

**SAN ANTONIO WATER SYSTEM  
CENTRAL WATER INTEGRATION PIPELINE  
TERMINUS TREATMENT FACILITY  
SAWS Job No. 18-8616  
SAWS Solicitation No. CO-00185**

**ADDENDUM No. 8  
September 11, 2018**

**To Respondent of Record:**

This addendum, applicable to work referenced above, is an amendment to the bidding documents and as such will be made a part of and included in the Contract Documents. Acknowledge receipt of this addendum by entering the addendum number and issue date in the space provided in submitted copies of the proposal.

**QUESTIONS AND ANSWERS**

- Q1. Is the PCSI to provide the 48" Mag meter on drawing I-1008? This Instrument is not on the Instrument Schedule.
- A1. Yes, FE/FIT-5090 is to be provided by the PCSI. This will be added Table 17410-1: Instrument Schedule in this addendum.
- Q2. In Addendum 6, they mention additional equipment is to be shipped to the ASP's Facility in Kansas City, MO. However, in the Spec Section 17300 the states the Owner is the ASP? Please Clarify who is the ASP for this project.
- A2. The ASP for the Owner will be Black & Veatch.
- Q3. In Spec Section 17310 Flow Instruments states to provide 1 per 10 of Instruments provided. Are we to include Mag Meter inline Flow Elements or just the Flow Meter Remote Transmitters?
- A3. The Contractor shall provide remote transmitter(s) for the spare requirements of 17310, as modified in this addendum.
- Q4. Who is responsible furnishing and installing the 15KVA UPS Systems shown on the Electrical one – line drawings? Please provide spec section for these 15KVA UPS's
- A4. The PCSI is responsible for providing the UPS. Revisions to Section 17328 are included in this addendum.
- Q5. Addendum 6 drawing E-1004, changed the outdoor pole mounted cameras to be on the 20' site lighting poles instead of dedicated 35' prestressed concrete camera poles. Is it the

intention of SAWS to install these on the light poles or do they require 35' concrete poles adjacent to the light poles?

- A5. The outdoor cameras may be installed on the site lighting poles where shown adjacent. Separate poles are not required if a light pole is in the same location.
- Q6. Electrical one-line diagrams show 15KVA UPS system, however the UPS system specification section 17328 schedule lists the size to be 1500VA, is there another specification to be utilized for 15KVA available?
- A6. Revisions to Section 17328 are included in this addendum.

## **REVISIONS TO CONTRACT DOCUMENTS AND TECHNICAL SPECIFICATIONS**

### **SECTION 17310**

- a) Paragraph 2.02.A, delete this paragraph in its entirety and replace with the following:
- A. Contractor shall furnish a minimum of one or 10 percent of each installed remote flow meter transmitter, whichever is greater.

### **SECTION 17328**

- a) Table 17328, delete this table in its entirety and replace with the following:

<b>UPS Tag</b>	<b>Location</b>	<b>Size</b>	<b>Input/Output Power</b>
	ELECTRICAL BUILDING	15KVA	120/208 VAC Input 3-PHASE/ 120/208 VAC Output 3-PHASE
	CONTROL BUILDING	15KVA	120/208 VAC Input 3-PHASE/ 120/208 VAC Output 3-PHASE
	DEWATERING FACILITY	15KVA	120/208 VAC Input 3-PHASE/ 120/208 VAC Output 3-PHASE
	OSG FACILITY	15KVA	120/208 VAC Input 3-PHASE/ 120/208 VAC Output 3-PHASE

- b) Add the following to Paragraph 2.02.A:
2. APC Symmetra Series (3-phase UPS)
- c) Paragraph 2.02.C.3. Item a, delete this paragraph in its entirety and replace with the following:

a. Output: Reference table under Paragraph 1.01.A.

d) Add the following after Paragraph 2.11:

2.12 ENCLOSURE (3 PHASE UPS)

- A. The UPS unit, comprised of an input circuit breaker, rectifier/charger, inverter, static transfer switch and maintenance bypass switch, shall be housed in a single free-standing NEMA 12 enclosure. Cabinet doors/covers shall require a tool for gaining access. Casters and stops shall be provided for ease of installation. Front access only shall be required for expedient servicing and adjustments. The UPS cabinet shall be structurally adequate and have provisions for hoisting, jacking and forklifting handling.
- B. The UPS shall be furnished with a sign marked "DANGER 208 VOLTS KEEP OUT". Letters shall be not less than 1-in high, 1/4-in stroke. Sign shall be laminated plastic with black letters on a white background, fastened by 316 stainless steel screws and OSHA approved.

SECTION 17410

a) Add FE/FIT-5090 to Table 17410-1: Instrument Schedule. Revise and replace Table 17410-1 as included herein.

This addendum is comprised of a total of 17 pages, including attachments.



**Timothy D. Gobrogge, P.E.**

Tetra Tech, Inc.

Texas Registered Engineering Firm No. 3924

700 North Saint Mary's Street, Suite 300

San Antonio, Texas 78205

END OF ADDENDUM No. 8

Table 17410-1: Instrument Schedule

REF	DWG NO.	TAG No.	QTY	Description	Instrument Type	Location	Mount: Process or Panel	Power Source	Output	Instrument Range or Set Point	HART (Yes/No)	Comments	Spec Section
1	I-1002	LIT-1011 LIT-1021	2	LEVEL SENSOR	LEVEL SENSOR/TRANSMITTER	CO2 BULK STORAGE TANK	PROCESS	120VAC	4-20mA	0-30 FT	No	PROVIDED BY CARBON DIOXIDE SYSTEM SUPPLIER	11300
2	I-1002	PIT-1012 PIT-1022	2	PRESSURE SENSOR	PRESSURE SENSOR/TRANSMITTER	CO2 BULK STORAGE TANK	PROCESS	120VAC	4-20mA	0-200PSI	No	PROVIDED BY CARBON DIOXIDE SYSTEM SUPPLIER	11300
3	I-1002	PSL-1014 PSL-1024	2	CO2 BULK STORAGE TANK LOW PRESSURE SWITCH	LOW PRESSURE SWITCH	CO2 BULK STORAGE TANK	PROCESS	N/A	Dry-contact	50PSI	No	PROVIDED BY CARBON DIOXIDE SYSTEM SUPPLIER	11300
4	I-1002	PSH-1013 PSH-1023	2	CO2 BULK STORAGE TANK HIGH PRESSURE SWITCH	HIGH PRESSURE SWITCH	CO2 BULK STORAGE TANK	PROCESS	N/A	Dry-contact	150PSI	No	PROVIDED BY CARBON DIOXIDE SYSTEM SUPPLIER	11300
5	I-1002	PI-1015 PI-1025	2	CO2 VAPOR FEED PRESSURE GAUGE	PRESSURE GAUGE	CO2 BULK STORAGE SKID - CARBON DIOXIDE GAS LINE	PROCESS	N/A	N/A	0-200PSI	No	PROVIDED BY CARBON DIOXIDE SYSTEM SUPPLIER	11300
6	I-1002	AE/AIT-1521 AE/AIT-1522	2	HOT-RETRACTABLE INSERTION pH SENSOR	pH SENSOR/INDICATING TRANSMITTER	CARRIER WATER LINES TO PRESSURIZED SOLUTION FEED PANELS	PROCESS	120VAC	4-20mA	0 - 14 pH	No	PROVIDED BY CARBON DIOXIDE SYSTEM SUPPLIER	11300
7	I-1002	PSL-1531 PSL-1532	2	SOLUTION FEED PANEL LOW PRESSURE SWITCH	LOW PRESSURE SWITCH	PRESSURIZED SOLUTION FEED PANEL - CARRIER WATER LINE	PANEL	N/A	Dry-contact	30PSI	No	PROVIDED BY CARBON DIOXIDE SYSTEM SUPPLIER	11300
8	I-1002	PI-1531-1 PI-1531-2 PI-1532-1 PI-1532-2	4	STATIC MIXER PRESSURE GAUGES	PRESSURE GAUGE	PRESSURIZED SOLUTION FEED PANEL - UPSTREAM AND DOWNSTREAM OF STATIC MIXERS	PANEL	N/A	N/A	0 - 160 PSIG	No	PROVIDED BY CARBON DIOXIDE SYSTEM SUPPLIER	11300
9	I-1002	FE-1541 FE-1542	2	CARBON DIOXIDE GAS FLOW METER	CORIOLIS FLOWMETER	PRESSURIZED SOLUTION FEED PANEL - CARBON DIOXIDE GAS LINE	PANEL	N/A	Analog	0 - 1,200 PPH	No	PROVIDED BY CARBON DIOXIDE SYSTEM SUPPLIER	11300
10	I-1002	FIT-1541 FIT-1542	2	CARBON DIOXIDE GAS FLOW INDICATOR/TRANSMITTER	FLOW TRANSMITTER	PRESSURIZED SOLUTION FEED PANEL - CARBON DIOXIDE GAS LINE	PANEL	120VAC	4-20mA	0 - 1,200 PPH	No	PROVIDED BY CARBON DIOXIDE SYSTEM SUPPLIER	11300
11	I-1002	PI-1541 PI-1542	2	CO2 VAPOR FEED PRESSURE GAUGE	PRESSURE GAUGE	CO2 VAPOR LINE ON FEED PANELS	PROCESS	N/A	N/A	0 - 160 PSIG	No	PROVIDED BY CARBON DIOXIDE SYSTEM SUPPLIER	11300
12	I-1002	PI-1590-1 PI-1590-2	2	CARBONIC ACID SOLUTION PRESSURE GAUGE	PRESSURE GAUGE	CARBONIC ACID SOLUTION INJECTION TO PROCESS TREATMENT	PROCESS	N/A	N/A	0 - 160 PSIG	No	PROVIDED BY CARBON DIOXIDE SYSTEM SUPPLIER	11300
13	I-1002	PSH-1511 PSH-1512	2	CO2 BOOSTER PUMP PRESSURE SWITCH	HIGH PRESSURE SWITCH	CO2 BOOSTER PUMP- CARBONATED PURIFIED WATER LINE	PROCESS	N/A	Dry-contact	150PSI	No	PROVIDED BY CARBON DIOXIDE SYSTEM SUPPLIER	11300
14	I-1002	TSH-1511 TSH-1512	2	CO2 BOOSTER PUMP EMPERATURE SWITCH	TEMPERATURE SENSOR	CO2 BOOSTER PUMP	INTERGAL TO MOTOR	N/A	Dry-contact	BY PUMP MANUFACTUER	No	PROVIDED BY CARBON DIOXIDE SYSTEM SUPPLIER	11300
15	I-1002	FSL-1511 FSL-1512	2	CO2 BOOSTER PUMP LOW FLOW SWITCH	FLOW SWITCH	CO2 BOOSTER PUMP	PROCESS	N/A	Dry-contact	BY PUMP MANUFACTUER	No	PROVIDED BY CARBON DIOXIDE SYSTEM SUPPLIER	11300
15	I-1003	PI-2001	1	STORAGE SILO PRESSURE INDICATOR	PRESSURE GAUGE	STORAGE SILO	PROCESS	N/A	N/A	0-XX PSI	N/A	PROVIDED BY LIME SYSTEM SUPPLIER	11292
16	I-1003	LE/LIT-2001	1	STORAGE SILO LEVEL SENSOR	LEVEL SENSOR	STORAGE SILO	LE - PROCESS LIT - PANEL	120VAC	4-20mA	0-XX PSI	YES	PROVIDED BY LIME SYSTEM SUPPLIER	11292

