

**ADDENDUM NO. 1**

**TO THE CONTRACT DOCUMENTS**

For the construction of the  
FISHERSVILLE WASTEWATER TREATMENT FACILITY  
EXPANSION AND ENR UPGRADE  
AUGUSTA COUNTY SERVICE AUTHORITY

Date: July 5, 2007  
B&V Project: 142230

To All Planholders and/or Prospective Bidders:

The following changes, additions and/or deletions are hereby made a part of the Contract Documents for the construction of the Expansion and ENR Upgrade of the Fishersville Wastewater Treatment Facility, Dated June 14, 2007, as fully and complete as if the same were fully set forth therein:

**A. PLANS**

1. Drawing L-05 (Sheet 5 of 228). ADD information for Monuments A and B. See Figures AD1-L1 and AD1-L2, respectively, attached to this Addendum No. 1.
2. Drawings C-05, C-06, C-07, C-08 (Sheets 12, 13, 14 and 15 of 228). DELETE sheets and REPLACE with revised drawings attached to this Addendum No. 1. (Revised full size sheets available upon request.)
3. Drawings SF-1, SF-2, SF-3 (Sheets 68, 69, and 70 of 228): DELETE sheets and REPLACE with revised drawings attached to this Addendum No. 1. (Revised full size sheets available upon request.) Revisions include the following:
  - a. Elevation of slab for backwash pumps lowered from 1247.50 to 1246.50 as shown.
  - b. Wall pipes added as shown.
  - c. Ship's ladder added as shown.
  - d. Location of backwash pumps, as shown in Section 1, SF-2, revised to match location in plan view.
4. Drawing M-02 (Sheet 96 of 228): ADD callout for weir elevation at end of grit channel "Weir Plate El. 1227.50"
5. Drawing M-29 (Sheet 123 of 228): ADD 2" sump pump discharge bypass from sanitary drain connection to additional 2" quick disconnect located at the truck unloading sump. Reference the drawings PID-24 and P-3. See Figure AD1-M1, attached to this Addendum No. 1.
6. Drawing P-3 (Sheet 143 of 228): See Figure AD1-P1, attached to this Addendum No. 1, for the following changes to drawing:
  - a. Plan note number 3. REPLACE text as follows; "Provide permanent signage in letters not less than 1/2" in height, to read 'SUMP PUMP DISCHARGES TO PLANT DRAIN PUMP STATION OR WASTE REMOVAL TRUCK CONNECTION. VERIFY TYPE OF CONTENTS OF CONTAINMENT AREA PRIOR TO SUMP PUMP OPERATION. OPEN ALS-VBL-802 AND CLOSE ALS-VBL-801 FOR PLANT DRAIN DISCHARGE. OPEN ALS-VBL-801 AND CLOSE ALS-VBL-802 FOR WASTE REMOVAL TRUCK CONNECTION.' This sign shall be securely attached in a visible location adjacent to sump pump control panel."

