed or furnished by CONSULTANT under the terms of this Agreement is defined in Appendix A and in the executed Task Orders pursuant hereto which will authorize CONSULTANT to perform specific services related to the project. Unless modified in writing by both parties through a Task Order, duties of CONSULTANT shall not be construed to exceed those services specifically established in Appendix A. **Any additional fees associated with services not included in Appendix A must be defined and agreed to by OWNER in writing prior to initiation of those services.**

Article III - Cooperation by OWNER

OWNER shall, to the extent reasonable and practicable, cooperate with CONSULTANT in the performance of CONSULTANT's services hereunder. Such cooperation shall include, but not necessarily be limited to: providing right of access to work sites as required for Consultant to

perform or furnish services under this Agreement; providing relevant material available from OWNER's files such as maps, drawings as available, records, and operation and maintenance information; serving all notices, attending all hearings; payment of all permit and other required fees associated with the Project; and rendering assistance in determining the location of existing facilities and improvements which may be affected by the Project.

OWNER shall be responsible for providing legal services which it deems necessary for the Project including review of contract documents, public advertising and contract letting. OWNER shall pay fees for utility services to the Project.

OWNER shall appoint ZACHERY DUKES as OWNER'S REPRESENTATIVE with respect to the services to be performed under this Agreement. OWNER'S REPRESENTATIVE shall have complete authority to transmit instructions, receive information, and interpret and define OWNER's policies. CONSULTANT shall be entitled to rely on representations made by OWNER'S REPRESENTATIVE unless otherwise specified in writing by OWNER.

Article IV - Schedule

A schedule for carrying out services performed by CONSULTANT under the terms of this Agreement is set forth in Appendix A. CONSULTANT will perform or furnish all services under this Agreement in accordance with said schedule.

OWNER will be kept informed as to the progress of the services under this Agreement under the terms presented in Appendix A. Neither party shall hold the other responsible for damages caused by, arising out of or resulting from delays beyond the control of the other party. Delays in work performed by CONSULTANT's Subconsultants are deemed to be delays within the control of CONSULTANT.

Article V - Assignment of Contract

CONSULTANT shall not assign this Agreement or any portion of the services to be performed or furnished hereunder without prior written approval of OWNER.

Article VI - Litigation

This Agreement does not require CONSULTANT to prepare for or appear as a witness in any litigation or alternative dispute resolution proceeding on behalf of OWNER, other than as specified in Appendix A, except in consideration of additional reasonable compensation negotiated as part of a Task Order specifically issued for such purpose. Notwithstanding the preceding, CONSULTANT shall participate without additional compensation in any litigation or alternative dispute resolution proceeding in which CONSULTANT is a party or in which a claim is made against OWNER based in whole or in part on CONSULTANT's negligence, professional errors or omissions, breach of contract or deficiencies in CONSULTANT's design or performance hereunder.

Article VII - Ownership of Work Products

Reports, drawings, specifications, submittals, and other work products of CONSULTANT for the Project, except working notes and internal documents, become the property of OWNER upon delivery thereof to OWNER and payment for the services which produced said documents in accordance with this Agreement. Reuse of these work products of CONSULTANT by OWNER for other than the specific project covered in this Agreement, or modification and use by OWNER of any documents connected with this Agreement, without the written permission of CONSULTANT shall be at OWNER's risk and OWNER agrees to defend, indemnify, and hold harmless CONSULTANT from all claims, damages and expenses including attorney's fees arising out of such unauthorized reuse of CONSULTANT work product by OWNER or by others acting through OWNER.

Article VIII - Payment

Payment for the services set forth in Appendix A and specific executed Task Orders shall be made by OWNER to CONSULTANT and shall be considered as full compensation for such services and all personnel, materials, supplies, and equipment used and costs incurred in carrying out such services.

A. Payment for services performed or furnished under terms of Appendix A and/or Task Orders in which a lump sum basis of compensation is specified shall be as described below:

1. Compensation to CONSULTANT shall be a lump sum amount specified in Appendix A and Task Orders.
2. Payments shall be monthly, based on percent completion. As each payment is due, a statement describing the services which have been performed or furnished and listing the percent of completion and the total amount of prior payments paid by OWNER shall be submitted to OWNER. Payment shall be made for the balance due under such statement, without retention unless OWNER contests all or part of said billing in which event only that portion so contested will be retained by OWNER pending resolution of the dispute and any uncontested portion will be paid.

B. If lump sum compensation is not agreed upon, payment for services performed in which a time and expense or unit price basis of compensation is specified shall be as described below:

1. Compensation to CONSULTANT shall be on a time and expense reimbursement basis or fixed unit rate basis as stipulated in Appendix A or an executed Task Order. A current copy of the Schedule of Charges will be included with CONSULTANT's proposal and each Task Order for time and expense or fixed unit rate reimbursement.

2. Payments for services provided by CONSULTANT on a time and expense basis shall be made monthly by the OWNER based on an itemized invoice from CONSULTANT which lists actual costs and expenses or units of work performed on the Project in the immediate preceding month. Such payments shall be for the invoice amount, without retention unless OWNER contests all or part of said billing in which event only that portion so contested will be retained by OWNER pending resolution of the dispute and any uncontested portion will be paid.

3. A budget for compensation for services provided by CONSULTANT on a time and expense basis will be established in the Proposal or Compensation section of a Task Order. The budget established shall not be exceeded without OWNER's written authorization. When reimbursable costs have reached fifty percent (50%) of the budget, CONSULTANT shall provide to OWNER a list of remaining services and the estimated cost for performing these services.

The budget may be increased by amendment if necessary to complete the scope of work. If appropriate, CONSULTANT will advise OWNER of the anticipated expenditure over the budgeted amount at least thirty (30) days prior to such time and request additional budget authorization.

C. CONSULTANT's final statement or invoice for any services which include construction, or the final statement or invoice for the Project, whichever occurs earlier in time, shall include properly completed and executed Releases of Liens and Claims (see Appendix C). Payment of any invoice not satisfying this requirements may be withheld until the requirements has been satisfied.

D. Payments are due upon receipt of a statement or invoice prepared in a manner acceptable to OWNER and approved by OWNER. Interest shall accrue and be paid on any unpaid approved statement or invoice amount at the legal rate of interest from the 45th day after receipt of such statement or invoice to the date of payment. Interest shall be payable at the same time that said statement or invoice amount is paid.

Article IX - Suspension of Work

OWNER may, at OWNER'S discretion, suspend, in writing, all or a portion of the services under this Agreement. CONSULTANT may suspend the services under this Agreement in the event OWNER does not make payment in accordance with the payment terms in Article VIII. The services under this Agreement will only be suspended for non-payment after written notice is received by OWNER from CONSULTANT of its intention to suspend performance and a cure period of seven (7) days after receipt of this notification by OWNER. The time for completion of the services under this Agreement shall be extended by the number of days the services under this Agreement is suspended. If the period of suspension exceeds ninety (90) days, the terms of this Agreement are subject to renegotiation, and both parties shall have the option to terminate the services under this Agreement on the suspended portion of project in accordance with Article X.

Article X - Termination of Services

OWNER, by notifying CONSULTANT in writing, may terminate any or all of the services covered by this Agreement. In the event of such termination, CONSULTANT shall have the right to expend a reasonable amount of additional time to assemble work in progress for the purpose of proper filing and closing of the job. Such additional time shall not exceed five percent (5%) of the total time expended to the date of notice of termination or a designated total time agreed upon in a Task Order. All charges thus incurred, together with associated expenses reasonably incurred by CONSULTANT and reasonable charges for any other commitments outstanding at the time of termination (such as for termination of subconsultants, rental agreements, etc.), shall be payable by OWNER within thirty (30) days following submission of a final statement by CONSULTANT. However, in the event that termination of said Agreement with CONSULTANT occurs at the completion of a specific phase of the services, the aforesaid provision for the proper filing and closing will not apply unless agreed to by OWNER under a specific Task Order. The payment provided for under this Article X shall constitute full satisfaction of any obligation OWNER has, may have or could be found to have to pay for services performed or furnished and expenses or charges incurred by CONSULTANT pursuant to this Agreement and any and all liabilities or damages arising out of or resulting from the termination of this Agreement.

Article XI - Indemnification

To the fullest extent permitted by law, CONSULTANT shall indemnify, hold harmless and defend OWNER, its parent, subsidiaries, partners, officers, directors, employees and agents from and against any and all claims, damages, costs, losses and expenses (including but not limited to attorneys' fees) caused by, arising out of or related to the negligence (including but not limited to professional negligence, errors or omissions) of CONSULTANT, its partners, officers, employees, agents, subconsultants and subcontractors in the performance or furnishing of services under this Agreement, provided however, that CONSULTANT's liability to OWNER under this Article XI shall not exceed the percentage share of such claim, damages, cost, loss and expense that the negligence (including professional negligence, errors or omissions) of CONSULTANT, its partners, officers, employees, agents, subconsultants and subcontractors bears to the total negligence of all negligent entities and individuals determined on the basis of comparative negligence principles.

Article XII - Insurance

A. CONSULTANT shall maintain worker's compensation and employers' liability insurance in accordance with the amount(s) and coverage(s) in the attached Appendix B.

B. CONSULTANT shall maintain commercial general liability and automobile liability insurance protecting it against claims arising from bodily or personal injury or damage to property, including loss of use thereof, resulting from operations of CONSULTANT pursuant to this Agreement or from the use of automobiles and equipment of or by CONSULTANT. The amount(s) and coverage(s) shall be in accordance with Appendix B.

C. CONSULTANT shall maintain a policy of professional liability insurance, protecting it against claims arising out of the negligent acts, errors, or omissions for which it is legally liable in the performance or furnishing of professional services pursuant to this Agreement. (Such insurance shall be maintained for one (1) year after final completion of construction. The amount(s) and coverage(s) shall be in accordance with Appendix B.

D. CONSULTANT is required to provide OWNER with Certificates of Insurance evidencing the afore-referenced coverages and, upon OWNER's written request, complete copies of such policies or other evidence of coverage satisfactory to OWNER shall be provided to OWNER. Approval or acceptance of said insurance by OWNER shall not relieve or decrease the liability of CONSULTANT hereunder.

E. OWNER agrees to endeavor to include a provision in the OWNER's contract with the Construction Contractor engaged on the Project which requires that CONSULTANT be listed as an additional insured on such Construction Contractor(s) liability insurance policy and property insurance (Builder's Risk) policy, if any.

Article XIII - Controlling Law

This Agreement is to be governed by the law of the State in which OWNER's principal place of business is located.

IN WITNESS WHEREOF, this Agreement has been executed by the respective duly authorized agent of OWNER and CONSULTANT, all as of the day and year first above written.

CONSULTANT

OWNER

HAZEN AND SAWYER

**KENTUCKY AMERICAN WATER
COMPANY**

By:  _____



By: Brent O'Neill, P.E.

Title: VICE PRESIDENT

Title: Director of Engineering

APPENDIX A INCLUDES:

**Request for Proposal
Consultant's Proposal
Owner's Insurance Requirements
Consultant's Certificate of Insurance**

Appendix B

Article XII, Insurance of the Agreement, is amended and supplemented to include the following agreement of the parties:

The limits of liability for the insurance required by Article XII are as follows:

XII	A. Worker's Compensation Employee's Liability	Statutory 100,000
	B. General Liability* General Aggregate Each Occurrence Products/Comp. Ops. Personal & Adv. Inj. Fire Damage (any one fire) Medical Expense (any one person) Automobile Liability Bodily Inj. & P.D. Combined Single Limit Each Accident	 1,000,000 1,000,000 1,000,000 1,000,000 300,000 10,000 1,000,000
	C. Professional Liability Occurrence Aggregate	 5,000,000 5,000,000
	D. Excess Liability Occurrence Aggregate	 1,000,000 1,000,000

* Additional Insured: OWNER will be added to the policies required in XII B as an additional insured.

** As needed to provide limits requested in XII B.

**Kentucky American Water Company
New Filter Building Design
Richmond Road Station Water Treatment Plant**

**Kickoff Meeting
January 30, 2014**

Agenda

1. Introductions – Project Team Roles and Responsibilities
 - Subconsultants – Gonzales, Integrated Engineering
2. Define Lines of Communication
3. Project Schedule
4. Scope and Fee
 - Base Design
 - CT Basin and Backwash Pump Station
 - Additional Construction Meetings and RPR
 - Exceptions
5. Project goals and expectations
6. Data and information requests
7. Notice to Proceed and Contract
8. Define acceptable equipment manufacturers
9. Next Meeting

**Kentucky American Water Company
New Filter Building Design
Richmond Road Station Water Treatment Plant**

**30% Review Meeting
April 22, 2014**

Meeting Minutes

Attendance: Zach Dukes, KAW Project Manager
David Shehee, KAW Water Quality
Kevin Kruchinski, KAW Production
Mike Maggard, KAW SCADA
Bret Casey, H&S
Jon Steinmetz, H&S
Bob Green, H&S
Lisa Melton, H&S

1. Basis of Design Memo review comments
 - a. Comments from KAW are forthcoming.
 - b. H&S summarized the CT basin design memo; which discussed options to provide additional clearwell/backwash storage. The primary recommendation is to add a backwash tank at the CT basin. In the future a new clearwell (above ground) could be added near the reservoir to provide more usable float volume than currently available in clearwell no. 1. At that point the backwash tank would float with the new clearwell.
 - c. The revised CT basin sizing criteria (below) was discussed; the basin volume has been reduced by 125,000 gallons. Dave recommended the basin be evaluated at pH 7.8 and chlorine residual of 1.5 mg/L. H&S will review and advise on the resulting capacity.
 - i. Flow: 18 mgd
 - ii. pH: 7.6
 - iii. Temp (min spring): 45° F
 - iv. Chlorine residual: 2.0 mg/l
 - v. CT volume required for 0.5 log giardia: 275,000 gallons
 - d. A 150,000 gallon backwash tank has been incorporated into the design. H&S noted the projected backwash volume required is 100,000 gallons based on a low-high-low wash duration of 20 minutes. KAW confirmed their existing backwash duration is shorter. Backwashes are typically done on time
 - e. The proposed CT basin/backwash supply tank volume is 425,000 gallons.
 - f. A letter will be prepared to KDOW on clearwell volume variance. H&S will prepare the draft for KAW input.
2. Review of 30% drawings
 - a. Site/Civil Discussion

- The box curb on the road to the filter building will be replaced with roll curb. The road will remain the current width.
 - KAW requested low-maintenance ground cover on the slopes
 - KAW was in agreement to the access provided to the filter building.
 - The blowers will be relocated to the west side of the filter building.
 - Grading on the west will tie-in closer around building.
 - A turn around will be provided on the south of the CT basin.
 - KAW noted an interest in a rain garden for stormwater control.
 - Pervious pavement or articulated block paving was discussed for the drive to the CT basin. KAW was interested in life cycle. H&S will follow-up.
 - A sidewalk will be added from the northeast door to the CT basin.
 - Several utility conflicts were identified, fiber optic, low voltage electric, sewer to the trailer. KAW owns the fiber optic cable. There are a couple of splices in the line already, and KAW may want to replace it all the way up to the sedimentation basins.
- b. Architectural
- KAW requested an architectural rendering of post-construction aesthetics. This information will be distributed within KAW for buy-in.
 - Window placement was discussed. Covering the windows to limit UV influence will be critical and will be discussed during the architectural call.
- c. Filter Building Layout
- Operating Floor - Access to valves and actuators was discussed. Actuators on the influent side are ok. Access to the backwash valves (outboard of the filter) was limited. Shifting the backwash valves further into the gullet was discussed, but would limit accessibility. KAW agreed to leave the valves in the current location, and shift the filters north to provide a walkway around Filter 1 and 2.
 - Access to equipment in the pipe gallery will be provided through hatches on the north and south of the building. A double hatch is preferred on the north.
 - Exterior equipment – locating of the blowers will be relocated to the southwest corner of the filter building.
 - Backwash flow meter – to be located in the filter building. Due to the location and elevation of the line, a magmeter will be provided instead of a venturi meter.
 - Modulating valves – will use Beck or Rexa actuators. All others will be Auma/EMI.
 - The filter effluent rate of flow controllers will use venturi meters.
 - The filtered water control valve arrangement consists of one rate of flow controller and two open-close motor operated valves (filter to waste; finished water). KAW was in agreement with this configuration.
 - The filter to waste line connects to the backwash waste line in the yard. An air gap is provided in the filter building.
 - Sample taps will be placed on the 18-inch filtered water pipe upstream of the venturi meter.
 - The clear walking area provided in the pipe gallery is 9 feet.

- KAW confirmed no compressed air is required for maintenance functions.

d. CT Basin Design

- Chemical feed – chemical feed (ammonia, fluoride, phosphate) will be provided in a separate vault downstream of the CT basin. System will be flow paced.
- Backwash wash tank – a fill line will be provided from the filtered water control structure. The tank will be filled slowly over the course of the day to limit impact to the clearwell. Chlorine will be present in the backwash supply.
- KAW suggested a second connection to the backwash tank from the high service pumps. H&S will incorporate a second connection into the design.
- Backwash pumps – submersible pumps are shown in the design. The main advantage is the elimination of the building. KAW noted they have vertical turbine pumps that are installed outside. H&S will follow-up with costs on vertical turbine pumps for KAW to evaluate.
- Backwash pump valve vault – the valve vault will be removed to eliminate confined space entry. The flow meter will be relocated to the filter building; isolation valves will be buried in the yard.
- The Pulsair mixing system will be removed from the design. The weirs will provide chemical mixing.

e. Yard Piping

- Finished water pipe (from CT basin) – will be connected to the line feeding clearwell no 1. KAW noted the line should be abandoned and capped upstream of this connection.
- Backwash waste (to wastewater tanks) – the new line was proposed to connect into the drain system on the east of the existing filter building. Due to additional hydraulic head and age of existing piping, a new line will be connected to the sealed manhole near the filter press building.

f. Equipment Summary

- Backwash Pumps – vertical turbine and submersible pumps were discussed. Vertical turbine pumps are preferred.
- Underdrains – Roberts or Leopold, polyethylene blocks, without IMS caps, will be specified. A graveless system may be considered in the future. The air scour system should not penetrate the filter media.
- Filter trough – FRP troughs will be specified.
- Valve actuators – Beck and Rexa will be used for modulating valves. Auma, or equal will be specified for open-close MOV's.

3. Schedule

- a. Submittal to KDOW Friday 5/9
- b. KAW is preparing the RFP for the Construction Manager; targeting to have a contractor on board 6/6
- c. Submit to PSC 06/24

- d. Final design submittal 7/21
4. Other items
 - a. A call to discuss architectural and LEED items was scheduled for Friday (4/25/14).
 - b. An electrical and instrumentation site visit will be scheduled for the week of 4/28/14.

Next Steps / Action Items

Hazen and Sawyer

- HS will evaluate the CT basin at pH of 7.8 and chlorine residual of 1.5 mg/L.
- HS will draft the KDOW variance letter for clearwell capacity
- HS will prepare architectural rendering of the site.
- H&S will provide additional information on pervious pavement for the driveways.
- HS will provide vertical turbine costs for the backwash pumps.
- HS will prepare regulatory submittal for 5/9. An intermediate set will be sent to KAW for review prior to submittal.

KAW

- Provide comments on Basis of Design memo

Kentucky American Water
New Filter Building Design
Richmond Road Station Water Treatment Plant

60% Review Meeting
June 5, 2014

Meeting Minutes

General

Meeting Date / Time: The meeting was held at the Richmond Road Station WTP offices on June 5, 2014 at 9:00am. The focus of the discussion was review of the 60% design submittal.

Attendees: Brent O'Neill, KAW Director of Engineering
Zach Dukes, KAW Project Manager
David Shehee, KAW Water Quality
Kevin Kruchinski, KAW Production
Mike Maggard, KAW SCADA
Justin Sensabaugh, KAW Production
Nathan Clark, KAW Maintenance
Stan Coffey, KAW Maintenance
Keith Cartier, KAW VP of Operations [CMAR meeting]
Bret Casey, Hazen and Sawyer
Bob Green, Hazen and Sawyer
Lisa Melton, Hazen and Sawyer
Darryl Evans, Hazen and Sawyer
Steve Garland, Integrated Engineering
Kent Kotthoff, Gonzalaz Companies
Tom Dohack, Gonzalaz Companies

Summary of Discussion / Key Issues

1. Project Updates / Schedule:
 - a. KDOW review: KDOW has requested a meeting to discuss CT time. The plan reviewer noted a concern that max. plant capacity was not used to size the CT basin. MOR data was provided to verify the calculations. A follow-up meeting will be scheduled with KDOW and representatives from HS and KAW [***Meeting occurred on June 12***]
 - b. Project Schedule: CMAR will bid June 26, 2014. The submittal to PSC is planned for the early July. The 90% design review package is tentatively planned for end of July.
2. Previous meeting open action items:
 - a. Architectural Renderings: KAW provided the following comments on the rendering. An additional view from the south is not required.
 - Clear Story – Minimize brick on the clear story. Add architectural louvers or windows; profile will be short to avoid bond beam.

- Plaques – the existing filter building plaque will be relocated to the north entrance. A new stone plaque will be added at the south entrance. Plaques shall be located above the doors.
 - Canopy – north and south canopy over doors is ok.
 - Lighting – add wall packs at exterior doors. Landscape lighting is not required.
 - Additional light poles to be provided by KU for the site.
 - CT basin should have landscaping on three sides to reduce visibility. Stone wall on north and east sides; plantings on the south side.
 - Architectural drawings (A104, A105) will be updated to remove side light panels around the main doors.
 - Windows (tinted to limit UV in filter building) or translucent panels are preferred over glass block
- b. Filter console configuration: Four new HMIs will be provided in the filter gallery for manual control of filters, in lieu of the hardwired consoles originally requested. Each panel will have the flexibility to serve all filters. Hard wired filter consoles will not be provided. Allen-Bradley screens will be considered in addition to Mapleleaf. **[Subsequent conversation with KAW personnel has resulted in Mapleleaf as the basis of design.]**
- c. Chlorine analyzers: Amperometric analyzers are preferred. The waste stream will be discharged to the washwater holding tanks. Preferred manufacturers: HACH and Prominent. Swan analytical is being piloted at the plant and may be added to the spec later. Rosemont and Wallace & Tiernan will be removed from listed manufacturers.
- d. Integrator services: Emerson Process Management, will be sole sourced as the Integrator, and will be contracted through the CM. KAW noted Emerson has a lengthy agreement process, and this can become a critical path item.
- e. KAW requested the use of sump pumps be minimized, and to drain by gravity where possible. Any waste stream with chlorine will be diverted to the washwater tanks; including analyzers.
3. Basis of Design Memo review comments – KAW provided the following comments on the Basis of Design Memo:
- Section 1 – Provide additional background on the drivers for the project and how we got to this point in the process, and reference the initial HDR study that was completed.
 - Section 2 – No site plan approval is required. Building permits will be submitted after 90% design (Aug). Integrated noted the review process is typically a month. The land disturbance permit will be the responsibility of the contractor.
 - Section 3 – Remove references to VFDs on the finished water pumps; adjust the number of sedimentation basins.
 - Section 4 – Identify Contractor laydown area, construction entrance (behind admin. building); parking, and temporary excavated material storage locations. Excavated material will be wasted on site (per CMAR meeting).
 - Section 5 – Add discussion on the backwash system, number of washes, filling process, etc. Add caustic feed point at the chemical vault.
 - Section 8 – Update ADA requirements. Remove tour discussion and toilet facilities.

- Section 9 – Heating may need to be electric as no gas line close (Tobi with KAW has drawing of natural gas line locations). Might need to contact Columbia gas for information.
 - Section 12 – Provide redundant analytical equipment for compliance points (turbidity at filter confluence; temperature, chlorine and pH monitors at the CT Basin).
 - Section 13 – No night shut downs are permitted. The plant has the lowest usage during the day; pumping occurs at night.
 - Section 14 – KAW asked to have additional equipment manufacturers listed:
 - i. Filtering Equipment: Leopold
 - ii. Turbidimeters: Swan Analytical
 - iii. Temperature transmitters: Hach and ProMinent
 - iv. pH Analyzers: ProMinent
 - v. Chlorine Residual Analyzers: Swan, ProMinent; remove Rosemont / Wallace & Tiernan
 - vi. Use multi-function analyzers where possible
 - a. The Basis of Design Memo will be updated for inclusion with the PSC submission.
 - b. Building permit will be submitted after 90% drawings (Aug).
 - c. Gas service – There is no gas service in the vicinity of the expansion. Information is being obtained from Columbia Gas on the existing service size and pressure. HS was asked to evaluate the life cycle costs of gas versus electric for building heaters.
 - d. KAW mentioned considering a natural gas generator as opposed to diesel. H&S to provide information on the economics for our proposed generator size.
 - e. Instrumentation – Particle counters are not desired. Backwash turbidimeters were discussed, but will not be included.
4. 60% Drawing Review:
- a. Civil Drawings
 - Utility location – KAW will locate large pipe at critical crossings using Badger. The CM will be responsible for locating smaller utilities. HS will send drawing of areas to locate.
 - The backwash waste line will tie-in downstream of MH “E”. The line will be routed in the center of the road to avoid the raw water intake and fiber optics on the east of the road.
 - L01 – Integrated will provide updated drawing. CT basin to have planting on one side. Stone wall to be provided on north and east of tank. Wall to be located 2-3 feet from tank. Overflow to be diverted between tank and wall.
 - 48” SW connection will be made a “Tee”
 - The existing clearwell pipe, south of the 48-in FW “tee” will be abandoned (cut and cap).
 - The reservoir connection at the high service pumps will also be cut and capped.
 - KAW will investigate the reservoir connection into the HSP room.
 - Chemical feed vault to be relocated south of the chemical manhole.
 - Chemical vault sump to be gravity drained to MH-2.
 - 48” FW bypass line at chemical vault to be removed.

- 48" FLW piping to CT basin (Cell No. 2), to be revised to remove vertical bends.
- b. Process Review
- Actuators: Beck and REXA are both being piloted at RRS. REXA is nearly double the cost of Beck; but may offer a 10 year guarantee on parts and labor. Both manufacturers will remain listed in the spec. A decision will be made once performance is evaluated.
 - Lift points. A beam will be added over access hatches in the filter gallery.
 - Plant Water: RRS has several non-potable water points (rpz assemblies). The closest, metered location is chemical building #2, which can be tapped for the new FTB.
 - Fabricated steel pipe: HS suggested fabricated steel pipe as an option and has used it on previous jobs. HS will send photos to KAW to review.
 - Backwash pumps: pump control options were discussed. Pumps will have VFDs.
 - Influent flume: KAW noted a concern that the flume be water tight.
 - Exterior hatches: KAW noted a concern with leaking and corrosion in exterior hatches over finished water. HS will review and provide a recommendation.
 - Chemical Vault
 1. Add caustic feed point.
 2. Mag meter size will be reduced.
 3. Flood sensor to be added to floor of vault.
 4. Modifications were discussed to bring dosing points above grade and enclose in building. HS will review and provide a recommendation for configuration.
 5. An eye wash station should be provided near the vault.
 - Filter Building
 1. M100: Add an additional 4-feet of clearance between filter effluent pipes on opposing sides in the pipe gallery.
 2. M100: Move sumps in filter effluent control vault to under hatches. HS to consider sanitary aspects of sump draining by gravity.
 3. M102: Exterior hatches over finished water need to be water tight.
 4. Lighting to be located at accessible points. LEDs preferred.
 5. Remove media bed expansion monitors.
 - CT Basin
 1. For flexibility in summer operation, chlorine and Pulsair mixing system will be provided at Cell No. 2 (Pass 5).
- c. Architectural
- Stone wall to be added as discussed in the civil section.
 - A104/A105: remove block around main doors in north and south elevation. Match rendering.
 - Provide alternatives for glass block (i.e. translucent panels or tinted windows).
 - Add decorative panel or louvers, or windows in clear story.
 - A200: CT basin cover to consist of white membrane roof with ballast stone. Stone will stop at cast-in-place concrete (backwash pumps); transition to be provided.
 - Ballast stone will be smaller than the material on Clearwell No. 1.

d. Structural

- S101: Beam will be added over hatches in the filter gallery to remove equipment.
- S200: Key ways to be added in the baffle walls to facilitate moving residuals and cleaning. Removable plates to be added to avoid short-circuiting.
- S201: coordinate with ballast stone addition over CT basin, as noted in architectural section. Vents and valve stands to be provided on housekeeping pad.
- Xypex coating will be added to the interior filter walls. Both the coating and admixture systems will be evaluated.
- HS will updated cost comparison on filter building superstructure. Steel superstructure vs. steel+precast planks. This will include the addition of the sloped roof.

e. HVAC

- H101: Location of AHU is ok where shown. If a single AHU is provided ductwork to be located in the space between the hollow core slab and metal roof deck if possible.
- If individual unit are provided, they will be electric to keep gas service outside of the building.
- HS will provide cost comparison of gas fired AHU vs. electric heat.
- Operating temperatures noted are acceptable: 50°F in pipe gallery and 60°F in filter gallery.

f. Electrical

- Power source for the filter building will be discussed between HS and KAW. HS would like to avoid adding another meter at the plant. The meter and feed in the High Service Pump room has capacity, but that capacity may be needed for other uses in the future. ***[Issue was reviewed in the field after the meeting. HS and KAW concluded that a separate service drop was the best alternative. HS has initiated process of acquiring service with KU.]***
- Fused panelboard for arc flash reduction are specified. This concept will be discussed further with AW corporate.
- Emergency generator will be located in the same location of the existing chemical building generator. The downtime required for concrete work and placing unit will require temporary back-up power. Contractor shall supply temporary generator.
- HS noted on the 7/12 HSPS electric bill there appeared to be double billing for demand charges. KAW may be entitled to a credit.
- Fiberglass conduit rep is interested in providing lunch and learn to KAW. HS will forward contact information. KAW indicated contractor must be comfortable with the material before they would consider its use. ***[Issue was reviewed in the field after the meeting. Schedule 40 PVC is much cheaper and used throughout the old filter building. KAW indicated use inside new filter building is acceptable. HS forwarded fiberglass conduit catalog to KAW as FYI.]***
- Security and Cameras: ADT will provide security; KAW will coordinate. HS will allot space in electric room for ADT equipment and conduit. Stationary cameras will be provided for the interior and exterior; KAW will coordinate internally.

- E101: Remove valve disconnects from instrumentation racks. Disconnects to be integral to the valve.
 - E103: Lighting location to be coordinated for accessibility.
- g. Instrumentation and Controls
- I100/I101: KAW to review tag numbers, and provide feedback.
 - Filter media expansion monitors were provided on two (2) filters to monitor backwash expansion. The units are being piloted at Granite City. KAW opted to remove the monitors. Backwash rates will be checked seasonally.

The meeting concluded at 1:00 p.m. A wrap up call will be scheduled, as needed, by KAW to finish meeting agenda discussions.

Summary of Discussion / Key Issues from CM Meeting

The CMAR meeting was held at the Richmond Road Station WTP offices on June 5, 2014 at 2:00pm. Representatives from KAW, HS, Gonzalaz, Layne, Bowen and W Rogers were present. The following clarification will be provided by HS:

1. Cast-in-Place Concrete (§03300): confirm if any variance is allowed for time between pours.
2. Identify limits and scope of demolition for Ex. Filter Building

Next Steps / Action Items

Hazen and Sawyer

- HS will schedule meeting with KDOW to discuss CT basin capacity concerns. *[Completed]*
- HS will schedule an Architectural progress call with KAW.
- HS will update the Basis of Design memo per comments provided.
- HS will send photos of fabricated steel piping for KAW review. *[Completed]*
- HS will send a site plan identifying utilities to be identified by KAW.
- HS will provide KAW information on Sigma and Great Lakes turbidimeters.
- HS will evaluate life cycle costs of gas heat versus electric.
- HS to provide recommendation on chemical feed vault configuration.
- HS to provide evaluation of natural gas generator as opposed to diesel.
- HS will forward information for fiberglass conduit representative to KAW. *[Completed]*
- HS to coordinate with KAW on power drop for new improvements. *[Completed]*
- CMAR meeting: HS will confirm the time between concrete pours. *[Completed]*

Kentucky American Water

- KAW will provide additional design memo comments.
- KAW will review tag numbers and provide comments.
- KAW will provide additional information on reservoir connection at HSP room.
- KAW will confirm if panelboards are acceptable for arch flash reduction.