Table 17410-1: Instrument Schedule

REF	DWG NO.	TAG No.	QTY	Description	Instrument Type	Location	Mount: Process or Panel	Power Source	Output	Instrument Range or Set Point	HART (Yes/No)	Comments	Spec Section
17	I-1003	LS-2101	1	SCREW CONVEYOR FEEDER LEVEL SWITCH	LEVEL SWITCH	SCREW CONVEYOR FEEDER	PROCESS	N/A	Dry-contact	N/A	YES	PROVIDED BY LIME SYSTEM SUPPLIER	11292
18	I-1003	PIT-2090 PE-2090	1	PLANT WATER SUPPLY LINE PRESSURE SENSOR	PRESSURE SENSOR/TRANSMITTER	PLANT WATER SUPPLY LINE	PROCESS	24VDC LOOP-POWER	4-20mA	0-XX PSI	No	PROVIDED BY LIME SYSTEM SUPPLIER	11292
19	I-1003	LE/LIT-2121	1	LIME SLAKERS LEVEL SENSOR	LEVEL INDICATOR TRANSMITTER	LIME SLAKERS 21-MXR-21	PROCESS	120VAC	4-20mA	0-XX FT.	YES	PROVIDED BY LIME SYSTEM SUPPLIER	11292
20	I-1003	TIT-2121	1	LIME SLAKERS TEMPERATURE SENSOR	TEMPERATURE INDICATOR TRANSMITTER	LIME SLAKERS 21-MXR-21	PROCESS	24VDC LOOP-POWER	4-20mA	0-XX Deg. F	YES	PROVIDED BY LIME SYSTEM SUPPLIER	11292
21	I-1003	LE/LIT-2301	1	SLURRY AGING TANK LEVEL SENSOR	LEVEL SENSOR	SLURRY AGING TANK 23-MXR-01	PROCESS	120VAC	4-20mA	0-XX FT.	YES	PROVIDED BY LIME SYSTEM SUPPLIER	11292
22	I-1003	PI-2401	1	SLURRY LOOP PUMP PRESSURE INDICATOR	PRESSURE GAUGE	SLURRY LOOP PUMP 24-PMP-01	PROCESS	N/A	N/A	0-XX PSI	No	PROVIDED BY LIME SYSTEM SUPPLIER	11292
23	I-1003	PSH-2401	1	SLURRY LOOP PUMP PRESSURE SWITCH	PRESSURE SWITCH	SLURRY LOOP PUMP 24-PMP-01	PROCESS	N/A	Dry-contact	XX PSI RISING	No	PROVIDED BY LIME SYSTEM SUPPLIER	11292
24	I-1003	FE/FIT-2411 FE/FIT-2421	2	SLURRY LOOP PUMP FLOW SENSOR/INDICATOR TRANSMITTER	FLOW INDICATOR TRANSMITTER	SLURRY LOOP PUMP 24-PMP-01	PROCESS	120VAC	4-20mA	0-XX GPM	YES	PROVIDED BY LIME SYSTEM SUPPLIER	11292
25	I-1003	WE/WIT-2121A WE/WIT-2121B WE/WIT-2121C	3	LIME SLAKER WEIGHT SENSOR	WEIGHT SENSOR	LIME SLAKERS 21-MXR-21	PROCESS	120VAC	4-20mA	0-XX LBS.	YES	PROVIDED BY LIME SYSTEM SUPPLIER	11292
26	I-1004	AE/AIT-2511 AE/AIT-2521	2	LIME SATURATOR pH SENSOR/INDICATING TRANSMITTER	pH SENSOR	LIME SATURATOR NO.1 & NO. 2 25-SAT-11, 25-SAT-21	PROCESS	120VAC	4-20mA	0-14 PH	YES	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17310
27	I-1004	FE/FIT-2511	1	PURIFIED WATER DISCHARGE FLOW SENSOR/INDICATING TRANSMITTER	FLOWMETER	PURIFIED WATER DISCHARGE LINE TO LIME STAUATOR NO. 1	PROCESS	120VAC	4-20mA	9-XX MGD	YES	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17310
28	I-1004	FE/FIT-2521	1	PURIFIED WATER DISCHARGE FLOW SENSOR/INDICATING TRANSMITTER	FLOWMETER	PURIFIED WATER DISCHARGE LINE TO LIME STAUATOR NO. 2	PROCESS	120VAC	4-20mA	0-XX MGD	YES	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17310
29	I-1004	AE/AIT-2518 AE/AIT-2528	2	LIME SATURATOR TURBIDITY SENSOR/INDICATING TRANSMITTER	TURBIDITY SENSOR	LIME SATURATOR	PROCESS	120VAC	4-20mA	0-XX NTU	YES	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17318
30	I-1004	FE/FIT-2590	1	CARBONATED WATER FLOWMETER	FLOWMETER	CARBONATED WATER FROM 10 MG GROUND STORAGE TANK	PROCESS	120VAC	4-20mA	0-XX MGD	YES	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17310
31	I-1004	PI-2911 PSH-2911 PI-2912 PSH-2912	2	FEED PUMP PRESSURE GAUGE/HIGH PRESSURE SWITCH	PRESSURE GAUGE/SWITCH	SOLUTION FEED PUMP 29-PMP-12, 29-PMP-11	PROCESS	N/A	Dry-contact	GAUGE: 0-XX PSI SWITCH: XX-PSI (RISING)	No	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17314