- b. Plan note number 4. ADD text as follows; “provide tee with two 1 1/4” shut off valves. One shut off valve with piping going to the funnel receptor and the other shut off valve with piping going to the truck unloading station. See sht M-29 and PID-24 for continuation.”
  - c. DELETE equipment designation “SP-801” and REVISE to “ALS-PSP-801”
7. Drawing P-5 (Sheet 145 of 228):
- a. REVISE Sump and Sewage Pump Schedule as follows:
    - i. DELETE the text “2.25” under the Sump Levels, Lead column for pump ALS-PSP-801.
    - ii. ADD the text “2-inch” under the Remarks column for pump ALS-PSP-801.
    - iii. ADD the text “2 – HIGH WATER ALARM” under the Remarks at the bottom of the schedule.
  - b. REVISE Plumbing Equipment Schedule as follows:
    - i. REVISE EWH-1 manufacturer/model to read, “STATE CSB-82-18-IFE”.
    - ii. REVISE ET-1 description from “14 gallon” to “8 gallon”.
    - iii. REVISE ET-1 manufacturer/model to read, “AMTROL THERM-X-TROL ST-20V-C”.
    - iv. REVISE EWH-2 manufacturer/model to read, “STATE CSB-82-18-IFE”
    - v. REPLACE detail J, as shown in Figure AD1-P2, attached to this Addendum No. 1.
8. Drawing E-1 (Sheet 146 of 228): ADD symbol “AREA Type 4X” under Area Designation. The symbol denotes “Indoor wet locations such as vaults, hosedown areas, basements etc. Minimum NEMA Type 4X Enclosure for equipment and gasketed fittings in a conduit system.” REVISE “480 volt, 3 Phase Welding Receptacle” symbol to “480 volt, 3 Phase Simplex Receptacle.”
9. Drawing E-3 (Sheet 148 of 228): REVISE callouts of electrical manholes to the East and West of Electrical Building from “ELECTRICAL VAULT” to “ELECTRICAL MANHOLE”
10. Drawing E-13 (Sheet 158 of 228): ADD grounding conductor #4/0 for Groundwater Pumping Station DRN-PSM-301 and connect to grounding ring around BNR Basins 3 and 4.
11. Drawing E-18 (Sheet 163 of 228): Dewatering Building Mezzanine Plan. Change Area Type 12 to Area Type 4X.
12. Drawing E-22 (Sheet 167 of 228): REVISE circuit number "SM-1" to "UTILITY" in Duct Bank Schedule Table for conduit number 1.
13. Drawing E-25 (Sheet 170 of 228): On Detail for Electrical Building Plan, change reference for ELECTRICAL VAULT to ELECTRICAL MANHOLE.
14. Drawing E-26 (Sheet 171 of 228). For pumps P-315, 317, 318 REVISE temperature and moisture connection leads connected to receptacles similar to power leads. REVISE receptacle symbol from 120 volt receptacle to 480 volt, 3 phase receptacle on motor leads and other three 480 leads for pumps P-315, P-317, P-318.

15. Drawing E-27 (Sheet 172 of 228). For pump P-312 REVISE temperature and moisture connection leads connected to receptacles similar to power leads. REVISE receptacle symbol from 120 volt receptacle to 480 volt, 3 phase receptacle on motor leads and other three 480 leads for pumps P-312.
16. Drawing E-34 (Sheet 179 of 228). DELETE circuits MCCDWB-67 and PLCCFG1-17.
17. Drawing E-36 (Sheet 181 of 228). One- Line Diagram BL-751 & BL-77. ADD circuit "BL751-2: 2-1PR#16S between LCP-DB to AFD-751. ADD circuit "BL751-4: 2-1PR#16S between LCP-DB to AFD-771.
18. Drawing E-38 (Sheet 183 of 228).
  - a. Switch Development SS1. REVISE "Local" to "Hand."
  - b. Schematic for Modulating Valve Actuator AIR-VBF-452.  
ADD "(Similar for VBF-313,314,315, VBF-323,324,325, VBF-333,334,335, VBF-343,344,345, VBF-318,328,338,348)."
  - c. Schematic for Motor Operated Valve VPG-310.  
ADD "Similar for UV-GSD-611, 621."
  - d. Schematic for Electronic Valve Actuator BNR-VBF-313
    - i. REPLACE text "Valve" with "Gate." Schematic to read as "Modulating Electronic Gate Actuator UV-GSD-615 (Similar for UV-GSD-625, FLT-GSD-500, PTR-GSD-212, 213).
    - ii. REPLACE Note 2 to read as "Not Used."
19. Drawing E-39 (Sheet 184 of 228).
  - a. Schematic for FLT-PVD-511 AFD, (applies to FLT-PVD-512, 513, 514, 515)
    - i. REVISE contact 1-2 "SS1 Hand" to "SS2 Local".
    - ii. REVISE Development SS1. REVISE "Hand" to "Local."
  - b. Schematic for SAMP-PSM-572, REVISE contact 5-6 SS7 from "SS7 Remote to "SS7Auto".
20. Drawing E-40 (Sheet 185 of 228).
  - a. Schematic for BL-751 AFD & BL-771 AFD.
    - i. REVISE analog wiring "Remote 4-20mA Speed Indication to PLC-DWB" to wiring "Remote 4-20mA Speed Control to PLC-DWB"
    - ii. ADD analog wiring "Remote 4-20mA Speed Control to LCP-DB."
    - iii. DELETE schematic for "Modulating Gate Actuator GSD-212 (Similar for GSD-213, FLT-GSD-500, UV-GSD-615, UV-GSD-625)."
  - b. Schematic for RAS-PSM-411 AFD, Similar for RAS-PSM-412, 421, 422, 431, 432.
    - i. REVISE analog wiring "Remote 4-20mA Speed Control to PLC-DWB" to wiring "Remote 4-20mA Speed Indication to PLC-DWB."
    - ii. REVISE contact 1-2 "SS2 Hand" to "SS2 Remote".

iii. REVISE Development SS2. CHANGE "Hand" to "Local."