**Kentucky American Water Company
New Filter Building Design
Richmond Road Station Water Treatment Plant**

90% Review Meeting

September 11, 2014

1:00 pm

Agenda

1. Project update / schedule
 - a. PSC update
 - b. 90% design submittal
 - c. W. Rogers – GMP schedule

2. Open action items
 - a. American Water corporate review (electrical and other disciplines)
 - b. Arc Flash study
 - c. Environmental audit of existing filter building
 - d. Blasting specification review/comments from Thelen
 - e. Subgrade and backfill recommendations
 - f. Building code seismic clarification
 - g. FTB stairs – aluminum vs. concrete
 - h. Construction joint offsets confirmed
 - i. Waterproof admixture review
 - j. Waterstops – labyrinth vs. 6" flat ribbed
 - k. Precast beams in FTB
 - l. Backfilling for east wall of Filter Building
 - m. W.Rogers – Constructability review: Effluent filter box configuration
 - n. W.Rogers – Constructability review: Operator gallery platform around actuators
 - o. W.Rogers – Constructability review: FTB North stairway

3. 90% Design Review Package
 - a. Drawings – design discussion points:
 - i. Civil
 1. Badger utility locating
 2. Additional surveying
 3. Site piping modifications
 4. Future clearwell connections
 5. Chemical feed vaults
 - ii. Mechanical
 1. Beck/REXA pilot update
 2. Existing 12" VCP – sed basin drain operation
 3. Chem Feed Manholes – chlorine gas monitor

4. Filter Building influent piping
 5. Backwash pump configuration
 6. Filter effluent box sample line
 7. Operator gallery access around valve actuators/columns
 8. Backwash tank modifications
 - iii. Architectural
 - iv. Structural
 1. Influent channel modifications
 2. Filtered water effluent flumes
 3. Effluent water control vault configuration
 - v. HVAC
 1. Existing gas service confirmed for pressure and capacity
 2. Field locate 2.5-inch gas line (record information not available)
 3. Height of main duct in filter building
 - vi. Electrical
 1. Coordination with ADT (i.e. camera, door lock location)
 2. Generator – disposal of existing generator?
 3. KU electrical service design - not started
 - vii. I&C
 1. Multivariable analyzer: HACH chlorine analyzer with Sawn Analytical turbidimeters
4. Other Project Topics
 5. Next Meeting

**Kentucky American Water Company
New Filter Building Design
Richmond Road Station Water Treatment Plant**

**Kickoff Meeting
January 30, 2014**

Meeting Minutes

Attendance: Zach Dukes, KAW Project Manager
David Shehee, KAW Water Quality
Kevin Kruchinski, KAW Production
Mike Maggard, KAW SCADA
Justin Sensabaugh, KAW Production
Nathan Clark, KAW Maintenance
Bret Casey, H&S
Jon Schubarth, H&S
Bob Green, H&S (by phone)
David Laliberte, H&S (by phone)
Pat Judge, Gonzales (by phone)

1. Introductions – Project Team Roles and Responsibilities
 - Subconsultants – Gonzales, Integrated Engineering
2. Define Lines of Communication
 - Communication on all matter will initiate between Zach Dukes and Bret Casey; PMs for the Owner and Consultant, respectively
3. Project Schedule
 - It was acknowledged that the project started a couple weeks past the proposed schedule.
 - H&S indicated that the originally proposed target date of June 26, 2014 to the Public Service Commission can likely still be achieved.
 - KAW to get CM on board between 30% and 60%. KAW will issue the RFP for the CMR contract.
 - Discussed the possibility of pre-purchasing long lead time items (MCCs, pumps, VFDs) to expedite the schedule.
4. Scope and Fee
 - Base Design - KAW indicated that they would like to move forward with the alternative design concept presented by H&S in the proposal, including the CT basin and backwash pump station.
 - Filters and filter building
 - i. KAW expressed some concern for approval of the higher loading rate and recommended the project team approach KDOW early in the design phase to gain their acceptance of the concept

- ii. H&S indicated that Kentucky administrative rules allow for a loading rate of 5 gpm/sf with dual media and filter effluent turbidity monitoring.
 - iii. H&S will prepare information to make a case for the higher loading rates and will discuss further with KAW how they prefer contact be made with KDOW.
 - iv. KAW does not believe the filtration rate is limited by the plant not meeting the required Ten States Standards weir overflow rate. The plant has to monitor settled water turbidity and keep it below 2 ntu for compliance. Settled water turbidity is generally below 1 ntu at the RRS WTP.
 - v. KAW will only consider pilot test if required by KDOW.
 - vi. Need further discussion on need for GAC. Proposed configuration is dual media with 12" sand and 24" GAC.
 - vii. Provide piping insulation and smaller plug-in dehumidifiers to dehumidify the filter gallery.
 - CT Basin and Backwash Pump Station
 - i. The design will include a smaller total filter area at a higher loading rate (5 gpm/sf; a new CT basin which will relieve the duty of providing CT in the existing finished water reservoirs; and a new backwash pump station to replace the existing on-site elevated storage currently used for filter washing
 - ii. KAW expressed some concern for approval of the higher loading rate and recommended the project team approach KDOW early in the design phase to gain their acceptance of the concept
 - iii. H&S indicated that Kentucky administrative rules allow for a loading rate of 5 gpm/sf with dual media and filter effluent turbidity monitoring.
 - iv. H&S will prepare information to make a case for the higher loading rates and will discuss further with KAW how they prefer contact be made with KDOW.
 - v. KAW requested that H&S look at a different location for the backwash pump station
 - Additional Construction Meetings and RPR
 - i. KAW indicated that their intention was to have H&S provide construction assistance and an RPR for the construction phase and that the contractual arrangement for this phase will be handled separately at a later date
 - Exceptions
 - i. KAW did not take issue with any of the items listed in Section 14 – Exceptions
 - ii. H&S indicated that we were not aware of the level of effort anticipated by KAW for our involvement with the PSC. KAW responded that our effort would be minimal and involve providing information to answer questions that might be posed
5. Project goals and expectations
- H&S will work to meet the schedule and budget goals of KAW as presented in the proposal submitted by H&S.
 - The proposed facilities will meet or exceed the WQ goals required by KDOW and as established by KAW for these facilities.
 - The layout and design of the facilities will consider the needs of the operation and maintenance staff.

- The H&S project team will look for O&M cost reductions in the design of the facilities (e.g. use of natural light where possible)
 - The architectural design of the filter building structure will achieve the goal of providing a facility that will serve for plant tours and highlight the Richmond Road Station WTP.
6. Notice to Proceed and Contract
- KAW will issue Notice to Proceed and the Contract.
7. Define acceptable equipment manufacturers
- H&S to develop a list of equipment and manufacturers
 - Underdrains – H&S to put together a list of underdrain types and manufacturers for consideration by KAW.
 - Manufacturers discussed included:
 - i. Actuators for modulating valves – Beck, Rexa
 - ii. Actuators for open/close – EIM, AUMA
 - iii. Pumps – Floway, Flowserve
 - iv. VFDs – Cutler Hammer, Alan Bradley (Powerflex), Toshiba
 - v. Probes, level measurement – Endress + Hauser
 - vi. Analytical equipment – Rosemount
 - Consider using bed expansion monitors for filter bed expansion. Note that INAW will be piloting these in Gary at the Broman Park WFP (Echo Smart - <http://www.entechdesign.com/>). Consider for operations check, not real time control.
 - I&C contract for KAW currently with Emerson
8. Next Meeting
- Schedule next meeting for the week of 2/24/2014
 - Schedule for regular progress meetings will be determined
9. Other items
- H&S to prepare a data request for the plant operating data
 - H&S will develop a preliminary hydraulic profile early in the project and continue to refine throughout the project.
 - H&S will work with Integrated Engineering to get survey started to located existing utilities and allow the new structures to be located on the site.
 - H&S structural engineers will work with the geotechnical consultant (Thelen Associates) to design the structural foundations based on the site geotech conditions.
 - KAW is currently not considering LEED certification for the filter building.
 - H&S will establish and FTP or Share Point site to share information during the project

**Kentucky American Water Company
New Filter Building Design
Richmond Road Station Water Treatment Plant**

**Progress Meeting – Conference call
February 26, 2014
10:30 a.m.**

Agenda

1. Comments to meeting minutes from kickoff meeting or KDOW meeting
2. Discussion of disinfection strategy
 - Confirm desire to request exemption to provide 0.5-log Giardia inactivation instead of 1.0-log Giardia inactivation.
 - Discuss any previous discussions KAW has had with KDOW on their current disinfection strategy
 - THM discussion
 - i. Relocate chlorine application to filter influent?
 - ii. Need for GAC filter caps for THM compliance or taste and odor treatment
3. Filters – discuss media configuration
4. Backwash pump station – discuss potential for EFI pump station
5. CT Basin – discuss exemption for clearwell capacity <15% of rated plant capacity.

**Kentucky American Water Company
New Filter Building Design
Richmond Road Station Water Treatment Plant**

**Review Meeting
March 27, 2014**

Meeting Minutes

Attendance: Brent O'Neill, KAW Director of Engineering
Zach Dukes, KAW Project Manager
David Shehee, KAW Water Quality
Eileen Burk, KAW Water Quality
Dottie Johnson, KAW Water Quality
Kevin Kruchinski, KAW Production
Mike Maggard, KAW SCADA
Justin Sensabaugh, KAW Production
Nathan Clark, KAW Maintenance
Keith Cartier, KAW VP of Operations
Bret Casey, H&S
Jon Schubarth, H&S
Bob Green, H&S

1. Basis of Design Memo review comments – **KAW will transmit comments to the Basis of Design Memo. Following are comments that were discussed:**
 - **Section 2 – H&S to check if site plan approval is needed from LFUCG.**
 - **Section 3 – water quality information needs to be confirmed. H&S will send David Shehee the data summary to make sure there aren't outliers in the data.**
 - **The plant will be operated as a base load plant in the future. Likely 8 mgd winter (Nov-Mar) and 16-18 mgd summer (Apr-Oct).**
 - **Section 5 - CT basin will be sized under worst case conditions (likely early spring when plant flows may be raising but water temp. still cold) based upon closer review of data provided. Need to confirm typical temperature data since data from 2013 had much colder water temperature). KAW asked that we revisit data for chlorine concentration, temp. and pH.**
 - **Section 8 – change the occupancy classification of the filter building. Primary occupancy will be plant employees. Design to ADA requirements for employees only.**
 - **Section 9 – use portable dehumidification units (Hi- E Dry). Provide drains for dehumidification units. Provide pipe insulation to limit condensation. Utilize ventilation (with filtration) in lieu of air conditioning for electrical rooms.**
 - **Section 10 – H&S to perform arc flash study to confirm the project meets the requirements of American Water Company Electrical Standards. Reduce the number of electrical feeds and generator sets if possible (by reusing existing) and look into**

- using the existing generator for Chemical Building #2 for any needs in the filter building r.
- **Section 11 – H&S will evaluate the cost and constructability issues between reusing existing Emerson controls in the filter building vs. providing new Allen Bradley controls.**
 - **Section 14 – KAW asked to have Kaiser blowers and Big Ass Fans added to the equipment manufacturers list.**
2. Schedule – confirm that the latest schedule is acceptable (submit KDOW 6/4, PSC 06/24, final design 7/21).
 - **KDOW review period is 45 days max. KDOW approval needed prior to submittal to PSC so KDOW submittal must be done by 5/10 to allow 45 days prior to 6/24.**
 - **KAW will be working on the RFP for the CM. Expect that to go out after the 30% submittal. Expect to invite Layne, Bowen and W Rogers to submit.**
 3. Site layout - revising layout to slide the filter building and CT basin east (down the hill) to avoid significant cut.
 4. Hydraulics
 - a. Two existing 30" diameter discharge connections to sed basins.
 - b. Replacing the 30" outlets from sed basins with 48" diameter outlets would reduce headloss approximately 9" – H&S to evaluate if this causes any structural concerns
 - c. Recommend leaving 30" diameter outlets in place and connecting immediately downstream with 48" lines to filter building to minimize construction sequencing issues.
 - **H&S will look at pipe sizing requirements to allow high rating of filters to 6 gpm/sf.**
 5. Clearwell and Chlorine Contact Basin Volume
 - a. KDOW requires 15% of plant capacity (3.75 mgal)
 - b. Clearwell volume
 - i. Clearwell 1 – 454,000 gallons (usable volume approximately 150,000 gallons)
 - ii. Clearwell 2 – 600,000 gallons (to be demolished)
 - c. Recommend requesting a variance to KDOW clearwell volume requirement
 - d. Need adequate clearwell volume to accommodate filter backwash while continuing to meet finished water demands. Estimate maximum float volume to accommodate backwash is 90,000 gallons.
 - e. Confirm design criteria for CT basin volume. May need to increase slightly to accommodate higher pH. Original CT calcs based on finished water pH of 7.3: actual 7.6.
 - **H&S will confirm sizing to accommodate worst case flow/temp conditions per Basis of Design Memo review comments.**
 6. Options for addressing need for additional clearwell volume (if needed)
 - a. Construct filter building and CT basin as proposed, demolish existing filter and keep existing Clearwell No. 2.
 - b. Construct filter building as proposed, demolish existing filter building, and construct new combined CT basin/clearwell in location of Clearwell No. 2.
 - c. Reduce flow required for backwash
 - i. Split filter cells in half, wash one half at a time
 - ii. Keep existing backwash tank in service

- **The following options were discussed. 1) Move CT basin, 2) new backwash tank and line, 3) new spot for some additional clearwell storage, and 4) backwash off system pressure. Following the meeting H&S developed options for addressing the CT basin location along with the options for providing volume for backwash supply. The memo and sketches are attached.**

Next meeting scheduled for 04/22/2014 for 30% review meeting

Kentucky American Water
New Filter Building Design
Richmond Road Station Water Treatment Plant

Structural Meeting
July 31, 2014

Meeting Minutes

General

Meeting Date / Time: The meeting was held at the Richmond Road Station WTP offices on July 31, 2014 at 10:00 a.m. The focus of the discussion was review of structural issues related to design and construction of the Filter Building and Chlorine Contact Basin.

Attendees: Brent O'Neill, KAW Director of Engineering
Zach Dukes, KAW Project Manager
Bret Casey, Hazen and Sawyer
Bob Green, Hazen and Sawyer
Lisa Melton, Hazen and Sawyer
Will Leadbitter, Hazen and Sawyer
Eric Oetjen, Hazen and Sawyer
Tom Dohack, Gonzalez Companies
Warren Rogers, W. Rogers Company
Michael Bailey, W. Rogers Company
John Boesch, W. Rogers Company

Summary of Discussion / Key Issues

1. Structural Discussion Items:

a. Blasting (Specification 02202)

- HS provided findings from follow-up phone call with Lee Czor of Thelen to discuss Geotech Report recommendation to not allow blasting for the project. During phone call with HS, Mr. Czor referenced a recent project where blasting near an existing structure may have induced cracking and indicated the recommendation was made to prevent damage to existing infrastructure at the Richmond Road site. He also indicated that the limestone bedrock at the Richmond Road site was well suited for blasting, but that it would also promote transmission of blast waves. In general, there is nothing prohibiting on-site blasting.
- In a general discussion of on-site blasting, all parties agreed that excavation by blasting should be allowed and that properly designed blast rounds and appropriate monitoring would mitigate the associated risks.
- It was noted that elimination of the parallel flumes under Filter Building pipe gallery would reduce depth of the excavation and therefore the amount of potential blasting.

- HS will provide Thelen with a copy of the blasting specification for general review and input on monitoring.
 - WRC noted they would need a clear distance of 3.0' between exterior wall faces and face of rock cuts for constructability.
- b. Geotechnical Report
- WRC and HS briefly discussed specific subgrade and backfilling requirements noted in the Geotech Report. HS stated they would follow-up with Thelen to confirm these items and that necessary recommendations would be incorporated into the 90% design documents.
- c. Piping Installation and Support Design
- WRC requested use of cast-in-place wall pipes that can be installed flush with formwork. HS noted this configuration is included in the Standard Details and would be acceptable.
 - WRC inquired as to the expected level of third party design of pipe supports for both gravity and seismic loadings.
 - HS will review code requirements for seismic design of pipe supports.
 - HS also noted that large diameter pipe supports could be designed in-house (by HS) if desired by WRC.
- d. Filter Building Stairs
- HS requested input from WRC on their preferred material and method for Filter Building stair construction. Options for cast-in-place (CIP) concrete, precast concrete and metal were discussed.
 1. It was decided that HS would provide preliminary designs for both CIP and aluminum stairs to WRC for pricing before a final determination is made.
 2. It was agreed that metal pan stairs would not be used. If a metal stair is chosen, an aluminum stair would be acceptable to KAW.
 3. KAW stated that either metal (aluminum) or concrete stairs would be acceptable.
 - WRC requested the use of dowel bar splicers (mechanical couplers) at intermediate landing connections to walls if cast-in-place stairs are constructed in the Filter Building. HS noted this would be acceptable and that stair details would show the dowel bar splicers.
- e. Parallel Channels and Elevated Flumes
- To improve constructability and reduce costs, it was decided to relocate the parallel channels under the Pipe Gallery to the space directly under the east and west filter bays adjacent to the gallery walls. The relocated channel inverts will match the pipe gallery. The filter base slabs will serve as top of channels, each side of the gallery. Approximate size of relocated channels will be 3' wide by 6' high.

- In order to eliminate potential leaks and constructability concerns in regard to the elevated flumes in the Pipe Gallery, it was decided to use piping in lieu of CIP concrete for the flumes.

f. General Concreting, Jointing and Admixtures

- WRC confirmed they would use wet curing methods on slabs and walls.
- WRC stated they had no objections to the project specifications for Concrete Formwork (03100), Joints in Concrete (03290), and Concrete Curing (03370) and that they intended to follow the requirements of these specifications.
- HS noted that the specification 03300-3.07-A requirement to allow a minimum of 72 hours before placing concrete directly adjacent to previously placed concrete can be relaxed to 48 hours.
- WRC and HS discussed the specification 03290-3.01-D requirement that vertical construction joints be offset a minimum of 5.0' from any corner. HS noted this distance could be reduced slightly depending on reinforcing steel layout and that HS will determine if a reduction is possible.
- WRC provided information on concrete material costs used for their initial project cost. 4,500 psi concrete with high-range water reducing admixture was costed at \$90/cy. Addition of a waterproofing admixture to this mix is approximately \$45/cy.
- In a general discussion of concrete waterproofing admixtures, all parties agreed to consider use of a Xypex type product in the interior filter bay walls. Further evaluation is required by HS and WRC.
- HS noted that the Chlorine Contact Basin could be jointed at 45.0' spacing and meet the requirements of the project specifications.
- WRC requested that a "Labyrinth" profile waterstop be used in vertical wall construction joints. HS stated use of this product would be evaluated. WRC will provide product info to HS.

g. Filter Building Superstructure

- WRC requested that HS consider use of precast concrete for construction of the Filter Building superstructure framing, indicating there is potential time savings for the project schedule.
- HS stated it was preferable to use CIP columns with precast beams, in lieu of an entirely precast frame. WRC agreed to consideration of this concept.
- WRC will identify local and/or regional precast manufacturers capable of performing the work.
- WRC will provide to HS precast construction details on recent jobs they have bid.
- HS will further evaluate impacts of precast beams on the design and lateral stability of the Filter Building.
- HS will determine final feasibility of using precast concrete beams for construction of the Filter Building framing.

h. Chemical Vault and Manholes

- WRC requested clarification on the method of construction for the Chemical Vault. HS indicated it would be a CIP concrete structure, as currently shown on the drawings.
 - WRC requested clarification on whether standard manholes would require a PE stamped design as part of the shop drawing process. HS stated that a PE stamped design would not be required for standard manholes, but that manholes subject to traffic loading would need to be designed for an H-20 truck loading in addition to other applicable loads.
- i. Demolition of existing Filter Building
- All parties agreed this was not a critical driver in the project schedule and that demolition would occur towards the end of construction.
 - HS stated demolition sequencing of the existing Filter Building and Clearwell would need to be investigated to address stability and buoyancy concerns.
- j. Special Inspections
- HS inquired as to the level of enforcement of Special Inspections in the Lexington area. KAW and WRC indicated that their projects were typically being inspected by the RPR and that full Special Inspections were not being implemented.
 - HS recommended confirmation of this approach with the local code official.
- k. Backfilling of Walls and Leak-testing
- HS inquired as to whether WRC had identified backfilling of any walls as critical to the project schedule. WRC noted that the south wall of the Filter Building was critical and that it would be beneficial to backfill approximately ½ of the wall height prior to placement of upper slabs. HS stated this request would be incorporated into design of the south wall.
 - HS stated that the project documents require leak-testing of hydraulic structures prior to placement of wall backfill. WRC confirmed their intent to follow this requirement for the Filter Building and Chlorine Contact Basin.
- l. Masonry Wall Construction
- HS inquired to WRC's preferred method for installation of masonry wall dowels. WRC stated that they preferred to use epoxy dowels in lieu of CIP bars. HS agreed to this method and stated it would be shown on the drawings.

The meeting concluded at 12:00 p.m. A wrap up call will be scheduled, as needed, by HS to finish meeting agenda discussions.

Next Steps / Action Items

Hazen and Sawyer

- HS will determine schedule for 90% submittal.
- HS will provide Thelen with a copy of the blasting specification for review.

- HS will confirm subgrade and backfilling recommendations in the Geotech Report with Thelen.
- HS will review Building Code requirements for seismic design of pipe supports.
- HS will provide preliminary designs for concrete and aluminum stairs to WRC for costing.
- HS will determine if 5.0' construction joint offset at corners can be reduced.
- HS and WRC will further evaluate the use of waterproofing admixtures for consideration by KAW.
- HS will evaluate the use of precast beams on the building design and determine feasibility for use in construction.
- HS will evaluate demolition constraints for the existing Filter Building and Clearwell.
- HS will contact local code official to determine level of enforcement for Special Inspections.
- HS will design the east wall of the Filter Building for backfilling to ½ height before placement of upper support elements.
- HS will show epoxy dowels on the drawings for construction of masonry walls.

W. Rogers Company

- WRC will identify precast manufacturers and provide contact info.
- WRC will provide precast member connection details.
- WRC will provide information on proposed "Labyrinth" water stop product.



"Casey, Bret"
<bcasey@hazenandsawyer.com>

05/19/2014 03:59 PM

To "Brent O'Neill - Kentucky American
(brent.oneill@amwater.com)" <brent.oneill@amwater.com>,
"Zachery.Dukes@amwater.com"

cc

bcc

Subject Draft Renderings of the RRS Filter Building

2 attachments



001-Richmond-road-NE-view.pdf



002-Richmond-road-NW-view.pdf

Attached is our first cut at the renderings of the filter building (and CT Basin) for your review. I confirmed that the roofs are sloped at 1:12 which is hard to see from the ground perspective. After you've had a chance to review, let us know if you have comments. If you'd prefer we could set up a conference call this week to go over any architectural questions you have.

Bret M. Casey, PE, BCEE

Senior Associate | Hazen and Sawyer

150 E. Campus View Blvd., Suite 133, Columbus, OH 43235

614 781-9655 (main) | 614 596-4155 (cell)

bcasey@hazenandsawyer.com | hazenandsawyer.com



"Casey, Bret"
<bcasey@hazenandsawyer.com>

06/06/2014 01:45 PM

To "Brent O'Neill - Kentucky American
(brent.oneill@amwater.com)" <brent.oneill@amwater.com>,
"Zachery.Dukes@amwater.com"
cc "Green, Robert" <rgreen@hazenandsawyer.com>

bcc

Subject: Photos of Fabricated Steel Pipe

5 attachments



5-1-06 011.jpg



Looking Northwest - Pipe Gallery.jpg



IMG_0280.jpg



IMG_0283.jpg



IMG_0278.jpg

Attached are some photos of steel piping in filter galleries. The first two are from Ann Arbor and the last three are from a new plant that I worked on about 10 years ago near Columbus. It's a 20 mgd plant, so similar to what we would have at Richmond Road. That piping was provided by Tennessee Metal (<http://www.tennesseemetalfab.com/index.html>). They provide extremely high quality steel pipe. They are located about half way between Nashville and Chattanooga and would be a good option to consider if you decide to price this as an option.

Bret M. Casey, PE, BCEE

Senior Associate | Hazen and Sawyer

150 E. Campus View Blvd., Suite 133, Columbus, OH 43235

614 781-9655 (main) | 614 596-4155 (cell)

bcasey@hazenandsawyer.com | hazenandsawyer.com



"Casey, Bret"
<bcasey@hazenandsawyer.com>
04/24/2014 10:52 PM

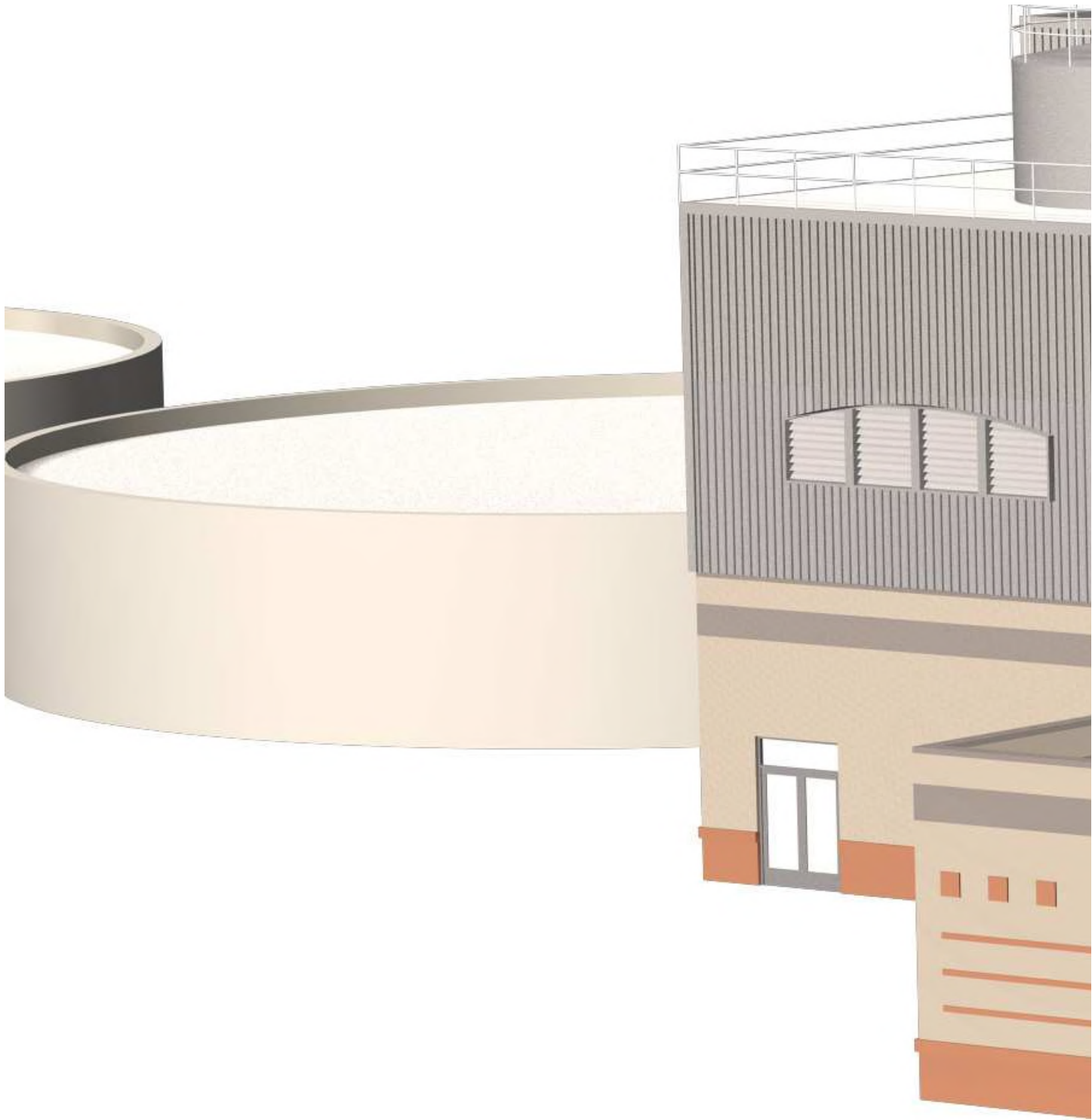
To "Zachery.Dukes@amwater.com"
<Zachery.Dukes@amwater.com>,
"brent.oneill@amwater.com" <brent.oneill@amwater.com>,
cc
bcc
Subject RE: Architectural Discussion for RRS Filter Building

1 attachment



RRS architectural conference call 04-25-2014 agenda.docx

Agenda for the call tomorrow along with the rendering we did for the Bradley Ave plant in Champaign.



-----Original Appointment-----

From: Casey, Bret

Sent: Wednesday, April 23, 2014 11:08 AM

To: Casey, Bret; Zachery.Dukes@amwater.com; brent.oneill@amwater.com; Green, Robert; Russell, William; Melton, Lisa

Subject: Architectural Discussion for RRS Filter Building

When: Friday, April 25, 2014 1:00 PM-2:00 PM (UTC-05:00) Eastern Time (US & Canada).

Where: conference call

Conference call to discuss architectural approach

Call in #: 888-337-0215

Access code: 2993728



"Casey, Bret"
<bcasey@hazenandsawyer.com>

02/13/2014 03:59 PM

To "brent.oneill@amwater.com" <brent.oneill@amwater.com>, "Zachery.Dukes@amwater.com" <Zachery.Dukes@amwater.com>,

cc "Green, Robert" <rgreen@hazenandsawyer.com>

bcc

Subject: Richmond Road Station Design Summary

1 attachment



Basis of Design Summary.docx

Attached is a draft of the basis of design summary. We plan to take this information and incorporate it into a formal basis of design memo to send to KDOW prior to our meeting next week. Please review the content of the attached and let us know if you have any changes that you'd like us to make. We are planning on sending this to KDOW later tomorrow or first thing Monday morning so they have it prior to the meeting on Tuesday. Thanks!

Bret M. Casey, PE, BCEE

Senior Associate | Hazen and Sawyer

150 E. Campus View Blvd., Suite 133, Columbus, OH 43235

614 781-9655 (main) | 614 596-4155 (cell)

bcasey@hazenandsawyer.com | hazenandsawyer.com



"Casey, Bret"
<bcasey@hazenandsawyer.com>

07/17/2014 08:42 AM

To "Zachery.Dukes@amwater.com"
<Zachery.Dukes@amwater.com>, "Brent O'Neill - Kentucky
American (brent.oneill@amwater.com)"
cc "Russell, William" <wrussell@hazenandsawyer.com>,
"Green, Robert" <rgreen@hazenandsawyer.com>, "Melton,
Lisa" <lmelton@hazenandsawyer.com>

bcc

Subject: Architectural Discussion

Brent/Zach are you guys available next Thursday (anytime) or Friday (morning) for a call to discuss the architectural design of the filter building?

Bret M. Casey, PE, BCEE


Senior Associate | Hazen and Sawyer

150 E. Campus View Blvd., Suite 133, Columbus, OH 43235

614 781-9655 (main) | 614 596-4155 (cell)

bcasey@hazenandsawyer.com | hazenandsawyer.com

Calendar Entry
Meeting

Notify me 
 Mark Private Pencil In

Subject Architectural Discussion of Filter Building

Chair bcasey@hazenandsawyer.com

When
Starts Fri 07/25/2014 10:00 AM
Ends Fri 07/25/2014 11:00 AM 1 hour

Where Location Conference call

Invitees Required (to) Brent E O'Neill/SERVCO/AWWSC, Zachery B. Dukes/KAWC/AWWSC, wrussell@hazenandsawyer.com,

Categorize

Description

Does this time work for everyone?

Call in number: 888-337-0215
Access code: 2993728

Your Notes




"Casey, Bret"
<bcasey@hazenandsawyer.com>

02/04/2014 03:27 PM

To "brent.oneill@amwater.com" <brent.oneill@amwater.com>, "Zachery.Dukes@amwater.com" <Zachery.Dukes@amwater.com>, cc "Green, Robert" <rgreen@hazenandsawyer.com>

bcc

Subject KDW Discussion on Filter Loading Rate

History:  This message has been replied to.