Table 17410-1: Instrument Schedule

REF	DWG NO.	TAG No.	QTY	Description	Instrument Type	Location	Mount: Process or Panel	Power Source	Output	Instrument Range or Set Point	HART (Yes/No)	Comments	Spec Section
32	I-1004	PI-2712 PI-2711	2	LIME SLUDGE PUMP PRESSURE INDICATOR	PRESSURE GAUGE	LIME SLUDGE PUMP 27-PMP-11, 27-PMP-12	PROCESS	N/A	N/A	0-XX PSI	No	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17314
33	I-1004	FE/FIT-2720	1	LIME SLUDGE FLOW TO GRAVITY THICKENER	MAGNETIC FLOW METER	LIME SLUDGE PUMP 27-PMP-11, 27-PMP-12	PROCESS	120VAC	4-20mA	0-XX MGD	YES	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17310
34	I-1004	LE/LIT-2701	1	SLUDGE BLOWDOWN PIT LEVEL SENSOR/INDICATING TRANSMITTER	LEVEL SENSOR	SLUDGE BLOWDOWN PIT	PROCESS	120VAC	4-20mA	0-XX FT.	YES	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17312
35	I-1004	LE/LIT-2901	1	SLUDGE BLOWDOWN PIT LEVEL SENSOR/INDICATING TRANSMITTER	LEVEL SENSOR	LIME SOLUTION STORAGE TANK 29-TK-01	PROCESS	120VAC	4-20mA	0-XX FT.	YES	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17312
36	I-1004	PI-2501 PIT-2501	1	LIME SATURATION UNITS INFLUENT HEADER PRESSURE	PRESSURE GAUGE/INDICATING TRANSMITTER	LIME SATURATION TANKS	PROCESS	24VDC LOOP-POWER	4-20mA	0-XX PSI	No	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17314
37	I-1005	TSH-3705	1	MOTOR WINDING TEMP SWITCH	TEMPERATURE SENSOR	BACKWASH SUPPLY PUMP 37-PMP-05	INTERGAL TO MOTOR	N/A	Dry-contact	BY PUMP MANUFACTUER	No	PROVIDED BY FILTER SYSTEM SUPPLIER	11200
38	I-1005	TSH-3706	1	MOTOR WINDING TEMP SWITCH	TEMPERATURE SENSOR	BACKWASH SUPPLY PUMP 37-PMP-06	INTERGAL TO MOTOR	N/A	Dry-contact	BY PUMP MANUFACTUER	No	PROVIDED BY FILTER SYSTEM SUPPLIER	11200
39	I-1005	TSH-3501-1 TSH-3501-2	2	BLOWER ENCLOSURE TEMP & MOTOR WINDING TEMP SWITCH	TEMPERATURE SENSOR	AIR SCOUR BLOWER 35-BWR-01	ENCLOSURE WALL & INTERGAL TO MOTOR	Dry-contact	Dry-contact	BY BLOWER MANUFACTUER	No	PROVIDED BY FILTER SYSTEM SUPPLIER	11200
40	I-1005	TSH-3502-1 TSH-3502-2	2	BLOWER ENCLOSURE TEMP & MOTOR WINDING TEMP SWITCH	TEMPERATURE SENSOR	AIR SCOUR BLOWER 35-BWR-02	ENCLOSURE WALL & INTERGAL TO MOTOR	Dry-contact	Discrete	BY BLOWER MANUFACTUER	No	PROVIDED BY FILTER SYSTEM SUPPLIER	11200
41	I-1005	PI-3705 PSH-3705 PI-3706 PSH-3706	2	BACKWASH SUPPLY PUMP PRESSURE SENSOR	PRESSURE GAUGE/SWITCH	BACKWASH SUPPLY PUMP 37-PMP-05, 37-PMP-06	PROCESS	N/A	Dry-contact	GAUGE: 0-XX PSI SWITCH: XX-PSI (RISING)	No	PROVIDED BY FILTER SYSTEM SUPPLIER	11200
42	I-1005	PI-3501 PI-3502	2	AIR SCOUR BLOWER PRESSURE GAUGE	PRESSURE GAUGE	AIR SCOUR BLOWER 35-BWR-01, 35-BWR-02	PROCESS	N/A	N/A	0-xx PSI	No	PROVIDED BY FILTER SYSTEM SUPPLIER	11200
43	I-1005	FE-3707	1	BACKWASH SUPPLY PUMP FLOW SENSOR	FLOW SENSOR	BACKWASH SUPPLY PUMP	PROCESS	N/A	ANALOG	0-XX GPM	YES	PROVIDED BY FILTER SYSTEM SUPPLIER	11200
44	I-1005	FIT-3707	1	BACKWAS SUPPLY PUMP FLOW TRANSMITTER	FLOW INDICATOR TRANSMITTER	BACKWASH SUPPLY PUMP	PROCESS	120VAC	4-20mA	0-XX GPM	YES	PROVIDED BY FILTER SYSTEM SUPPLIER	11200
45	I-1005	PDIT-3505	1	AIR SCOUR DIFFERENTIAL PRESSURE SENSOR	DIFFERENTIAL PRESSURE SENSOR	AIR SCOUR BLOWER SYSTEM	PROCESS	24VDC LOOP-POWER	4-20mA	0-XX PSI	NO	PROVIDED BY FILTER SYSTEM SUPPLIER	11200

Table 17410-1: Instrument Schedule

REF	DWG NO.	TAG No.	QTY	Description	Instrument Type	Location	Mount: Process or Panel	Power Source	Output	Instrument Range or Set Point	HART (Yes/No)	Comments	Spec Section
46	I-1005	FSL-3709 FI-3709	1	PUMP FLOW SENSOR	LOW FLOW SWITCH/ROTAMETER	PRE FILTER INSTRUMENT AND SAMPLE PANEL	PANEL	N/A	Dry-contact	XX GPM	No	FURNISHED BY CONTROL SYSTEMS INTEGRATOR PROVIDED BY FILTER-SYSTEM SUPPLIER	FCI Model FS10 series or equal. 11200
47	I-1005	AE/AIT-3709	1	PUMP TURBIDITY SENSOR	TURBIDITY SENSOR	PRE FILTER INSTRUMENT AND SAMPLE PANEL	PANEL	120VAC	4-20mA	0-XX NTU	YES	FURNISHED BY CONTROL SYSTEMS INTEGRATOR PROVIDED BY FILTER-SYSTEM SUPPLIER	FCI Model FS10 series or equal. 11200
48	I-1005	FSL-3001 FI-3001	1	PUMP FLOW SENSOR	FLOW SENSOR	PRE FILTER INSTRUMENT AND SAMPLE PANEL	PANEL	N/A	Dry-contact	XX GPM	No	CONTROL SYSTEMS INTEGRATOR PROVIDED BY FILTER-SYSTEM SUPPLIER	FS10 series or equal. 11200
49	I-1005	AE/AIT-3001	1	PUMP pH SENSOR	pH ISENSOR	PRE FILTER INSTRUMENT AND SAMPLE PANEL	PANEL	120VAC	4-20mA	0-XX NTU	YES	FURNISHED BY CONTROL SYSTEMS INTEGRATOR PROVIDED BY FILTER-SYSTEM SUPPLIER	FCI Model FS10 series or equal. 11200
50	I-1006	FE-3010 FE-3020 FE-3030 FE-3040 FE-3050 FE-3060 FE-3070 FE-3080	8	IN-LINE FILTRATE FLOW	16" ELECTROMAGNETIC FLOWMETER	FILTERED WATER LINE	PROCESS	120 VAC	4-20mA	0-6,000 GPM	Yes	PROVIDED BY FILTER SYSTEM SUPPLIER	11200
51	I-1006	FIT-3010 FIT-3020 FIT-3030 FIT-3040 FIT-3050 FIT-3060 FIT-3070 FIT-3080	8	IN-LINE FILTRATE FLOW	ELECTROMAGNETIC FLOWMETER INDICATING TRANSMITTER	MEDIA FILTER CONTROL PANEL 30-ISP-02, 30-ISP-03, 30-ISP-04, 30-ISP-05 (2 EACH PANEL)	PANEL	120 VAC	4-20mA	0-6,000 GPM	Yes	PROVIDED BY FILTER SYSTEM SUPPLIER	11200
52	I-1006	PDIT-3010 PDIT-3020 PDIT-3030 PDIT-3040 PDIT-3050 PDIT-3060 PDIT-3070 PDIT-3080	8	DIFFERENTIAL PRESSURE SENSOR WITH WITH REMOTE SENSORS AND CENCENTRIC FLANGE MOUNTED DIAPHRAGM SEALS	DIFFERENTIAL PRESSURE SENSOR	MEDIA FILTER CONTROL PANEL 30-ISP-02, 30-ISP-03, 30-ISP-04, 30-ISP-05 (2 EACH PANEL)	PANEL	24VDC LOOP-POWER	4-20mA	0-10 PSIG	Yes	PROVIDED BY FILTER SYSTEM SUPPLIER	11200