21. Drawing E-41 (Sheet 186 of 228): DELETE circuit PLCCFG1-17.
22. Drawing PID-04 (Sheet 198 of 228).
  - a. DELETE 1-PEW-CU-3 from the PEW piping to SCR-COS-103. REPLACE with 1.5"-PEW-CU-3 to the PEW piping to SCR-COS-103
  - b. DELETE the HOA selector switch (HS) and interlock diamond in the existing MCC-IPS box for the existing Grit Blowers.
23. Drawing PID-05 (Sheet 199 of 228): ADD Seal Water System piping and solenoid valve to the Influent Pump INFP-PVE-141 similar to the existing pumps.
24. Drawing PID-23 (Sheet 217 of 228).
  - a. DELETE reference to NPW System for the centrifuge inlet piping flushing water source. REPLACE reference to PEW System for the centrifuge inlet piping flushing water source.
  - b. DELETE valve VBF-911 and associated inputs and outputs located in the PLC-CFG-1.
25. Drawing PID-24 (Sheet 218 of 228). See figure AD1-PID1, attached to this Addendum No. 1.
  - a. DELETE sump pump schedule.
  - b. ADD valve tag numbers as follows: ALS-VBL-801 for the 2" ball valve to bypass the sump pump discharge to the waste removal truck connector and ALS-VBL-802 for the 2" ball valve to the sump pump discharge to plant drain.
26. Drawing PID-30 (Sheet 224 of 228).
  - a. DELETE 1.5"-NPW-CU-3 from the PEW piping to the Polymer Activation Chamber. REPLACE with 1.5"-PEW-CU-3 to the PEW piping to the Polymer Activation Chamber.
  - b. DELETE reference to NPW Water Supply System for the Polymer Activation Chamber water source. REPLACE with reference to PEW Water Supply System for the Polymer Activation Chamber water source.

## **B. SPECIFICATIONS**

1. Section 00400: Following the last page, INSERT the scope of services and equipment from Walker Process Equipment and Chicago Pumps attached to this Addendum No. 1.
2. Section 01015: Page 3, in Paragraph 9, under Operations of Existing Facilities: after the first subparagraph, ADD the following:

“Dewatering of existing process tanks will be performed by Owner. With a minimum of 3 weeks notice, Owner will drain tanks and dispose of the contents. Additional cleaning of the tanks prior to construction activities will be the responsibility of the Contractor.”
3. Section 01620: DELETE Section 01620 and REPLACE with revised Section 01620 attached to this Addendum No. 1.

4. Section 03480. ADD Section 03480, as attached in this Addendum No. 1. The precast system described will be accepted as an alternative for the construction of BNR Basins 3 and 4. Concrete must meet mix design requirements included in this Addendum No. 1.

5. Section 11140:

a. page 4, in Paragraph 2-2, under Performance and Design Requirements, for pumps FLT-PVD-513, FLT-PVD-514 and FLT-PVD-515, REVISE the performance requirements as follows:

|  | DELETE  | REPLACE WITH |
|--|---------|--------------|
| Minimum head at reduced speed              | 9.3 ft  | 10.9         |
| Capacity at minimum head and reduced speed | 278 gpm | 1389 gpm     |

b. Page 8, in Paragraph 2-5.09 under Lineshaft Stuffing Box, DELETE “low pressurehigh pressureoil lubricated” and REPLACE with “low pressure.”

c. DELETE the following sentence:

“The stuffing box housing of enclosed lineshaft units shall include provisions for placing the lineshaft enclosing tube in tension and for maintaining pressure tight joints.”

6. Section 11150: Paragraph 2-2 PERFORMANCE AND DESIGN REQUIREMENTS. DELETE table and REPLACE with table attached to this Addendum No. 1.

7. Section 11243:

a. DATA SHEET: Performance and Design Requirements:  
ADD Headloss of 1.49 ft.

b. Sub-Paragraph 2-9.02 Filtration Local Control Panel. REVISE last paragraph as follows:

Panel power supply shall be 480 volts ac, 60 Hz, three phase, 3-wire, **and provided by an uninterruptible power supply (UPS) system in accordance with the UPS section**. Control voltage shall be derived from the 480 volt source through a control power transformer provided in the local control panel.

c. Sub-Paragraph 3-2.04 Field Performance Test (Backwash Water Use). REVISE penalty assessed from \$300 per percent to \$1280 per percent.