Brent/Zach, Bob Green and I have been discussing our approach with KDOW on the loading rate for the new filters at Richmond Road Station. We discussed this at our kickoff meeting last week. Brent, David Laliberte also shared with us the discussion you had with him on this topic after the meeting. We'd like to have a quick call tomorrow to discuss our approach if you are available. Would you have some time tomorrow morning before 10:30 or after lunch to discuss? If not tomorrow, let me know what your availability is on Thursday. Thank you.

Bret M. Casey, PE, BCEE

Senior Associate | Hazen and Sawyer

150 E. Campus View Blvd., Suite 133, Columbus, OH 43235

614 781-9655 (main) | 614 596-4155 (cell)

bcasey@hazenandsawyer.com | hazenandsawyer.com

Calendar Entry

Meeting Invitation bcasey has invited you to a meeting

Subject	Architectural Discussion for RRS Filter Building	Chair	bcasey@hazenandsawyer.com
When	Date Friday 04/25/2014	Invitees	Required (to) Zachery B. Dukes/KAWC/AWWSC, Brent E O'Neill/SERVCO/AWWSC.
	Time 01:00 PM - 02:00 PM (1 hour)		
Where	conference call	Optional (cc)	

Conference call to discuss architectural approach

Call in #: 888-337-0215
Access code: 2993728



"Casey, Bret"
<bcasey@hazenandsawyer.com>

04/25/2014 11:33 AM

To "Zachery.Dukes@amwater.com"
<Zachery.Dukes@amwater.com>,
cc "Brent.O'Neill@amwater.com"
<Brent.O'Neill@amwater.com>, "Green, Robert"
<rgreen@hazenandsawyer.com>, "Russell, William"
bcc

Subject RE: Architectural Discussion for RRS Filter Building

Yes, 1:15 works for us.

From: Zachery.Dukes@amwater.com [mailto:Zachery.Dukes@amwater.com]
Sent: Friday, April 25, 2014 11:21 AM
To: Casey, Bret
Cc: Brent.O'Neill@amwater.com; Green, Robert; Russell, William; Melton, Lisa
Subject: Re: Architectural Discussion for RRS Filter Building

Can we push this back to 115?

Sent from my iPhone

On Apr 24, 2014, at 10:52 PM, "Casey, Bret" <bcasey@hazenandsawyer.com> wrote:
[Agenda for the call tomorrow along with the rendering we did for the Bradley Ave plant in Champaign.](#)

-----Original Appointment-----

From: Casey, Bret
Sent: Wednesday, April 23, 2014 11:08 AM
To: Casey, Bret; Zachery.Dukes@amwater.com; brent.oneill@amwater.com; Green, Robert; Russell, William; Melton, Lisa
Subject: Architectural Discussion for RRS Filter Building
When: Friday, April 25, 2014 1:00 PM-2:00 PM (UTC-05:00) Eastern Time (US & Canada).
Where: conference call

Conference call to discuss architectural approach

Call in #: 888-337-0215
Access code: 2993728

<[champaign-se-persp.jpg](#)>
<[RRS architectural conference call 04-25-2014 agenda.docx](#)>



"Casey, Bret"
<bcasey@hazenandsawyer.com>

07/24/2014 11:35 AM

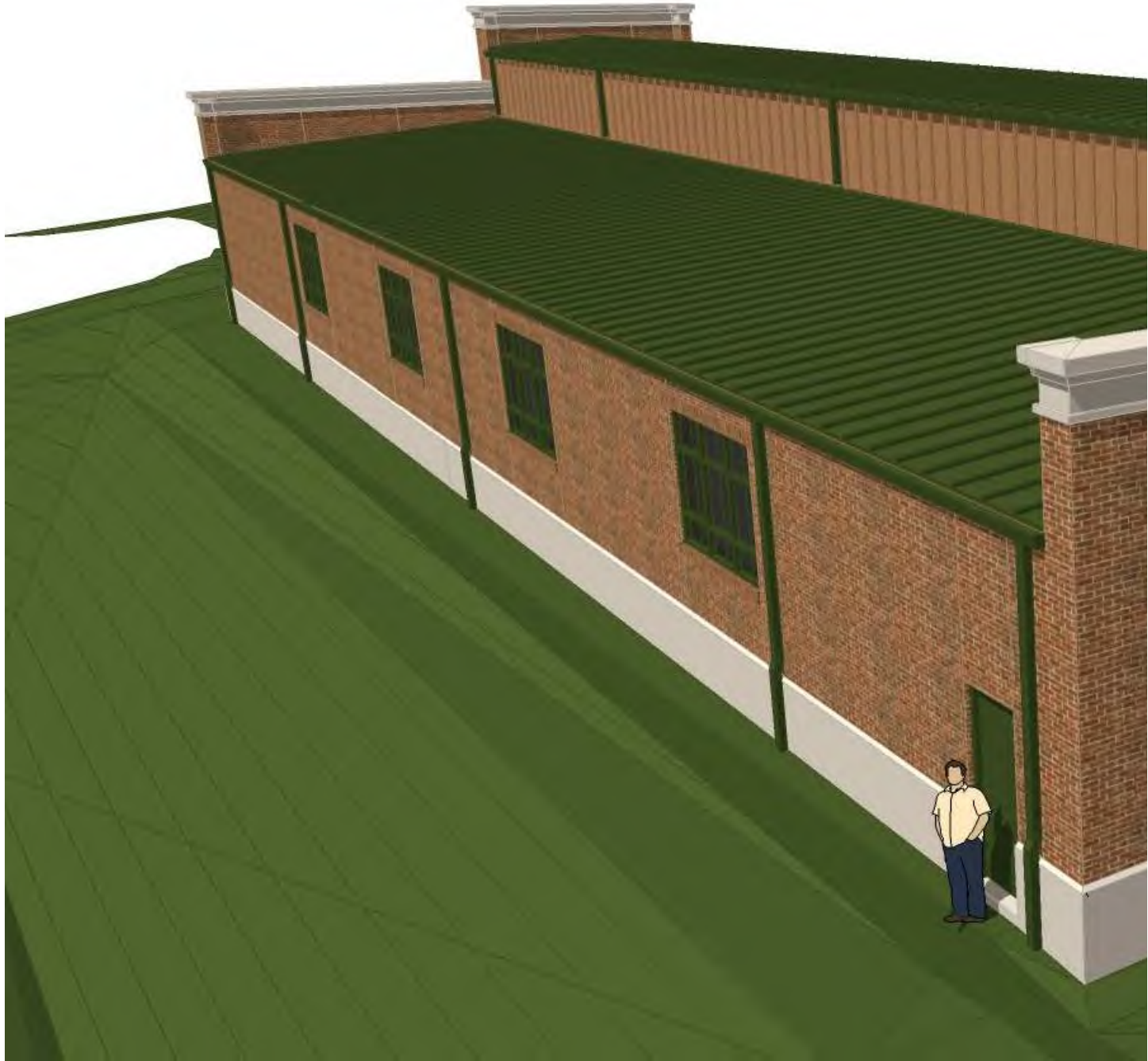
To "Brent O'Neill - Kentucky American
(brent.oneill@amwater.com)" <brent.oneill@amwater.com>,
"Zachery.Dukes@amwater.com"

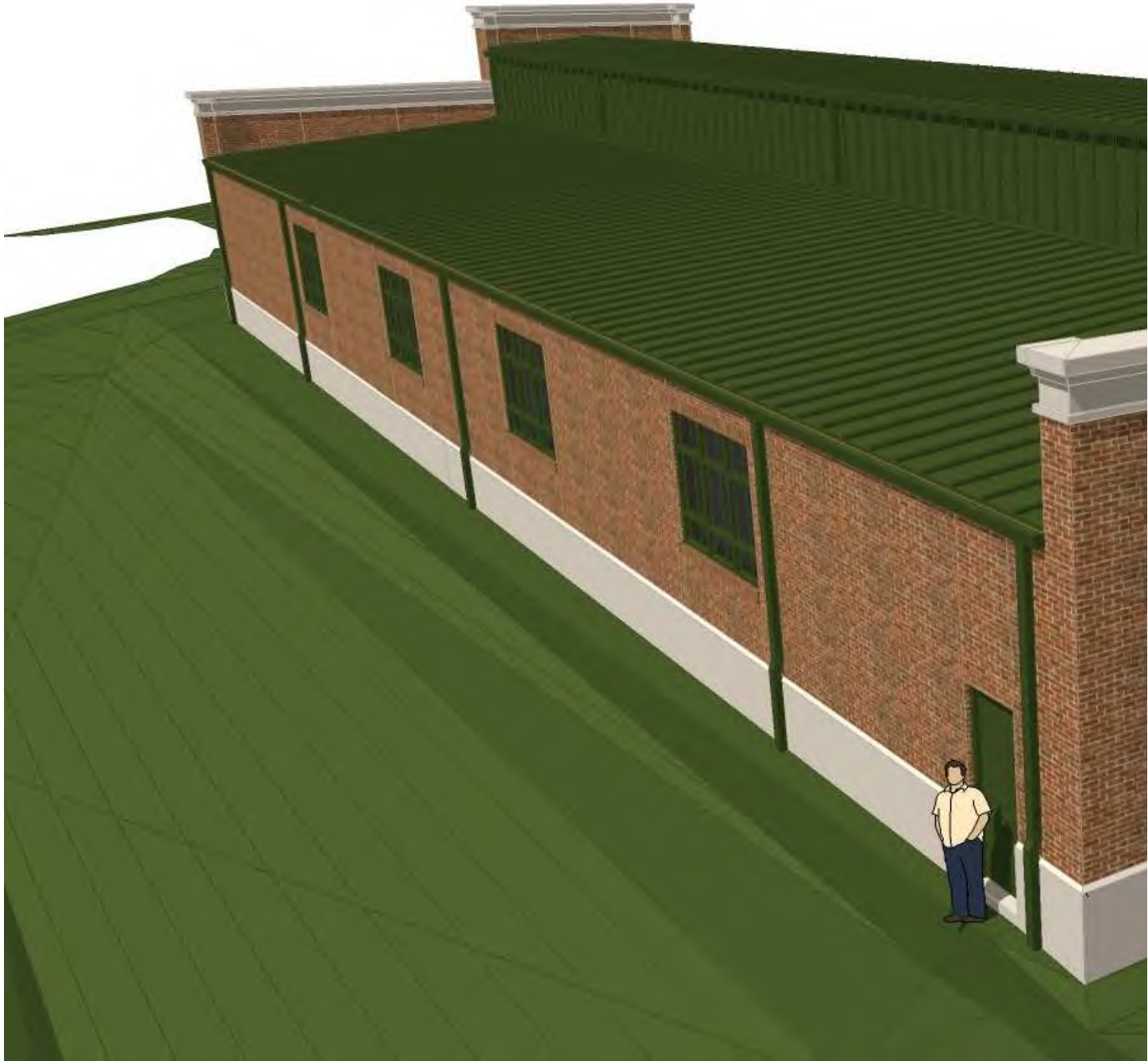
cc

bcc

Subject RE: Architectural Discussion of Filter Building

Attached are a few renderings for our discussion tomorrow morning. I will forward more information later today on these options.

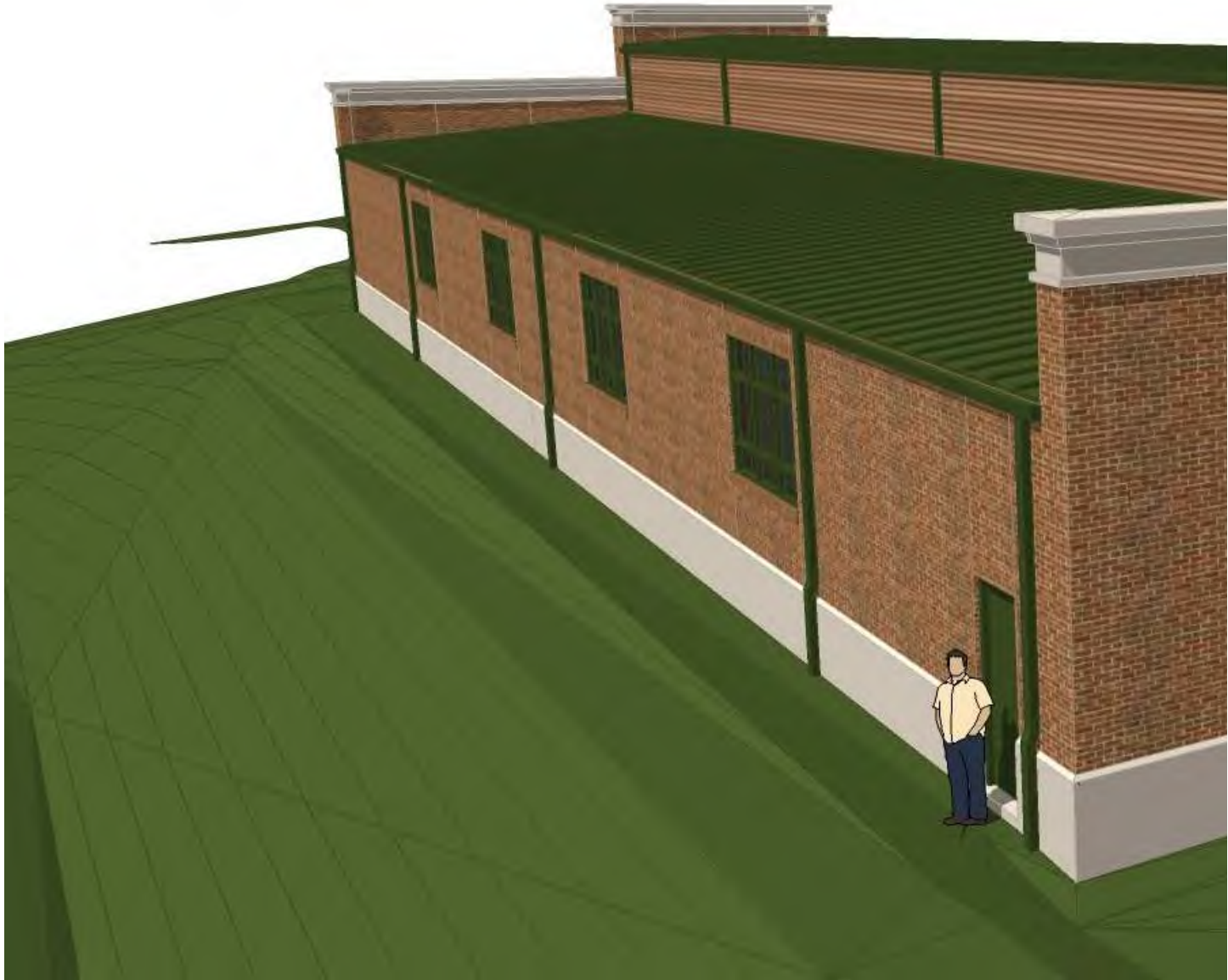












-----Original Appointment-----

From: Casey, Bret

Sent: Wednesday, July 23, 2014 5:24 PM

To: Casey, Bret; Brent O'Neill - Kentucky American (brent.oneill@amwater.com); Zachery.Dukes@amwater.com; Russell, William; Green, Robert; Melton, Lisa

Subject: Architectural Discussion of Filter Building

When: Friday, July 25, 2014 10:00 AM-11:00 AM (UTC-05:00) Eastern Time (US & Canada).

Where: Conference call

Does this time work for everyone?

Call in number: 888-337-0215

Access code: 2993728



**Brent E
O'Neill/SERVCO/AWWSC**
02/04/2014 03:55 PM

To "Casey, Bret" <bcasey@hazenandsawyer.com>,
cc Brent E O'Neill/SERVCO/AWWSC@aww, Zachery B.
Dukes/KAWC/AWWSC@aww, "Green, Robert"
<rgreen@hazenandsawyer.com>
bcc

Subject Re: KDOW Discussion on Filter Loading Rate

Bret

I can't do 10:30 tomorrow but sometime after 2:30 will work

Brent O'Neill
Director of Engineering
(859)-321-8235

On Feb 4, 2014, at 3:27 PM, "Casey, Bret" <bcasey@hazenandsawyer.com> wrote:

Brent/Zach, Bob Green and I have been discussing our approach with KDOW on the loading rate for the new filters at Richmond Road Station. We discussed this at our kickoff meeting last week. Brent, David Laliberte also shared with us the discussion you had with him on this topic after the meeting. We'd like to have a quick call tomorrow to discuss our approach if you are available. Would you have some time tomorrow morning before 10:30 or after lunch to discuss? If not tomorrow, let me know what your availability is on Thursday. Thank you.

Bret M. Casey, PE, BCEE

Senior Associate | Hazen and Sawyer
150 E. Campus View Blvd., Suite 133, Columbus, OH 43235
614 781-9655 (main) | 614 596-4155 (cell)
bcasey@hazenandsawyer.com | hazenandsawyer.com



RE: Kickoff Meeting Tomorrow
Casey, Bret to: Zachery.Dukes@amwater.com

01/29/2014 08:33 PM

Zach, attached is the agenda for the meeting tomorrow.

From: Casey, Bret
Sent: Wednesday, January 29, 2014 5:48 PM
To: 'Zachery.Dukes@amwater.com'
Subject: RE: Kickoff Meeting Tomorrow

I'll send you an agenda first thing tomorrow morning. See you tomorrow...

From: Zachery.Dukes@amwater.com [<mailto:Zachery.Dukes@amwater.com>]
Sent: Wednesday, January 29, 2014 3:27 PM
To: Casey, Bret
Subject: Re: Kickoff Meeting Tomorrow

Please develop one. We do have a speaker phone and we will be in the Training Room A that the pew proposal was in. You can pull in around behind the building and call me to let you in.

Zach

Sent from my iPhone

On Jan 29, 2014, at 12:52 PM, "Casey, Bret" <bcasey@hazenandsawyer.com> wrote:
Zach, just wanted to check in before our meeting tomorrow. Do you have an agenda for the meeting or would you like me to develop one? Also, we have at least one person who is going to join by phone. Will you have a speaker phone available in the room we are meeting? Thanks. Looking forward to getting started!

Bret M. Casey, PE, BCEE

Senior Associate | Hazen and Sawyer

150 E. Campus View Blvd., Suite 133, Columbus, OH 43235
614 781-9655 (main) | 614 596-4155 (cell)
bcasey@hazenandsawyer.com | hazenandsawyer.com



Richmond Road Filter Building Kickoff Meeting Agenda.docx

**KDOW Discussion on Filter Loading Rate**

Casey, Bret to: brent.oneill@amwater.com,
Zachery.Dukes@amwater.com

02/04/2014 03:27 PM

Cc: "Green, Robert"

History: This message has been replied to.

Brent/Zach, Bob Green and I have been discussing our approach with KDOW on the loading rate for the new filters at Richmond Road Station. We discussed this at our kickoff meeting last week. Brent, David Laliberte also shared with us the discussion you had with him on this topic after the meeting. We'd like to have a quick call tomorrow to discuss our approach if you are available. Would you have some time tomorrow morning before 10:30 or after lunch to discuss? If not tomorrow, let me know what your availability is on Thursday. Thank you.

Bret M. Casey, PE, BCEE

Senior Associate | Hazen and Sawyer
150 E. Campus View Blvd., Suite 133, Columbus, OH 43235
614 781-9655 (main) | 614 596-4155 (cell)
bcasey@hazenandsawyer.com | hazenandsawyer.com



RE: Accepted: Discuss Richmond Road Filters
Casey, Bret to: Zachery.Dukes@amwater.com

02/04/2014 04:43 PM

History: This message has been replied to and forwarded .

Let me know if you want us to call you directly or if I should set up a call-in number.

-----Original Appointment-----

From: Zachery.Dukes@amwater.com [<mailto:Zachery.Dukes@amwater.com>]

Sent: Tuesday, February 04, 2014 4:19 PM

To: Casey, Bret

Subject: Accepted: Discuss Richmond Road Filters

When: Wednesday, February 05, 2014 3:00 PM-3:30 PM (UTC-05:00) Eastern Time (US & Canada).

Where: conference call

**Kentucky American Water - Richmond Road Station**

Green, Robert to: Mark Rasche (mark.rasche@ky.gov)
Cc: "Casey, Bret", "Zachery Dukes (zachery.dukes@amwater.com)"

02/05/2014 04:45 PM

Mark,

Thank you for your time today. We are requesting an opportunity to visit with KDOW to discuss an upcoming project for Kentucky American Water at their Richmond Road Station in Lexington. We will plan to provide you some basic design information prior to the meeting.

I am emailing you today to solicit some available dates for this meeting the weeks of February 17th and 24th. Once we know your availability we will check with the Owner and our design team for a firm date and time.

We look forward to working with KDOW on this very important project.

Robert A. Green, PE

Associate | Hazen and Sawyer
11311 Cornell Park Drive, Ste. 135, Cincinnati, OH 45242
513 469-2750 (main) | 513 469-5125 (direct) | 313 304-6614 (cell) | 513 469-2751 (fax)
rgreen@hazenandsawyer.com | hazenandsawyer.com



Contract for Richmond Road Filters

Casey, Bret to: Zachery.Dukes@amwater.com

02/06/2014 01:14 PM

History: This message has been replied to.

Zach, we are working with our subs to get the sub contract agreements completed so we can get surveying and geotech going. How are you planning on executing our contract for this project? Will it be a task order under our master services agreement? If so, will you just reference out proposal for scope and schedule or do you need something more detailed broken out on scope and schedule from me?

Bret M. Casey, PE, BCEE

Senior Associate | Hazen and Sawyer
150 E. Campus View Blvd., Suite 133, Columbus, OH 43235
614 781-9655 (main) | 614 596-4155 (cell)
bcasey@hazenandsawyer.com | hazenandsawyer.com



RE: Contract for Richmond Road Filters
Casey, Bret to: Zachery.Dukes@amwater.com

02/07/2014 09:32 AM

History: This message has been replied to.

Here's one that we did with Illinois American for Granite City...

-----Original Message-----

From: Zachery.Dukes@amwater.com [mailto:Zachery.Dukes@amwater.com]
Sent: Friday, February 07, 2014 8:59 AM
To: Casey, Bret
Subject: Re: Contract for Richmond Road Filters

Bret,

Do you have a recent AW Task Order that references the MSA that I can modify for this project?

Zach

Zachery B. Dukes, P.E.
Project Manager Engineer
Kentucky American Water
2300 Richmond Road
Lexington, KY 40502

Office (859) 268-6352
Cell (859) 537-0750
zachery.dukes@amwater.com
www.amwater.com

From: "Casey, Bret" <bcasey@hazenandsawyer.com>
To: "Zachery.Dukes@amwater.com" <Zachery.Dukes@amwater.com>,
Date: 02/06/2014 01:14 PM
Subject: Contract for Richmond Road Filters

Zach, we are working with our subs to get the sub contract agreements completed so we can get surveying and geotech going. How are you planning on executing our contract for this project? Will it be a task order under our master services agreement? If so, will you just reference out proposal for scope and schedule or do you need something more detailed broken out on scope and schedule from me?

Bret M. Casey, PE, BCEE

Senior Associate | Hazen and Sawyer
150 E. Campus View Blvd., Suite 133, Columbus, OH 43235
614 781-9655 (main) | 614 596-4155 (cell) bcasey@hazenandsawyer.com |
hazenandsawyer.com



0952_001.pdf

**Surveying at Richmond Road****Casey, Bret** to: Zachery.Dukes@amwater.com

02/07/2014 11:31 AM

Cc: "Steinmetz, John", Eddie Mesta

History:

This message has been replied to.

Zach, we are working to get the surveying scheduled. Eddie Mesta from Integrated Engineering will be contacting you to coordinate. We have the drawings of the site that you provided during the proposal stage. Do you have a GIS for the plant site as well? We are a little concerned about the snow cover and how it might affect the accuracy of the survey. However, I don't think we want to wait for the snow to melt since it could be a few weeks. One option is to move forward with the survey and then perform a follow-up QA/QC after the snow melts to make sure we didn't miss anything. Let me know what you think.

Bret M. Casey, PE, BCEE

Senior Associate | Hazen and Sawyer
150 E. Campus View Blvd., Suite 133, Columbus, OH 43235
614 781-9655 (main) | 614 596-4155 (cell)
bcasey@hazenandsawyer.com | hazenandsawyer.com



Re: Hazen Sawyer MSA 
Robert L Fredericks to: Bob Maul
Cc: Paul J Ferla, Zachery B. Dukes

02/08/2014 01:33 PM

Zach -

Not sure if you received a response yet....but here is :

- the original Hazen & Sawyer MSA 2006
- Amendment 3 which includes the current rate sheet
- Amendment 4 which extends the agreement to 12/2015.



Hazen & Sawyer MSA ENGR SERV 12.08.06.pdf



Hazen MSA Eng Serv Amend 3 dated extend to 2013.pdf



Hazen&Sawyer executed MSA Eng Ser Amend 4 extend to 2015.pdf

Robert L. Fredericks
Senior Strategic Buyer
PH: 856-727-6236

American Water Company
3906 Church Road
Mt. Laurel, NJ 08054
Fax : 856-727-6258

Mail : American Water Co.
1025 Laurel Oak Rd
Voorhees, NJ 08043

Bob Maul

Paul: Can you provide Zach with the MSA for Ha...

02/07/2014 04:23:02 PM

From: Bob Maul/SERVCO/AWWSC

To: Paul J Ferla/SERVCO/AWWSC@AWW,
Cc: Zachery B. Dukes/KAWC/AWWSC@AWW, Robert L Fredericks/SHARVCS/AWWSC@AWW
Date: 02/07/2014 04:23 PM
Subject: Hazen Sawyer MSa

Paul:

Can you provide Zach with the MSA for Hazen Sawyer. I do not see the Engineering MSA's in the Intranet

Bob Maul C.P.M
Manager Capital Strategic Sourcing
727 Craig Road
St. Louis Missouri 63141
7-400-2323 Internal Office
314-996-2323 Office
314-550-4502 Mobile
Bob.Maul@amwater.com

**FW: Kentucky American Water - Richmond Road Station**

Green, Robert to: Zachery Dukes
(zachery.dukes@amwater.com)

02/11/2014 08:26 AM

Cc: "Casey, Bret"

History: This message has been replied to and forwarded.

Zach,

Please see available dates for KDOW below. The 18th is the best date for myself and the soonest one offered. I'm not available on the 20th. Please let me know ASAP and I will confirm with Mark. It will likely be just myself from H&S for this trip. We'll be sending you a summary of the pertinent topics for your review, and ultimately we'll forward on to KDOW in advance of this meeting.

Please let me know if the 18th works or we need to look at other dates.

Thank you.

Robert A. Green, PE

Associate | Hazen and Sawyer
11311 Cornell Park Drive, Ste. 135, Cincinnati, OH 45242
513 469-2750 (main) | 513 469-5125 (direct) | 313 304-6614 (cell) | 513 469-2751 (fax)
rgreen@hazenandsawyer.com | hazenandsawyer.com

From: Rasche, Mark (EEC) [mailto:Mark.Rasche@ky.gov]
Sent: Monday, February 10, 2014 8:54 AM
To: Green, Robert
Subject: RE: Kentucky American Water - Richmond Road Station

Robert,

Good times for February 17-28 are:

- February 18 all day
- February 20 afternoon
- February 24 all day
- February 25 morning
- February 26 morning
- February 27 morning

If you need into March, let me know.

Mark

Mark Rasche, P. E.
Supervisor, Engineering Section

Water Infrastructure Branch
Division of Water
200 Fair Oaks Lane
Frankfort, KY 40601
Phone (502)564-3410
Fax (502)564-0111

From: Green, Robert [<mailto:rgreen@hazenandsawyer.com>]
Sent: Wednesday, February 05, 2014 4:46 PM
To: Rasche, Mark (EEC)
Cc: Casey, Bret; Zachery Dukes (zachery.dukes@amwater.com)
Subject: Kentucky American Water - Richmond Road Station

Mark,

Thank you for your time today. We are requesting an opportunity to visit with KDOW to discuss an upcoming project for Kentucky American Water at their Richmond Road Station in Lexington. We will plan to provide you some basic design information prior to the meeting.

I am emailing you today to solicit some available dates for this meeting the weeks of February 17th and 24th. Once we know your availability we will check with the Owner and our design team for a firm date and time.

We look forward to working with KDOW on this very important project.

Robert A. Green, PE

Associate | Hazen and Sawyer
11311 Cornell Park Drive, Ste. 135, Cincinnati, OH 45242
513 469-2750 (main) | 513 469-5125 (direct) | 313 304-6614 (cell) | 513 469-2751 (fax)
rgreen@hazenandsawyer.com | hazenandsawyer.com

**RE: Contract for Richmond Road Filters****Casey, Bret** to: Zachery.Dukes@amwater.com

02/13/2014 03:53 PM

History: This message has been replied to.

I checked with our folks in Cincinnati to see if they got the contract yet. Did you send that regular mail or through UPS or Fed Ex? They haven't seen it yet, and I just wanted to make sure that they didn't miss it when it came in.

-----Original Message-----

From: Zachery.Dukes@amwater.com [mailto:Zachery.Dukes@amwater.com]
Sent: Monday, February 10, 2014 3:56 PM
To: Casey, Bret
Subject: RE: Contract for Richmond Road Filters

Will do. Thanks.

Zachery B. Dukes, P.E.
Project Manager Engineer
Kentucky American Water
2300 Richmond Road
Lexington, KY 40502

Office (859) 268-6352
Cell (859) 537-0750
zachery.dukes@amwater.com
www.amwater.com

From: "Casey, Bret" <bcasey@hazenandsawyer.com>
To: "Zachery.Dukes@amwater.com" <Zachery.Dukes@amwater.com>,
Date: 02/10/2014 03:37 PM
Subject: RE: Contract for Richmond Road Filters

If you could, send it to our Cincinnati office, attention Gary Haubner. He will be signing it and I will be there the next two days. Address is:

11311 Cornell Park Dr,
Blue Ash, OH 45242

Thanks!

-----Original Message-----

From: Zachery.Dukes@amwater.com [mailto:Zachery.Dukes@amwater.com]
Sent: Monday, February 10, 2014 3:18 PM
To: Casey, Bret
Subject: Re: Contract for Richmond Road Filters

See attached. I can put the original in the mail today for signature and return. Should I send it to you?

(See attached file: 3419_001.pdf)

Thanks,
Zach

Zachery B. Dukes, P.E.
Project Manager Engineer
Kentucky American Water
2300 Richmond Road
Lexington, KY 40502

Office (859) 268-6352
Cell (859) 537-0750
zachery.dukes@amwater.com
www.amwater.com

From: "Casey, Bret" <bcasey@hazenandsawyer.com>
To: "Zachery.Dukes@amwater.com"
<Zachery.Dukes@amwater.com>,
Date: 02/06/2014 01:14 PM
Subject: Contract for Richmond Road Filters

Zach, we are working with our subs to get the sub contract agreements completed so we can get surveying and geotech going. How are you planning on executing our contract for this project? Will it be a task order under our master services agreement? If so, will you just reference out proposal for scope and schedule or do you need something more detailed broken out on scope and schedule from me?

Bret M. Casey, PE, BCEE

Senior Associate | Hazen and Sawyer
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614 781-9655 (main) | 614 596-4155 (cell) bcasey@hazenandsawyer.com |
hazenandsawyer.com



Draft Section 5 - Basis of Design - Richmond Road Station WTP - Kentucky
American Water

Green, Robert to: Mark Rasche (mark.rasche@ky.gov)

02/17/2014 08:53 AM

Cc: "Zachery Dukes (zachery.dukes@amwater.com)", "Casey, Bret"

History: This message has been replied to and forwarded .

Mark,

Attached please find a draft section from our Basis of Design along with a very preliminary site layout for our discussion tomorrow.

We are in the very early stages of the project and thought it best to discuss a couple of items with KDOW before we proceed. Three items that we will want to discuss are as follows:

- Filtration rate
- Baffling factor for the new CT Contactor
- Schedule and permitting

Thank you for the opportunity to meet with us. We look forward to working with you.