Table 17410-1: Instrument Schedule

REF	DWG NO.	TAG No.	QTY	Description	Instrument Type	Location	Mount: Process or Panel	Power Source	Output	Instrument Range or Set Point	HART (Yes/No)	Comments	Spec Section
53	I-1006	PI-3010-1 PI-3010-2 PI-3020-1 PI-3020-2 PI-3030-1 PI-3030-2 PI-3040-1 PI-3040-2 PI-3050-1 PI-3050-2 PI-3060-1 PI-3060-2 PI-3070-1 PI-3070-2 PI-3080-1 PI-3080-2	16	FILTER INFLUENT PRESSURE (ONE PER CELL)	PRESSURE GUAGE	MEDIA FILTER CONTROL PANEL 30-ISP-02, 30-ISP-03, 30-ISP-04, 30-ISP-05 (4 EACH PANEL)	PANEL	N/A	N/A	0-60 PSIG	N/A	PROVIDED BY FILTER SYSTEM SUPPLIER	11200
54	I-1006	PI-3010-3 PI-3020-3 PI-3030-3 PI-3040-3 PI-3050-3 PI-3060-3 PI-3070-3 PI-3080-3	8	FILTER EFFLUENT PRESSURE	PRESSURE GUAGE	MEDIA FILTER CONTROL PANEL 30-ISP-02, 30-ISP-03, 30-ISP-04, 30-ISP-05	PANEL	N/A	N/A	0-60 PSIG	N/A	PROVIDED BY FILTER SYSTEM SUPPLIER	11200
55	I-1007	FE/FIT-4010	1	BYPASS LINES	FLOWMETER	GROUND STORAGE TANK	PROCESS	120VAC	4-20mA	0-XX MGD	YES		
56	I-1007	PIT-3090	1		PRESSURE INDICATOR TRANSMITTER	POST FILTER INSTRUMENT AND SAMPLE PANEL	PANEL	24VDC LOOP-POWER	4-20mA	0-XX PSI	No	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17314
57	I-1007	FS-3090 FS-4021 FS-4022 FS-4023 FS-4024	5	POST FILTER LOW FLOW SWITCH FOR INSTRUMENT PANEL	FLOW SWITCH	POST FILTER INSTRUMENT AND SAMPLE PANEL	PANEL	N/A	Dry-contact	0-XX L/HR	No	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17310
58	I-1007	FI-3090 FI-4021 FI-4022 FI-4023 FI-4024	5	POST FILTER FLOW CONTROLLER FOR INSTRUMENT PANEL	FLOW INDICATOR/ROTAMETER	POST FILTER INSTRUMENT AND SAMPLE PANEL	PANEL	N/A	N/A	0-60 L/HR	No	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17310
59	I-1007	AE/AIT-3090 AE/AIT-4021	2	POST FILTER TURBIDITY	TURBIDITY SENSOR	POST FILTER INSTRUMENT AND SAMPLE PANEL	PANEL	120VAC	4-20mA	0-XX NTU	YES	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17318
60	I-1007	AE/AIT-4023	1	POST FILTER CHLORINE	CHLORINE FREE SENSOR	POST FILTER INSTRUMENT AND SAMPLE PANEL	PANEL	120VAC	4-20mA	TBD	YES	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17318

Table 17410-1: Instrument Schedule

REF	DWG NO.	TAG No.	QTY	Description	Instrument Type	Location	Mount: Process or Panel	Power Source	Output	Instrument Range or Set Point	HART (Yes/No)	Comments	Spec Section
61	I-1007	AE/AIT-4022	1	POST FILTER FLUORIDE	FLUORIDE SENSOR	POST FILTER INSTRUMENT AND SAMPLE PANEL	PANEL	120VAC	4-20mA	TBD	YES	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17318
62	I-1007	AE/AIT-4024	1	POST FILTER HARDNESS	HARDNESS SENSOR	POST FILTER INSTRUMENT AND SAMPLE PANEL	PANEL	120VAC	4-20mA	TBD	YES	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17318
63	I-1007	LIT-4040	1	STORAGE TANK LEVEL INDICATOR TRANSMITTER	LEVEL INDICATOR TRANSMITTER	SAWS STORAGE TANK	PROCESS	24VDC LOOP-POWER	4-20mA	0-XX FT.	No	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17312
64	I-1007	PE-4040	1	STORAGE TANK PRESSURE SENSOR	PRESSURE SENSOR	SAWS STORAGE TANK	PROCESS	N/A	N/A	N/A	No	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17314
65	I-1007	LSHH-4040	1	STORAGE TANK LEVEL HIGH HIGH	LEVEL STORAGE HIGH HIGH	SAWS STORAGE TANK	PROCESS	N/A	Dry-contact	EL: XX FT.	No	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17312
66	I-1007	LSH-4040	1	STORAGE TANK LEVEL HIGH	LEVEL STORAGE HIGH	SAWS STORAGE TANK	PROCESS	N/A	Dry-contact	EL: XX FT.	No	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17312
67	I-1007	LSL-4040	1	STORAGE TANK LEVEL LOW	LEVEL STORAGE LOW	SAWS STORAGE TANK	PROCESS	N/A	Dry-contact	EL: XX FT.	No	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17312
68	I-1007	LSLL-4040	1	STORAGE TANK LEVEL LOW LOW	LEVEL STORAGE LOW LOW	SAWS STORAGE TANK	PROCESS	N/A	Dry-contact	EL: XX FT.	No	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17312
69	I-1008	FS-4061 FS-4062 FS-4063	3	INSTRUMENT PANEL ANALYZER LOW FLOW SWITCH	LOW FLOW SWITCH	STONE OAK PUMP STATION	PANEL	N/A	Dry-contact	0-XX L/HR FALLING	No	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17310
70	I-1008	FI-4061 FI-4062 FI-4063	3	INSTRUMENT PANEL ANALYZER FLOW CONTROLLER	FLOW INDICATOR	STONE OAK PUMP STATION	PANEL	N/A	N/A	FI-4061: 0-60 L/HR FI-4062: 0-60 L/HR FI-4063: 0-100 L/HR	No	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17310
71	I-1008	AE/AIT-4061	1	INSTRUMENT PANEL TURBIDITY ANALYZER	TURBIDITY SENSOR	STONE OAK PUMP STATION	PANEL	120VAC	4-20mA	0-XX NTU	YES	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17318
72	I-1008	AE/AIT-4062	1	INSTRUMENT PANEL FLUORIDE ANALYZER	FLUORIDE SENSOR	STONE OAK PUMP STATION	PANEL	120VAC	4-20mA	0-XX PPM	YES	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17318
73	I-1008	AE/AIT-4063	1	INSTRUMENT PANEL CHLORINE ANALYZER	CHLORINE FREE SENSOR	STONE OAK PUMP STATION	PANEL	120VAC	4-20mA	0-XX PPM	YES	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17318