8. Section 11312:

a. Sub-Paragraph 2-2.01. Description. REVISE Operating floor elevation from 1226 to 1229.

b. Paragraph 2-6 Drive Assembly and Paragraph 2-7 Electrical. REVISE hazardous area rating to Class 1, Division 2.

9. Section 11315:

a. Paragraph 2-1. Service and Installation Conditions. REVISE the following sentence: “The grinder shall be used to reduce particle size of primary sludge pumped to thickened primary sludge holding cells” to say: “The grinder shall be used to reduce particle size of digested sludge pumped to centrifuge.”

- b. Paragraph 3-2. Installation Check. ADD the following after Paragraph 3-1:  
 3-2. Installation Check. An experienced, competent, and authorized representative of the manufacturer shall visit the site of the Work and inspect, check, adjust if necessary, and approve the equipment installation. The representative shall be present when the equipment is placed in operation in accordance with Section 01650, Startup Requirements, and shall revisit the job site as often as necessary until all trouble is corrected and the equipment installation and operation are satisfactory in the opinion of Engineer.

The manufacturer's representative shall furnish a written report certifying that the equipment has been properly installed and lubricated; is in accurate alignment; is free from any undue stress imposed by connecting piping or anchor bolts; and has been operated under full load conditions and that it operated satisfactorily.

All costs for these services shall be included in the contract price.

10. Section 11515:

- a. Paragraph 2-2 Performance and Design Requirements. ADD the following to the table:  
 Nominal Cell Size for BNR-MXP-204: 6.0' x 6.0'  
 Cell sidewater depth for Oxidic Zone: 16.7'
- b. Sub-Paragraph 3-3.01 Suspended Solids Distribution Test. ADD the following after the second paragraph:

| <u>Cell</u>        | <u>Influent Flow</u> | <u>RAS Flow</u> | <u>Recycle Flow</u> |     |
|--------------------|----------------------|-----------------|---------------------|-----|
| Anaerobic Cell 1   | 1                    | 1               | 0                   | mgd |
| Cell 2             | 1                    | 1               | 0                   | mgd |
| Cell 1             | 1                    | 1               | 3                   | mgd |
| Anoxic Cell 2      | 1                    | 1               | 3                   | mgd |
| Post-Anoxic Cell 1 | 1                    | 1               | 0                   | mgd |
| Post-Anoxic Cell 2 | 1                    | 1               | 0                   | mgd |

A round of sampling shall consist of one sample collected at each of eight points in each test basin/cell as indicated on Fig 1-11515. A minimum of three rounds of samples shall be collected. Where oxygen uptake rate testing is specified, samples collected for oxygen uptake rate determination can be used for the suspended solids analyses at the discretion of Contractor. Each sample shall be analyzed according to Method 2540 D, Total Suspended Solids Dried at 103-105°C, 17th Edition, Standard Methods for the Examination of Water and Wastewater. The total suspended solids concentration of all samples shall be averaged and at least 2/3 of the data points shall be within ± 10 percent of the average.

As each sample or measurement is collected the time (month, day, hour and minute) shall be recorded. In the report submitted for review, the collection or measurement times shall be included with the analytical results for each sample or the value of each measurement. The influent flow, RAS flow and MLSS recycle flow shall be recorded at the beginning and end of each round of sampling, and the recorded values shall be included in the report.

Each round of samples shall be collected from all eight points in the test basin/cell sequentially or simultaneously. When a round is complete, the subsequent round may

begin. Samples shall be taken between 8 a.m. and 5 p.m., but after the influent high flows in the morning stabilize to minimize the chance of changing influent characteristics.

Contractor will be responsible for collecting all and ensuring that they are representative. The shall be taken in as short a period as possible, not to exceed 2 hours, to minimize the potential effect of aeration basin influent composition variability. Samples shall be analyzed at an EPA certified laboratory of Contractor's choice.

11. Section 11610. Paragraph 2-8.03 Electric Motors. ADD the following after the second paragraph:

"Each motor shall be furnished with at least one automatic reset winding temperature switch per phase. Temperature switch contacts shall be normally closed and rated 5 amps at 120 volts ac. The contacts shall be wired in series with the end leads brought out to the motor terminal box."