Robert A. Green, PE

Associate | Hazen and Sawyer
11311 Cornell Park Drive, Ste. 135, Cincinnati, OH 45242
513 469-2750 (main) | 513 469-5125 (direct) | 313 304-6614 (cell) | 513 469-2751 (fax)
rgreen@hazenandsawyer.com | hazenandsawyer.com



Section 5 - RRS - Water Treatment Process - Draft 1.docxRRS WTP proposed site plan.pdf



RE: Surveying at Richmond Road
Eddie Mesta to: Zachery.Dukes, bcasey
Cc: "Steinmetz, John"

02/17/2014 11:07 AM

History: This message has been replied to.

Good Morning Zach,

We have scheduled one of our surveyors (Homer Owen) to be on site either Wednesday or Thursday of this week. The snow should be melted by then. Please let me know who Homer should be coordinated with when he arrives on site. Also, I'm assuming that since the site is within a secure area that we won't have any BUD utility locations performed with exception of you all locating the existing waterlines. Do I need to formally call BUD for the locations of the waterlines or will you handle that internally? Also, please let me know if you will be able to get the lines located by Wednesday so we can pick everything up at once.

Thanks!

Eddie Mesta, PE
Integrated Engineering, PLLC

-----Original Message-----

From: Zachery.Dukes@amwater.com [mailto:Zachery.Dukes@amwater.com]
Sent: Monday, February 10, 2014 3:31 PM
To: bcasey@hazenandsawyer.com
Cc: Eddie Mesta; Steinmetz, John
Subject: Re: Surveying at Richmond Road

We do not yet have that plant GIS(ed). I agree we could move forward with the survey then double check once weather is better.

Zach

Zachery B. Dukes, P.E.
Project Manager Engineer
Kentucky American Water
2300 Richmond Road
Lexington, KY 40502

Office (859) 268-6352
Cell (859) 537-0750
zachery.dukes@amwater.com
www.amwater.com

From: "Casey, Bret" <bcasey@hazenandsawyer.com>
To: "Zachery.Dukes@amwater.com" <Zachery.Dukes@amwater.com>,
Cc: "Steinmetz, John" <jsteinmetz@hazenandsawyer.com>, Eddie Mesta <eddie@int-engineering.com>
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Bret M. Casey, PE, BCEE

Senior Associate | Hazen and Sawyer
150 E. Campus View Blvd., Suite 133, Columbus, OH 43235
614 781-9655 (main) | 614 596-4155 (cell) bcasey@hazenandsawyer.com |
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**RE: Surveying at Richmond Road****Eddie Mesta** to: Zachery.Dukes

Cc: bcasey, "Steinmetz, John"

02/17/2014 02:53 PM

History: This message has been replied to.

Hey Zach,

It has been my experience that BUD will not perform private utility locates but I'll call it in and see. Are you aware of any other existing underground lines in the project vicinity (gas, phone, electric)? Please advise. Thanks.

Eddie Mesta, PE
Integrated Engineering, PLLC

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**RE: Surveying at Richmond Road**

Eddie Mesta to: Zachery.Dukes

Cc: bcasey, "Steinmetz, John"

02/17/2014 05:39 PM

History: This message has been replied to.

10-4. I'll call it in. Thanks.

Eddie Mesta, PE
Integrated Engineering, PLLC

-----Original Message-----

From: Zachery.Dukes@amwater.com [mailto:Zachery.Dukes@amwater.com]

Sent: Monday, February 17, 2014 4:26 PM

To: Eddie Mesta

Cc: bcasey@hazenandsawyer.com; Steinmetz, John

Subject: Re: Surveying at Richmond Road

Yes, gas and electric. Possibly phone.
Zach

Sent from my iPhone

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> wrote:

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> Cc: bcasey@hazenandsawyer.com; 'Steinmetz, John'

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> Thanks,

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> To: "Zachery.Dukes@amwater.com"
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**RE: Surveying at Richmond Road****Eddie Mesta** to: Zachery.Dukes

02/18/2014 09:33 AM

History: This message has been replied to.

We're calling them in this morning. With the 48 hour policy they would need to be located by Thursday. Lately we've been having issues with BUD on locating private utility lines. If so we may have to get a private utility locator to get the lines located.

Eddie Mesta, PE
Integrated Engineering, PLLC

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From: Zachery.Dukes@amwater.com [mailto:Zachery.Dukes@amwater.com]
Sent: Tuesday, February 18, 2014 8:50 AM
To: eddie@int-engineering.com
Subject: RE: Surveying at Richmond Road

When are you requesting the locates be completed?

Zach

Zachery B. Dukes, P.E.
Project Manager Engineer
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Lexington, KY 40502

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**RE: Surveying at Richmond Road****Eddie Mesta** to: Zachery.Dukes

Cc: bcasey, "Steinmetz, John"

02/18/2014 09:56 AM

History: This message has been replied to and forwarded .

Hey Zach,

Here is the BUD utility locate #

#1402180228

Homer Owen is planning on being on site tomorrow mid to late morning to get started. Should I tell him to give you a call shortly before he arrives to coordinate?

Thanks.

Eddie Mesta, PE
Integrated Engineering, PLLC

-----Original Message-----

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To: eddie@int-engineering.com
Cc: bcasey@hazenandsawyer.com; 'Steinmetz, John'
Subject: RE: Surveying at Richmond Road

Great. Please send me the BUDS No. so I can forward it along to our guys for their file.

Thanks,
Zach

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**RE: Surveying at Richmond Road****Eddie Mesta** to: Zachery.Dukes

02/18/2014 10:31 AM

We have on other projects but we'll see what response we get for this locate.

Eddie Mesta, PE
Integrated Engineering, PLLC

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I'm not sure what you mean by private utility lines. We locate our water lines but KU has lines in our plant (before the meter) and Columbia Gas has lines on the site. You've had trouble with those lines being located?

Zach

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Integrated Engineering, PLLC

-----Original Message-----

From: Zachery.Dukes@amwater.com [mailto:Zachery.Dukes@amwater.com]
Sent: Tuesday, February 18, 2014 8:50 AM
To: eddie@int-engineering.com
Subject: RE: Surveying at Richmond Road

When are you requesting the locates be completed?

Zach

Zachery B. Dukes, P.E.
Project Manager Engineer
Kentucky American Water
2300 Richmond Road
Lexington, KY 40502

Office (859) 268-6352
Cell (859) 537-0750
zachery.dukes@amwater.com
www.amwater.com

From: "Eddie Mesta" <eddie@int-engineering.com>
To: <Zachery.Dukes@amwater.com>,
Cc: <bcasey@hazenandsawyer.com>, "'Steinmetz, John'"
<jsteinmetz@hazenandsawyer.com>
Date: 02/17/2014 05:39 PM
Subject: RE: Surveying at Richmond Road

10-4. I'll call it in. Thanks.

Eddie Mesta, PE
Integrated Engineering, PLLC

-----Original Message-----

From: Zachery.Dukes@amwater.com [mailto:Zachery.Dukes@amwater.com]
Sent: Monday, February 17, 2014 4:26 PM
To: Eddie Mesta
Cc: bcasey@hazenandsawyer.com; Steinmetz, John
Subject: Re: Surveying at Richmond Road

Yes, gas and electric. Possibly phone.
Zach

Sent from my iPhone

> On Feb 17, 2014, at 2:53 PM, "Eddie Mesta" <eddie@int-engineering.com>
> wrote:

>

> Hey Zach,

>

> It has been my experience that BUD will not perform private utility
> locates but I'll call it in and see. Are you aware of any other existing
> underground lines in the project vicinity (gas, phone, electric)? Please
> advise. Thanks.

>

>

>

> Eddie Mesta, PE

> Integrated Engineering, PLLC

>

> -----Original Message-----

> From: Zachery.Dukes@amwater.com [mailto:Zachery.Dukes@amwater.com]

> Sent: Monday, February 17, 2014 1:22 PM

> To: eddie@int-engineering.com

> Cc: bcasey@hazenandsawyer.com; 'Steinmetz, John'
> Subject: RE: Surveying at Richmond Road
>
> Hey Eddie,
> BUDS would do the locates for everything except the water lines and
> fiber
optics within our plant area. KAWC locates the water line and our IT guy has
Randy Walker Electric locate fiber. Will your surveyor be white lining an area
for locates or describing an area? I'll put in an order for locates from our
end to be done by midday Wednesday. Please have Homer do the same.
> If you want them done before Wednesday let me know and I'll try to
expedite the process.
>
> Thanks,
> Zach
>
> Zachery B. Dukes, P.E.
> Project Manager Engineer
> Kentucky American Water
> 2300 Richmond Road
> Lexington, KY 40502
>
> Office (859) 268-6352
> Cell (859) 537-0750
> zachery.dukes@amwater.com
> www.amwater.com
>
>
> From: "Eddie Mesta"
<eddie@int-engineering.com>
> To:
<Zachery.Dukes@amwater.com>,
<bcasey@hazenandsawyer.com>,
> Cc: "'Steinmetz, John'"
<jsteinmetz@hazenandsawyer.com>
> Date: 02/17/2014 11:07 AM
> Subject: RE: Surveying at
Richmond Road
>
>
>
> Good Morning Zach,
>
> We have scheduled one of our surveyors (Homer Owen) to be on site
> either
Wednesday or Thursday of this week. The snow should be melted by then.
> Please let me know who Homer should coordinated with when he arrives
> on
site. Also, I'm assuming that since the site is within a secure area that we
won't have any BUD utility locations performed with exception of you all
locating the existing waterlines. Do I need to formally call BUD for the
locations of the waterlines or will you handle that internally? Also, please
let me know if you will be able to get the lines located by Wednesday so we
can pick everything up at once.
>
>
> Thanks!
>
> Eddie Mesta, PE
> Integrated Engineering, PLLC

>
>
> -----Original Message-----
> From: Zachery.Dukes@amwater.com [mailto:Zachery.Dukes@amwater.com]
> Sent: Monday, February 10, 2014 3:31 PM
> To: bcasey@hazenandsawyer.com
> Cc: Eddie Mesta; Steinmetz, John
> Subject: Re: Surveying at Richmond Road
>
> We do not yet have that plant GIS(ed). I agree we could move forward
> with
the survey then double check once weather is better.
>
> Zach
>
> Zachery B. Dukes, P.E.
> Project Manager Engineer
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> Lexington, KY 40502
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> Office (859) 268-6352
> Cell (859) 537-0750
> zachery.dukes@amwater.com
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>
>
>
> From:
"Casey, Bret"
<bcasey@hazenandsawyer.com>
> To:
"Zachery.Dukes@amwater.com"
<Zachery.Dukes@amwater.com>,
> Cc:
"Steinmetz, John"
<jsteinmetz@hazenandsawyer.com>, Eddie Mesta
> <eddie@int-engineering.com>
> Date:
02/07/2014 11:31
AM
> Subject:
Surveying at
Richmond Road
>
>
>
> Zach, we are working to get the surveying scheduled. Eddie Mesta from
Integrated Engineering will be contacting you to coordinate. We have the
drawings of the site that you provided during the proposal stage. Do you have
a GIS for the plant site as well? We are a little concerned about the snow
cover and how it might affect the accuracy of the survey. However, I don't
think we want to wait for the snow to melt since it could be a few weeks. One
option is to move forward with the survey and then perform a follow-up QA/QC
after the snow melts to make sure we didn't miss anything.
> Let me know what you think.
>
> Bret M. Casey, PE, BCEE
>
> Senior Associate | Hazen and Sawyer
> 150 E. Campus View Blvd., Suite 133, Columbus, OH 43235

> 614 781-9655 (main) | 614 596-4155 (cell) bcasey@hazenandsawyer.com|
hazenandsawyer.com
>
>

**RE: Surveying at Richmond Road****Eddie Mesta** to: Zachery.Dukes

Cc: "Homer Owen"

02/18/2014 12:06 PM

History: This message has been replied to.

Hey Zach,

I have forwarded your # to Homer. He has a quick job to do in the AM and should be to KAWC mid to late morning. He'll call ahead to you when he's on his way to the site.

Thanks.

Eddie Mesta, PE
Integrated Engineering, PLLC

-----Original Message-----

From: Zachery.Dukes@amwater.com [mailto:Zachery.Dukes@amwater.com]
Sent: Tuesday, February 18, 2014 10:31 AM
To: eddie@int-engineering.com
Subject: RE: Surveying at Richmond Road

Yeah, Homer can call me on my cell - 859.537.0750.

Zach

Zachery B. Dukes, P.E.
Project Manager Engineer
Kentucky American Water
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Lexington, KY 40502

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To: <Zachery.Dukes@amwater.com>,
Cc: <bcasey@hazenandsawyer.com>, "'Steinmetz, John'"
<jsteinmetz@hazenandsawyer.com>
Date: 02/18/2014 09:56 AM
Subject: RE: Surveying at Richmond Road

Hey Zach,

Here is the BUD utility locate #

#1402180228

Homer Owen is planning on being on site tomorrow mid to late morning to get started. Should I tell him to give you a call shortly before he arrives to coordinate?

Thanks.

Eddie Mesta, PE
Integrated Engineering, PLLC

-----Original Message-----

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Sent: Tuesday, February 18, 2014 8:06 AM
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Subject: RE: Surveying at Richmond Road

Great. Please send me the BUDS No. so I can forward it along to our guys for their file.

Thanks,
Zach

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Cc: <bcasey@hazenandsawyer.com>, "'Steinmetz, John'"
<jsteinmetz@hazenandsawyer.com>
Date: 02/17/2014 02:53 PM
Subject: RE: Surveying at Richmond Road

Hey Zach,

It has been my experience that BUD will not perform private utility locates but I'll call it in and see. Are you aware of any other existing underground lines in the project vicinity (gas, phone, electric)? Please advise. Thanks.

Eddie Mesta, PE
Integrated Engineering, PLLC

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Thanks,
Zach

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<eddie@int-engineering.com>
To: <Zachery.Dukes@amwater.com>, <bcasey@hazenandsawyer.com>,
Cc: <jsteinmetz@hazenandsawyer.com>
Date: 02/17/2014 11:07 AM
Subject: RE: Surveying at
Richmond Road

Good Morning Zach,

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Thanks!

Eddie Mesta, PE
Integrated Engineering, PLLC

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Sent: Monday, February 10, 2014 3:31 PM
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Cc: Eddie Mesta; Steinmetz, John

Subject: Re: Surveying at Richmond Road

We do not yet have that plant GIS(ed). I agree we could move forward with the survey then double check once weather is better.

Zach

Zachery B. Dukes, P.E.
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Kentucky American Water
2300 Richmond Road
Lexington, KY 40502

Office (859) 268-6352
Cell (859) 537-0750
zachery.dukes@amwater.com
www.amwater.com

From:

"Casey, Bret"

<bcasey@hazenandsawyer.com>

To:

"Zachery.Dukes@amwater.com"

<Zachery.Dukes@amwater.com> ,

Cc:

"Steinmetz, John"

<jsteinmetz@hazenandsawyer.com> , Eddie Mesta

<eddie@int-engineering.com>

Date:

02/07/2014 11:31 AM

Subject:

Surveying at


Richmond Road

Zach, we are working to get the surveying scheduled. Eddie Mesta from Integrated Engineering will be contacting you to coordinate. We have the drawings of the site that you provided during the proposal stage. Do you have a GIS for the plant site as well? We are a little concerned about the snow cover and how it might affect the accuracy of the survey. However, I don't think we want to wait for the snow to melt since it could be a few weeks. One option is to move forward with the survey and then perform a follow-up QA/QC after the snow melts to make sure we didn't miss anything. Let me know what you think.

Bret M. Casey, PE, BCEE

Senior Associate | Hazen and Sawyer
150 E. Campus View Blvd., Suite 133, Columbus, OH 43235
614 781-9655 (main) | 614 596-4155 (cell) bcasey@hazenandsawyer.com |
hazenandsawyer.com



Re: Utility Locates Required - RRS WTF 
Benjamin J Wink to: Zachery B. Dukes
Cc: Bryan Siler, Justin D Sensabaugh

02/18/2014 12:22 PM

History: This message has been replied to.

Confirmed - Mike will be out later this afternoon or tomorrow first thing. George is scheduling now. Do we need this any sooner?

Thanks,

BJ Wink
MCSA, ITIL 2011, MCITP
Central Division, Kentucky & Tennessee
Client Technology Analyst
American Water
2300 Richmond Road
Lexington, KY 40502

859-268-6319 Office
859-621-0862 Cell
859-335-3319 Fax

Benjamin.Wink@amwater.com

ITS Service Desk - 866-777-8426
Manually enter your own Service Desk ticket, or chat with a Service Desk rep!
Just go to <http://sdonline> (for internal network use only)

Zachery B. Dukes Bryan and BJ, Please see the below BUD utility I... 02/18/2014 10:20:49 AM

From: Zachery B. Dukes/KAWC/AWWSC
To: Bryan Siler/KAWC/AWWSC, Benjamin J Wink/SERVCO/AWWSC,
Cc: Justin D Sensabaugh/KAWC/AWWSC
Date: 02/18/2014 10:20 AM
Subject: Utility Locates Required - RRS WTF

Bryan and BJ,
Please see the below BUD utility locate (#1402180228) request. This site is within the RRS WTF. This needs to be completed within 48 hrs or sooner, if possible. Kenny Buehler (at RRS) will be the point of contact to assist with locates within the the plant. Please have your locators contact him to make sure nothing is missed.

Let me know if you have any questions or concerns.

Thanks,
Zach

Zachery B. Dukes, P.E.
Project Manager Engineer

Kentucky American Water

2300 Richmond Road
Lexington, KY 40502

Office (859) 268-6352

Cell (859) 537-0750

zachery.dukes@amwater.com

www.amwater.com

----- Forwarded by Zachery B. Dukes/KAWC/AWWSC on 02/18/2014 10:14 AM -----

From: "Eddie Mesta" <eddie@int-engineering.com>
To: <Zachery.Dukes@amwater.com>,
Cc: <bcasey@hazenandsawyer.com>, "Steinmetz, John" <jsteinmetz@hazenandsawyer.com>
Date: 02/18/2014 09:56 AM
Subject: RE: Surveying at Richmond Road

Hey Zach,

Here is the BUD utility locate #

#1402180228

Homer Owen is planning on being on site tomorrow mid to late morning to get started. Should I tell him to give you a call shortly before he arrives to coordinate?

Thanks.

Eddie Mesta, PE
Integrated Engineering, PLLC

-----Original Message-----

From: Zachery.Dukes@amwater.com [mailto:Zachery.Dukes@amwater.com]
Sent: Tuesday, February 18, 2014 8:06 AM
To: eddie@int-engineering.com
Cc: bcasey@hazenandsawyer.com; 'Steinmetz, John'
Subject: RE: Surveying at Richmond Road

Great. Please send me the BUDS No. so I can forward it along to our guys for their file.

Thanks,
Zach

Zachery B. Dukes, P.E.
Project Manager Engineer
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Lexington, KY 40502

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zachery.dukes@amwater.com
www.amwater.com



Waterline locations

Homer Owen to: Zachery.Dukes

02/23/2014 07:34 PM

History: This message has been replied to.

Hey Zach,

I am planning on coming back down Tuesday to finish up the topo on the site. I assume the waterline will be marked by then and if it isn't, please let me know when it is as I don't want to come back down till it is marked because I should be able to finish up the topo work in one more trip.

Thanks,

Homer

Homer M. Owen IV, PLS
Integrated Engineering, PLLC
(Formerly Riegler Engineering)
homero@int-engineering.com
7430 U.S. Highway 42 - Suite 214
Florence, KY 41042
p. 859-371-5500, ext. 202
f. 859-904-1538
c. 859-663-1165
www.int-engineering.com



(Please make a note the above new email Address)

**RE: Contract for Richmond Road Filters****Casey, Bret** to: Zachery.Dukes@amwater.com

02/24/2014 10:55 AM

History:

This message has been replied to.

Zach, would Wednesday afternoon this week work for our next meeting? We are working on a data request to get you before the meeting. I should be able to send that to you this afternoon. Let me know if Wednesday works. Thanks.

-----Original Message-----

From: Zachery.Dukes@amwater.com [mailto:Zachery.Dukes@amwater.com]
Sent: Monday, February 24, 2014 8:07 AM
To: Casey, Bret
Subject: RE: Contract for Richmond Road Filters

Hey Bret,

When I our next meeting? When meeting with KYDOW we discussed having a quick meeting with our Water Quality lead to tie up some loose ends.

Zach

Zachery B. Dukes, P.E.
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Kentucky American Water
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From: "Casey, Bret" <bcasey@hazenandsawyer.com>
To: "Zachery.Dukes@amwater.com" <Zachery.Dukes@amwater.com>,
Date: 02/19/2014 04:33 PM
Subject: RE: Contract for Richmond Road Filters

Zach, I hate to tell you this, but we never got the contract in Cincinnati. I don't know if they delivered it to someone else or if it will eventually make its way back to you. I did not give you the suite number (not sure if that's the reason). Suite number is 135. Let me know if you want to wait a few days and see if it surfaces or if you just want to get another one signed. I apologize for that.

-----Original Message-----

From: Zachery.Dukes@amwater.com [mailto:Zachery.Dukes@amwater.com]
Sent: Thursday, February 13, 2014 4:25 PM
To: Casey, Bret
Subject: RE: Contract for Richmond Road Filters

Sent regular mail that day.

Zachery B. Dukes, P.E.
Project Manager Engineer
Kentucky American Water

2300 Richmond Road
Lexington, KY 40502

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Cell (859) 537-0750
zachery.dukes@amwater.com
www.amwater.com

From: "Casey, Bret" <bcasey@hazenandsawyer.com>
To: "Zachery.Dukes@amwater.com"
<Zachery.Dukes@amwater.com>,
Date: 02/13/2014 03:53 PM
Subject: RE: Contract for Richmond Road Filters

I checked with our folks in Cincinnati to see if they got the contract yet. Did you send that regular mail or through UPS or Fed Ex? They haven't seen it yet, and I just wanted to make sure that they didn't miss it when it came in.

-----Original Message-----

From: Zachery.Dukes@amwater.com [mailto:Zachery.Dukes@amwater.com]
Sent: Monday, February 10, 2014 3:56 PM
To: Casey, Bret
Subject: RE: Contract for Richmond Road Filters

Will do. Thanks.

Zachery B. Dukes, P.E.
Project Manager Engineer
Kentucky American Water
2300 Richmond Road
Lexington, KY 40502

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Cell (859) 537-0750
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From: "Casey, Bret"
<bcasey@hazenandsawyer.com>
To: "Zachery.Dukes@amwater.com"
<Zachery.Dukes@amwater.com>,
Date: 02/10/2014 03:37 PM
Subject: RE: Contract for
Richmond Road Filters

If you could, send it to our Cincinnati office, attention Gary Haubner. He will be signing it and I will be there the next two days. Address is:

11311 Cornell Park Dr,
Blue Ash, OH 45242

Thanks!

-----Original Message-----

From: Zachery.Dukes@amwater.com [mailto:Zachery.Dukes@amwater.com]
Sent: Monday, February 10, 2014 3:18 PM
To: Casey, Bret
Subject: Re: Contract for Richmond Road Filters

See attached. I can put the original in the mail today for signature and return. Should I send it to you?

(See attached file: 3419_001.pdf)

Thanks,
Zach

Zachery B. Dukes, P.E.
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Lexington, KY 40502

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From: "Casey, Bret"
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To: "Zachery.Dukes@amwater.com"
<Zachery.Dukes@amwater.com>,
Date: 02/06/2014 01:14 PM
Subject: Contract for
Richmond Road Filters

Zach, we are working with our subs to get the sub contract agreements completed so we can get surveying and geotech going. How are you planning on executing our contract for this project? Will it be a task order under our master services agreement? If so, will you just reference out proposal for scope and schedule or do you need something more detailed broken out on scope and schedule from me?

Bret M. Casey, PE, BCEE

Senior Associate | Hazen and Sawyer
150 E. Campus View Blvd., Suite 133, Columbus, OH 43235
614 781-9655 (main) | 614 596-4155 (cell) bcasey@hazenandsawyer.com |
hazenandsawyer.com

**RE: Contract for Richmond Road Filters****Casey, Bret** to: Zachery.Dukes@amwater.com

02/24/2014 01:53 PM

History: This message has been replied to.

I have a site visit in Cincinnati early on Wednesday. I could be in Lexington by 11 or 11:30, or we could just do it by phone at 10:30 or so. I think it will be fairly straightforward if we want to have this discussion by phone. Let me know which you'd prefer.

We'll send you the information today or tomorrow as to what we want to discuss. I am finalizing meeting minutes for the kickoff and the KDOW meeting so I'll send those as well.

-----Original Message-----

From: Zachery.Dukes@amwater.com [mailto:Zachery.Dukes@amwater.com]
Sent: Monday, February 24, 2014 1:31 PM
To: Casey, Bret
Subject: RE: Contract for Richmond Road Filters

Wednesday works for me but I looks like the afternoon is full for our water quality lead. Can you do that morning? We could do a call-in if need be.

Zach

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-----Original Message-----

From: Zachery.Dukes@amwater.com [mailto:Zachery.Dukes@amwater.com]
Sent: Monday, February 10, 2014 3:18 PM
To: Casey, Bret
Subject: Re: Contract for Richmond Road Filters

See attached. I can put the original in the mail today for signature and return. Should I send it to you?

(See attached file: 3419_001.pdf)

Thanks,

Zach

Zachery B. Dukes, P.E.
Project Manager Engineer
Kentucky American Water
2300 Richmond Road
Lexington, KY 40502

Office (859) 268-6352
Cell (859) 537-0750
zachery.dukes@amwater.com
www.amwater.com

From:

"Casey, Bret"

<bcasey@hazenandsawyer.com>

To:

"Zachery.Dukes@amwater.com"
<Zachery.Dukes@amwater.com> ,

Date:

02/06/2014 01:14 PM

Subject:

Contract for

Richmond Road Filters

Zach, we are working with our subs to get the sub contract agreements completed so we can get surveying and geotech going. How are you planning on executing our contract for this project? Will it be a task order under our master services agreement? If so, will you just reference out proposal for scope and schedule or do you need something more detailed broken out on scope and schedule from me?

Bret M. Casey, PE, BCEE

Senior Associate | Hazen and Sawyer
150 E. Campus View Blvd., Suite 133, Columbus, OH 43235
614 781-9655 (main) | 614 596-4155 (cell) bcasey@hazenandsawyer.com |
hazenandsawyer.com



Meeting Minutes and Data Request

Casey, Bret to: Zachery.Dukes@amwater.com
Cc: "Green, Robert"

02/24/2014 10:33 PM

History: This message has been replied to and forwarded .

Zach, attached are the meeting minutes for the kickoff meeting and the meeting with KDOW . Please review those and let me know if you have any changes . Also let me know if you want me to issue those to all the attendees or if you will forward them . We will be getting the FTP site set up so I can start posting meeting minutes there, but for now we can e-mail . Once you review the KDOW meeting minutes, we think it would be a good idea to forward those to the KDOW attendees so we can get the decisions that were made during the meeting (especially regarding filter loading rates) on the record .

I've also included a first cut at the data request of the information that we'll need for the project . I've indicated two years of data to start with . If we get into the analysis and it looks like there's a wide variance we may need another year just to make sure we're not missing something .

Call me tomorrow if you have any questions . I will put together a short agenda for what we would like to cover on Wednesday . Thanks Zach .

Bret M. Casey, PE, BCEE

Senior Associate | Hazen and Sawyer
150 E. Campus View Blvd., Suite 133, Columbus, OH 43235
614 781-9655 (main) | 614 596-4155 (cell)
bcasey@hazenandsawyer.com | hazenandsawyer.com



18February2014 - KDOW Meeting Minutes_draft.doc Richmond Road Station data request.docx



RRS Kickoff Meeting Minutes.docx



RE: Meeting Minutes and Data Request

Casey, Bret to: Zachery.Dukes@amwater.com

02/25/2014 03:10 PM

History:

This message has been replied to and forwarded .

Zach, attached is the agenda for tomorrow's call.

From: Casey, Bret
Sent: Monday, February 24, 2014 10:33 PM
To: Zachery.Dukes@amwater.com
Cc: Green, Robert
Subject: Meeting Minutes and Data Request

Zach, attached are the meeting minutes for the kickoff meeting and the meeting with KDOW . Please review those and let me know if you have any changes. Also let me know if you want me to issue those to all the attendees or if you will forward them. We will be getting the FTP site set up so I can start posting meeting minutes there, but for now we can e-mail. Once you review the KDOW meeting minutes, we think it would be a good idea to forward those to the KDOW attendees so we can get the decisions that were made during the meeting (especially regarding filter loading rates) on the record.

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Call me tomorrow if you have any questions. I will put together a short agenda for what we would like to cover on Wednesday. Thanks Zach.

Bret M. Casey, PE, BCEE

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614 781-9655 (main) | 614 596-4155 (cell)
bcasey@hazenandsawyer.com | hazenandsawyer.com



RRS Progress Meeting Agenda 02-26-2014.docx



Fw: K2 Clearwell pic
David Shehee to: Zachery B. Dukes

02/26/2014 12:18 PM

FYI

David

David B. Shehee
Superintendent, Water Quality and Environmental Compliance



KENTUCKY
AMERICAN WATER

www.kentuckyamwater.com

2300 Richmond Road | Lexington | Kentucky 40502

☎ 859.335.3660 | 📠 859.335.3388 | ✉ david.shehee@amwater.com

For quality and value, tap water is the clear choice.



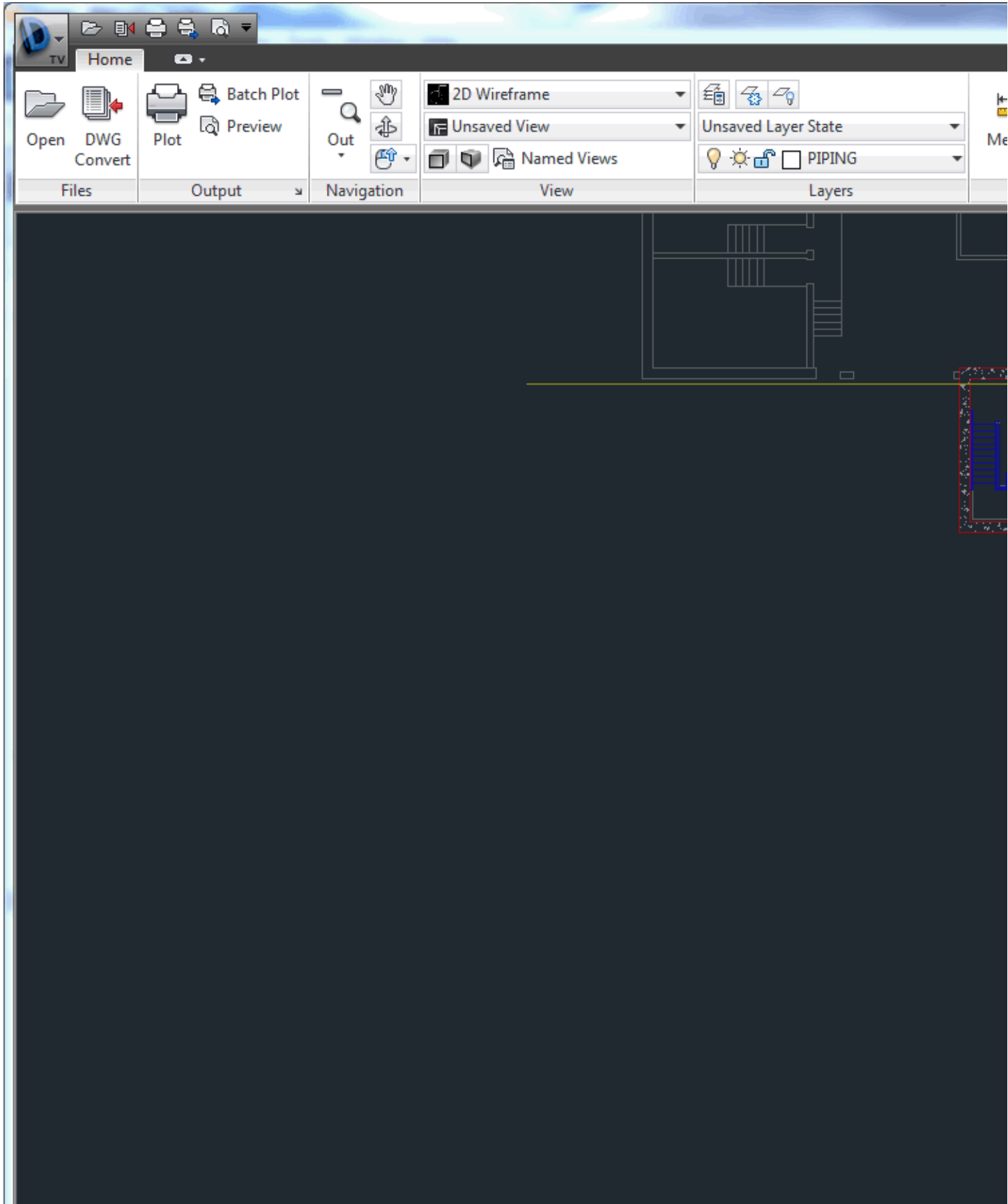
BLUEGRASS
GREENSOURCE

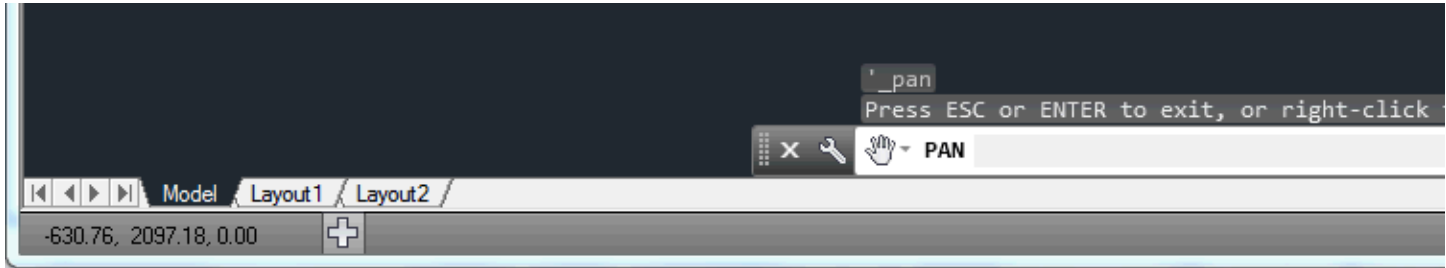


Please consider the environment before printing this email.