Table 17410-1: Instrument Schedule

REF	DWG NO.	TAG No.	QTY	Description	Instrument Type	Location	Mount: Process or Panel	Power Source	Output	Instrument Range or Set Point	HART (Yes/No)	Comments	Spec Section
74	I-1008	PIT-5010 PE-5010	1	SUCTION HEADER PRESSURE	PRESSURE SENSOR	STONE OAK PUMP STATION SUCTION HEADER	PROCESS	24VDC LOOP-POWER	4-20mA	0-250 PSI	YES	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17314
75	I-1008	PIT-5020 PE-5020	1	DISCHARGE HEADER PRESSURE	PRESSURE INDICATOR TRANSMITTER	STONE OAK PUMP STATION PURIFIED WATER TO DISTRIBUTION SYSTEM LINE	PROCESS	24VDC LOOP-POWER	4-20mA	0-250 PSI	YES	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17314
76	I-1008	PI-5001-1 PI-5001-2 PI-5002-1 PI-5002-2 PI-5003-1 PI-5003-2 PI-5004-1 PI-5004-2	8	HIGH SERVICE PUMP PRESSURE GAUGE	PRESSURE GAUGE	STONE OAK PUMP STATION HIGH SERVICE PUMP 50-PMP-01, 50-PMP-02, 50-PMP-03, 50-PMP-04	PROCESS	N/A	N/A	0-XX PSI	No	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17314
77	I-1008	PSL-5001 PSL-5002 PSL-5003 PSL-5004	4	HIGH SERVICE PUMP LOW SUCTION PRESSURE SWITCH	PRESSURE SWITCH LOW	STONE OAK PUMP STATION HIGH SERVICE PUMP 50-PMP-01, 50-PMP-02, 50-PMP-03, 50-PMP-04	PROCESS	N/A	Dry-contact	XX PSI FALLING	No	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17314
78	I-1008	PSH-5001 PSH-5002 PSH-5003 PSH-5004	4	HIGH SERVICE PUMP HIGH DISCHARGE PRESSURE SWITCH	PRESSURE SWITCH HIGH	STONE OAK PUMP STATION HIGH SERVICE PUMP 50-PMP-01, 50-PMP-02, 50-PMP-03, 50-PMP-04	PROCESS	N/A	Dry-contact	XX PSI RISING	No	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17314
79	I-1008	RTD-5001-1 RTD-5001-2 RTD-5002-1 RTD-5002-2 RTD-5003-1 RTD-5003-2 RTD-5004-1 RTD-5004-2	8	HIGH SERVICE PUMP RESISTANCE TEMPERATURE DETECTOR	RESISTANCE TEMPERATURE DETECTOR	STONE OAK PUMP STATION HIGH SERVICE PUMP 50-PMP-01, 50-PMP-02, 50-PMP-03, 50-PMP-04	INTERGAL TO MOTOR	BY PUMP MANUFACT UER	ANALOG	BY PUMP MANUFACTUER	No	SUPPLIED BY PUMP MANUFACTUER	
80	I-1008	FE/FIT-5001 FE/FIT-5002 FE/FIT-5003 FE/FIT-5004	4	HIGH SERVICE PUMP FLOW SENSOR/INDICATING TRANSMITTER	FLOW SENSOR	STONE OAK PUMP STATION HIGH SERVICE PUMP 50-PMP-01, 50-PMP-02, 50-PMP-03, 50-PMP-04	PROCESS	120VAC	4-20mA	0-6,500 GPM	YES	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17310
81	I-1009	PI-6160	13	POTABLE WATER PRESSURE GAUGE	PRESSURE GAUGE	POTABLE WATER SUPPLY LINE	PROCESS	N/A	N/A	0-160PSI	No	PROVIDED BY OSG SYSTEM SUPPLIER	11366
82	I-1009	PI-6132 PI-6133	2	SOFTENED WATER PRESSURE GAUGE	PRESSURE GAUGE	SOFTENED WATER SUPPLY LINE	PROCESS	N/A	N/A	0-160PSI	No	PROVIDED BY OSG SYSTEM SUPPLIER	11366
83	I-1009	PI-6141 PI-6142	2	POTABLE WATER PRESSURE GAUGE	PRESSURE GAUGE	WATER SUPPLY LINE TO BRINE TANK	PROCESS	N/A	N/A	0-160PSI	No	PROVIDED BY OSG SYSTEM SUPPLIER	11366
84	I-1009	PI-6110 PI-6120	2	BRINE FILTER DIFFERENTIAL PRESSURE GAUGE	PRESSURE GAUGE	BRINE METERING PUMP SUCTION LINE	PROCESS	N/A	N/A	0-160PSI	No	PROVIDED BY OSG SYSTEM SUPPLIER	11366

Table 17410-1: Instrument Schedule

REF	DWG NO.	TAG No.	QTY	Description	Instrument Type	Location	Mount: Process or Panel	Power Source	Output	Instrument Range or Set Point	HART (Yes/No)	Comments	Spec Section
85	I-1009	PI-6231 PI-6232	2	BRINE SKID SUPPLY PRESSURE GAUGE	PRESSURE GAUGE	BRINE METERING PUMP DISCHARGE LINE	PROCESS	N/A	N/A	0-160PSI	No	PROVIDED BY OSG SYSTEM SUPPLIER	11366
86	I-1009	TE/TIT-6241 TE/TIT-6242	2	OSG SKID INSTRUMENTATION	TEMPERATUR	OSG SKID	PROCESS	BY MFG	4-20mA	BY MFG	No	PROVIDED BY OSG SYSTEM SUPPLIER	11366
87	I-1009	PE-6001A PE-6002A	2	BRINE TANK LEVEL SENSOR	PRESSURE ELEMENT	BRINE TANK	PROCESS	24VDC	Analog	0-30FT	No	PROVIDED BY OSG SYSTEM SUPPLIER	11366
88	I-1009	LIT-6001A LIT-6002A	2	BRINE TANK LEVEL SENSOR	LEVEL TRANSMITTER	BRINE TANK	PROCESS	120VAC	4-20mA	0-30FT	No	PROVIDED BY OSG SYSTEM SUPPLIER	11366
89	I-1009	LE-6001B LE-6002B	2	BRINE TANK LEVEL SENSOR	YOYO TYPE LEVEL ELEMENT	BRINE TANK	PROCESS	24VDC	Analog	0-30FT	No	PROVIDED BY OSG SYSTEM SUPPLIER	11366
90	I-1009	LIT-6001B LIT-6002B	2	BRINE TANK LEVEL SENSOR	LEVEL TRANSMITTER	BRINE TANK	PROCESS	120VAC	4-20mA	0-30FT	YES	PROVIDED BY OSG SYSTEM SUPPLIER	11366
91	I-1009	FE/FIT-6141 FE/FIT-6142	2	POTABLE WATER SUPPLY TO BRINE TANK FLOW SENSOR/INDICATING	MAGNETIC FLOW METER	POTABLE WATER BRINE TANK SUPPLY LINE	PROCESS	120VAC	4-20mA	0 - 1,200 PPH	YES	PROVIDED BY OSG SYSTEM SUPPLIER	11366
92	I-1009	AE/AIT-6200	1	HYDROGEN GAS DETECTOR	HYDROGEN ANALYZER / TRANSMITTER	OSG SKID ROOM	PANEL	120VAC	4-20mA	BY MFG	No	PROVIDED BY OSG SYSTEM SUPPLIER	11366
93	I-1009	FE/FIT-6241-1 FE/FIT-6241-2	2	OSG SKID 1 FLOW METER	MAGNETIC FLOW METER	OSG SKID ROOM	SKID	120VAC	4-20mA	BY MFG	No	PROVIDED BY OSG SYSTEM SUPPLIER	11366
94	I-1009	FE/FIT-6242-1 FE/FIT-6242-2	2	OSG SKID 2 FLOW METER	MAGNETIC FLOW METER	OSG SKID ROOM	SKID	120VAC	4-20mA	BY MFG	No	PROVIDED BY OSG SYSTEM SUPPLIER	11366
95	I-1009	LSL-6241 LSL-6242	2	OSG LOW LEVEL SWITCH	LOW LEVEL SWITCH	OSG SKID ROOM	SKID	N/A	Dry-contact	BY MFG	No	PROVIDED BY OSG SYSTEM SUPPLIER	11366
96	I-1009	FSL-6250-1 FSL-6250-2	2	DILLUTION BLOWER LOW AIR FLOW	FLOW SWITCH	OSG SKID ROOM, HYPO TANKS	PROCESS	N/A	Dry-contact	BY MFG	No	PROVIDED BY OSG SYSTEM SUPPLIER	11366
97	I-1009	PI-6170-1 PI-6170-2	2	POTABLE WATER PRESSURE GAUGE	PRESSURE GAUGE	POTABLE WATER SUPPLY LINE	PROCESS	N/A	N/A	0-160PSI	No	PROVIDED BY OSG SYSTEM SUPPLIER	11366
98	I-1009	FE/FIT-6170	1	POTABLE WATER FLOW METER	FLOW SENSOR/INDICATING TRANSMITTER	POTABLE WATER SUPPLY LINE	PROCESS	120VAC	4-20mA	0-XX GPM	YES	PROVIDED BY OSG SYSTEM SUPPLIER	11366
99	I-1010	FSL-6311 FSL-6312	2	DILLUTION BLOWER LOW AIR FLOW	FLOW SWITCH	HYPOCHLORITE STORAGE TANK	PROCESS	N/A	Dry-contact	BY MFG	No	PROVIDED BY OSG SYSTEM SUPPLIER	11366
100	I-1010	LIT-6311 LIT-6312	2	HYPOCHLORITE STORAGE TANK LEVEL TRANSMITTER	LEVEL INDICATOR TRANSMITTER	HYPOCHLORITE STORAGE TANK	PROCESS	120VAC	4-20mA	0-XX FT.	YES	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17312
101	I-1010	PE-6311 PE-6312	2	HYPOCHLORITE STORAGE TANK PRESSURE SENSOR	PRESSURE SENSOR	HYPOCHLORITE STORAGE TANK	PROCESS	N/A	N/A	0-XX FT.	No	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17314