12. Section 13208. ADD this Section 13208, as attached to this Addendum No. 1. The precast system described in this section will be accepted as an alternative for the construction of the Aerobic Digesters. Concrete must meet design mix included with Section 03480.

13. Sections 13700, 13701 and 13702: Paragraph 2-1.02 under Operating Conditions,

DELETE

|   |     |
|---|-----|
| Effluent fecals 30 day geometric mean, #/100 mL | 200 |
|---|-----|

REPLACE with

|   |     |
|---|-----|
| E. Coli 30 day geometric mean, #/100 mL | 126 |
|---|-----|

14. Section 15091-S01. Miscellaneous Ball Valve Schedule. DELETE this Schedule.
15. Section 15092-S01. Industrial Ball Valve Schedule. DELETE this Section and REPLACE with Schedule attached to this Addendum No. 1.
16. Section 15093-S01. Check Valve Schedule. DELETE this Section and REPLACE with Schedule attached to this Addendum No. 1.
17. Section 15100P-S01. Yard Hydrants Schedule. ADD this Schedule, as attached to this Addendum No. 1.
18. Section 15101. AWWA Butterfly Valves. ADD this Section and associated Schedule, as attached to this Addendum No. 1.
19. Section 15102-S01. Eccentric Plug Valves Schedule. DELETE this Section and REPLACE with Schedule attached to this Addendum No. 1.
20. Section 15104. Resilient-Seated Gate Valves. DELETE this Section and associated Schedule.
21. Section 15105. Double Disc Gate Valves. ADD this Section and associated Schedule, as attached to this Addendum No. 1.
22. Section 15160: DELETE the last page and REPLACE with Flow Tubes and Venturi Tubes Schedule attached to this Addendum No. 1.

### C. CONTRACTOR/MANUFACTURER QUESTIONS

1. Section 11243: Manufacturer questions:
  - a. Motor Efficiency: The filter section mentions that these motors can be standard efficiency. However, there is no supersede clause and the motor section calls out the motors to be premium efficient.  
**Motors should be premium efficient.**
  - b. UPS: Confirm if a UPS in our panels is required. It has been removed as a reference in our section, however the UPS section still states that our panel is to have a UPS  
**UPS is required and shall be per Section 13380. See amendment to Section 11243 above.**
  - c. Control Panel Heaters: PLC Section states that we are to provide a heater in our panel. Confirm if a heater is needed  
**Heaters are needed because of the high humidity in the filter building.**
  - d. Confirm that our PLC is to be based on the Ethernet connection and not DH+  
**PLC to have Ethernet with Allen-Bradley or Siemen's protocol**
  - e. Backwash pump elevation. Confirm how they are resolving this issue so that the pumps will retain their prime or use a flow meter so that we know to start the BW timer once the proper flow is achieved.  
**As indicated above, elevation of filter backwash pumps has been lowered 1' from original design. Elevation is now 1246.50.**

#### D. ATTACHMENTS

1. Figure AD1-1: Revisions to drawing L-05
2. Figure AD1-2: Revisions to drawing L-05
3. Revised Drawings C-05, C-06, C-07 and C-08
4. Revised Drawings SF-1, SF-2 and SF-3
5. Figure AD1-M1: Revisions to drawing M-29
6. Figure AD1-P1: Revisions to drawing P-3
7. Figure AD1-P2: Revisions to drawing P-5
8. Figure AD1-PID1: Revisions to drawing PID-24
9. Attachment to Section 00400- Scope of Services and Equipment from Walker Process Equipment and Chicago Pumps
10. Revised Section 01620- Equipment Schedule
11. Section 03480- Precast concrete specification for BNR Basins 3 and 4 and concrete mix
12. Revised Section 11150- Submersible Pumps- Performance and Design Requirements Table
13. Section 13208- Precast concrete specification for Aerobic Digesters

14. Revised Section 15092-S01- Revised Industrial Ball Valve Schedule
15. Revised Section 15093-S01-Revised Check Valve Schedule
16. Section 15100P-S01- Yard Hydrant Schedule
17. Section 15101- AWWA Butterfly Valves and Schedule
18. Section 15105- Double Disc Gate Valves and Schedule
19. Revised Section 15160- Revised Flow Tubes and Venturi Tubes Schedule