----- Forwarded by David Shehee/KAWC/AWWSC on 02/26/2014 12:18 PM -----

From: Ronald K Kruchinski/KAWC/AWWSC
To: David Shehee/KAWC/AWWSC@AWW,
Date: 02/26/2014 11:30 AM
Subject: K2 Clearwell pic





Kevin Kruchinski
Kentucky American Water
2300 Richmond Rd Lexington, KY 40502
r.kruchinski@amwater.com
P 859-335-3418 M 859-361-1770

For quality and value, tap water is the clear choice

**RE: Invoice****Casey, Bret** to: Zachery.Dukes@amwater.com

03/03/2014 04:12 PM

History: This message has been replied to.

Zach, for January and February we will bill to 5% of the lump sum amount. So the invoice will be \$19,830.

Sorry for the delay in getting this to you. I will get it to you by the end of March for the next billing cycle. Thanks.

-----Original Message-----

From: Zachery.Dukes@amwater.com [mailto:Zachery.Dukes@amwater.com]
Sent: Monday, March 03, 2014 11:23 AM
To: Casey, Bret
Subject: RE: Invoice

Just the total in the short term for my accrual but would like the breakdown when officially submitted for payment to Share Services.

Zach

Zachery B. Dukes, P.E.
Project Manager Engineer
Kentucky American Water
2300 Richmond Road
Lexington, KY 40502

Office (859) 268-6352
Cell (859) 537-0750
zachery.dukes@amwater.com
www.amwater.com

From: "Casey, Bret" <bcasey@hazenandsawyer.com>
To: "Zachery.Dukes@amwater.com" <Zachery.Dukes@amwater.com>,
Date: 03/03/2014 11:20 AM
Subject: RE: Invoice

Yes, I'm working on that right now. Do you just need the total or a breakdown of hours?

-----Original Message-----

From: Zachery.Dukes@amwater.com [mailto:Zachery.Dukes@amwater.com]
Sent: Monday, March 03, 2014 11:19 AM
To: Casey, Bret
Subject: Invoice

Can you send me the February invoice amount today?

Thanks,
Zach

Zachery B. Dukes, P.E.
Project Manager Engineer

Kentucky American Water
2300 Richmond Road
Lexington, KY 40502

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zachery.dukes@amwater.com
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GPR Contact for Utility Locating

Eddie Mesta to: Zachery.Dukes
Cc: "Steinmetz, John", brad

03/12/2014 10:58 AM

Hello Zach,

Good to meet with you this morning. As promised I am sending Brad Rister's contact information. As discussed Brad can assist you with any additional utility or other underground utility locations that you may need in the future utilizing Ground Penetrating Radar. Please let me know if you have any questions or need any additional information. Thanks.



Eddie Mesta, PE
Integrated Engineering, PLLC
166 Prosperous Place; Suite 220
Lexington, KY 40509
p. 859-368-0145
f. 859-904-1538
c. 859-948-3218
www.int-engineering.com



Brad Rister P. E .vcf



Old RRS plans
Steinmetz, John to: 'Eddie Mesta'
Cc: Zachery Dukes

03/12/2014 11:08 AM

Eddie – I think we sent these to you earlier, and if we did they may be better quality, but the attached may be of use to you in “connecting the dots” and in the final annotation of your topo survey .

Thanks,
John



3483_001.pdf



RE: Richmond Road Station WTP
Melton, Lisa to: Zachery.Dukes@amwater.com
Cc: "Casey, Bret", "Green, Robert"

03/13/2014 04:11 PM

History: This message has been replied to.

Zach,

Thanks for confirming the operating level. Practically speaking, what is the safest low level elevation the clearwell can operate at without impacting the pumps?

I also wanted to clarify if Clearwell #1 (at the Pump Station) is the smaller volume at 454,000 gallons? I know the record drawings swap numbering conventions over the years, but it appears the high service pump clearwell is smaller. Please advise.

Thank You,

Lisa

-----Original Message-----

From: Zachery.Dukes@amwater.com [mailto:Zachery.Dukes@amwater.com]
Sent: Thursday, March 13, 2014 2:42 PM
To: Melton, Lisa
Subject: Re: Richmond Road Station WTP

Lisa,

You were correct. We operate Clearwell #1 (600,000 Gallon @ Pump Station) around 10ft. SCADA set points are as follows for that Clearwell: High - 12 ft, High High - 12.2 ft, Low - 8 ft, Low Low - 5 ft.

-Zach

Zachery B. Dukes, P.E.
Project Manager Engineer
Kentucky American Water
2300 Richmond Road
Lexington, KY 40502

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Cell (859) 537-0750
zachery.dukes@amwater.com
www.amwater.com

From: "Melton, Lisa" <lmelton@hazenandsawyer.com>
To: "Zachery.Dukes@amwater.com" <Zachery.Dukes@amwater.com>,
Cc: "Casey, Bret" <bcasey@hazenandsawyer.com>, "Green, Robert" <rgreen@hazenandsawyer.com>
Date: 03/10/2014 05:29 PM
Subject: Richmond Road Station WTP

Afternoon Zack,

I am working with Bret Casey and Bob Green on the Richmond Road WTP

improvements. I have a few clarification questions for you regarding the site and existing equipment.

1. High Service Pump, discharge piping: Based on the record drawings of the site piping (attached) there are three high service pump discharge lines (24-in, 20-in, 16-in) that head west from the Operations Building. The exact alignment of the forcemains are not provided. The surveyor has located the 20-in forcemain. Can you confirm the discharge location of the other two lines? Are there any other utilities in the vicinity of the proposed filters and CT basin, that you are aware of?
2. Backwash Pump Station: The proposed site plan is attached. We are proposing an alternative location for the backwash pump station to the south of the Admin building. Does this coincide with available locations for the station?
3. Lastly can you provide the shop drawing (system curve) for the existing blower. We want to confirm if the unit can be re-used at the new filter building.

Let me know if you have any questions.

Thank You,
Lisa

Lisa Melton

Assistant Engineer | Hazen and Sawyer
11311 Cornell Park Drive, Suite 135, Cincinnati, OH 45242
513 469-2750 (main) | 513 469-5158 (direct) lmelton@hazenandawyer.com |
hazenandsawyer.com [attachment "Exhibit 1_Proposed Site Plan.pdf" deleted by
Zachery B.
Dukes/KAWC/AWWSC] [attachment "RRS_site piping_1938-1965.pdf" deleted by
Zachery B. Dukes/KAWC/AWWSC]



RE: RRS Filter Building

Casey, Bret to: Zachery.Dukes@amwater.com

03/19/2014 04:14 PM

History: This message has been replied to and forwarded.

Zach, attached is the draft Basis of Design memo for your review. Please let me know if next Thursday will work for a review meeting. Thanks!

-----Original Message-----

From: Zachery.Dukes@amwater.com [mailto:Zachery.Dukes@amwater.com]
Sent: Wednesday, March 19, 2014 7:45 AM
To: Casey, Bret
Subject: RRS Filter Building

What's the latest? Next meeting? Still on schedule? Have all the info you requested?

Zach

Zachery B. Dukes, P.E.
Project Manager Engineer
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Lexington, KY 40502

Office (859) 268-6352
Cell (859) 537-0750
zachery.dukes@amwater.com
www.amwater.com



Basis of Design Memo-Draft 1.pdf



RE: RRS Filter Building

Casey, Bret to: Zachery.Dukes@amwater.com
Cc: "Green, Robert"

03/19/2014 04:39 PM

History: This message has been replied to.

Zach, Bob Green reminded me that for other American Water projects we have provided hard copies of the Basis of Design memo. Please let me know if you'd like hard copies (and if so how many) and we will overnight those to you.

-----Original Message-----

From: Casey, Bret
Sent: Wednesday, March 19, 2014 4:13 PM
To: 'Zachery.Dukes@amwater.com'
Subject: RE: RRS Filter Building

Zach, attached is the draft Basis of Design memo for your review. Please let me know if next Thursday will work for a review meeting. Thanks!

-----Original Message-----

From: Zachery.Dukes@amwater.com [mailto:Zachery.Dukes@amwater.com]
Sent: Wednesday, March 19, 2014 7:45 AM
To: Casey, Bret
Subject: RRS Filter Building

What's the latest? Next meeting? Still on schedule? Have all the info you requested?

Zach

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Lexington, KY 40502

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Cell (859) 537-0750
zachery.dukes@amwater.com
www.amwater.com



agenda for tomorrow 's call

Casey, Bret to: Zachery.Dukes@amwater.com
Cc: "Green, Robert"

03/25/2014 05:06 PM

History: This message has been forwarded.

Zach attached is an agenda for the items we want to discuss on the phone tomorrow. We are currently working through the mass balance calculations to determine if the existing clearwell no. 1 has adequate volume. We might have that completed before our call in the morning, but definitely before our meeting on Thursday. At this point it looks like we should be OK, but we wanted to present options for increasing the clearwell volume if that is determined to be necessary. We can discuss that in more detail tomorrow. Thanks.

Bret M. Casey, PE, BCEE

Senior Associate | Hazen and Sawyer
150 E. Campus View Blvd., Suite 133, Columbus, OH 43235
614 781-9655 (main) | 614 596-4155 (cell)
bcasey@hazenandsawyer.com | hazenandsawyer.com



conference call 03-26-2014 agenda.docx

**RE: agenda for tomorrow 's call**

Casey, Bret to: Zachery.Dukes@amwater.com
Cc: "Green, Robert"

03/26/2014 04:46 PM

Zach, attached is the revised site plan. As far as an agenda for tomorrow, we can go over the items on the agenda we used for today's call and also cover comments related to the Basis of Design Memo. I've attached an updated agenda for tomorrow's meeting. We'll see you in the morning.

From: Casey, Bret
Sent: Tuesday, March 25, 2014 5:06 PM
To: Zachery.Dukes@amwater.com
Cc: Green, Robert
Subject: agenda for tomorrow's call

Zach attached is an agenda for the items we want to discuss on the phone tomorrow. We are currently working through the mass balance calculations to determine if the existing clearwell no. 1 has adequate volume. We might have that completed before our call in the morning, but definitely before our meeting on Thursday. At this point it looks like we should be OK, but we wanted to present options for increasing the clearwell volume if that is determined to be necessary. We can discuss that in more detail tomorrow. Thanks.

Bret M. Casey, PE, BCEE

Senior Associate | Hazen and Sawyer
150 E. Campus View Blvd., Suite 133, Columbus, OH 43235
614 781-9655 (main) | 614 596-4155 (cell)
bcasey@hazenandsawyer.com | hazenandsawyer.com



000-SITE-01.pdf Review Meeting 03-27-2014 agenda.docx



KAWC RRS Additional Survey & Geotech Stakes

Eddie Mesta to: Zachery.Dukes
Cc: "Steinmetz, John", "Mitch Estes"

03/28/2014 11:17 AM

History: This message has been replied to.

Hello Zach,

I wanted to let you know that Mitch Estes, our surveyor, will be on site Monday morning to set geotechnical sounding stakes for the corners for the filter building. He is also planning on picking an additional utility locations that were not marked when Homer was surveying the site. Should I direct Mitch to contact you for site access? If not please advise on who Mitch needs to contact. Mitch's cell phone # is 606-207-9900. I have also copied Mitch to this email.

Thanks and have a nice weekend!

Eddie Mesta, PE
Integrated Engineering, PLLC
166 Prosperous Place; Suite 220
Lexington, KY 40509
p. 859-368-0145
f. 859-904-1538
c. 859-948-3218
www.int-engineering.com



**RE: Invoice****Casey, Bret** to: Zachery.Dukes@amwater.com

03/31/2014 11:59 AM

Zach, since I was out of the office for a few weeks, we did not get the invoice mailed to you in March. We'll send out the invoice for January/Feb for the \$19,830. I will get you a number this afternoon for what our March invoice will be.

-----Original Message-----

From: Casey, Bret
Sent: Monday, March 03, 2014 4:12 PM
To: 'Zachery.Dukes@amwater.com'
Subject: RE: Invoice

Zach, for January and February we will bill to 5% of the lump sum amount. So the invoice will be \$19,830.

Sorry for the delay in getting this to you. I will get it to you by the end of March for the next billing cycle. Thanks.

-----Original Message-----

From: Zachery.Dukes@amwater.com [mailto:Zachery.Dukes@amwater.com]
Sent: Monday, March 03, 2014 11:23 AM
To: Casey, Bret
Subject: RE: Invoice

Just the total in the short term for my accrual but would like the breakdown when officially submitted for payment to Share Services.

Zach

Zachery B. Dukes, P.E.
Project Manager Engineer
Kentucky American Water
2300 Richmond Road
Lexington, KY 40502

Office (859) 268-6352
Cell (859) 537-0750
zachery.dukes@amwater.com
www.amwater.com

From: "Casey, Bret" <bcasey@hazenandsawyer.com>
To: "Zachery.Dukes@amwater.com" <Zachery.Dukes@amwater.com>,
Date: 03/03/2014 11:20 AM
Subject: RE: Invoice

Yes, I'm working on that right now. Do you just need the total or a breakdown of hours?

-----Original Message-----

From: Zachery.Dukes@amwater.com [mailto:Zachery.Dukes@amwater.com]
Sent: Monday, March 03, 2014 11:19 AM
To: Casey, Bret
Subject: Invoice

Can you send me the February invoice amount today?

Thanks,
Zach

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Project Manager Engineer
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www.amwater.com

**RE: Invoice****Casey, Bret** to: Zachery.Dukes@amwater.com

03/31/2014 05:07 PM

Zach, our invoice total for March will be \$35,694. That takes us to a total of \$55,524 which is 14% of our total design fee.

-----Original Message-----

From: Casey, Bret
Sent: Monday, March 31, 2014 11:44 AM
To: 'Zachery.Dukes@amwater.com'
Subject: RE: Invoice

Zach, since I was out of the office for a few weeks, we did not get the invoice mailed to you in March. We'll send out the invoice for January/February for the \$19,830. I will get you a number this afternoon for what our March invoice will be.

-----Original Message-----

From: Casey, Bret
Sent: Monday, March 03, 2014 4:12 PM
To: 'Zachery.Dukes@amwater.com'
Subject: RE: Invoice

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-----Original Message-----

From: Zachery.Dukes@amwater.com [mailto:Zachery.Dukes@amwater.com]
Sent: Monday, March 03, 2014 11:23 AM
To: Casey, Bret
Subject: RE: Invoice

Just the total in the short term for my accrual but would like the breakdown when officially submitted for payment to Share Services.

Zach

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Lexington, KY 40502

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Cell (859) 537-0750
zachery.dukes@amwater.com
www.amwater.com

From: "Casey, Bret" <bcasey@hazenandsawyer.com>
To: "Zachery.Dukes@amwater.com" <Zachery.Dukes@amwater.com>,
Date: 03/03/2014 11:20 AM
Subject: RE: Invoice

Yes, I'm working on that right now. Do you just need the total or a breakdown of hours?

-----Original Message-----

From: Zachery.Dukes@amwater.com [mailto:Zachery.Dukes@amwater.com]

Sent: Monday, March 03, 2014 11:19 AM

To: Casey, Bret

Subject: Invoice

Can you send me the February invoice amount today?

Thanks,
Zach

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zachery.dukes@amwater.com
www.amwater.com



Re: RRS
Steinmetz, John to: Zachery.Dukes@amwater.com
Cc: Lee Czor, Blade Wyatt

04/02/2014 09:21 AM

Yes.
Thanks,
John

Zachery.Dukes@amwater.com wrote:

John,
Did you get Lee the cross section he was looking for?

Zach

Zachery B. Dukes, P.E.
Project Manager Engineer
Kentucky American Water
2300 Richmond Road
Lexington, KY 40502

Office (859) 268-6352
Cell (859) 537-0750
zachery.dukes@amwater.com
www.amwater.com

From: Lee Czor <LCzor@ThelenAssoc.com>
To: "Steinmetz, John" <jsteinmetz@hazenandsawyer.com>,
Cc: "Zachery.Dukes@amwater.com" <Zachery.Dukes@amwater.com>, Blade
Wyatt <BWyatt@ThelenAssoc.com>
Date: 04/01/2014 10:06 AM
Subject: RE: RRS

Just checked back with the drillers and it now looks like Thursday. Do you have the x-section of the structure? I got the plan view last week, but no x-section. I wanted to finalize the depth of the rock core hole based on anticipated bearing elevations. Thanks

Lee J. Czor, P.E.
Senior Geotechnical Engineer
(Embedded image moved to file: pic27152.jpg)
Thelen Associates, Inc.
125 Trade Street, Suite D
Lexington, KY 40511-2616
859-226-0761 (O)

859-226-0763 (F)
859-806-6257 (M)
lczor@thelensoc.com
www.thelensoc.com

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From: Steinmetz, John [<mailto:jsteinmetz@hazenandsawyer.com>]
Sent: Tuesday, April 01, 2014 9:30 AM
To: Lee Czor
Subject: FW: RRS

Lee – still planning to be on site tomorrow?

John

From: Casey, Bret
Sent: Tuesday, April 01, 2014 9:28 AM
To: Steinmetz, John
Cc: Green, Robert
Subject: RE: RRS

Yes, please. If things go OK, we might be able to go ahead and drill for the CT basin location but let me get back to you on that.

From: Steinmetz, John
Sent: Tuesday, April 01, 2014 8:57 AM
To: Casey, Bret
Cc: Green, Robert
Subject: RE: RRS

On Friday the plan was for them to be on site tomorrow. Want me to confirm?

From: Casey, Bret
Sent: Tuesday, April 01, 2014 8:32 AM
To: Steinmetz, John
Cc: Green, Robert
Subject: RE: RRS

Bob and I talked about the CT basin at length yesterday. I think we've boiled it down to two options. Leave it where it is shown on Lisa's last site plan version or move it to the location of the existing filter building. If KAW wants to pursue the existing filter building location, we'll likely need some additional borings on the west and east side of the building. I'll get back to you on where we want to go with this. What is Thelen's schedule to be on site?

From: Steinmetz, John
Sent: Tuesday, April 01, 2014 8:24 AM
To: Casey, Bret
Cc: Green, Robert
Subject: RE: RRS

What game?

It could be my pessimism but more likely all the negative thinking from all the talking heads who basked in UK's problems this year and slammed Calipari's one & done process.

Thx.

From: Casey, Bret
Sent: Monday, March 31, 2014 3:59 PM
To: Steinmetz, John
Cc: Green, Robert
Subject: RRS

John, did you guys make it to the site on Friday?

Have you come down from yesterday's game yet? These young cats are putting your power of negative thinking philosophy to the test!

Bret M. Casey, PE, BCEE

Senior Associate | Hazen and Sawyer
150 E. Campus View Blvd., Suite 133, Columbus, OH 43235
614 781-9655 (main) | 614 596-4155 (cell)
bcasey@hazenandsawyer.com | hazenandsawyer.com
[attachment "image001.png" deleted by Zachery B. Dukes/KAWC/AWWSC]
[attachment "oledata.mso" deleted by Zachery B. Dukes/KAWC/AWWSC]



RE:
Steinmetz, John to: Lee Czor, Zachery Dukes

04/03/2014 07:38 AM

History: This message has been replied to.

Zach - FYI

From: Steinmetz, John
Sent: Thursday, April 03, 2014 7:36 AM
To: 'Lee Czor'
Subject: RE:

Actually Zach wins, as we agreed it would be a 'Price Is Right' format. We both owe him \$1.

From: Lee Czor [<mailto:LCzor@ThelenAssoc.com>]
Sent: Wednesday, April 02, 2014 3:37 PM
To: Steinmetz, John
Subject:

John,

FYI – It looks like you, Zach and I were all wrong on the soil depths at the site...we are looking at 17-20 ft. range for overburden. I'll update you when I get the logs from the drillers.

Lee J. Czor, P.E.
Senior Geotechnical Engineer



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125 Trade Street, Suite D
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859-226-0763 (F)
859-806-6257 (M)
lczor@thelenassoc.com
www.thelenassoc.com



RE: RE:
Lee Czor to: Zachery.Dukes@amwater.com

04/03/2014 10:40 AM

Zach,
We finished everything for this round. We will be back to perform the drilling for the other two structures in the near future.

Lee J. Czor, P.E.
Senior Geotechnical Engineer

Thelen Associates, Inc.
125 Trade Street, Suite D
Lexington, KY 40511-2616
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-----Original Message-----

From: Zachery.Dukes@amwater.com [mailto:Zachery.Dukes@amwater.com]
Sent: Thursday, April 03, 2014 8:02 AM
To: jsteinmetz@hazenandsawyer.com
Cc: Lee Czor
Subject: RE:

Lee,
Your guys mentioned they may be coming back today to finish. Did they get everything completed yesterday?

Zach

Zachery B. Dukes, P.E.
Project Manager Engineer
Kentucky American Water
2300 Richmond Road
Lexington, KY 40502

Office (859) 268-6352
Cell (859) 537-0750
zachery.dukes@amwater.com
www.amwater.com

From: "Steinmetz, John" <jsteinmetz@hazenandsawyer.com>
To: Lee Czor <LCzor@ThelenAssoc.com>, Zachery Dukes
<Zachery.Dukes@amwater.com>,
Date: 04/03/2014 07:38 AM
Subject: RE:

Zach - FYI

From: Steinmetz, John
Sent: Thursday, April 03, 2014 7:36 AM
To: 'Lee Czor'
Subject: RE:

Actually Zach wins, as we agreed it would be a 'Price Is Right' format. We both owe him \$1.

From: Lee Czor [mailto:LCzor@ThelenAssoc.com]
Sent: Wednesday, April 02, 2014 3:37 PM
To: Steinmetz, John
Subject:

John,

FYI - It looks like you, Zach and I were all wrong on the soil depths at the site...we are looking at 17-20 ft. range for overburden. I'll update you when I get the logs from the drillers.

Lee J. Czor, P.E.
Senior Geotechnical Engineer
(Embedded image moved to file: pic24999.jpg) Thelen Associates, Inc.
125 Trade Street, Suite D
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859-806-6257 (M)
lczor@thelenassoc.com
www.thelenassoc.com



CT Basin Options

Casey, Bret to: Zachery.Dukes@amwater.com

04/03/2014 03:47 PM

Zach, as we discussed yesterday, we think there are two options for locating the new CT basin. Attached is a summary of the two options. We are recommending keeping the CT basin up on the hill and providing some additional storage for backwash volume. We have not put together a detailed cost of this backwash option, but it will likely be less expensive than the standalone backwash pump station that was included in our original proposal. Let me know if you want to get on a quick call tomorrow or early next walk to walk through this. Thanks!

Bret M. Casey, PE, BCEE

Senior Associate | Hazen and Sawyer
150 E. Campus View Blvd., Suite 133, Columbus, OH 43235
614 781-9655 (main) | 614 596-4155 (cell)
bcasey@hazenandsawyer.com | hazenandsawyer.com



CT Basin Options.docx 201404031535.pdf



Spent Backwash Holding Tanks

Green, Robert to: Kevin.Kruchinski@amwater.com

04/09/2014 08:57 AM

Cc: "Casey, Bret", "Zachery Dukes (zachery.dukes@amwater.com)"

History: This message has been replied to.

Kevin,

Following up on that call I made to you this morning. Please let me know how much volume those spent backwash holding tanks can accommodate. As you know, we are proposing about 100K gallons per backwash. Wanting to make sure we have capacity in those tanks.

Thank you.

Robert A. Green, PE

Associate | Hazen and Sawyer

11311 Cornell Park Drive, Ste. 135, Cincinnati, OH 45242

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rgreen@hazenandsawyer.com | hazenandsawyer.com

**RE: Spent Backwash Holding Tanks****Green, Robert** to: Zachery.Dukes@amwater.com

04/09/2014 09:51 AM

Cc: "Casey, Bret", "Kevin.Kruchinski@amwater.com"

History:

This message has been replied to.

So from the reading each tank is approx. 350K gallon.....correct?

-----Original Message-----

From: Zachery.Dukes@amwater.com [mailto:Zachery.Dukes@amwater.com]

Sent: Wednesday, April 09, 2014 9:48 AM

To: Green, Robert

Cc: Casey, Bret; Kevin.Kruchinski@amwater.com

Subject: Re: Spent Backwash Holding Tanks

Further reading:

Each wash water waste tank is 50 feet in diameter with a center depth of 27 feet and an approximate volume of 350,000 gallons. Each tank is equipped with two (2) submersible 250 gpm residuals pumps which discharge periodically to the thickeners. Three (3) vertical turbine pumps are also installed in each tank which direct supernatant to Lake Ellerslie. As part of the 2008 improvements, a wall was constructed to separate the supernatant pump wells from the settling area of the tanks. Decant pipes were installed with floats and swivel joints to withdraw settled water from 2 feet below the surface of the tanks. Each supernatant pump is rated for 1,600 gpm. A venturi tube located in a vault next to the tanks meters the discharged supernatant. Discharge of supernatant from the wash water tanks and dewatering process to Lake Ellerslie is granted under a NPDES permit. The NPDES permit requires that the total suspended solids (TSS) of the discharge be less than 30 mg/L. Samples are collected monthly for evaluating the TSS of the discharge. While sampling has shown that discharge requirements are being met, it is believed that TSS in the discharge is greater than 30 mg/L at the beginning of the discharge cycle, which may indicate that insufficient time is provided for settling before supernatant withdrawal, and at the end of the discharge cycle, when the water level in the wash water tanks is low and close to the sludge at the bottom of the tanks. Dredging of Lake Ellerslie has to be performed approximately every two years due to deposition of solids and it is costly to perform. At low water elevations, the center line elevation of the decant piping is only about 3.5 feet above the invert of the wash water tank. This could result in the discharge of solids with the supernatant. This issue can be addressed by modifying the controls for the motor operated plug valve on the decant pipe so that the valve is closed when the water level in the wash water tank is higher than the current set elevation. Additional operation modifications can be made so that the timing of the decant is adjusted to allow for proper settling time prior to pumping of the supernatant. Since 2003, the waste stream to Lake Ellerslie is dechlorinated with sodium thiosulfate prior to discharge.

-Zach

Zachery B. Dukes, P.E.
Project Manager Engineer
Kentucky American Water
2300 Richmond Road
Lexington, KY 40502

Office (859) 268-6352

Cell (859) 537-0750
zachery.dukes@amwater.com
www.amwater.com

From: "Green, Robert" <rgreen@hazenandsawyer.com>
To: "Kevin.Kruchinski@amwater.com" <Kevin.Kruchinski@amwater.com>,
Cc: "Casey, Bret" <bcasey@hazenandsawyer.com>, "Zachery Dukes
(zachery.dukes@amwater.com)" <zachery.dukes@amwater.com>
Date: 04/09/2014 08:57 AM
Subject: Spent Backwash Holding Tanks

Kevin,

Following up on that call I made to you this morning. Please let me know how much volume those spent backwash holding tanks can accommodate. As you know, we are proposing about 100K gallons per backwash. Wanting to make sure we have capacity in those tanks.

Thank you.

Robert A. Green, PE

Associate | Hazen and Sawyer
11311 Cornell Park Drive, Ste. 135, Cincinnati, OH 45242
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469-2751 (fax)
rgreen@hazenandsawyer.com | hazenandsawyer.com

**Re: Spent Backwash Holding Tanks**

Ronald K Kruchinski to: Green, Robert
Cc: Zachery B. Dukes, "Casey, Bret"

04/09/2014 10:01 AM

Agree

Kevin Kruchinski
Production Superintendent
Kentucky American Water
2300 Richmond Rd Lexington, KY 40502
r.kruchinski@amwater.com
P 859-335-3418 M 859-361-1770

For quality and value, tap water is the clear choice.

On Apr 9, 2014, at 9:51 AM, "Green, Robert" <rgreen@hazenandsawyer.com> wrote:

So from the reading each tank is approx. 350K
gallon.....correct?

-----Original Message-----

From: Zachery.Dukes@amwater.com [
mailto:Zachery.Dukes@amwater.com]
Sent: Wednesday, April 09, 2014 9:48 AM
To: Green, Robert
Cc: Casey, Bret; Kevin.Kruchinski@amwater.com
Subject: Re: Spent Backwash Holding Tanks

Further reading:

Each wash water waste tank is 50 feet in diameter with a center depth of 27 feet and an approximate volume of 350,000 gallons. Each tank is equipped with two (2) submersible 250 gpm residuals pumps which discharge periodically to the thickeners. Three (3) vertical turbine pumps are also installed in each tank which direct supernatant to Lake Ellerslie. As part of the 2008 improvements, a wall was constructed to separate the supernatant pump wells from the settling area of the tanks. Decant pipes were installed with floats and swivel joints to withdraw settled water from 2 feet below the surface of the tanks. Each supernatant pump is rated for 1,600 gpm. A venturi tube located in a vault next to the tanks meters the discharged supernatant. Discharge of supernatant from the wash water tanks and dewatering process to Lake Ellerslie is granted under a NPDES permit. The NPDES permit requires that the total suspended solids (TSS) of the discharge be less than 30 mg/L. Samples are

collected monthly for evaluating the TSS of the discharge. While sampling has shown that discharge requirements are being met, it is believed that TSS in the discharge is greater than 30 mg/L at the beginning of the discharge cycle, which may indicate that insufficient time is provided for settling before supernatant withdrawal, and at the end of the discharge cycle, when the water level in the wash water tanks is low and close to the sludge at the bottom of the tanks. Dredging of Lake Ellerslie has to be performed approximately every two years due to deposition of solids and it is costly to perform. At low water elevations, the center line elevation of the decant piping is only about 3.5 feet above the invert of the wash water tank. This could result in the discharge of solids with the supernatant. This issue can be addressed by modifying the controls for the motor operated plug valve on the decant pipe so that the valve is closed when the water level in the wash water tank is higher than the current set elevation. Additional operation modifications can be made so that the timing of the decant is adjusted to allow for proper settling time prior to pumping of the supernatant. Since 2003, the waste stream to Lake Ellerslie is dechlorinated with sodium thiosulfate prior to discharge.