Table 17410-1: Instrument Schedule

REF	DWG NO.	TAG No.	QTY	Description	Instrument Type	Location	Mount: Process or Panel	Power Source	Output	Instrument Range or Set Point	HART (Yes/No)	Comments	Spec Section
102	I-1010	LSHH-6301	1	SECONDARY CONTAINMENT AREA HIGH HIGH LEVEL	LEVEL SWITCH HIGH HIGH	SUMP PUMP	PROCESS	N/A	Dry-contact	EL: XX FT.	No	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17312
103	I-1010	LSH-6301	1	SECONDARY CONTAINMENT AREA HIGH LEVEL	LEVEL SWITCH HIGH	SUMP PUMP	PROCESS	N/A	Dry-contact	EL: XX FT.	No	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17312
104	I-1010	LSL-6301	1	SECONDARY CONTAINMENT AREA LOW LEVEL	LEVEL SWITCH LOW	SUMP PUMP	PROCESS	N/A	Dry-contact	EL: XX FT.	No	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17312
105	I-1010	PI-6511 PI-6512 PI-6513 PI-6514	4	METERING PUMP PRESSURE GAUGE	PRESSURE GAUGE	METERING PUMP 65-CMP-11, 65-CMP-12, 65-CMP-13, 65-CMP-14	PROCESS	N/A	N/A	0-XX PSI	No	PROVIDED BY METERING PUMP SUPPLIER	11366
106	I-1010	PSH-6511 PSH-6512 PSH-6513 PSH-6514	4	METERING PUMP PRESSURE SENSOR	HIGH PRESSURE SWITCH	METERING PUMP 65-CMP-11, 65-CMP-12, 65-CMP-13, 65-CMP-14	PROCESS	N/A	Dry-contact	EL: XX PSI RISING	No	PROVIDED BY METERING PUMP SUPPLIER	11366
107	I-1010	FE/FIT-6551 FE/FIT-6552	2	NaOCI FEED FLOW SENSOR	FLOW SENSOR	NaOCI FEED	PROCESS	120VAC	4-20mA	0-XX GPM	YES	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17310
108	I-1011	LE/LIT-6901	1	BULK FLUORIDE STORAGE TANK LEVEL SENSOR	LEVEL SENSOR	BULK FLUORIDE STORAGE TANK	LE - PROCESS LIT-PANEL	120VAC	4-20mA	0-XX FT.	YES	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17312
109	I-1011	FSH-6901	1	TANK DISCHARGE HIGH FLOW SWITCH	FLOW SENSOR	FLUORIDE TANK DISCHARGE LINE	PROCESS	N/A	Dry-contact	XX GPM RISING	No	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17310
110	I-1011	PSH-6941 PSH-6942	2	METERING PUMP HIGH PRESSURE SENSOR	HIGH PRESSURE SENSOR	FLUORIDE METERING PUMP DISCHARGE LINE	PROCESS	N/A	Dry-contact	XX PSI RISING	No	PROVIDED BY PUMP SYSTEM SUPPLIER	11242
111	I-1011	PI-6941 PI-6942	2	METERING PUMP PRESSURE SENSOR	PRESSURE SENSOR	FLUORIDE METERING PUMP DISCHARGE LINE	PROCESS	N/A	N/A	0-XX PSI	No	PROVIDED BY PUMP SYSTEM SUPPLIER	11242
112	I-1011	FE/FIT-6970	1	FLUORIDE METERING PUMP FLOW METER	MAGNETIC FLOW METER	DISCHARGE HEADER OF FLUORIDE PUMP	PROCESS	120VAC	4-20mA	0-XX GPM	YES	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17310
113	I-1011	LS-6971 LS-6972	2	FLUORIDE PIPE LEAK DETECTIN	LEVEL SWITCH	DISCHARGE HEADER OF FLUORIDE PUMP	PROCESS	BY MFG	Dry-contact	BY MFG	No	DOUBLE-WALL PIPE MFG	15076
114	I-1011	FS-6970	1	EMERGENCY SHOWER/EYEWASH FLOW SWITCH	FLOW SWITCH	FLUORIDE SHOWER/EYEWASH	PROCESS	N/A	Dry-contact	XX GPM RISING	No	FURNISHED BY CONTROL SYSTEMS INTEGRATOR — VENDOR SUPPLIED EQUIPMENT	15440 47340
115	I-1011	LSHH-6980 LSH-6980 LSL-6980	3	SUMP PUMP LEVEL SENSORS	LEVEL SENSOR	SUMP PUMP 69-PMP-80	PROCESS	N/A	Dry-contact	EL: XX FT.	No	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17312
116	I-1012	LE/LIT-6701	1	POLYMER BULK STORAGE TANK LEVEL SENSOR	LEVEL SENSOR	POLYMER BULK STORAGE TANK 67-TK-01	LE - PROCESS LIT - PANEL	120VAC	4-20MmA	0-XX FT.	YES	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17312

