Peshastin WWTF - Preventative Maintenance Checklist

Daily Rounds **Week of:**

Item	Action	Location	Interval	Routine Check	Preventative Maintenance	Mon	Tue	Wed	Thu	Fri	Sat	Sun
				Check applicable category		*Record date above for each day; initial or record value below for each item*						
Influent EQ System												
Influent	Complete permit and process control testing as required	Laboratory	Daily									
Influent Tanks	Review tank level and flowrate trends for repeated high levels or other abnormalities	SCADA	Daily									
Influent Tanks	Open dry-pit vault lid to visual inspect pump station Open influent tank lids to visually inspect tank interiors Verify sump pump operation	Influent Tanks	Weekly									
Submersible Level Sensor	Clean transducer as necessary	Influent Tanks	Semi-annually									
Float Switches	Verify proper operation	Influent Tanks	Semi-annually									
Submersible Influent Pumps	Visually inspect pumps and listen to pumps during operation for abnormal noises	Dry-pit Vault	Monthly									
Submersible Influent Pumps	Check and record amp draw Chech miniCAS relay	Dry-pit Vault	Quarterly									
Submersible Influent Pumps	Perform pump service in accordance with the manufacturer O&M manual including inspection of oil, impeller wear, insulation resistance, voltage balance, etc.	Dry-pit Vault	Semi-annually									
Electromagnetic Flowmeter	Calibrate as necessary	UV Room	Annually									
Influent Valves - Limitorque Actuators	Valves are located in non-hazardous locations and should normally be maintenance free. Periodically check oil. Replace bearings, seals or other parts if failure occurs.	Process Building	Quarterly									
Composite Sampler	Visual inspect and clean Collect sample	UV Room	Daily									
Valves (all types)	Full open and close each valve to verify operation Visually inspect for leaks Check bolt tightness Visually inspect for proper operation	Various	Semi-annually									

Peshastin WWTF - Preventative Maintenance Checklist

Daily Rounds **Week of:**

Item	Action	Location	Interval	Routine Check	Preventative Maintenance	Mon	Tue	Wed	Thu	Fri	Sat	Sun
				Check applicable category		*Record date above for each day; initial or record value below for each item*						
SBRs												
SBR System	Complete permit and process control testing as required	Laboratory	Daily									
Surface Wasting Device	Visually verify no obstructions to flow present Verify adequate grease on shaft Inspect moving parts Washdown as necessary Verify guides functioning properly	SBR Walkway	Weekly									
Surface Wasting Device	Clean device and gate stem Operate actuator through full cycle Inspect for grease leakage	SBR Walkway	Quarterly									
Surface Wasting Device	Lubricate device Check mounting hardware for tightness Check wire connections Complete actuator maintenance as prompted by actuator controlller	SBR Walkway	Semi-annually									
Submersible WAS Pumps	Visually inspect pumps and listen to pumps during operation for abnormal noises	Dry-pit Vault	Monthly									
Submersible WAS Pumps	Check and record amp draw Chech miniCAS relay	Dry-pit Vault	Quarterly									
Submersible WAS Pumps	Perform pump service in accordance with the manufacturer O&M manual including inspection of oil, impeller wear, insulation resistance, voltage balance, etc.	Dry-pit Vault	Semi-annually									
DO Sensor	Inspect Calibrate Clean	SBRs	Quarterly									
Float Switches	Verify proper operation	SBRs	Semi-annually									
Rotary Positive Displacement Blowers	Check differential pressure (<10.5 psi) Check/clean intake filter and replace as necessary (max -45 mbar vacuum pressure) Check discharge air temp (<275 deg F) Check and correct oil level as necessary Check screwed connections for tightness	Process Building	Weekly									
Rotary Positive Displacement Blowers	Check for cleanliness and ventilation of housing Megger to check winding insulation and record readings Check all electrical connections. Check function of pressure valve and clean	Process Building	Quarterly									
Rotary Positive Displacement Blowers	Clean inlet/outlet openings in acoustic hood Check/replace v-belts as necessary Check sheaves for wear and replace as needed Replace grease if discolored	Process Building	Semi-annually									
Rotary Positive Displacement Blowers	Replace oil at 8,000 operating hours Replace grease Replace intake filter Check flexible pipe connection Check non-return valve function Relubricate motor at intervals in manufacturer O&M	Process Building	Annually									
Rotary Positive Displacement Blowers	Replace belts and check sheave alignment (2 years) Schedule service technician inspection (3 years)	Process Building	Greater than annual									