-Zach

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zachery.dukes@amwater.com
www.amwater.com

From: "Green, Robert" <rgreen@hazenandsawyer.com>
To: "Kevin.Kruchinski@amwater.com" <Kevin.Kruchinski@amwater.com>,
Cc: "Casey, Bret" <bcasey@hazenandsawyer.com>,
"Zachery Dukes
(zachery.dukes@amwater.com)" <
zachery.dukes@amwater.com>
Date: 04/09/2014 08:57 AM
Subject: Spent Backwash Holding Tanks

Kevin,

Following up on that call I made to you this morning. Please let me know how much volume those spent backwash holding tanks can accommodate. As you know, we are proposing about 100K gallons per backwash. Wanting to make sure we have capacity in those tanks.

Thank you.

Robert A. Green, PE

Associate | Hazen and Sawyer

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(cell) | 513

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**30% submittal and next meeting****Casey, Bret** to: Zachery.Dukes@amwater.com

04/09/2014 03:34 PM

Zach, we are working towards getting our drawings updated to submit the 30% at the end of next week. We anticipate having updated filter building drawings, CT basin drawings and site layout completed for this submittal. We'll need to resolve the issue on the CT basin and backwash storage in order to update the CT basin and site layout (CT basin location). Give me a call when you get a chance to talk through the options that I emailed to you last week.

If we submit the updated drawings to you next Friday (4/18), will that still allow us to have our review meeting on 4/22? We'd like to keep that date if possible since we'll need to submit to KDOW by 5/10 (45 days prior to 6/24 PSC submittal). If yes, what time would you like to have that meeting? We should allow a few hours to go through the issues. I was planning on having our architect (Bill Russell) come to the meeting to talk through the architectural layout of the new filter building.

Bret M. Casey, PE, BCEE

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150 E. Campus View Blvd., Suite 133, Columbus, OH 43235
614 781-9655 (main) | 614 596-4155 (cell)
bcasey@hazenandsawyer.com | hazenandsawyer.com



Filter Building

Steinmetz, John to: Zachery Dukes
Cc: Steve Garland

04/11/2014 08:19 AM

History: This message has been replied to.

Zach – would you mind if Steve from Integrated and I came to the site around 2:00 this afternoon?
We'd like to look at the structure that we're looking to tie the backwash discharge into .

Thanks,
John

John B. Steinmetz, PE

Senior Associate | Hazen and Sawyer
444 Lewis Hargett Circle, Suite 260, Lexington, KY 40503
859 219-1126 (main) | 859 421-9695 (cell)
jsteinmetz@hazenandsawyer.com | hazenandsawyer.com



CT Basin Sizing

Zachery Dukes
Green, Robert to: (zachery.dukes@amwater.com),
 David.Shehee@amwater.com,
 Cc: "Casey, Bret", "Melton, Lisa"

04/15/2014 07:44 AM

Zach et all,

We have looked a little closer at the water quality data provided for purposes of sizing the CT Basin . Average temperatures for Mar and Apr for 2013 were 45 F and 57 F, respectively. Average pH on top of the filter is 7.6. Free chlorine residual a little tougher to determine as the reported top of filter chlorine is free, and the plant tap is total due to the conversion to chloramines. In our last progress meeting there was discussion of base loading the plant at a winter (Nov – Mar) flow of 6 to 8 mgd, and summer flow of 16 to 18 mgd. We continue to believe a worst case scenario would be a higher spring flow while the water temp is colder. Therefore, we recommend using the following criteria as a conservative (but not as conservative as we previously were assuming) approach:

- Temp. = 45 F (7.7 C)
- pH = 7.6
- Free Cl residual at Basin effluent = 2 mg/L
- Flow rate = 18 mgd
- Baffle Factor = 0.7

With these assumptions, the CT required for 0.5 log inactivation would be 30 mg-min/L. the resulting CT Basin size would be 275,000 gallons.

We wanted to get consensus with you on these parameters and basin size for CT only before we move forward. Bret will be calling you to discuss this matter and our concept of adding the backwash volume as an appendage to the CT basin.

Robert A. Green, PE

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 11311 Cornell Park Drive, Ste. 135, Cincinnati, OH 45242
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Monthly Temp Averages		Temp (avg) deg F
2013	Jan	40.0
	Feb	43.3
	March	45.1
	April	57.1
	May	64.6
	June	74.7
	July	74.7
	Aug	77.0
	Sept	76.3

	Oct	66.8
	Nov	53.3
	Dec	43.7
2014	Jan	38.6
	Feb	40.0



Flow&Temp Graph_04-11-2014.pdf Flow&pH Graph_04-11-2014.pdf



Re: RRS Filter Building - CT Basin Options 
Ronald K Kruchinski to: Zachery B. Dukes
Cc: Brent E O'Neill, Justin D Sensabaugh, Keith L Cartier

04/17/2014 11:02 AM

I'm okay with the proposed solution.

Kevin Kruchinski
Kentucky American Water
2300 Richmond Rd Lexington, KY 40502
r.kruchinski@amwater.com
P 859-335-3418 M 859-361-1770

For quality and value, tap water is the clear choice

Zachery B. Dukes [Guys, Attached is a summary of the two options....](#) 04/16/2014 11:14:03 AM

From: Zachery B. Dukes/KAWC/AWWSC
To: Brent E O'Neill/SERVCO/AWWSC@AWW, Ronald K Kruchinski/KAWC/AWWSC@AWW, Justin D Sensabaugh/KAWC/AWWSC, Keith L Cartier/KAWC/AWWSC@AWW,
Date: 04/16/2014 11:14 AM
Subject: RRS Filter Building - CT Basin Options

Guys,
Attached is a summary of the two options. Hazen recommends keeping the CT basin up on the hill and providing some additional storage for backwash volume (in the form of a 100,000 - 150,000 gallon tank adjacent to the CT Basin). They have not put together a detailed cost of this backwash option, but believe it will likely be less expensive than the stand-alone backwash pump station that was included in their original proposal. Their reference to a possible, future Clearwell #1 (the one at the Control Room, feeding the high-service pumps) is something we should discuss. It looks as though the only way it could be justified now is if KDOW requires a certain amount of storage at the plant. Let me know your thoughts.

[attachment "CT Basin Options - Drawings.pdf" deleted by Ronald K Kruchinski/KAWC/AWWSC]
[attachment "CT Basin Options.docx" deleted by Ronald K Kruchinski/KAWC/AWWSC]

Thanks,
Zach

Zachery B. Dukes, P.E.
Project Manager Engineer
Kentucky American Water
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Lexington, KY 40502

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Cell (859) 537-0750
zachery.dukes@amwater.com
www.amwater.com



RRS-30% Submittal

Melton, Lisa to: Zachery.Dukes@amwater.com
Cc: "Casey, Bret", "Green, Robert"

04/18/2014 02:43 PM

History: This message has been forwarded.

Afternoon Zach,

Attached are the 30% drawings for review. Hard copies are in the mail and should arrive Monday.

Look forward to meeting with you on Tuesday.

Have a great weekend,

Lisa

Lisa Melton

Assistant Engineer | Hazen and Sawyer
11311 Cornell Park Drive, Suite 135, Cincinnati, OH 45242
513 469-2750 (main) | 513 469-5158 (direct)
lmelton@hazenandawyer.com | hazenandsawyer.com



KAW RRS_30% Client-Submittal.pdf



Agenda for tomorrow

Casey, Bret to: Zachery.Dukes@amwater.com

04/21/2014 03:30 PM

History:

This message has been replied to.

Zach, attached is the agenda for tomorrow's meeting. We are going to bring a laptop and a projector so we can put the drawings up on the wall for discussion. We will see you tomorrow morning at 8. Are we meeting in the same conference room as the last meeting?



RRS Review Meeting 04-22-2014 agenda.docx



Architectural Rendering

Casey, Bret to: Zachery.Dukes@amwater.com
Cc: "Green, Robert"

04/23/2014 11:22 AM

History: This message has been replied to.

Zach, Bob and I spoke to Bill Russell yesterday afternoon. He is our architect in Raleigh and was involved in the project that we did for American Water at Champaign as well as Hidden Lake (INAW). For both of those projects we did renderings (see attached). These renderings were not pasted into a photo, they were just standalone renderings. In talking to Bill, the effort to include the rendering in a photo is significantly more than a standalone rendering (maybe double or triple). I know that the discussion was to get an idea of what the filter building would look like from the road. In order to accomplish this, we would need to paste the rendering into a photo and make the rendering a photo realistic rendering which requires the additional effort. Take a look at the attached renderings. If something similar would be acceptable, we can accomplish this with our anticipated design effort. If we are going to generate a photo realistic rendering, it will likely be beyond our anticipated design budget for architectural design. We can discuss this more on the phone on Friday. I will put together a brief agenda for our call on Friday. Thanks.

Bret M. Casey, PE, BCEE

Senior Associate | Hazen and Sawyer
150 E. Campus View Blvd., Suite 133, Columbus, OH 43235
614 781-9655 (main) | 614 596-4155 (cell)
bcasey@hazenandsawyer.com | hazenandsawyer.com



champaign-se-persp.jpg



se_compiled-2010-nov-30.pdf

**RE: Architectural Rendering****Casey, Bret** to: Zachery.Dukes@amwater.com

Cc: "Green, Robert"

04/23/2014 03:02 PM

History: This message has been replied to.

Good. Thanks for getting back to me.

I have a few questions on the current backwash. Trying to figure out if your existing backwash water has chlorine or chloramines in it. Is Kevin the right person to talk to about specifics?

-----Original Message-----

From: Zachery.Dukes@amwater.com [mailto:Zachery.Dukes@amwater.com]

Sent: Wednesday, April 23, 2014 11:25 AM

To: Casey, Bret

Cc: Green, Robert

Subject: Re: Architectural Rendering

A stand alone rendering will probably be fine as long as it accurately relays the view from Richmond Road.

Zachery B. Dukes, P.E.
Project Manager Engineer
Kentucky American Water
2300 Richmond Road
Lexington, KY 40502

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Cell (859) 537-0750
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www.amwater.com

From: "Casey, Bret" <bcasey@hazenandsawyer.com>
To: "Zachery.Dukes@amwater.com" <Zachery.Dukes@amwater.com>,
Cc: "Green, Robert" <rgreen@hazenandsawyer.com>
Date: 04/23/2014 11:22 AM
Subject: Architectural Rendering

Zach, Bob and I spoke to Bill Russell yesterday afternoon. He is our architect in Raleigh and was involved in the project that we did for American Water at Champaign as well as Hidden Lake (INAW). For both of those projects we did renderings (see attached). These renderings were not pasted into a photo, they were just standalone renderings. In talking to Bill, the effort to include the rendering in a photo is significantly more than a standalone rendering (maybe double or triple). I know that the discussion was to get an idea of what the filter building would look like from the road. In order to accomplish this, we would need to paste the rendering into a photo and make the rendering a photo realistic rendering which requires the additional effort. Take a look at the attached renderings. If something similar would be acceptable, we can accomplish this with our anticipated design effort. If we are going to generate a photo realistic rendering, it will likely be beyond our anticipated design budget for architectural design. We can discuss this more on the phone on Friday. I will put together a brief agenda for our call on Friday.

Thanks.

Bret M. Casey, PE, BCEE

Senior Associate | Hazen and Sawyer

150 E. Campus View Blvd., Suite 133, Columbus, OH 43235

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hazenandsawyer.com [attachment "champaign-se-persp.jpg" deleted by Zachery B. Dukes/KAWC/AWWSC] [attachment "se_compiled-2010-nov-30.pdf" deleted by Zachery B. Dukes/KAWC/AWWSC]

**RE: Underdrains****Casey, Bret** to: Zachery.Dukes@amwater.com, Green, Robert

04/25/2014 09:59 AM

History:

This message has been replied to.

Thanks Zach. Would this be a sole source or would we also specify the comparable Leopold underdrain?

-----Original Message-----

From: Zachery.Dukes@amwater.com [mailto:Zachery.Dukes@amwater.com]
Sent: Friday, April 25, 2014 9:33 AM
To: Green, Robert; Casey, Bret
Subject: Underdrains

American Water's standard has been the Robert's Infinity underdrain with gravel and a fix grid air system at the sand/gravel interface. The infinity system is a plastic block underdrain, but they are lower profile than universal plastic blocks and are custom fabricated to the length of the filter box so it eliminates the intermediate gaskets.

Zachery B. Dukes, P.E.
Project Manager Engineer
Kentucky American Water
2300 Richmond Road
Lexington, KY 40502

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zachery.dukes@amwater.com
www.amwater.com



RE: HGL
Casey, Bret to: Zachery.Dukes@amwater.com

04/29/2014 01:37 PM

Zach, attached is the draft HGL. This is still being reviewed so it's not final but it should be close.

-----Original Message-----

From: Zachery.Dukes@amwater.com [mailto:Zachery.Dukes@amwater.com]
Sent: Monday, April 28, 2014 3:47 PM
To: Casey, Bret
Subject: HGL

Do you guys have a HGL sheet you can send me yet?

Zachery B. Dukes, P.E.
Project Manager Engineer
Kentucky American Water
2300 Richmond Road
Lexington, KY 40502

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Cell (859) 537-0750
zachery.dukes@amwater.com
www.amwater.com



RRS-Hydraulic Profile.pdf

**Invoice for April****Casey, Bret** to: Zachery.Dukes@amwater.com

04/30/2014 07:27 PM

History:

This message has been forwarded.

Zach our total invoice for April will be \$59,490. That takes us to a total to date of \$115.014 which is 29% of our budget.

Bret M. Casey, PE, BCEE

Senior Associate | Hazen and Sawyer
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614 781-9655 (main) | 614 596-4155 (cell)
bcasey@hazenandsawyer.com | hazenandsawyer.com



RRS - Updated design information

Melton, Lisa to: Zachery.Dukes@amwater.com
Cc: "Casey, Bret", "Green, Robert"

05/07/2014 10:25 AM

History: This message has been replied to and forwarded .

Morning Zach,

Attached is an updated set of drawings and specifications for the WTP Improvements. With the exception of adding the civil drawings, this reflects what we will provide in the KDOW submittal. Please review and comment as you have time.

We will be sending the regulatory submittal out on Friday.

Thank You,
Lisa

Lisa Melton

Assistant Engineer | Hazen and Sawyer
7870 E. Kemper Road, Suite 300, Cincinnati, OH 45249
513 469-2750 (main) | 513 469-5158 (direct)
lmelton@hazenandawyer.com | hazenandsawyer.com



KAW-RRS-Progress-Set_2014-05-06.pdf KAW-RRS_Specs_KDOW.PDF



RE: Schedule and CM RFPs

Casey, Bret to: Zachery.Dukes@amwater.com

05/14/2014 01:38 PM

Zach, there are a few items I want to discuss with you when you have a few minutes. Let me know when would be a good time to talk. The items are...

- Sampling – we will have turbidimeters and chlorine analyzers associated with the filter building and CT basin. I am thinking that we would put the chlorine analyzers on the upper level with a sample sink. Do you need any of these samples to go back to the lab or can we keep them all local in the filter building?
- We've talked about eliminating the pre-chlorine. I know that KDOW likes to have pre-chlorine. The drawings we just submitted to KDOW show the first chlorine application point post filter. I'm wondering if we need to point out to KDOW that we are proposing to eliminate pre-chlorine. The one related item to this decision is related to the ventilation in the filter building. If we eliminate pre-chlorine, we could probably eliminate ventilation in the upper level of the filter building and just have electric unit heaters. If however, KDOW pushes for chlorine ahead of the filters we would typically like to ventilate that space to avoid corrosion issues from the chlorine. This would drive us to an air handler located outside (probably gas fired). I would be interested how you handled this on KRS2 plant.
- During our electrical/I&C visit, Mike Maggard mentioned that he wants to have filter consoles with push buttons and lights for all the filter control valves (in addition to the PLC touch screen). This provides backup if you lose the PLC. I want to confirm that decision with you. Mike did say that we can take half of the existing filters off-line (so 8) and move the Emerson controls over to our new filter building. We'll have to look at the timing of that to make sure we do it during a time when you can survive with 8 filters. This allows us to reuse the Emerson controls that were recently installed and save a fair amount of money.
- There are some other equipment items I want to discuss with you as well (filter media, blowers, valve actuators).

Thanks.

From: Casey, Bret
Sent: Friday, May 09, 2014 4:54 PM
To: Zachery.Dukes@amwater.com
Subject: Schedule and CM RFPs

Zach, we are working on our schedule the next submittal. Backing up from the 6/24 submittal to PSC, the schedule looks like this...

60% Submittal to KAW	6/2
60% Review meeting with KAW	week of 6/9
PSC submittal	6/24

Let me know what your schedule looks like for a review meeting the week of June 9. I will be in Boston for ACE on the 9th and 10th, but could meet on the 12th or 13th if that works for KAW.

I also wanted to check with you to see where things stand with the CM RFP. We plan to get Gonzalez (our subconsultant) engaged in the next week or two to begin their work with constructability reviews. They will also assist us in review of the CM RFP.

Thanks Zach. Have a good weekend.

Bret M. Casey, PE, BCEE

Senior Associate | Hazen and Sawyer
150 E. Campus View Blvd., Suite 133, Columbus, OH 43235
614 781-9655 (main) | 614 596-4155 (cell)
bcasey@hazenandsawyer.com | hazenandsawyer.com



Draft Renderings of the RRS Filter Building

Brent O'Neill - Kentucky American

Casey, Bret to: (brent.oneill@amwater.com) ,
Zachery.Dukes@amwater.com

05/19/2014 03:59 PM

History: This message has been replied to.

Attached is our first cut at the renderings of the filter building (and CT Basin) for your review. I confirmed that the roofs are sloped at 1:12 which is hard to see from the ground perspective. After you've had a chance to review, let us know if you have comments. If you'd prefer we could set up a conference call this week to go over any architectural questions you have.

Bret M. Casey, PE, BCEE

Senior Associate | Hazen and Sawyer
150 E. Campus View Blvd., Suite 133, Columbus, OH 43235
614 781-9655 (main) | 614 596-4155 (cell)
bcasey@hazenandsawyer.com | hazenandsawyer.com



001-Richmond-road-NE-view.pdf 002-Richmond-road-NW-view.pdf



RRS - Chemical Feed Systems

Melton, Lisa to: Zachery.Dukes@amwater.com
Cc: "Casey, Bret", "Green, Robert" , "Novak, Kyle C"

05/20/2014 11:15 AM

History: This message has been replied to and forwarded .

Morning Zach,

Attached is a data request for additional information on the various chemical feed systems around the plant. Depending on what information you have on file, a site visit may be easier to confirm the details. Feel free to post information to the FTP site or email.

Let me know if you have any questions.

Thank You,

Lisa Melton

Assistant Engineer | Hazen and Sawyer
7870 E. Kemper Road, Suite 300, Cincinnati, OH 45249
513 469-2750 (main) | 513 469-5158 (direct)
lmelton@hazenandawyer.com | hazenandsawyer.com



Richmond Road Station data request_05-16-2014.docx



RE: Geotech Report

Steinmetz, John to: Zachery.Dukes@amwater.com
Cc: "Casey, Bret"

05/20/2014 02:14 PM

It's being completed now. I'll check the timeframe.

Thanks,
John

-----Original Message-----

From: Zachery.Dukes@amwater.com [mailto:Zachery.Dukes@amwater.com]
Sent: Tuesday, May 20, 2014 2:13 PM
To: Steinmetz, John
Cc: Casey, Bret
Subject: Geotech Report

John,
Do we have a geotech report put together yet that I can reference in the RFP?

Zach

Zachery B. Dukes, P.E.
Project Manager Engineer
Kentucky American Water
2300 Richmond Road
Lexington, KY 40502

Office (859) 268-6352
Cell (859) 537-0750
zachery.dukes@amwater.com
www.amwater.com

Fw: Arc Flash Study

Michael D Maggard to: Zachery.Dukes

05/27/2014 02:05 PM

Darryls contact info is below.

Mike Maggard
Sr. Specialist Maintenance Service
Kentucky American Water
2300 Richmond Rd.
Lexington, Ky. 40502
office (859) 268-6348
cell (859)321-3674
e-mail michael.maggard@amwater.com

----- Forwarded by Michael D Maggard/KAWC/AWWSC on 05/27/2014 02:04 PM -----

From: "Evans, Darryl W" <DEvans@hazenandsawyer.com>
To: "Michael.Maggard@amwater.com" <Michael.Maggard@amwater.com>,
Date: 05/27/2014 02:02 PM
Subject: RE: Arc Flash Study

Mike,

Any way you could get your hands on GP209 for month of July and August 2012?
GP193 from January of 2014?

2012 was brutally hot so I would think that would be close to a worst case for
the high service pump station. January of 2014 was brutally cold and may be
close to a worst case for old filter bldg., chem bldg. 1 + 2.

Call if you need to discuss.

Darryl W. Evans, PE

Associate | Hazen and Sawyer
2304 Hurstbourne Village Drive, Suite 1100, Louisville, KY 40299
(502) 290-6187 (office)
(502) 292-9090 (cell)
devans@hazenandsawyer.com

-----Original Message-----

From: Michael.Maggard@amwater.com [mailto:Michael.Maggard@amwater.com]
Sent: Monday, May 05, 2014 1:03 PM
To: Evans, Darryl W
Subject: RE: Arc Flash Study

Daryll,

3. Yes we do have a gas service
4. Both Blower and Backwash Pump are 30 HP 5. Please see attachments

(See attached file: GP209.tiff)(See attached file: GP193.Tiff)

Mike Maggard
Sr. Specialist Maintenance Service
Kentucky American Water
2300 Richmond Rd.
Lexington, Ky. 40502
office (859) 268-6348
cell (859)321-3674
e-mail michael.maggard@amwater.com

From: "Evans, Darryl W" <DEvans@hazenandsawyer.com>
To: "Michael.Maggard@amwater.com" <Michael.Maggard@amwater.com>,
Date: 05/01/2014 05:05 PM
Subject: RE: Arc Flash Study

Mike,

The loads on PP-FB are not individual heaters. Each heater is listed 3 times, once for each phase of the 3-phase heater. So the load is actually 1/3 of what I thought. Not the way I'm used to seeing a panelboard schedule but nonetheless, I feel like an idiot. My apologies if you have wasted any time on this.

Aside from questions 1 and 2, the other questions still valid.

Darryl W. Evans, PE

Associate | Hazen and Sawyer
2304 Hurstbourne Village Drive, Suite 1100, Louisville, KY 40299
(502) 290-6187 (office)
(502) 292-9090 (cell)
devans@hazenandsawyer.com

-----Original Message-----

From: Evans, Darryl W
Sent: Thursday, May 01, 2014 8:31 AM
To: 'Michael.Maggard@amwater.com'
Subject: RE: Arc Flash Study

Good info. Thanks.

On page 173 of the pdf file is a schedule for PNL PP-FB. The heating load dwarfs anything else. I had a few questions:

1. Is this panelboard in the filter building?
2. Is that schedule accurate? The connected heating load alone far exceeds the capacity of the 300KVA transformer. I know that it is unlikely that all will be on at the same time but its still a lot compared to the transformer size.
3. Does the plant have a gas service? If yes, potentially we could explore using it to supply building heat.
4. Do you know the horsepower of the existing blower and backwash pump? If it is in the report somewhere I apologize but I did not see it.
5. Do you have utility bills for transformers GP193 (300KVA feeding Filter Bldg and Chem Bldgs) and GP209 (1500KVA feeding pump station)? Or the name of a contact at KU that I could work with to get them?

I'm trying to avoid another service but now concerned that electric heat could be a deal breaker.

Thanks for your help. I look forward to working with you.

Darryl W. Evans, PE

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2304 Hurstbourne Village Drive, Suite 1100, Louisville, KY 40299
(502) 290-6187 (office)
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devans@hazenandsawyer.com

-----Original Message-----

From: Michael.Maggard@amwater.com [mailto:Michael.Maggard@amwater.com]
Sent: Wednesday, April 30, 2014 12:45 PM
To: Evans, Darryl W
Subject: Arc Flash Study

Darryl,

Attached is the arc flash study for Richmond Road Station. You will find the transformer KVA rating in Appendix I.

(See attached file: KAW Richmond Road Master Report rev0.pdf)

Mike Maggard
Sr. Specialist Maintenance Service
Kentucky American Water
2300 Richmond Rd.
Lexington, Ky. 40502
office (859) 268-6348
cell (859)321-3674
e-mail michael.maggard@amwater.com

**RE: RRS Filter Building****Evans, Darryl W** to: Zachery.Dukes@amwater.com

05/27/2014 02:26 PM

History: This message has been replied to.

Okay. Are you available for a call?

Darryl W. Evans, PE

Associate | Hazen and Sawyer
2304 Hurstbourne Village Drive, Suite 1100, Louisville, KY 40299
(502) 290-6187 (office)
(502) 292-9090 (cell)
devans@hazenandsawyer.com

-----Original Message-----

From: Zachery.Dukes@amwater.com [mailto:Zachery.Dukes@amwater.com]
Sent: Tuesday, May 27, 2014 2:25 PM
To: Evans, Darryl W
Subject: RRS Filter Building

Darryl,

Please run all questions regarding the filter building through me. I at least need to be Cc(ed) on correspondences with Mike Maggard, David Shehee and the like.

Thanks,
Zach

Zachery B. Dukes, P.E.
Project Manager Engineer
Kentucky American Water
2300 Richmond Road
Lexington, KY 40502

Office (859) 268-6352
Cell (859) 537-0750
zachery.dukes@amwater.com
www.amwater.com

RE: Arc Flash Study 

Michael D Maggard to: Evans, Darryl W
<DEvans@hazenandsawyer.com>

05/27/2014 02:40 PM

Cc: Zachery.Dukes

Darryll,

Attached are the bills you requested.
I have copied Zach Dukes on this email, as he has requested to be cc'd on our correspondences.



GP193_1-29-2014.Tiff GP209_7-30-2012.Tiff GP209_8-30-2012.Tiff

Mike Maggard
Sr. Specialist Maintenance Service
Kentucky American Water
2300 Richmond Rd.
Lexington, Ky. 40502
office (859) 268-6348
cell (859)321-3674
e-mail michael.maggard@amwater.com

"Evans, Darryl W"

Mike, Any way you could get your hands on GP2...

05/27/2014 02:02:01 PM

From: "Evans, Darryl W" <DEvans@hazenandsawyer.com>
To: "Michael.Maggard@amwater.com" <Michael.Maggard@amwater.com>,
Date: 05/27/2014 02:02 PM
Subject: RE: Arc Flash Study

Mike,

Any way you could get your hands on GP209 for month of July and August 2012?
GP193 from January of 2014?

2012 was brutally hot so I would think that would be close to a worst case for
the high service pump station. January of 2014 was brutally cold and may be
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Call if you need to discuss.

Darryl W. Evans, PE

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(502) 292-9090 (cell)
devans@hazenandsawyer.com

-----Original Message-----

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Sent: Monday, May 05, 2014 1:03 PM
To: Evans, Darryl W
Subject: RE: Arc Flash Study

Darryll,

3. Yes we do have a gas service
4. Both Blower and Backwash Pump are 30 HP
5. Please see attachments

(See attached file: GP209.tiff)(See attached file: GP193.Tiff)

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Kentucky American Water
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Lexington, Ky. 40502
office (859) 268-6348
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e-mail michael.maggard@amwater.com

From: "Evans, Darryll W" <DEvans@hazenandsawyer.com>
To: "Michael.Maggard@amwater.com" <Michael.Maggard@amwater.com>,
Date: 05/01/2014 05:05 PM
Subject: RE: Arc Flash Study

Mike,

The loads on PP-FB are not individual heaters. Each heater is listed 3 times, once for each phase of the 3-phase heater. So the load is actually 1/3 of what I thought. Not the way I'm used to seeing a panelboard schedule but nonetheless, I feel like an idiot. My apologies if you have wasted any time on this.

Aside from questions 1 and 2, the other questions still valid.

Darryll W. Evans, PE

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2304 Hurstbourne Village Drive, Suite 1100, Louisville, KY 40299
(502) 290-6187 (office)
(502) 292-9090 (cell)
devans@hazenandsawyer.com

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To: 'Michael.Maggard@amwater.com'
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Sent: Wednesday, April 30, 2014 12:45 PM
To: Evans, Darryl W
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(See attached file: KAW Richmond Road Master Report rev0.pdf)

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2300 Richmond Rd.
Lexington, Ky. 40502
office (859) 268-6348
cell (859)321-3674
e-mail michael.maggard@amwater.com



RE: Arc Flash Study

Evans, Darryl W to: Michael.Maggard@amwater.com
Cc: "Zachery.Dukes@amwater.com"

05/27/2014 02:43 PM

10-4. Just got off the phone with Zach.
Zach, thanks but never mind. Mike was working on it as we spoke.

Darryl W. Evans, PE

Associate | Hazen and Sawyer
2304 Hurstbourne Village Drive, Suite 1100, Louisville, KY 40299
(502) 290-6187 (office)
(502) 292-9090 (cell)
devans@hazenandsawyer.com

-----Original Message-----

From: Michael.Maggard@amwater.com [mailto:Michael.Maggard@amwater.com]
Sent: Tuesday, May 27, 2014 2:40 PM
To: Evans, Darryl W
Cc: Zachery.Dukes@amwater.com
Subject: RE: Arc Flash Study

Daryll,

Attached are the bills you requested.
I have copied Zach Dukes on this email, as he has requested to be cc'd on our correspondences.

(See attached file: GP193_1-29-2014.Tiff)(See attached file:
GP209_7-30-2012.Tiff)(See attached file: GP209_8-30-2012.Tiff)

Mike Maggard
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From: "Evans, Darryl W" <DEvans@hazenandsawyer.com>
To: "Michael.Maggard@amwater.com" <Michael.Maggard@amwater.com>,
Date: 05/27/2014 02:02 PM
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devans@hazenandsawyer.com

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Date: 05/01/2014 05:05 PM
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(502) 290-6187 (office)

(502) 292-9090 (cell)
devans@hazenandsawyer.com

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To: 'Michael.Maggard@amwater.com'
Subject: RE: Arc Flash Study

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Thanks for your help. I look forward to working with you.

Darryl W. Evans, PE

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(502) 290-6187 (office)
(502) 292-9090 (cell)
devans@hazenandsawyer.com

-----Original Message-----

From: Michael.Maggard@amwater.com [mailto:Michael.Maggard@amwater.com]
Sent: Wednesday, April 30, 2014 12:45 PM
To: Evans, Darryl W
Subject: Arc Flash Study

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(See attached file: KAW Richmond Road Master Report rev0.pdf)

Mike Maggard
Sr. Specialist Maintenance Service
Kentucky American Water
2300 Richmond Rd.
Lexington, Ky. 40502

office (859) 268-6348
cell (859)321-3674
e-mail michael.maggard@amwater.com



FW: KAW Richmond Road Filter Bldg 140212LE Hazen & Sawyer, PC

Steinmetz, John to: Zachery Dukes

05/28/2014 08:41 AM

Cc: "Casey, Bret"

Zach – hot off the press

Thanks,
John

From: Therese Kindoll [mailto:TKindoll@ThelenAssoc.com]
Sent: Tuesday, May 27, 2014 6:05 PM
To: Steinmetz, John
Cc: Lee Czor
Subject: KAW Richmond Road Filter Bldg 140212LE Hazen & Sawyer, PC

Good Evening Mr. Steinmetz,

Lee Czor asked that I email you our Geotechnical Exploration Report dated May 27, 2014 referencing the KAW Richmond Road Filter Building project. If you have any questions regarding this report, please feel free to contact Lee Czor at (859) 226-0761. Hard copy is in this evening's mail.

Therese Kindoll
tkindoll@thelenassoc.com
Engineering Administrative Assistant

Thelen Associates, Inc.
1398 Cox Avenue
Erlanger, Kentucky 41018-1002
Phone - (859) 746 - 9400
Fax - (859) 746 - 9408
www.thelenassoc.com

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140212LE_GeoRept_20140527_LeeCzor.pdf

**RE: Expected Spend****Casey, Bret** to: Zachery.Dukes@amwater.com

05/28/2014 03:20 PM

History: This message has been replied to.

Zach, our current contract just goes through design. That will take us to the end of July. I expect we will be somewhere around \$90k for each of the next three invoices (May, June and July). Do you need the remainder of the year as well?

-----Original Message-----

From: Zachery.Dukes@amwater.com [mailto:Zachery.Dukes@amwater.com]

Sent: Tuesday, May 20, 2014 9:57 AM

To: Casey, Bret

Subject: Expected Spend

Bret,

Can you shoot me a quick monthly expected spend for the rest of the year? Just the month and what you expect to invoice. Very high level.