TERMINUS TREATMENT FACILITY  
 SEPT 2018  
 ADDENDUM NO. 8

CENTRAL WATER INTEGRATION PIPELINE  
 INSTRUMENT SCHEDULE

Table 17410-1: Instrument Schedule

REF	DWG NO.	TAG No.	QTY	Description	Instrument Type	Location	Mount: Process or Panel	Power Source	Output	Instrument Range or Set Point	HART (Yes/No)	Comments	Spec Section
117	I-1012	TSH-6701	1	POLYMER BULK STORAGE TANK TEMPERATURE SENSOR	TEMPERATURE SENSOR	POLYMER BULK STORAGE TANK 67-TK-01	INTERGAL TO MOTOR	N/A	Dry-contact	N/A	No	FURNISHED BY PUMP MFG	11241
118	I-1012	FS-6701	1	EMERGENCY SHOWER/EYEWASH FLOW SWITCH	FLOW SWITCH	FILTER AID POLYMER SHOWER/EYEWASH	PROCESS	N/A	Dry-contact	XX GPM RISING	No	VENDOR SUPPLIED EQUIPMENT	15440
119	I-1012	LSHH-6780 LSH-6780 LSL-6780	3	SUMP PUMP LEVEL SENSORS	LEVEL SENSOR	SUMP PUMP 67-PMP-80	PROCESS	N/A	N/A	EL: XX FT.	No	VENDOR SUPPLIED EQUIPMENT	11241
120	I-1012	PI-6711-1 PI-6711-2 PI-6711-3 PI-6712-1 PI-6712-2 PI-6712-3	6	POLYMER BLENDER PRESSURE GAUGE	PRESSURE GAUGE	POLYMER BLENDING AND FEED SKID	SKID	N/A	N/A	0-XX PSI	No	VENDOR SUPPLIED EQUIPMENT	11241
121	I-1012	FSL-6711 FSL-6712	2	LOW FLOW SWITCH FOR LEACK DECTECTION	LOW FLOW SWITCH	POLYMER BLENDING AND FEED SKID	SKID	N/A	N/A	0-XX GPM	No	VENDOR SUPPLIED EQUIPMENT	11241
122	I-1012	DPS-6711 DPS-6712	2	POLYMER BLENDER DIFFERENTIAL PRESSURE SWITCH	DIFFERENTIAL PRESSURE SENSOR	POLYMER BLENDING AND FEED SKID	SKID	N/A	N/A	0-XX PSI	No	VENDOR SUPPLIED EQUIPMENT	11241
123	I-1012	FC-6711 FC-6712	2	POLYMER BLENDER FLOW CONTROLLER	FLOW CONTROLLER	POLYMER BLENDING AND FEED SKID	SKID	N/A	N/A	0-XX GPM	No	VENDOR SUPPLIED EQUIPMENT	11241
124	I-1012	PI-6712-4 PI-6712-4	2	POLYMER PUMP DSICHARGE PRESSURE	PRESSURE GAUGE	POLYMER DISCHARGE PIPING	PROCESS	N/A	N/A	0-XX PSI	No	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17314
125	I-1013	TSH-7101 TSH-7102	2	BACKWASH RECOVERY PUMP HIGH TEMPERATURE SWITCH	TEMPERATURE SENSOR	BACKWASH RECOVERY PUMP 71-PMP-01, 71-PMP-02	INTEGRAL TO MOTOR	BY MFG	BY MFG	BY MFG	No	VENDOR SUPPLIED EQUIPMENT	11200
126	I-1013	MS-7101 MS-7102	2	BACKWASH RECOVERY PUMP MOISTURE SWITCH	MOISTURE SWITCH	BACKWASH RECOVERY PUMP 71-PMP-01, 71-PMP-02	INTEGRAL TO MOTOR	BY MFG	BY MFG	BY MFG	No	VENDOR SUPPLIED EQUIPMENT	11200
127	I-1013	PI-7111 PI-7112	2	BACKWASH WASTE DISCHARGE PRESSURE INDICATOR	PRESSURE GAUGE	BACKWASH WASTE DISCHARGE LINE	PROCESS	N/A	N/A	0-XX PSI	No	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17312
128	I-1013	PSH-7111 PSH-7112	2	BACKWASH WASTE DISCHARGE HIGH PRESSURE SWITCH	HIGH PRESSURE SENSOR	BACKWASH WASTE DISCHARGE LINE	PROCESS	N/A	N/A	0-XX PSI RISING	No	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17314
129	I-1013	LE/LIT-7101	1	BACKWASH WASTE WETWELL LEVEL	LEVEL SENSOR	BACKWASH RECOVERY PUMP	PROCESS	120VAC	4-20mA	0-XX FT.	YES	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17312
130	I-1013	LSL-7101	1	BACKWASH WASTE WETWELL LOW LEVEL SWITCH	LEVEL SWITCH LOW	BACKWASH RECOVERY PUMP	PROCESS	N/A	Dry-contact	EL: XX FT.	Np.	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17312
131	I-1013	FE/FIT-7130	1	BACKWASH WASTE FLOW TO GRAVITY THICKENER	FLOWMETER	BACKWASH RECOVERY PUMP DISCHARGE HEADER	PROCESS	120VAC	4-20mA	0-XX GPM	YES	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17310

TERMINUS TREATMENT FACILITY  
 SEPT 2018  
 ADDENDUM NO. 8

CENTRAL WATER INTEGRATION PIPELINE  
 INSTRUMENT SCHEDULE

Table 17410-1: Instrument Schedule

REF	DWG NO.	TAG No.	QTY	Description	Instrument Type	Location	Mount: Process or Panel	Power Source	Output	Instrument Range or Set Point	HART (Yes/No)	Comments	Spec Section
132	I-1013	AE/AIT-7101	1	BACKWASH RECOVERY BASIN pH SENSOR/INDICATING TRANSMITTER	pH SENSOR	BACKWASH RECOVERY BASIN 71-TK-01	PROCESS	120VAC	4-20mA	0-14 PH.	YES	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17318
133	I-1014	LE/LIT-7301	1	GRAVITY THICKENER LEVEL SENSOR	LEVEL SENSOR	GRAVITY THICKENER 73-TK-01	PROCESS	120VAC	4-20mA	0-XX FT.	YES	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17318
134	I-1014	TSH-7301	1	GRAVITY THICKENER DRIVE MOTOR HIGH TEMPERATURE SWITCH	HIGH TEMPERATURE SWITCH	GRAVITY THICKENER 73-TK-01	INTRGRAL TO MOTOR	N/A	Dry-contact	BY MFG	Np.	VENDOR SUPPLIED EQUIPMENT	11450
135	I-1014	TSH-8001	1	SLUDGE HOLDING TANK MIXER MOTOR HIGH TEMPERATURE SWITCH	HIGH TEMPERATURE SWITCH	SLUDGE TANK MIXER 80-MXR-01	INTRGRAL TO MOTOR	N/A	Dry-contact	BY MFG	Np.	VENDOR SUPPLIED EQUIPMENT	11450
136	I-1014	WSHH-7301	1	GRAVITY THICKENER HIGH HIGH TORQUE SENSOR	TORQUE SENSOR HIGH HIGH	GRAVITY THICKENER 73-TK-01	PROCESS	N/A	Dry-contact	BY MFG	Np.	VENDOR SUPPLIED EQUIPMENT	11450
137	I-1014	LE/LIT-8001	1	SLUDGE HOLDING TANK LEVEL SENSOR	LEVELS ENSOR	SLUDGE HOLDING TANK 80-TK-01	PROCESS	120VAC	4-20mA	0-XX FT.	YES	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17312
138	I-1014	PSH-8111 PSH-8112	2	THICKENED SLUDGE TRANSFER PUMP HIGH PRESSURE SWITCH	PRESSURE SENSOR	THICKENED SLUDGE TRANSFER PUMP 81-PMP-11, 81-PMP-12	PROCESS	N/A	Dry-contact	XX PSI RISING	Np.	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17314
139	I-1014	FSLL-8111 FSLL-8112	2	THICKENED SLUDGE TRANSFER PUMP LOW LOW FLOW SWITCH	FLOW SWITCH LOW LOW	THICKENED SLUDGE TRANSFER PUMP 81-PMP-11, 81-PMP-12	PROCESS	N/A	Dry-contact	XX GPM FALLING	Np.	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17310
140	I-1014	PSH-8113 PSH-8114	2	CENTRIFUGE FEED PUMP HIGH PRESSURE SWITCH	PRESSURE SENSOR	CENTRIFUGE FEED PUMP 81-PMP-13, 81-PMP-14	PROCESS	N/A	Dry-contact	XX PSI RISING	Np.	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17314
141	I-1014	FSLL-8113 FSLL-8114	2	CENTRIFUGE FEED PUMP LOW LOW FLOW SWITCH	FLOW SWITCH LOW LOW	CENTRIFUGE FEED PUMP 81-PMP-13, 81-PMP-14	PROCESS	N/A	Dry-contact	XX GPM FALLING	Np.	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17310
142	I-1014	PSH-8115 PSH-8116	2	LIQUID SLUDGE LOADING PUMP HIGH PRESSURE SWITCH	PRESSURE SENSOR	LIQUID SLUDGE LOADING PUMP 81-PMP-15, 81-PMP-16	PROCESS	N/A	Dry-contact	XX PSI RISING	Np.	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17314
143	I-1014	FSLL-8115 FSLL-8116	2	LIQUID SLUDGE LOADING PUMP LOW LOW FLOW SWITCH	FLOW SWITCH LOW LOW	LIQUID SLUDGE LOADING PUMP 81-PMP-15, 81-PMP-16	PROCESS	N/A	Dry-contact	XX GPM FALLING	Np.	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17310
144	I-1014	FE/FIT-8113 FE/FIT-8114	2	CENTRIFUGE FEED PUMP FLOW METER	FLOWMETER	CENTRIFUGE FEED PUMP 81-PMP-13, 81-PMP-14	PROCESS	120VAC	4-20mA	0-XX GPM	YES	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17310
145	I-1014	FE/FIT-8120	1	GRAVITY THICKENER SLUDGE FLOW TO SLUDGE HOLDING TANK	FLOWMETER/INDICATING TRANSMITTER	DEWATERING BUILDING	PROCESS	120VAC	4-20mA	0-XX GPM	YES	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17310
146	I-1014	FE/FIT-8190	1	SLUDGE FLOW TO TRUCK LOAD OUT	FLOWMETER/INDICATING TRANSMITTER	DEWATERING BUILDING	PROCESS	120VAC	4-20mA	0-XX GPM	YES	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17310

