



<b>CLIENT:</b> SEATTLE PUBLIC UTILITIES		<b>DATE:</b>
<b>PROJECT:</b> PS 73 IMPROVEMENTS	<b>SYSTEM:</b> ALL PUMP STATION SYSTEMS	<b>REPORT BY:</b>

**Note to Designer: Update Equipment Tags with project specific information**

LOOP 100 – WASTEWATER PUMPING SYSTEM		
KEY ELEMENTS	EQUIPMENT TAG	NOTES
<input type="checkbox"/> Pump Station 73 Wet well		
<input type="checkbox"/> Level Transducers in the Wet well	PE/PT-7301 PE/PT-7302	
<input type="checkbox"/> Float Switches	LSH-7301 LSHH-7302	
<input type="checkbox"/> Wastewater Pumps (Constant Speed: 2,400 gpm).	P-7301 P-7302	
<input type="checkbox"/> Soft Starters	RVSS-7301 RVSS-7302	
<input type="checkbox"/> Wastewater Pump Discharge Pipes		
<input type="checkbox"/> Wastewater Pump Discharge Force Main		
<input type="checkbox"/> Suction Isolation Valves	GV-7301 GV-7302	
<input type="checkbox"/> Discharge Check Valves	CHV-7301 CHV-7302	
<input type="checkbox"/> Discharge Isolation Valves	GV-7303 GV-730405	
ACTIVITY	EQUIPMENT TAG	COMPLIANT / NOTES
<b>Manual Control Test</b>		
<input type="checkbox"/> Turn Pump 1 HOA switch to HAND		
<input type="checkbox"/> Engage Pump 1: Run from Lead Pump On Level to Pump Off Level - Time draw down run:		
<input type="checkbox"/> Turn Pump 2 HOA switch to AUTO		
<input type="checkbox"/> Engage Pump 2: Run from Lead Pump On Level to Pump Off Level - Time draw down run:		
<b>Automatic Control Test</b>		
<input type="checkbox"/> Turn Pump 1 and 2 HOA switches to AUTO		
<input type="checkbox"/> Run pumps through 3 fill/pump cycles		
<input type="checkbox"/> Verify pumps switch between lead pumps		
<input type="checkbox"/> During 4 <sup>th</sup> pump cycle turn lead pump HOA to OFF		



<input type="checkbox"/>	Verify lag pump starts and finishes pump down		
	<b>PAC Fail Test</b>		
<input type="checkbox"/>	Verify IDEC Smart Relay Timer Set		
<input type="checkbox"/>	Fill Wet Well to LSH level		
<input type="checkbox"/>	Simulate PAC fail		
<input type="checkbox"/>	Verify LSH triggers IDEC Smart Relay, calls both pumps to run, and runs pumps for programmed time		
	<b>Alarm / OIU Indicators Test</b>		
<input type="checkbox"/>	Verify Pumps in AUTO indication		
<input type="checkbox"/>	Verify Pumps in HAND indication		
<input type="checkbox"/>	OIU Auto/Manual indication		
<input type="checkbox"/>	Pump 1 and Pump 2 Running indication		
<input type="checkbox"/>	Pump 1 and Pump 2 Fail indication		
<input type="checkbox"/>	Wet Well Level Transducer Level indication		
<input type="checkbox"/>	Pump 1 and Pump 2 Fail to Start indication		
<input type="checkbox"/>	Pump 1 and Pump 2 Excessive Run indication		
<input type="checkbox"/>	Overflow (LSHH) Alarm tripped indication		
<input type="checkbox"/>	Operator Set Points (set per contract)		

<b>LOOP 200 – FACILITY VENTILATION SYSTEM</b>			
<b>KEY ELEMENTS</b>		<b>EQUIPMENT TAG</b>	<b>NOTES</b>
<input type="checkbox"/>	Dry Well and Wet Well ducting and balancing dampers		
<input type="checkbox"/>	Dry Well Supply Fan	SF-7310	
<input type="checkbox"/>	Dry Well Exhaust Fan	EF-7311	
<input type="checkbox"/>	Wet Well Supply Fan	SF-7320	
<input type="checkbox"/>	Wet Well Exhaust Fan	EF-7321	
<input type="checkbox"/>	Dry Well Supply Flow Switch	FSL-7310	
<input type="checkbox"/>	Dry Well Exhaust Flow Switch	FSL-7311	
<b>ACTIVITY</b>		<b>EQUIPMENT TAG</b>	<b>COMPLIANT / NOTES</b>
	<b>System Test</b>		
<input type="checkbox"/>	Turn on all ventilation equipment		
<input type="checkbox"/>	Verify Run indication on all Fans	SF-7310 EF-7311 SF-7320	