Zach

Zachery B. Dukes, P.E.
Project Manager Engineer
Kentucky American Water
2300 Richmond Road
Lexington, KY 40502

Office (859) 268-6352
Cell (859) 537-0750
zachery.dukes@amwater.com
www.amwater.com

**Coordination for next week****Casey, Bret** to: Zachery.Dukes@amwater.com

05/30/2014 02:15 PM

History:

This message has been replied to.

Zach, I was hoping to talk later today or Monday morning about a few things before our meeting next week.

- Status on CM RFP. Not sure if you still want us to review. We would like to get a copy before the meeting next week.
- Agenda for the review meeting, items to cover. Is your rate person still attending?
- Comments on renderings
- KDOW permit. Did you have a chance to call Mark Rasche about their turnaround time? We have a few items that we'd like to point out to KDOW as well. Things that weren't on the original submittal but have been added. We were planning on call the reviewer that has been assigned to the project (Mortaza Tabayeh), but I wanted to check with you before we did.

I will forward you our estimate for our invoice for the month of May later today. I also wanted to confirm what additional info you need from me for estimated invoices through the end of the year.

Thanks!

Bret M. Casey, PE, BCEE

Senior Associate | Hazen and Sawyer
150 E. Campus View Blvd., Suite 133, Columbus, OH 43235
614 781-9655 (main) | 614 596-4155 (cell)
bcasey@hazenandsawyer.com | hazenandsawyer.com

**RE: Coordination for next week****Casey, Bret** to: Zachery.Dukes@amwater.com

Cc: "Green, Robert"

05/30/2014 02:25 PM

History: This message has been replied to.

I just got a call from Mortaza Tabayeh with a question on our CT calcs. So whatever you did worked to get them started on their review!

He asked why we did not use the plant capacity of 25 mgd for our calcs and I explained that it would be overly conservative to use max capacity at cold water. He will discuss with mark Rasche. I told him we could provide the flow and temperature data to support the numbers we used. Are you OK with us sending that data directly to KDOW?

From: Casey, Bret

Sent: Friday, May 30, 2014 2:13 PM

To: Zachery.Dukes@amwater.com

Subject: Coordination for next week

Zach, I was hoping to talk later today or Monday morning about a few things before our meeting next week.

- Status on CM RFP. Not sure if you still want us to review. We would like to get a copy before the meeting next week.
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Thanks!

Bret M. Casey, PE, BCEE

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RE: Coordination for next week

Casey, Bret to: Zachery.Dukes@amwater.com

05/30/2014 04:25 PM

We'll pull together the flow and temperature data to send to KDOW.

Also, wanted to let you know that our invoice for May will be \$83,286. This will take us to \$198,300 which is 50% of the total fee.

Let's talk Monday. Let me know what time works for you. Have a great weekend!

From: Zachery.Dukes@amwater.com [mailto:Zachery.Dukes@amwater.com]

Sent: Friday, May 30, 2014 2:23 PM

To: Casey, Bret

Subject: Re: Coordination for next week

That's fine if they require it. We could talk either after 5 today or Monday. I pulled a few strings... RFP is out, I will email you what I sent out. I have an addendum in the works as well.

Sent from my iPhone

On May 30, 2014, at 2:25 PM, "Casey, Bret" <bcasey@hazenandsawyer.com> wrote:

I just got a call from Mortaza Tabayeh with a question on our CT calcs. So whatever you did worked to get them started on their review!

He asked why we did not use the plant capacity of 25 mgd for our calcs and I explained that it would be overly conservative to use max capacity at cold water. He will discuss with mark Rasche. I told him we could provide the flow and temperature data to support the numbers we used. Are you OK with us sending that data directly to KDOW?

From: Casey, Bret

Sent: Friday, May 30, 2014 2:13 PM

To: Zachery.Dukes@amwater.com

Subject: Coordination for next week

Zach, I was hoping to talk later today or Monday morning about a few things before our meeting next week.

- Status on CM RFP. Not sure if you still want us to review. We would like to get a copy before the meeting next week.
- Agenda for the review meeting, items to cover. Is your rate person still attending?
- Comments on renderings
- KDOW permit. Did you have a chance to call Mark Rasche about their turnaround time? We have a few items that we'd like to point out to KDOW as well. Things that weren't on the original submittal but have been added. We were planning on call the reviewer that has been assigned to the project (Mortaza Tabayeh), but I

wanted to check with you before we did.

I will forward you our estimate for our invoice for the month of May later today . I also wanted to confirm what additional info you need from me for estimated invoices through the end of the year.

Thanks!

Bret M. Casey, PE, BCEE

Senior Associate | Hazen and Sawyer
150 E. Campus View Blvd., Suite 133, Columbus, OH 43235
614 781-9655 (main) | 614 596-4155 (cell)
bcasey@hazenandsawyer.com | hazenandsawyer.com



KAW RRS - 60% Submittal

Melton, Lisa to: Zachery.Dukes@amwater.com
Cc: "Casey, Bret", "Green, Robert"

06/02/2014 05:37 PM

History: This message has been replied to and forwarded .

Afternoon Zach,

The 60% Design Review package which includes: drawings, specifications and the updated Basis of Design Memo, is posted on the FTP site. The drawings and design memo are attached for reference, but the drawings exceed email capacity.

Four (4) hard copies of the drawings and a one (1) copy of the spec book are being sent to your office .

Look forward to seeing you Thursday. If you have any questions in the interim, feel free to call.

Thank You,

Lisa

Lisa Melton

Assistant Engineer | Hazen and Sawyer
7870 E. Kemper Road, Suite 300, Cincinnati, OH 45249
513 469-2750 (main) | 513 469-5158 (direct)
lmelton@hazenandawyer.com | hazenandsawyer.com




I12-020032-Basis of DesignMemo_06-02-2014.pdf



I12-020032-60 Percent Specs_06-02-2014.pdf



Re: Fw: KAW RRS - 60% Submittal 
Brent E O'Neill to: Zachery B. Dukes

06/03/2014 09:20 AM

Zach -

Here are my quick notes - I have attached notes to the drawings



I12-020032-60 Percent Dwgs_06-02-2014 - BEO Comments.pdf



AMERICAN WATER

Brent O'Neill
Director of Engineering
Kentucky American Water
2300 Richmond Road
Lexington, KY 40502


Office 859.268.6316
Cell 859.321.8235

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Re: Fw: KAW RRS - 60% Submittal 
Brent E O'Neill to: Zachery B. Dukes

06/03/2014 12:44 PM

Attached are my comments for the Design Memo



I12-020032-Basis of DesignMemo_06-02-2014 - BEO Comments.pdf



AMERICAN WATER

Brent O'Neill
Director of Engineering
Kentucky American Water
2300 Richmond Road
Lexington, KY 40502

Office 859.268.6316
Cell 859.321.8235

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Zachery B. Dukes

Guys, Please see below the 60% Design for the...

06/03/2014 07:36:10 AM



**Zachery B.
Dukes/KAWC/AWWSC**
06/03/2014 07:36 AM

To Brent E O'Neill/SERVCO/AWWSC@AWW, Ronald K
Kruchinski/KAWC/AWWSC@AWW, David
Shehee/KAWC/AWWSC@AWW, Michael D
Maggard/KAWC/AWWSC, Justin D
Sensabaugh/KAWC/AWWSC, Keith L
Cartier/KAWC/AWWSC@AWW,

cc

Subject Fw: KAW RRS - 60% Submittal

Guys,
Please see below the 60% Design for the RRS Filter Building. I apologize for the quick turn-around but please have your comments emailed to me by 12pm tomorrow.

Thanks,
Zach

Zachery B. Dukes, P.E.
Project Manager Engineer
Kentucky American Water
2300 Richmond Road
Lexington, KY 40502

Office (859) 268-6352
Cell (859) 537-0750

zachery.dukes@amwater.com

www.amwater.com

----- Forwarded by Zachery B. Dukes/KAWC/AWWSC on 06/03/2014 07:33 AM -----

From: "Melton, Lisa" <lmelton@hazenandsawyer.com>
To: "Zachery.Dukes@amwater.com" <Zachery.Dukes@amwater.com>,
Cc: "Casey, Bret" <bcasey@hazenandsawyer.com>, "Green, Robert" <rgreen@hazenandsawyer.com>
Date: 06/02/2014 05:37 PM
Subject: KAW RRS - 60% Submittal

Afternoon Zach,

The 60% Design Review package which includes: drawings, specifications and the updated Basis of Design Memo, is posted on the FTP site. The drawings and design memo are attached for reference, but the drawings exceed email capacity.

Four (4) hard copies of the drawings and a one (1) copy of the spec book are being sent to your office.

Look forward to seeing you Thursday. If you have any questions in the interim, feel free to call.

Thank You,
Lisa

Lisa Melton

Assistant Engineer | Hazen and Sawyer

7870 E. Kemper Road, Suite 300, Cincinnati, OH 45249

513 469-2750 (main) | 513 469-5158 (direct)


lmelton@hazenandawyer.com | hazenandsawyer.com

[attachment "I12-020032-Basis of DesignMemo_06-02-2014.pdf" deleted by Brent E

O'Neill/SERVCO/AWWSC] [attachment "I12-020032-60 Percent Specs_06-02-2014.pdf" deleted by Brent

E O'Neill/SERVCO/AWWSC]



Re: Fw: KAW RRS - 60% Submittal 
David Shehee to: Zachery B. Dukes

06/03/2014 04:22 PM

Zach,

Attached are my highlighted areas for questions with comments included .



I12-020032-60 Percent Dwgs_06-02-2014.pdf I12-020032-60 Percent Specs_06-02-2014.pdf



I12-020032-Basis of DesignMemo_06-02-2014.pdf

David

David B. Shehee | Superintendent, Water Quality and Environmental Compliance | 2300 Richmond Road | Lexington | Kentucky 40502 | ☎ 859.335.3660 | 📠 859.335.3388



Please consider the environment prior to printing this

e-mail.

Zachery B. Dukes

Zachery B. Dukes, P.E. Project Manager Engineer

06/03/2014 08:17:17 AM

From: Zachery B. Dukes/KAWC/AWWSC
To: Zachery B. Dukes/KAWC/AWWSC@AWW,
Cc: Brent E O'Neill/SERVCO/AWWSC@AWW, David Shehee/KAWC/AWWSC@AWW, Justin D Sensabaugh/KAWC/AWWSC, Keith L Cartier/KAWC/AWWSC@AWW, Michael D Maggard/KAWC/AWWSC, Ronald K Kruchinski/KAWC/AWWSC@AWW
Date: 06/03/2014 08:17 AM
Subject: Re: Fw: KAW RRS - 60% Submittal

[attachment "I12-020032-60 Percent Dwgs_06-02-2014.pdf" deleted by David Shehee/KAWC/AWWSC]

Zachery B. Dukes, P.E.

Project Manager Engineer
Kentucky American Water
2300 Richmond Road
Lexington, KY 40502

Office (859) 268-6352
Cell (859) 537-0750
zachery.dukes@amwater.com
www.amwater.com

Zachery B. Dukes

Guys, Please see below the 60% Design for the...

06/03/2014 07:36:05 AM



draft agenda for tomorrow

Casey, Bret to: Zachery.Dukes@amwater.com

06/04/2014 10:45 AM

History: This message has been replied to.

Zach, attached is the draft agenda for our review meeting tomorrow morning. After you've had a chance to review this and the drawings, it would be good if we could talk for a few minutes this afternoon. I've also included the minutes from our last review meeting so you can cross check. I'm not sure I sent these to you. If not, I apologize.

Let me know if you have some time later this afternoon to talk. Thanks.

Bret M. Casey, PE, BCEE

Senior Associate | Hazen and Sawyer
150 E. Campus View Blvd., Suite 133, Columbus, OH 43235
614 781-9655 (main) | 614 596-4155 (cell)
bcasey@hazenandsawyer.com | hazenandsawyer.com



RRS 60%Review Meeting 06-02-2014_Detailed agenda.docx



RRS 30% Review Meeting 04-22-2014 Meeting Minutes.docx



Photos of Fabricated Steel Pipe

Brent O'Neill - Kentucky American

Casey, Bret to: (brent.oneill@amwater.com) ,
Zachery.Dukes@amwater.com

06/06/2014 01:46 PM

Cc: "Green, Robert"

Attached are some photos of steel piping in filter galleries. The first two are from Ann Arbor and the last three are from a new plant that I worked on about 10 years ago near Columbus. It's a 20 mgd plant, so similar to what we would have at Richmond Road. That piping was provided by Tennessee Metal (<http://www.tennesseemetalfab.com/index.html>). They provide extremely high quality steel pipe. They are located about half way between Nashville and Chattanooga and would be a good option to consider if you decide to price this as an option.

Bret M. Casey, PE, BCEE

Senior Associate | Hazen and Sawyer
150 E. Campus View Blvd., Suite 133, Columbus, OH 43235
614 781-9655 (main) | 614 596-4155 (cell)
bcasey@hazenandsawyer.com | hazenandsawyer.com



5-1-06 011.jpg Looking Northwest - Pipe Gallery.jpg IMG_0280.jpg IMG_0283.jpg IMG_0278.jpg

Fw: CT Basin

David Shehee to: Zachery B. Dukes

06/10/2014 09:58 AM

Just in case you deleted the map.

David

David B. Shehee | Superintendent, Water Quality and Environmental Compliance | 2300 Richmond Road | Lexington | Kentucky 40502 | ☎ 859.335.3660 | 📠 859.335.3388



Please consider the environment prior to printing this

e-mail

----- Forwarded by David Shehee/KAWC/AWWSC on 06/10/2014 09:57 AM -----

From: "Roney, Julie (EEC)" <Julie.Roney@ky.gov>
To: "'David.Shehee@amwater.com'" <David.Shehee@amwater.com>,
Date: 06/09/2014 02:32 PM
Subject: RE: CT Basin

David, I was told by our engineering supervisor that he and the engineer assigned to the project are trying to set up a meeting this week with KAWC and your engineers.

I've attached a map of the Fair Oaks property—it's rather a mess with both Wilkinson Blvd and Buffalo Trace construction. The only access to the 200 Building is off of Lewis Ferry Road (blue line on map). There is no stop light at Lewis Ferry. Coming from Lexington on US 60, after you come down the hill, Lewis Ferry is roughly 0.5 miles past the US 127 overpass; it will be a right turn.

From: David.Shehee@amwater.com [mailto:David.Shehee@amwater.com]
Sent: Monday, June 09, 2014 2:13 PM
To: Roney, Julie (EEC)
Subject: CT Basin

Hey Julie,

Let me know when you have had a chance to meet with your engineering lead on what we discussed regarding the CT basin. With the pace at which this project must proceed, Hazen and Sawyer want to set up a meeting this week with you guys to resolve if necessary. I told them that I didn't think it was necessary but wanted to make sure I heard back from you before telling them not to schedule the meeting.

Thanks,

David

David B. Shehee | Superintendent, Water Quality and Environmental Compliance | 2300 Richmond Road | Lexington | Kentucky 40502 | ☎ 859.335.3660 | 📠 859.335.3388



Please consider the environment prior to printing this e-mail.



FairOaks_Btrace_v2.pdf



RE: Richmond Road WTP - Request for Clarification

Casey, Bret to: Zachery.Dukes@amwater.com

06/17/2014 03:36 PM

Cc: "Steinmetz, John", "Leadbitter, William G.", "Green, Robert", "Melton, Lisa"

Zach, we are working on the other questions that you sent me this morning. We'll get back to you later today or early tomorrow on those. Regarding question 1 from Layne below, we will be incorporating Thelen's recommendation to over excavate under the filter building down to bedrock and backfill with lean concrete to the design foundation bearing elevation. In addition, we will want to cap the exposed rock after excavation with a mudmat. The mudmat should be a 1,500 psi lean concrete, 3" thick, placed within 24 hours of rock exposure. The Contractor will need to cover all rock bearing surfaces within the footprint of structures.

The other question that came up during the pre-bid was related to the length of time between concrete pours. Our specs require 72 hours between adjacent pours. This is to minimize shrinkage cracking. Our preference would be to keep that requirement in the specs.

-----Original Message-----

From: Zachery.Dukes@amwater.com [mailto:Zachery.Dukes@amwater.com]

Sent: Monday, June 16, 2014 8:45 AM

To: Casey, Bret

Cc: Steinmetz, John

Subject: Fw: Richmond Road WTP - Request for Clarification

Could you get me a clarification quickly on #1 below?

Thanks,
Zach

Zachery B. Dukes, P.E.
Project Manager Engineer
Kentucky American Water
2300 Richmond Road
Lexington, KY 40502

Office (859) 268-6352
Cell (859) 537-0750
zachery.dukes@amwater.com
www.amwater.com

----- Forwarded by Zachery B. Dukes/KAWC/AWSC on 06/16/2014 08:44 AM -----

From: Ted Wagner <Ted.Wagner@Layne.com>
To: "Zachery.Dukes@amwater.com" <Zachery.Dukes@amwater.com>,
Date: 06/13/2014 04:29 PM
Subject: Richmond Road WTP - Request for Clarification

Zachery,

Please find here questions from our estimating team.

1. Please clarify the foundation requirements under the Filter Building. The Soils Report in Paragraph 8.3 recommends that at the Filter Building, all clay soils encountered below the foundation

elements be over excavated down to bedrock and backfilled with lean concrete to the design foundation bearing elevation. This will occur mainly under the filters on the east side of the building as the west side is already in or close to the bedrock elevation. We do not find any reference to these recommendations in plan notes or earthwork specifications.

2. Can you provide a brick allowance please?

Regards,

TED WAGNER

Estimator, Heavy Civil

LAYNE | water + mineral + energy

4520 N. State Road 37 | Orleans, IN | 47452

Office: 812-865-3232 | Cell: 812-583-1409 | Fax: 812-865-2136

ted.wagner@layne.com | layne.com

**FW: Richmond Road WTP - Request for Clarification****Casey, Bret** to: Zachery.Dukes@amwater.com

06/17/2014 05:40 PM

History:

This message has been replied to.

Zach, below are the responses to the questions. Let me know if you need anything else to finalize the addendum.

From: Melton, Lisa
Sent: Tuesday, June 17, 2014 4:48 PM
To: Casey, Bret
Cc: Green, Robert
Subject: RE: Richmond Road WTP - Request for Clarification

Bret,

Responses to questions noted below. This covers both emails from this morning:

1. What is the size of the existing Settled Water (SW) lines we are tying into to feed new Filter Building?

Response: Existing Settled Water lines are 30-in.

2. What is the size of the existing Finished Water (FW) line we are tying into at Clearwell No.2?

Response: Existing Finished Water line is 30-in.

3. Can you provide details of Structure "YI-1" fed by the filter backwash & filter to waste lines? Is this planned to be a precast structure or cast-in-place? Response: YI-1 shall be a 6-ft x 4-ft structure. Rim elevation 1003.00, Inv 995.00. Pipe elevations as noted below. The structure can be precast, or cast-in-place.

(N) INV IN: 996.80

(W) INV IN: 996.80 [20" BWV]

(W) INV IN: 999.00 [16" FTW]

(S) INV OUT: 995.08

4. Are the stairs at the entrance of the Filter Building to be concrete or aluminum? They are shown as metal/aluminum on Structural sheets, shown and/or appearing as concrete on the Architectural sheets. Please clarify. Response: The stairs on the north side of the filter building shall be concrete.

Thank You,

Lisa

-----Original Message-----

From: Casey, Bret

Sent: Tuesday, June 17, 2014 9:46 AM

To: Green, Robert; Melton, Lisa

Subject: FW: Richmond Road WTP - Request for Clarification

One more email to come. We need to respond today or tomorrow so Zach can issue and addendum.

-----Original Message-----

From: Zachery.Dukes@amwater.com [<mailto:Zachery.Dukes@amwater.com>]

Sent: Tuesday, June 17, 2014 9:44 AM

To: Casey, Bret

Subject: Fw: Richmond Road WTP - Request for Clarification

Let me know if you need to discuss #3

Zachery B. Dukes, P.E.
Project Manager Engineer
Kentucky American Water
2300 Richmond Road
Lexington, KY 40502

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Cell (859) 537-0750

zachery.dukes@amwater.com

www.amwater.com

----- Forwarded by Zachery B. Dukes/KAWC/AWWSC on 06/17/2014 09:43 AM -----

From: Ted Wagner <Ted.Wagner@Layne.com>

To: "Zachery.Dukes@amwater.com" <Zachery.Dukes@amwater.com> ,

Date: 06/16/2014 03:49 PM

Subject: Richmond Road WTP - Request for Clarification

Zachery,

Please find here additional questions from our estimating team.

1. What is the size of the existing Settled Water (SW) lines we are tying into to feed new Filter Building?
2. What is the size of the existing Finished Water (FW) line we are tying into at Clearwell No. 2?
3. Can you provide details of Structure "YI-1" feed by the filter backwash & filter to waste lines? Is this planned to be a precast structure or cast-in-place?

Regards,

TED WAGNER

Estimator, Heavy Civil

LAYNE | water + mineral + energy

4520 N. State Road 37 | Orleans, IN | 47452

Office: 812-865-3232 | Cell: 812-583-1409 | Fax: 812-865-2136

ted.wagner@layne.com | layne.com

Re: RRS Filter Backwash 📎

Ronald K Kruchinski to: Zachery B. Dukes

06/19/2014 08:13 AM

Cc: Michael D Maggard, Nathan A Clark, Justin D Sensabaugh

Sounds a bit low but I'm not sure. I think our high and low backwash rates are measured as gpm so somebody would need to do the math to determine gpm/ft2.

Mike- Can you check in SCADA and see what our low and high wash rates are?

Kevin Kruchinski | Production Superintendent | Kentucky American Water | 2300 Richmond Rd | Lexington, KY 40502 | O 859-335-3418 | M 859-361-1770

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Zachery B. Dukes

Does a current low filter backwash rate of 5 gpm...

06/19/2014 08:03:57 AM

From: Zachery B. Dukes/KAWC/AWWSC
To: Ronald K Kruchinski/KAWC/AWWSC@AWW,
Cc: Justin D Sensabaugh/KAWC/AWWSC, Nathan A Clark/KAWC/AWWSC@AWW
Date: 06/19/2014 08:03 AM
Subject: RRS Filter Backwash

Does a current low filter backwash rate of 5 gpm/ft2 sound right?

Zachery B. Dukes, P.E.

Project Manager Engineer

Kentucky American Water

2300 Richmond Road

Lexington, KY 40502


Office (859) 268-6352

Cell (859) 537-0750

zachery.dukes@amwater.com

www.amwater.com



Re: RRS Filter Backwash 
Michael D Maggard to: R Kevin Kruchinski
Cc: Zachery B. Dukes, Nathan A Clark, Justin D Sensabaugh

06/19/2014 08:17 AM

History: This message has been replied to.

Wash 1 Low - 1700 gpm for 3 minutes
Wash 2 High - 4000 gpm for 5 minutes
Wash 3 Low - 1700 gpm for 3 minutes

Mike Maggard
Sr. Specialist Maintenance Service
Kentucky American Water
2300 Richmond Rd.
Lexington, Ky. 40502
office (859) 268-6348
cell (859)321-3674
e-mail michael.maggard@amwater.com

Ronald K Kruchinski Sounds a bit low but I'm not sure. I think our hi... 06/19/2014 08:13:04 AM

From: Ronald K Kruchinski/KAWC/AWWSC
To: Zachery B. Dukes/KAWC/AWWSC@AWW,
Cc: Michael D Maggard/KAWC/AWWSC@AWW, Nathan A Clark/KAWC/AWWSC@AWW, Justin D Sensabaugh/KAWC/AWWSC@AWW
Date: 06/19/2014 08:13 AM
Subject: Re: RRS Filter Backwash

Sounds a bit low but I'm not sure. I think our high and low backwash rates are measured as gpm so somebody would need to do the math to determine gpm/ft².

Mike- Can you check in SCADA and see what our low and high wash rates are?

Kevin Kruchinski | Production Superintendent | Kentucky American Water | 2300 Richmond Rd | Lexington, KY 40502 | O 859-335-3418 | M 859-361-1770

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Zachery B. Dukes Does a current low filter backwash rate of 5 gpm... 06/19/2014 08:03:57 AM



RE: Richmond Road Water Treatment Plant

Evans, Darryl W to: Oakley, Joseph
Cc: "Melton, Lisa", "Casey, Bret" , "Zachery.Dukes@amwater.com"
 , "Michael.Maggard@amwater.com"

06/19/2014 04:06 PM

Joe,

Attached are:

1. Load Data Sheet
2. One-Line Diagram
3. Site Plan
4. Grading Plan
5. Piping Plan

Please be aware that these are 60% plans. The loads are worst case. They could go down if natural gas is substituted for electricity for some of the heating, an issue still being evaluated at this time. The location and size of structures are more or less final. Obviously, we would prefer to get a padmount transformer as close to the electric room as practical.

Please let me know if you have any questions.

Thanks.

Darryl W. Evans, PE

Associate | Hazen and Sawyer
2304 Hurstbourne Village Drive, Suite 1100, Louisville, KY 40299
(502) 290-6187 (office)
(502) 292-9090 (cell)
devans@hazenandsawyer.com

From: Oakley, Joseph [mailto:Joseph.Oakley@lge-ku.com]
Sent: Tuesday, June 17, 2014 8:14 AM
To: Evans, Darryl W
Subject: FW: Richmond Road Water Treatment Plant

Darryl,

Please have the load sheet filled out and signed and please send me the latest site plan with utilities and proposed grade changes.

Thanks,

Joe Oakley
Senior Engineer
Kentucky Utilities Company

Lexington Operations Center
500 Stone Road
Lexington, KY 40503
Office 859-367-4306

From: Oakley, Joseph
Sent: Thursday, June 12, 2014 12:10 PM
To: 'mark@jeffhallelectric.com'
Subject: RE: Richmond Road Water Treatment Plant

Mark,

Thank you for discussing this project with me. Attached is a KU electric load sheet that will need to be filled out for each service to the project. Please have the someone completely fill out the load sheet, sign and date it and sent back to me.

Thank you,

Joe Oakley
Senior Engineer
Kentucky Utilities Company
Lexington Operations Center
500 Stone Road
Lexington, KY 40503
Office 859-367-4306

From: mark@jeffhallelectric.com [<mailto:mark@jeffhallelectric.com>]
Sent: Wednesday, June 11, 2014 10:32 AM
To: Oakley, Joseph
Subject: Richmond Road Water Treatment Plant

Joseph,

I am an electrical contractor who is putting an estimate together for the project at Richmond Road Water Treatment Plant. The project drawings that have been put out are only 60% designed as you will see on the drawings, I have attached. On page 3 of attached electrical specs, it states that it we are responsible for coordinating with utility company in regards to utility equipment. I would like to know what I would need to do for you to achieve what they are wanting for the project. If you have any questions, feel free to give me a call. Thanks

Mark Wisley
mark@jeffhallelectric.com
(P) 812-865-4020
(F) 812-865-4321
(C) 812-583-0435



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KAW Richmond Road Arc Flash Report rev0.pdf



RE: Richmond Road Water Treatment Plant

Evans, Darryl W to: Oakley, Joseph
Cc: "Melton, Lisa", "Casey, Bret" , "Zachery.Dukes@amwater.com"
 , "Michael.Maggard@amwater.com"

06/19/2014 05:01 PM

History: This message has been replied to.

Trying again.

Darryl W. Evans, PE

Associate | Hazen and Sawyer
2304 Hurstbourne Village Drive, Suite 1100, Louisville, KY 40299
(502) 290-6187 (office)
(502) 292-9090 (cell)
devans@hazenandsawyer.com

From: Oakley, Joseph [mailto:Joseph.Oakley@lge-ku.com]
Sent: Thursday, June 19, 2014 4:48 PM
To: Evans, Darryl W
Cc: Melton, Lisa; Casey, Bret; Zachery.Dukes@amwater.com; Michael.Maggard@amwater.com
Subject: RE: Richmond Road Water Treatment Plant

Darryl,

Please resend because I cannot open the attachment.

Thanks,

Joe Oakley
KU

From: Evans, Darryl W [mailto:DEvans@hazenandsawyer.com]
Sent: Thursday, June 19, 2014 4:06 PM
To: Oakley, Joseph
Cc: Melton, Lisa; Casey, Bret; Zachery.Dukes@amwater.com; Michael.Maggard@amwater.com
Subject: RE: Richmond Road Water Treatment Plant

Joe,

Attached are:

1. Load Data Sheet
2. One-Line Diagram
3. Site Plan
4. Grading Plan
5. Piping Plan

Please be aware that these are 60% plans. The loads are worst case. They could go down if natural gas is substituted for electricity for some of the heating, an issue still being evaluated at this time. The

location and size of structures are more or less final. Obviously, we would prefer to get a padmount transformer as close to the electric room as practical.

Please let me know if you have any questions.

Thanks.

Darryl W. Evans, PE

Associate | Hazen and Sawyer
2304 Hurstbourne Village Drive, Suite 1100, Louisville, KY 40299
(502) 290-6187 (office)
(502) 292-9090 (cell)
devans@hazenandsawyer.com

From: Oakley, Joseph [<mailto:Joseph.Oakley@lge-ku.com>]
Sent: Tuesday, June 17, 2014 8:14 AM
To: Evans, Darryl W
Subject: FW: Richmond Road Water Treatment Plant

Darryl,

Please have the load sheet filled out and signed and please send me the latest site plan with utilities and proposed grade changes.

Thanks,

Joe Oakley
Senior Engineer
Kentucky Utilities Company
Lexington Operations Center
500 Stone Road
Lexington, KY 40503
Office 859-367-4306

From: Oakley, Joseph
Sent: Thursday, June 12, 2014 12:10 PM
To: 'mark@jeffhallelectric.com'
Subject: RE: Richmond Road Water Treatment Plant

Mark,

Thank you for discussing this project with me. Attached is a KU electric load sheet that will need to be filled out for each service to the project. Please have the someone completely fill out the load sheet, sign and date it and sent back to me.

Thank you,

Joe Oakley
Senior Engineer
Kentucky Utilities Company
Lexington Operations Center
500 Stone Road
Lexington, KY 40503
Office 859-367-4306

From: mark@jeffhallelectric.com [<mailto:mark@jeffhallelectric.com>]
Sent: Wednesday, June 11, 2014 10:32 AM
To: Oakley, Joseph
Subject: Richmond Road Water Treatment Plant

Joseph,

I am an electrical contractor who is putting an estimate together for the project at Richmond Road Water Treatment Plant. The project drawings that have been put out are only 60% designed as you will see on the drawings, I have attached. On page 3 of attached electrical specs, it states that it we are responsible for coordinating with utility company in regards to utility equipment. I would like to know what I would need to do for you to achieve what they are wanting for the project. If you have any questions, feel free to give me a call. Thanks

Mark Wisley

mark@jeffhallelectric.com
(P) 812-865-4020
(F) 812-865-4321
(C) 812-583-0435



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KU Load Data Sheet & Plans 06-19-14.pdf



60% Design Meeting - Minutes

Melton, Lisa to: Zachery.Dukes@amwater.com
Cc: "Casey, Bret", "Green, Robert"

06/23/2014 12:27 PM

Afternoon Zach,

Please find attached the meeting minutes from the June 5th progress meeting. There is a list of action items on the last page that we will provide follow-up information on. An updated Basis of Design memo will be sent this week for review.

Let us know if you have any questions.

Thank You,
Lisa

Lisa Melton

Assistant Engineer | Hazen and Sawyer
7870 E. Kemper Road, Suite 300, Cincinnati, OH 45249
513 469-2750 (main) | 513 469-5158 (direct)
lmelton@hazenandawyer.com | hazenandsawyer.com



RRS 60% Review Meeting_Minutes_Final_06-05-2014.docx



RR WTP - Analytical Instruments

Evans, Darryl W to: Michael.Maggard@amwater.com,
Zachery.Dukes@amwater.com

07/01/2014 01:14 PM

Cc: "Casey, Bret", "Melton, Lisa" , "Thunhorst, Chris"

Mike/Zach,

I have created a "Multivariable Analyzer" spec. Per our review meeting, KAW included ProMinent or Hach as the basis of design and requested multivariable instruments where possible. Per ProMinent tech support, their DCA controller has the capacity to take CL2 residual, pH, and temperature signals from their sensors and convert each to a separate 4-20mA signal. All out of one "box".