Table 17410-1: Instrument Schedule

REF	DWG NO.	TAG No.	QTY	Description	Instrument Type	Location	Mount: Process or Panel	Power Source	Output	Instrument Range or Set Point	HART (Yes/No)	Comments	Spec Section
147	I-1014	WE/WIT-8190	1	SLUDGE TRUCK LOAD OUT WEIGHT	WEIGHT SENSOR/INDICATING TRANSMITTER	DEWATERING BUILDING TRUCK LOAD OUT SCALL	PROCESS	120VAC	4-20mA	0-XX LBS.	YES	VENDOR SUPPLIED EQUIPMENT	13311
148	I-1015	TSH-7701 TSH-7702	2	WASTE/DECANT RECOVERY PUMP HIGH TEMPERAURE SWITCH	TEMPERATURE SENSOR	WASTE/DECANT RECOVERY PUMP 77-PMP-01, 77-PMP-02	INTEGRAL TO MOTOR	BY MFG	BY MFG	BY MFG	No	VENDOR SUPPLIED EQUIPMENT	11310
149	I-1015	MS-7701 MS-7702	2	WASTE/DECANT RECOVERY PUMP MOISTURE SWITCH	MOISTURE SWITCH	WASTE/DECANT RECOVERY PUMP 77-PMP-01, 77-PMP-02	INTEGRAL TO MOTOR	BY MFG	BY MFG	BY MFG	No	VENDOR SUPPLIED EQUIPMENT	11310
150	I-1015	LE/LIT-7701	1	WASTE/DECANT RECOVERY BASIN LEVEL SENSOR	LEVELS ENSOR	FILTER-TO-WASTE/DECANT RECOVERY BASIN	PROCESS	120VAC	4-20mA	0-XX FT.	YES	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17312
151	I-1015	LSL-7701	1	WASTE/DECANT RECOVERY BASIN LOW LEVEL SWITCH	LEVEL SWITCH LOW	FILTER-TO-WASTE/DECANT RECOVERY BASIN	PROCESS	N/A	Dry-contact	EL: XX FT.	Np.	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17312
152	I-1015	PI-7711 PI-7712	2	DECANT RECOVERY PUMP PRESSURE	PRESSURE GAUGE	DECANT RECOVERY PUMP 77-PMP-11; 7712-PMP-12	PROCESS	N/A	Dry-contact	XX PSI	Np.	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17314
153	I-1015	PSH-7711 PSH-7712	2	DECANT RECOVERY PUMP PRESSURE	PRESSURE SWITCH HIGH	DECANT RECOVERY PUMP 77-PMP-11; 7712-PMP-12	PROCESS	N/A	Dry-contact	XX PSI RISING	No	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17314
154	I-1015	FE/FIT-7730	1	WASTE RECOVERY PUMP DISCHARGE FLOWMETER	FLOWMETER	WASTE RECOVERY PUMP 77-PMP-01, 77-PMP-02	PROCESS	120VAC	4-20mA	0-XX GPM	YES	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17310
155	I-1016	TSH-8512 TSH-8522	2	SCREW CONVEYOR HIGH TEMPERATURE SWITCH	TEMPERATURE SENSOR	DEWATERED CAKE TRANSFER SCREW CONVEYOR	INTERGAL TO MOTOR	N/A	Dry-contact	N/A	No	SUPPLIED BY CENTRIFUGE MFG	11363
156	I-1016	WSH-8512 WSH-8522	2	SCREW CONVEYOR HIGH WEIGHT SWITCH	WEIGHT SENSOR	DEWATERED CAKE TRANSFER SCREW CONVEYOR	INTEGRAL TO CONVEYOR	N/A	Dry-contact	TBD	No	SUPPLIED BY CENTRIFUGE MFG	11363
157	I-1016	WE/WIT-8511-1 WE/WIT-8511-2 WE/WIT-8511-3 WE/WIT-8511-4	4	MOTORIZED SLIDE GATE WEIGHT SENDOR/INDICATOR TRANSMITTER (TWO PER GATE)	WEIGHT SENSOR/INDICATOR TRANSMITTER	LOAD OUT BIN 85-LOB-11	PROCESS	120VAC	4-20mA	0-XX LBS.	YES	VENDOR SUPPLIED EQUIPMENT	13250
158	I-1016	WE/WTR-8511-5	1	LOAD OUT TRUCK WEIGHT	WEIGHT SENSOR	LOAD OUT BIN 85-LOB-11	PROCESS	120VAC	4-20mA	0-XX LBS.	YES	VENDOR SUPPLIED EQUIPMENT	13311
159	I-1016	FI-8511 FI-8521	2	SERVICE WATER FLOW	FLOW INDICATOR/ROTAMETER		PROCESS	N/A	N/A	0 -XX GPM	No	VENDOR SUPPLIED EQUIPMENT	
160	I-1017	WE/WIT-6801 WE/WIT-6802 WE/WIT-6803 WE/WIT-6804	4	POLYMER TOTE WEIGHT SENSOR	WEIGHT SENSOR	POLYMER TOTE	PROCESS	120VAC	4-20mA	0-XX LBS.	YES	CONTRACTOR SUPPLIED EQUIPMENT	N/A



Table 17410-1: Instrument Schedule

REF	DWG NO.	TAG No.	QTY	Description	Instrument Type	Location	Mount: Process or Panel	Power Source	Output	Instrument Range or Set Point	HART (Yes/No)	Comments	Spec Section
161	I-1017	FSL-6841 FSL-6842 FSL-6843	3	POLYMER PUMP LOW FLOW FOR LEAK DETECTION	FLOW SWITCH	PPOLYMER BLENDING AND FEED SKID	SKID	N/A	Dry-contact	TBD	NO	VENDOR SUPPLIED EQUIPMENT	11241
162	I-1017	PI-6841-1 PI-6841-2 PI-6841-3 PI-6842-1 PI-6842-2 PI-6842-3 PI-6843-1 PI-6843-2 PI-6843-3	9	POLYMER SKID PRESSURE GAUGES	PRESSURE GAUGE	POLYMER BLENDING AND FEED SKID	SKID	N/A	N/A	0-XX PSI	NO	VENDOR SUPPLIED EQUIPMENT	11241
163	I-1017	PI-6841-4 PI-6842-4 PI-6843-4	3	POLYMER DISCHARGE PRESSURE	PRESSURE GAUGE	POLYMER BLENDING AND FEED SKID	SKID	N/A	N/A	0-XX PSI	NO	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17314
164	I-1019	PI-2211-1 PI-2211-2 PI-2211-3 PI-2221-1 PI-2221-2 PI-2221-3 PI-6843-1 PI-6843-2 PI-6841-3	9	POLYMER BLENDNG SKID DIFFERENTIAL PRESSURE GAUGE	PRESSURE GAUGE	POLYMER BLENDING AND FEED SKID	SKID	N/A	N/A	0-XX PSI	No	VENDOR SUPPLIED EQUIPMENT	11241
165		PI-2211-4 PI-2221-4 PI-6843-4		POLYMER PUMP DISCHARGE PRESSURE	PRESSURE GAUGE	PUMP DISCHARGE PIPING	PROCESS	NA	N/A	0-XX PSI	No	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17314
166	I-1019	DPS-2211 DPS-2221 DPS-6843	3	POLYMER BLENDNG SKID DIFFERENTIAL PRESSURE SWITCH	DIFFERENTIAL PRESSURE SENSOR	POLYMER BLENDING FEED SKID	SKID	N/A	Dry-contact	0-XX PSI	No	VENDOR SUPPLIED EQUIPMENT	11241
167	I-1019	FIC-2211-1 FIC-2211-2 FIC-2221-1 FIC-2221-2 FIC-6843-1 FIC-6843-2	6	POLYMER BLENDNG SKID MIXING WATER FLOW CONTROLER	FLOW CONTROLLER	POLYMER BLENDING FEED SKID	SKID	N/A	N/A	0-XX GPM	No	VENDOR SUPPLIED EQUIPMENT	11241
168	I-1019	FSL-2211 FSL-2221 FSL-6843	3	POLYMER BLENDNG SKID LOW FLOW SWITCH FOR LEAK DETECTION	FLOW SWITCH	POLYMER BLENDING FEED SKID	SKID	N/A	Dry-contact	0-XX GPM FALLING	No	VENDOR SUPPLIED EQUIPMENT	11241
169	I-1008	FE/FIT-5090	1	GRAVITY LINE FLOW SENSOR/INDICATING TRANSMITTER	MAGNETIC FLOW METER	STONE OAK PUMP STATION	PROCESS	120VAC	4-20mA	0-60 MGD	YES	FURNISHED BY CONTROL SYSTEMS INTEGRATOR	17310
170													