		EF-7321	
<input type="checkbox"/>	Turn off each fan in sequence and verify fan indication "not running"	SF-7310 EF-7311 SF-7320 EF-7321	
<input type="checkbox"/>	Turn off Dry Well Supply and exhaust fans in sequence and verify Low Flow Switch indication. And, verify that the "Go/No-Go" strobe engages	FSL-7310 FSL-7311	
<input type="checkbox"/>	Turn on all ventilation equipment		

<b>LOOP 300 – WET WELL GAS DETECTION SYSTEM (LEL)</b>			
<b>KEY ELEMENTS</b>		<b>EQUIPMENT TAG</b>	<b>NOTES</b>
<input type="checkbox"/>	Gas Detection Analyzer	AE/AIT-7301	
<input type="checkbox"/>	Gas Sample Pump	SP-7301	
<b>ACTIVITY</b>		<b>EQUIPMENT TAG</b>	<b>COMPLIANT / NOTES</b>
	<b>System Test</b>		
<input type="checkbox"/>	Turn on all LEL equipment	AE/AIT-7301 SP-7301	
<input type="checkbox"/>	Verify level concentration of gases on OIU	AE/AIT-7301 SP-7301	
<input type="checkbox"/>	Simulate alarm condition on LEL and verify indication on SCADA Panel/OIU	AE/AIT-7301 SP-7301	
<input type="checkbox"/>	Simulate fault condition and verify fault indication on SCADA Panel/OIU	AE/AIT-7301 SP-7301	

<b>LOOP 300 – WET WELL GAS DETECTION SYSTEM (VOC)</b>			
<b>KEY ELEMENTS</b>		<b>EQUIPMENT TAG</b>	<b>NOTES</b>
<input type="checkbox"/>	Gas Detection Analyzer	AE/AIT-7302	
<input type="checkbox"/>	Gas Sample Pump	SP-7301	
<b>ACTIVITY</b>		<b>EQUIPMENT TAG</b>	<b>COMPLIANT / NOTES</b>
	<b>System Test</b>		
<input type="checkbox"/>	Turn on all VOC equipment	AE/AIT-7302 SP-7301	
<input type="checkbox"/>	Verify level concentration of VOC gases on OIU	AE/AIT-7302 SP-7301	
<input type="checkbox"/>	Simulate alarm condition on VOC and verify indication on SCADA Panel/OIU	AE/AIT-7302 SP-7301	



<input type="checkbox"/>	Simulate fault condition and verify fault indication on SCADA Panel/OIU	AE/AIT-7302 SP-7301	
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<b>LOOP 400 – SUMP PUMP</b>			
<b>KEY ELEMENTS</b>		<b>EQUIPMENT TAG</b>	<b>NOTES</b>
<input type="checkbox"/>	Dry Well Sump Pump		
<input type="checkbox"/>	Dry Well Flood Switch	LSHH-7303	
<b>ACTIVITY</b>		<b>EQUIPMENT TAG</b>	<b>COMPLIANT / NOTES</b>
	<b>System Test</b>		
<input type="checkbox"/>	Fill sump		
<input type="checkbox"/>	Lift float and pump out sump		
<input type="checkbox"/>	Verify check valve holds		
<input type="checkbox"/>	Lift Dry Well Flood Switch and verify alarm indication on the SCADA Panel		

<b>LOOPS 500, 600, 700 – CONTROL CABINET DC AND AC POWER</b>			
<b>KEY ELEMENTS</b>		<b>EQUIPMENT TAG</b>	<b>NOTES</b>
<input type="checkbox"/>	AC Power Supply Monitor	PFR-7300	
<input type="checkbox"/>	SCADA Battery Monitor	N/A	SCADA to verify alarms and indications
<b>ACTIVITY</b>		<b>EQUIPMENT TAG</b>	<b>COMPLIANT / NOTES</b>
	<b>System Test</b>		
<input type="checkbox"/>	Simulate AC power fail and verify alarm indication on OIU		
<input type="checkbox"/>	DC power monitoring and alarms	N/A	SCADA to verify alarms and indications

<b>LOOPS 800 – FLOW MONITORING</b>			
<b>KEY ELEMENTS</b>		<b>EQUIPMENT TAG</b>	<b>NOTES</b>
<input type="checkbox"/>	Flow Meter	FE/FIT-7301	
<b>ACTIVITY</b>		<b>EQUIPMENT TAG</b>	<b>COMPLIANT / NOTES</b>
	<b>System Test</b>		



<input type="checkbox"/>	Monitor that flow rates and rolling Daily Totalized Flow indicating on OIU	FE/FIT-7301	Majority of flow meter testing done in EAT
<input type="checkbox"/>	Simulate Flow Meter Out of Range Alarm, verify indication	FE/FIT-7301	
<input type="checkbox"/>	Simulate Flow Meter Fault, verify alarm indication	FE/FIT-7301	

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APPROVAL

Facility has passed the Systems Acceptance Testing phase of commissioning and is ready for the 7-Day Operational Acceptance Testing phase of commissioning.

CxA \_\_\_\_\_

Date \_\_\_\_\_