My question concerns turbidimeters. ProMinent also makes a turbidimeter. See attached pdf. ProMinent is not listed in the acceptable manufacturers for turbidimeters but I was wondering if KAW would prefer getting all the analytical instrumentation from the same manufacturer? It doesn't matter to me but I thought I would mention it in case KAW was interested.

Please let me know if you would like to discuss. If you're not the right person to ask, I ask that you forward to whomever appropriate.

Thanks.

Darryl W. Evans, PE

Associate | Hazen and Sawyer
2304 Hurstbourne Village Drive, Suite 1100, Louisville, KY 40299
(502) 290-6187 (office)
(502) 292-9090 (cell)
devans@hazenandsawyer.com



17831.doc ProMinent Dulcotest_Sensors_Catalog_2013.pdf



Fw: RR WTP - Analytical Instruments
Michael D Maggard to: David Shehee
Cc: Zachery B. Dukes, devans

07/01/2014 04:19 PM

David,

Please provide Daryll with your preferences.

Mike Maggard
Sr. Specialist Maintenance Service
Kentucky American Water
2300 Richmond Rd.
Lexington, Ky. 40502
office (859) 268-6348
cell (859)321-3674
e-mail michael.maggard@amwater.com

----- Forwarded by Michael D Maggard/KAWC/AWWSC on 07/01/2014 04:13 PM -----

From: "Evans, Darryl W" <DEvans@hazenandsawyer.com>
To: "Michael.Maggard@amwater.com" <Michael.Maggard@amwater.com>, "Zachery.Dukes@amwater.com" <Zachery.Dukes@amwater.com>,
Cc: "Casey, Bret" <bcasey@hazenandsawyer.com>, "Melton, Lisa" <lmelton@hazenandsawyer.com>, "Thunhorst, Chris" <cthunhorst@hazenandsawyer.com>
Date: 07/01/2014 01:14 PM
Subject: RR WTP - Analytical Instruments

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(502) 290-6187 (office)
(502) 292-9090 (cell)
devans@hazenandsawyer.com



17831.doc ProMinent Dulcotest_Sensors_Catalog_2013.pdf



Re: Fw: RR WTP - Analytical Instruments 
David Shehee to: Michael D Maggard
Cc: devans, Zachery B. Dukes

07/02/2014 11:19 AM

Let me look into this turb. First time I am seeing it.

David

David B. Shehee | Superintendent, Water Quality and Environmental Compliance | 2300 Richmond Road | Lexington | Kentucky 40502 | ☎ 859.335.3660 | 📠 859.335.3388



Please consider the environment prior to printing this

e-mail

Michael D Maggard

David, Please provide Daryll with your preferen...

07/01/2014 04:19:08 PM

From: Michael D Maggard/KAWC/AWWSC
To: David Shehee/KAWC/AWWSC@AWW,
Cc: Zachery B. Dukes/KAWC/AWWSC@AWW, devans@hazenandsawyer.com
Date: 07/01/2014 04:19 PM
Subject: Fw: RR WTP - Analytical Instruments

David,

Please provide Daryll with your preferences.

Mike Maggard
Sr. Specialist Maintenance Service
Kentucky American Water
2300 Richmond Rd.
Lexington, Ky. 40502
office (859) 268-6348
cell (859)321-3674
e-mail michael.maggard@amwater.com

----- Forwarded by Michael D Maggard/KAWC/AWWSC on 07/01/2014 04:13 PM -----

From: "Evans, Darryl W" <DEvans@hazenandsawyer.com>
To: "Michael.Maggard@amwater.com" <Michael.Maggard@amwater.com>, "Zachery.Dukes@amwater.com" <Zachery.Dukes@amwater.com>, "Casey, Bret" <bcasey@hazenandsawyer.com>, "Melton, Lisa" <lmelton@hazenandsawyer.com>, "Thunhorst, Chris" <cthunhorst@hazenandsawyer.com>
Date: 07/01/2014 01:14 PM
Subject: RR WTP - Analytical Instruments

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Thanks.

Darryl W. Evans, PE

Associate | Hazen and Sawyer

2304 Hurstbourne Village Drive, Suite 1100, Louisville, KY 40299

(502) 290-6187 (office)

(502) 292-9090 (cell)

devans@hazenandsawyer.com

[attachment "17831.doc" deleted by David Shehee/KAWC/AWWSC] [attachment "ProMinent Dulcotest_Sensors_Catalog_2013.pdf" deleted by David Shehee/KAWC/AWWSC]



RE: Fw: RR WTP - Analytical Instruments

Evans, Darryl W to: David.Shehee@amwater.com,
Michael.Maggard@amwater.com
Cc: "Zachery.Dukes@amwater.com"

07/02/2014 11:27 AM

I've never seen it before either. It caught my eye when looking for other instruments. ProMinent has pretty good reputation. I thought it might be of interest and maybe worth a try. Again, it doesn't make any difference to me. Hach makes good stuff too.

Darryl W. Evans, PE

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2304 Hurstbourne Village Drive, Suite 1100, Louisville, KY 40299
(502) 290-6187 (office)
(502) 292-9090 (cell)
devans@hazenandsawyer.com

From: David.Shehee@amwater.com [mailto:David.Shehee@amwater.com]
Sent: Wednesday, July 02, 2014 11:20 AM
To: Michael.Maggard@amwater.com
Cc: Evans, Darryl W; Zachery.Dukes@amwater.com
Subject: Re: Fw: RR WTP - Analytical Instruments

Let me look into this turb. First time I am seeing it.

David

David B. Shehee | Superintendent, Water Quality and Environmental Compliance | 2300 Richmond Road | Lexington | Kentucky 40502 | ☎ 859.335.3660 | 📠 859.335.3388



Please consider the environment prior to printing this e-mail

From: Michael D Maggard/KAWC/AWWSC
To: David Shehee/KAWC/AWWSC@AWW,
Cc: Zachery B. Dukes/KAWC/AWWSC@AWW, devans@hazenandsawyer.com
Date: 07/01/2014 04:19 PM
Subject: Fw: RR WTP - Analytical Instruments

David,

Please provide Daryll with your preferences.

Mike Maggard
Sr. Specialist Maintenance Service
Kentucky American Water
2300 Richmond Rd.
Lexington, Ky. 40502
office (859) 268-6348
cell (859)321-3674
e-mail michael.maggard@amwater.com

----- Forwarded by Michael D Maggard/KAWC/AWWSC on 07/01/2014 04:13 PM -----

From: "Evans, Darryl W" <DEvans@hazenandsawyer.com>
To: "Michael.Maggard@amwater.com" <Michael.Maggard@amwater.com>, "Zachery.Dukes@amwater.com" <Zachery.Dukes@amwater.com>,
Cc: "Casey, Bret" <bcasey@hazenandsawyer.com>, "Melton, Lisa" <lmelton@hazenandsawyer.com>, "Thunhorst, Chris" <cthunhorst@hazenandsawyer.com>
Date: 07/01/2014 01:14 PM
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devans@hazenandsawyer.com

[attachment "17831.doc" deleted by David Shehee/KAWC/AWWSC] [attachment "ProMinent
Dulcotest_Sensors_Catalog_2013.pdf" deleted by David Shehee/KAWC/AWWSC]

RE: Fw: RR WTP - Analytical Instruments 

David Shehee to: Evans, Darryl W
<DEvans@hazenandsawyer.com>

07/02/2014 11:47 AM

Cc: "Michael.Maggard@amwater.com", "Zachery.Dukes@amwater.com"

Definitely want to check it out. Keep it in the list and I will check it out.

Thanks,

David

David B. Shehee | Superintendent, Water Quality and Environmental Compliance | 2300 Richmond Road |
Lexington | Kentucky 40502 | ☎ 859.335.3660 | 📠 859.335.3388



Please consider the environment prior to printing this e-mail

From: "Evans, Darryl W" <DEvans@hazenandsawyer.com>
To: "David.Shehee@amwater.com" <David.Shehee@amwater.com>, "Michael.Maggard@amwater.com" <Michael.Maggard@amwater.com>,
Cc: "Zachery.Dukes@amwater.com" <Zachery.Dukes@amwater.com>
Date: 07/02/2014 11:27 AM
Subject: RE: Fw: RR WTP - Analytical Instruments

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Darryl W. Evans, PE

Associate | Hazen and Sawyer

2304 Hurstbourne Village Drive, Suite 1100, Louisville, KY 40299

(502) 290-6187 (office)

(502) 292-9090 (cell)

devans@hazenandsawyer.com

From: David.Shehee@amwater.com [<mailto:David.Shehee@amwater.com>]

Sent: Wednesday, July 02, 2014 11:20 AM

To: Michael.Maggard@amwater.com

Cc: Evans, Darryl W; Zachery.Dukes@amwater.com

Subject: Re: Fw: RR WTP - Analytical Instruments

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David

David B. Shehee | Superintendent, Water Quality and Environmental Compliance | 2300 Richmond Road |
Lexington | Kentucky 40502 | ☎ 859.335.3660 | 📠 859.335.3388



Please consider the environment prior to printing this e-mail

From: Michael D Maggard/KAWC/AWWSC
To: David Shehee/KAWC/AWWSC@AWW,
Cc: Zachery B. Dukes/KAWC/AWWSC@AWW, devans@hazenandsawyer.com
Date: 07/01/2014 04:19 PM
Subject: Fw: RR WTP - Analytical Instruments

David,

Please provide Darryl with your preferences.

Mike Maggard
Sr. Specialist Maintenance Service
Kentucky American Water
2300 Richmond Rd.
Lexington, Ky. 40502
office (859) 268-6348
cell (859)321-3674
e-mail michael.maggard@amwater.com

----- Forwarded by Michael D Maggard/KAWC/AWWSC on 07/01/2014 04:13 PM -----

From: "Evans, Darryl W" <DEvans@hazenandsawyer.com>
To: "Michael.Maggard@amwater.com" <Michael.Maggard@amwater.com>, "Zachery.Dukes@amwater.com" <Zachery.Dukes@amwater.com>,
Cc: "Casey, Bret" <bcasey@hazenandsawyer.com>, "Melton, Lisa" <lmelton@hazenandsawyer.com>, "Thunhorst, Chris" <cthunhorst@hazenandsawyer.com>
Date: 07/01/2014 01:14 PM
Subject: RR WTP - Analytical Instruments

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(502) 290-6187 (office)
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devans@hazenandsawyer.com

[attachment "17831.doc" deleted by David Shehee/KAWC/AWWSC] [attachment "ProMinent
Dulcotest_Sensors_Catalog_2013.pdf" deleted by David Shehee/KAWC/AWWSC]



FW: KAW permits

Steinmetz, John to: Brent O'Neill
Cc: "Casey, Bret", "Melton, Lisa" , Zachery Dukes, Steve Garland

07/18/2014 04:07 PM

Brent – in response to your call today, see below and attached for a summary of the LFUCG permitting process. When confirmation emails or letters are received, we'll forward them.

Please let me know if you have any other questions related to this .

Thanks,
John

From: Steve Garland [mailto:SteveG@int-engineering.com]
Sent: Friday, July 18, 2014 3:59 PM
To: Steinmetz, John; 'Eddie Mesta'
Subject: RE: KAW permits

1. I have contacted Barbara to see if she would email me a confirmation that a public facilities review is not required.
2. I have contacted Cheryl Gault with P and Z to see if she would email a confirmation that a development plan is not required.
3. Plan Review path:
 - a) I spoke with Tara with Commercial Building Inspection. She said it would be beneficial to email all the contacts (attached) with the plans that they need before the meeting so they know what will be put in front of them at the meeting.
 - b) After plan review all comments must be addressed, then it is at least one and a half to two weeks after the final signoff that a permit can be pulled.

Refer to attached contact form for what each individual department requires as far as plans, calculations, letters, etc. Will this suffice as the summary?

The storm water quality and quantity is handled through engineering. A good idea is as soon as the project is scheduled for TAC, the week before to have each group get what they need. TAC will go more smoothly and things can be addressed before the meeting, speeding up the permitting time.

Steve Garland, PE, LEED AP, CFM
Integrated Engineering, PLLC
166 Prosperous Place; Suite 220
Lexington, KY 40509
p. 859-368-0145 xt 106
f. 859-904-1538
www.int-engineering.com



From: Steinmetz, John [<mailto:jsteinmetz@hazenandsawyer.com>]
Sent: Friday, July 18, 2014 2:42 PM
To: Eddie Mesta; Steve Garland
Cc: Casey, Bret; Melton, Lisa
Subject: KAW permits

Eddie, Steve – we had a meeting with KAW and their CM, W. Rogers, the other day and we'll send you info that relates to your work. In a nutshell, KAW is finding us old plans that may allow us to figure out the existing utilities. We'll review those before asking you to complete your additional surveying scope. Speaking of that scope, it will not include a waste area grading plan, so we'll stick with the rain gardens and the extension of the gravity backwash discharge.

On another note, Brent O'Neill of KAW called me today asking for clarification of the LFUCG permitting process. Please send me an email that summarizes the various approvals, the individual timeframes and processes, etc. Please include Barbara's statement that a Development Plan is not required (did you get that in writing? If not, can you get an email confirmation?), the stormwater quantity and quality process, and the Tuesday TAC process. Am I missing anything?

Thanks,
John

John B. Steinmetz, PE

Senior Associate | Hazen and Sawyer
444 Lewis Hargett Circle, Suite 260, Lexington, KY 40503
859 219-1126 (main) | 859 421-9695 (cell)
jsteinmetz@hazenandsawyer.com | hazenandsawyer.com



review board form.doc



RE: Architectural Discussion of Filter Building

Brent O'Neill - Kentucky American

Casey, Bret to: (brent.oneill@amwater.com) ,
Zachery.Dukes@amwater.com, Russell, William

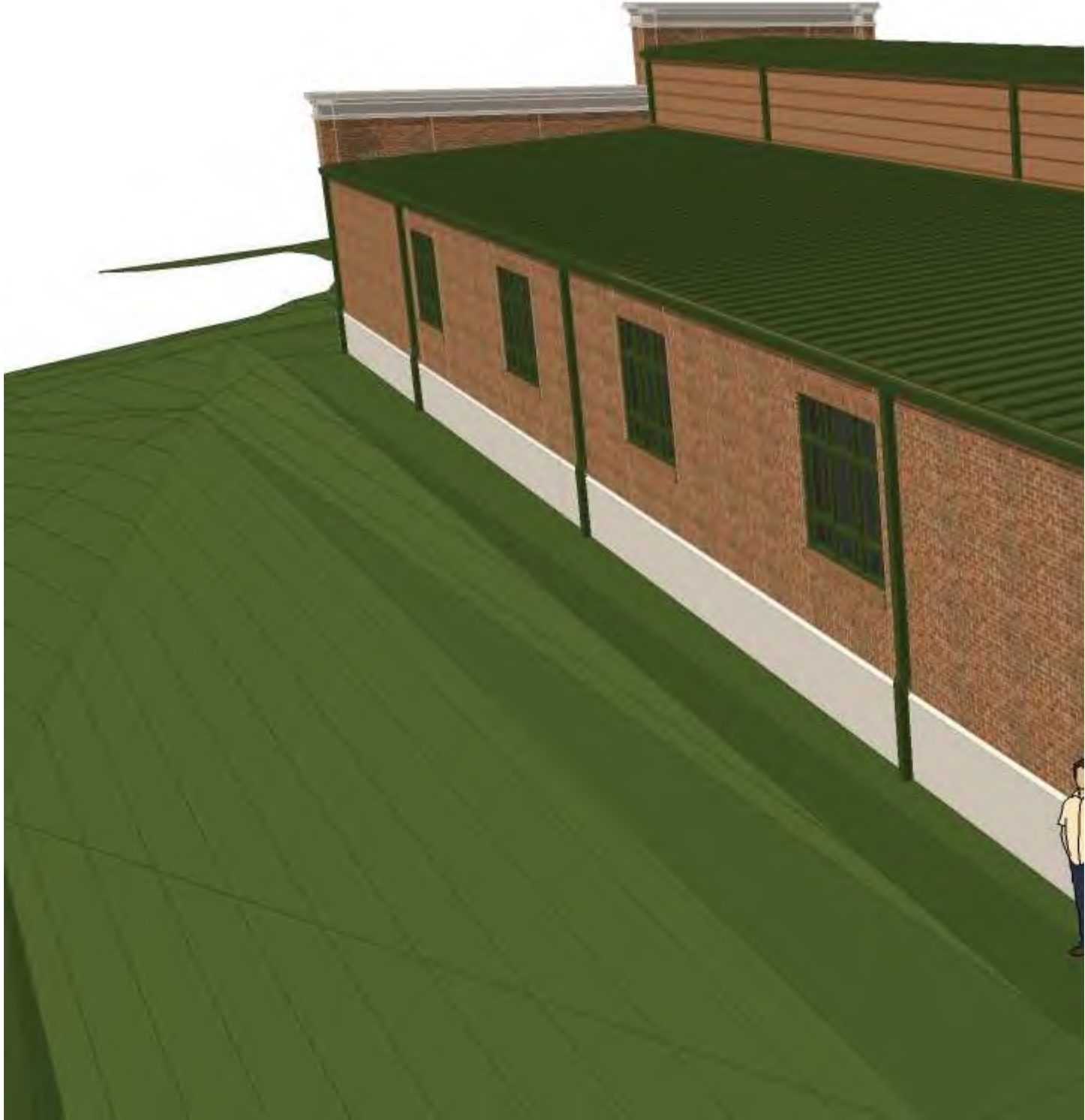
07/24/2014 11:36 AM

Attached are a few renderings for our discussion tomorrow morning. I will forward more information later today on these options.

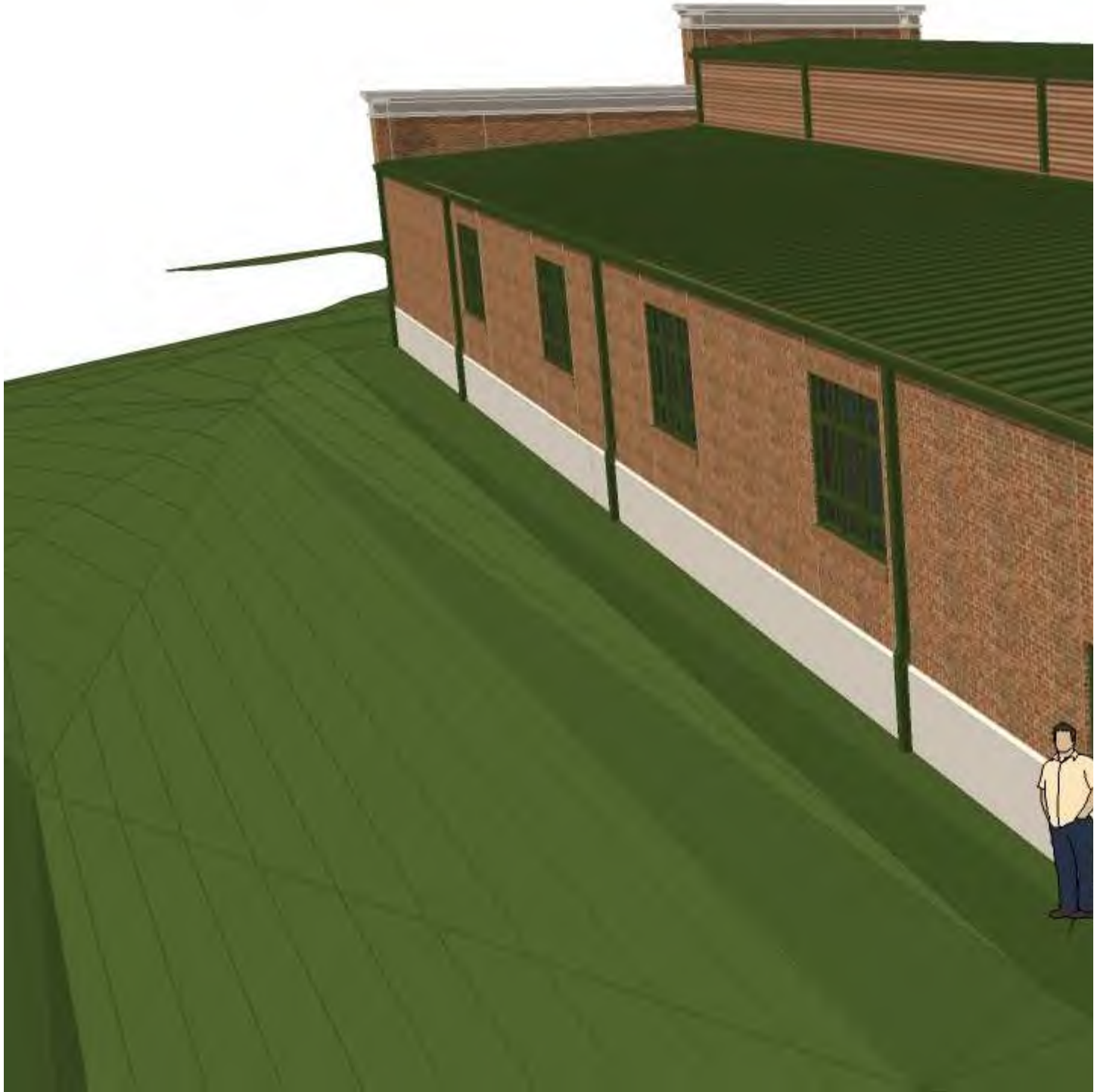












-----Original Appointment-----

From: Casey, Bret

Sent: Wednesday, July 23, 2014 5:24 PM

To: Casey, Bret; Brent O'Neill - Kentucky American (brent.oneill@amwater.com);

Zachery.Dukes@amwater.com; Russell, William; Green, Robert; Melton, Lisa

Subject: Architectural Discussion of Filter Building

When: Friday, July 25, 2014 10:00 AM-11:00 AM (UTC-05:00) Eastern Time (US & Canada).

Where: Conference call

Does this time work for everyone?

Call in number: 888-337-0215

Access code: 2993728


RRS Filter Building Operating Costs**Ronald K Kruchinski** to: Linda Bridwell, Zachery B. Dukes

07/25/2014 11:31 AM

Cc: Keith L Cartier

All the numbers are based upon 2013 actual expenses.

Filter wash water- 18.28 million gallons of water. RRS unit production cost was on average \$350 / MG. Wash water cost us \$6,398. I would expect similar costs in the new building .

Labor- Total labor at RRS was \$520,256. If operators and maintenance spend about 15% of their time on the filter building operation the cost would be \$78,038. I would expect a similar allocation in the new building.

Chemicals- We spent \$38,534 on chlorine. If we reduce our chlorine 50% due to not pre-chlorinating we could save \$19,000. 50% reduction would likely be the maximum reduction we may be better with a more conservative value like 30-40% reduction.

Electric- We spent \$42,767 on the filter building. I would expect similar costs in the new building .

Kevin Kruchinski | Production Superintendent | Kentucky American Water | 2300 Richmond Rd | Lexington, KY 40502 | O 859-335-3418 | M 859-361-1770

Kentucky American Water is a proud recipient of the "2014 Best Places to Work in Kentucky Award ."

**Richmond Road - Existing RTU I/O Count**

Evans, Darryl W to: Michael.Maggard@amwater.com
Cc: "Zachery.Dukes@amwater.com", "Melton, Lisa" , "Casey, Bret"

08/07/2014 03:39 PM

Mike,

Following up on our phone call, it looks like the existing RTU I/O will be sufficient. As of right now each RTU has 48/32/16/8 DI/DO/AI/AO. So far I count 42/24/10/2 needed. According to the Emerson drawings, you have 10 spare discrete inputs now (>20%), in the future you would have 6 (<20%). The other card types have ample spares as is. There are 3 spare slots.

Let me know if this warrants another 16 or 32 discrete input card. 6 spares seems on the low side to me but by the same token 22 or 38 seems excessive.

Please call if you would like to discuss.

Darryl W. Evans, PE

Associate | Hazen and Sawyer
2304 Hurstbourne Village Drive, Suite 1100, Louisville, KY 40299
(502) 290-6187 (office)
(502) 292-9090 (cell)
devans@hazenandsawyer.com



FW: KAW Gas Coordination

Casey, Bret to: Zachery.Dukes@amwater.com
Cc: "Green, Robert"

08/19/2014 09:09 AM

History: This message has been replied to.

We are all set on the natural gas coordination. You have two gas meters at the plant, one for the plant and one for the admin building. Our new gas line will be metered on the plant meter.

From: Dezelski, Teresa
Sent: Tuesday, August 19, 2014 9:02 AM
To: Casey, Bret
Cc: Melton, Lisa
Subject: KAW Gas Coordination

Bret-

I have coordinated the new AHU gas load with Columbus Gas of Kentucky. I have talked to Nick Schlarb (800-440-6111) at Columbia Gas and have been informed that the existing supplied pressure of 10 PSI and capacity of the system will not require any changes to add the new AHU at the filter building.

Looking through existing drawings there is a 2 ½" intermediate pressure line that passes the filter building to the chemical building. The new connection should be able to connect into this line.

Teresa Dezelski, LEED AP BD+C

Assistant Engineer | HAZEN AND SAWYER
150 E. Campus View Blvd., Suite 133, Columbus, OH 43235
614-781-9655 (Main) | 614-781-9665 (Fax)
tdezelski@hazenandsawyer.com | hazenandsawyer.com



Additional Scope Items

Casey, Bret to: Zachery.Dukes@amwater.com

08/20/2014 05:16 PM

History:

This message has been replied to.

Zach, there's a few things that have come up in meetings over the last few months that I keep forgetting to talk with you about. The first is the plant-wide arc flash study. We can certainly get you a proposal on doing that if you are still interested. The second is the environmental audit of the existing filter building (prior to demo of the building). I can talk to our folks in Lexington to find out who they might recommend for that.

Also, we've had some additional surveying from Integrated to survey the waste area and the extension on the spent backwash line. They also had a little bit more effort on the design of the rain gardens which wasn't part of the original scope. John will talk to you a little more about these things when he sees you on Friday morning. The surveying and rain garden design is not a significant effort, but I was wondering if there was an opportunity for some additional fee for these items. Let me know what you think.

Thanks.

Bret M. Casey, PE, BCEE

Senior Associate | Hazen and Sawyer
150 E. Campus View Blvd., Suite 133, Columbus, OH 43235
614 781-9655 (main) | 614 596-4155 (cell)
bcasey@hazenandsawyer.com | hazenandsawyer.com



Basis of Design Memo - Final

Green, Robert to: Zachery Dukes
(zachery.dukes@amwater.com)

08/22/2014 09:50 AM

Cc: "Casey, Bret"

History: This message has been replied to.

Zach,

Per your discussion with Bret, attached please find the Basis of Design Memo – Final.

Please open it up and take a look and let me know this document is what you needed for the PSC email from Brent.

Thank you.

Robert A. Green, PE

Associate | Hazen and Sawyer
7870 East Kemper Road, Suite 300, Cincinnati, OH 45249
513 469-2750 (main) | 513 469-5125 (direct) | 313 304-6614 (cell) | 513 469-2751 (fax)
rgreen@hazenandsawyer.com | hazenandsawyer.com



Basis of Design Memo_Final.pdf



RE: Basis of Design Memo - Final

Green, Robert to: Zachery.Dukes@amwater.com
Cc: "Casey, Bret"

08/22/2014 10:21 AM

It has not changed.....it was produced same time your hard copy was produced.

Bob

-----Original Message-----

From: Zachery.Dukes@amwater.com [mailto:Zachery.Dukes@amwater.com]
Sent: Friday, August 22, 2014 10:11 AM
To: Green, Robert
Cc: Casey, Bret
Subject: Re: Basis of Design Memo - Final

Has this changed at all since you guys sent me hard copies labeled Final?

Zachery B. Dukes, P.E.
Project Manager Engineer
Kentucky American Water
2300 Richmond Road
Lexington, KY 40502

Office (859) 268-6352
Cell (859) 537-0750
zachery.dukes@amwater.com
www.amwater.com

From: "Green, Robert" <rgreen@hazenandsawyer.com>
To: "Zachery Dukes (zachery.dukes@amwater.com)"
<zachery.dukes@amwater.com>,
Cc: "Casey, Bret" <bcasey@hazenandsawyer.com>
Date: 08/22/2014 09:50 AM
Subject: Basis of Design Memo - Final

Zach,

Per your discussion with Bret, attached please find the Basis of Design Memo - Final.

Please open it up and take a look and let me know this document is what you needed for the PSC email from Brent.

Thank you.

Robert A. Green, PE

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[attachment "Basis of Design Memo_Final.pdf" deleted by Zachery B. Dukes/KAWC/AWWS]

**FW: KAW - Filter Building Constructability Input**

Casey, Bret to: Zachery.Dukes@amwater.com

08/25/2014 08:27 AM

Zach, here's the other structural/constructability issues we want to talk to Roger's about. Let me know if it's OK to forward to Roger's. Thanks.

From: Melton, Lisa
Sent: Thursday, August 21, 2014 9:04 AM
To: Casey, Bret
Cc: Green, Robert
Subject: KAW - Filter Building Constructability Input

Bret,

Summary of constructability/cost items we would like input from W.Rogers on:

- Filtered Water Control Vault (S100/S103): Design has been updated to reflect filtered water effluent flumes to the control vault. Invert of flume is 978.33, invert of box is 986.00. Several options noted below for possible construction methods. Please advise on most cost effective method.
 - Lower half the control vault (south portion, upstream of weir) to elev 978.33. Keep north chamber at current elev. 986.00 for 48" piping to CT basin.
 - Raise floor of control vault to an approximate elevation of 990.50. The 48" FLW will exit from bottom of north chamber to CT basin. Fitting shall be concrete encased.

- North FTB Stairway (S100/S103): Clarification on construction method requested for north stair into Filter Building. Is the preference to leave the area hollow and abandon the forms, or will stone fill be used.

- Filter Gallery walkway (M102): With the reduction in exterior wall thickness, access around the columns and actuators on the outboard side of the filters is only 2'2". To increase access in these areas we can either add a 45o chamfer at the corner of the filters (option A) or we can extend the cantilevered walkway 10" (option B). W. Rogers is asked to advise on the most cost effective method.

Please modify if needed – thanks!

Lisa

Lisa Melton

Assistant Engineer | Hazen and Sawyer
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lmelton@hazenandawyer.com | hazenandsawyer.com



112-020032-Filter Building.dwf

**RE: KAW - RR Filters**

Casey, Bret to: Michael Bailey
Cc: "Green, Robert", "Melton, Lisa" , "Zachery.Dukes@amwater.com"

08/25/2014 08:46 AM

Michael, attached are the meeting minutes from our structural meeting a few weeks ago. We are planning on having our next meeting on 9/11 in Lexington. Not sure yet on time, but likely mid-morning. We expect to get you an updated set of drawings after Labor Day.

From: Michael Bailey [mailto:michaelb@wrogers.com]
Sent: Tuesday, August 19, 2014 8:06 AM
To: Casey, Bret
Subject: FW: KAW - RR Filters

Attached is precast beam details

Michael Bailey
W. Rogers Company
Office: 859-231-6290
Direct: 859-410-7212
michaelb@wrogers.com

From: Michael Bailey
Sent: Thursday, August 07, 2014 4:12 PM
To: 'Casey, Bret'
Subject: KAW - RR Filters

From our discipline meetings last week:

- Attached is cutsheet on the Labyrinth waterstop we proposed to use at the wall vertical and slab horizontal construction joints. At the wall to slab joints the normal PVC flat waterstop is what we would use.
- I am waiting (was told would have by tomorrow and will forward) on some cutsheets from prestress manufacture regarding the use of precast beams. Below is contact regarding these beams. We have worked with MSP on previous jobs and they are aware that you guys might call with questions:
 - Mid South Prestress – contact Scott Hadder 937-477-0128 or shadder@msprestress.com
- Below is link regarding alternate metal roof manufacture. This company has been in the roof business for over 50 years. Product details can be found on the website.
 - Atas.com

Please advise if you need any more information on products above or have any other questions.
Thanks.

Michael Bailey
W. Rogers Company
Office: 859-231-6290

Direct: 859-410-7212
michaelb@wrogers.com



RRS Structural Review Meeting_Minutes_07-31-2014.docx