Peshastin WWTF - Preventative Maintenance Checklist

Daily Rounds **Week of:**

Item	Action	Location	Interval	Routine Check	Preventative Maintenance	Mon	Tue	Wed	Thu	Fri	Sat	Sun
				Check applicable category		*Record date above for each day; initial or record value below for each item*						
Air Diffusion Equipment	Visually inspect the aeration basin surface pattern for signs of failure or fouling. Purge water from each system.	SBRs	Weekly									
Air Diffusion Equipment	Drain aeration basin & remove excess solids. Clean diffusers. Inspect support hardware, pipe connections, purge assembly, etc.	SBRs	Annually									
Air Diffusion Equipment	Perform acid cleaning if normal cleaning does not relieve fouling	SBRs	Greater than annual									
Air Flow Meter	Inspect Calibrate Clean	Process Building	Annually									
Aeration Valves - Limitorque Actuators	Valves are located in non-hazardous locations and should normally be maintenance free. Periodically check oil. Replace bearings, seals or other parts if failure occurs.	Process Building	Quarterly									
Aeration System Solenoid Valves	Visually inspect for proper operation	Process Building	Monthly									
Valves (all types)	Full open and close each valve to verify operation Visually inspect for leaks Check bolt tightness Visually inspect for proper operation	Various	Semi-annually									

Peshastin WWTF - Preventative Maintenance Checklist

Daily Rounds **Week of:**

Item	Action	Location	Interval	Routine Check	Preventative Maintenance	Mon	Tue	Wed	Thu	Fri	Sat	Sun
				Check applicable category		*Record date above for each day; initial or record value below for each item*						
Effluent System												
Effluent System	Complete permit and process control testing as required	Laboratory	Daily									
Effluent Valves - Limitorque Actuators	Valves are located in non-hazardous locations and should normally be maintenance free. Periodically check oil. Replace bearings, seals or other parts if failure occurs.	Process Building	Quarterly									
Effluent Tank	Review tank level and flowrate trends for repeated high levels or other abnormalities	SCADA	Daily									
Effluent Tank	Open effluent tank lids to visually inspect tank interior	Effluent Tank	Weekly									
Effluent pumps	Pull and visually inspect pumps	Effluent Tank	Annually									
Effluent Pump Ball Check Valves	Visually inspect for leaks Verify no obstructions exist in valve	Effluent Tank	Annually									
Submersible Level Sensor	Clean transducer as necessary	Effluent Tank	Semi-annually									
Float Switches	Verify proper operation	Effluent Tank	Semi-annually									
Electromagnetic Flowmeter	Calibrate as necessary	Process Building	Annually									
Filters	Record each filter stage headloss, air flow, and chem feed rate Visually verify rejects flow and general operation	Process Building	Daily									
Filters	Remove air lift pump to clean and inspect Test float switch and clean Check the test switch for air burst operation	Process Building	Semi-annually									
Air Compressor (Filters)	Check oil level Drain condensate Check for loose parts, excessive noise/vibration, oil leaks	Process Building	Daily									
Air Compressor (Filters)	Clean filter components per O&M Clean air intake filters Check belts for tightness	Process Building	Weekly									
Air Compressor (Filters)	Change oil (or 500 op. hours) Check entire system for air leakage Tight fittings as necessary Check and clean valves Check PRV operation	Process Building	Quarterly									
Filter Gallery Sump Pump	Test for proper operation	Process Building	Monthly									
UV System	Visually inspect; check system faults and alarms; check that system is in REMOTE AUTO Inspect low water level sensor for debris and clean as necessary Clean weirs and remove debris	UV Room	Daily									
UV System	Clean channel as necessary	UV Room	Weekly									
UV System	Remove and clean lamp sleeves Check power cable strain relief for tightness Check seals	UV Room	Monthly									
UV System - Module	Remove module and replace lamps and sleeve o-ring seals (12,000 hours)	UV Room	Annually									

Peshastin WWTF - Preventative Maintenance Checklist

Daily Rounds **Week of:**

Item	Action	Location	Interval	Routine Check	Preventative Maintenance	Mon	Tue	Wed	Thu	Fri	Sat	Sun
				Check applicable category		*Record date above for each day; initial or record value below for each item*						
Valves (all types)	Full open and close each valve to verify operation Visually inspect for leaks Check bolt tightness Visually inspect for proper operation	Various	Semi-annually									
Composite Sampler	Visual inspect and clean Collect sample	UV Room	Daily									

Peshastin WWTF - Preventative Maintenance Checklist

Daily Rounds **Week of:**

Item	Action	Location	Interval	Routine Check	Preventative Maintenance	Mon	Tue	Wed	Thu	Fri	Sat	Sun
				Check applicable category		*Record date above for each day; initial or record value below for each item*						
Solids Handling System												
Solids Handling System	Complete permit and process control testing as required	Laboratory	Daily									
Solids Handling System	Review tank level and flowrate trends for repeated high levels or other abnormalities	SCADA	Daily									
WAS EQ Pump	Perform inspection of pump and piping, impeller, oil, cable entry, cable, cooling system, starter equipment and insulation resistance per the manufacturer O&M manual. Change oil and replace impeller every 2,000 operating hours or as needed.	WAS EQ Lift Station	Semi-annually									
WAS EQ Pump	Perform overall of bearing and mechanical seal (every 4,000 operating hours or as needed)	WAS EQ Lift Station	Annually									
Submersible Level Sensor	Clean transducer as necessary	WAS EQ Lift Station	Semi-annually									
Float Switches	Verify proper operation	WAS EQ Lift Station	Semi-annually									
Thickener Equipment	Review and record average backwash cycle frequency (min) and approximated average permeate flux rate (gpm/tank) for each tank	Process Building	Daily									
Thickener Equipment	Drain and clean tank(s); visually inspect membranes Perform chemical backwash of membranes (2x week per O&M) Fill tank(s) with chlorinated water and air scour membranes	Process Building	Weekly									
Thickener Equipment	Blowers - perform routine checks per O&M manual PM/BW pumps - check buffer oil every 200 operating hrs PM/BW pumps - check gear oil every 500 operating hrs Provide general cleaning and washdown of equipment	Process Building	Monthly									
Thickener Equipment	PM/BW pumps - change buffer oil every 2000 operating hrs PM/BW pumps - change gear oil every 2000 operating hrs Pressure transmitters - perform CIP/SIP per O&M	Process Building	Semi-annually									
Thickener Equipment	TS Pumps - replace rotor/stator/seals as required	Process Building	Greater than annual									
Float Switches	Verify proper operation	Thickener	Semi-annually									
Float Switches	Verify proper operation	Digesters	Semi-annually									
Digesters	Visual inspect tank for excessive foaming or other noticable abnormality	Digesters	Weekly									
Air Compressor (Cake Pump/Tools)	Check oil level Drain condensate Check for loose parts, excessive noise/vibration, oil leaks	UV Room	Daily									
Air Compressor (Cake Pump/Tools)	Clean filter components per O&M Clean air intake filters Check belts for tightness	UV Room	Weekly									
Air Compressor (Cake Pump/Tools)	Change oil (or 500 op. hours) Check entire system for air leakage Tight fittings as necessary Check and clean valves Check PRV operation	UV Room	Quarterly									

Peshastin WWTF - Preventative Maintenance Checklist

Daily Rounds **Week of:**

Item	Action	Location	Interval	Routine Check	Preventative Maintenance	Mon	Tue	Wed	Thu	Fri	Sat	Sun
				Check applicable category		*Record date above for each day; initial or record value below for each item*						
Cake Pump	Inspect motor for unusual noise or vibration Clean surface of motor	Dewatering Room	Weekly									
Cake Pump	Check electrical connections and fastener tightness Inspect gearbox oil level and condition	Dewatering Room	Quarterly									
Cake Pump	Lubricate pin jints as necessary (4,000 Op. hrs) Check pump for proper mechanical seal leakage Check pump rotor and stator for wearing	Dewatering Room	Semi-annually									
Cake Pump	Change gearbox oil (10,000 hrs or 2 years) Check gearmotor roller bearings and replace as needed (10,000 hrs) Replace gearmotor shaft seal rings (10,000 hrs) Overhaul gear motor per manufacturer O&M (5 yrs) Replace stator and packing ring as needed (2 yrs) Replace pump parts per O&M (5 yrs)	Dewatering Room	Greater than annual									
Centrifuge	Provide general washdown of equipment	Centrifuge Room	Weekly									
Centrifuge	Record dewatered cake, centrate quality and polymer usage	Centrifuge Room	Monthly									
Centrifuge	Refer to manufacturer O&M for maintenance procedures	Centrifuge Room	Quarterly									
Float Switches	Verify proper operation	Centrate Pump	Semi-annually									
Electromagnetic Flowmeter	Calibrate as necessary	Centrifuge Room	Annually									
Valves (all types)	Full open and close each valve to verify operation Visually inspect for leaks Check bolt tightness Visually inspect for proper operation	Various	Semi-annually									

Peshastin WWTF - Preventative Maintenance Checklist

Daily Rounds **Week of:**

Item	Action	Location	Interval	Routine Check	Preventative Maintenance	Mon	Tue	Wed	Thu	Fri	Sat	Sun
				Check applicable category		*Record date above for each day; initial or record value below for each item*						
Electrical and Control System												
SCADA	Review alarm list and daily trends for abnormalities	Sitewide	Daily									
Generator Receptacle	Attach potable generator and verify operation	Process Building	Semi-annually									
Control System	Complete any maintenance items required by the *Telemetry System O&M Manual*	Process Building	Annually									
Variable Frequency Drives	Perform inspection and maintenance in accordance with equipment O&M manual	Process Building	Quarterly									
Motor Control Centers	Perform infrared scan Visually inspect and clean the enclosure Bus Bar: visually inspect insulators Bus Bar: visually inspect wiring Disconnects: visually inspect and clean Disconnects: verify proper operation Contactors: visually inspect and clean Electrical Interlocks: inspect Mechanical Interlocks: inspect	Process Building	Annually									
Motor Control Centers	2 years - Bus Bar: check connections for tightness/torque 2 years - Bus Bar: electrical test 2 years - Motor Overload Relays: check connections for tightness 2 years - Molded Case Circuit Breakers: mechanical test 3 years - Motor Overload Relays: perform cleaning, calibration and function tests 3 years - Molded Case Circuit Breakers: visual inspection and cleaning 3-5 years - Molded Case Circuit Breakers: electrical test	Process Building	Greater than annual									
Distribution Panels	Follow maintenance tasks detailed in manufacturer's O&M	Process Building	Greater than annual									
Wall AC Unit	Clean air filter Clean grills and chassis	Process Building	Semi-annually									

Peshastin WWTF - Preventative Maintenance Checklist

Daily Rounds **Week of:**

Item	Action	Location	Interval	Routine Check	Preventative Maintenance	Mon	Tue	Wed	Thu	Fri	Sat	Sun
				Check applicable category		*Record date above for each day; initial or record value below for each item*						
General WWTF												
Handhole and Vault Hatches	Open vault lid and visually inspect Clean as necessary	Site	Quarterly									
Handhole and Vault Hatches	Lubricate moving parts	Site	Annually									
Hoist and Trolley	Visually inspect and clean as necessary. Lubricate roller assembly, all pins, and ratchet jackbearings and shafts.	Process Building	Quarterly									
HVAC Unit	Clean external metal mesh filters Replace filters as required per manufacturer O&M	Process Building	Monthly									
HVAC Unit	Check motor and bearings Inspect condenser coils for cleanliness	Process Building	Semi-annually									
HVAC Unit	Lubricate where required Verify damper operation Verify blower wheel and fasteners for proper operation Check door seals and wiring connections Check cabinet for cleanliness and corrosion	Process Building	Annually									
Radiant Space Heater	Clean heater assembly. Tighten electrical connections. Tighten hangers and mechanical connections.	UV Room	Greater than annual									
Radiant Space Heater	Clean heater assembly. Tighten electrical connections. Tighten hangers and mechanical connections.	Dewatering Room	Greater than annual									
Radiant Space Heater	Clean heater assembly. Tighten electrical connections. Tighten hangers and mechanical connections.	Chem/Mech Rooms	Greater than annual									
Duct Fan	Lubricate fan bearings and ball bearing motors. Replace fan belts. Clean fan assembly.	Dewatering Room	Annually									
Exhaust Fan	Lubricate fan bearings and ball bearing motors. Replace fan belts. Clean fan assembly.	UV Room	Annually									
Heat pump	Clean housing; check and tighten electrical connections.	Laboratory	Annually									
Air Handler	Change air filter as necessary	Laboratory	Quarterly									
Hot Water Tank	Drain tank to prevent sediment buildup in the tank. Ensure pressure relief valve is in operating condition. Remove lime scale from the heating element. Inspect anode rod and replace as necessary.	Process Building	Greater than annual									
Hot Water Tank	Drain tank to prevent sediment buildup in the tank. Ensure pressure relief valve is in operating condition. Remove lime scale from the heating element. Inspect anode rod and replace as necessary.	Mechanical Building	Greater than annual									
Safety Shower and Eyewash	Operate safety eyewash and shower	Process Building	Weekly									
Thermostatic Mixing Valve	Check thermostatic mixing valve for proper operation while operating eyewash and shower	Process Building	Weekly									
Reduced Pressure Backflow Assembly	Test using certified tester	Process Building	Greater than annual									
Reduced Pressure Backflow Assembly	Test using certified tester	Site	Greater than annual									

Peshastin WWTF - Preventative Maintenance Checklist

Daily Rounds **Week of:**

Item	Action	Location	Interval	Routine Check	Preventative Maintenance	Mon	Tue	Wed	Thu	Fri	Sat	Sun
				Check applicable category		*Record date above for each day; initial or record value below for each item*						
RPBA Hotbox	Visually inspect, verify heater is operable during winter	Site	Weekly									
Laboratory Equipment	Follow manufacturer recommendations, maintain certifications, etc.	Laboratory	Annually									
Valves (all types)	Full open and close each valve to verify operation Visually inspect for leaks Check bolt tightness Visually inspect for proper operation	Sitewide	Semi-annually									
Smoke/CO Detectors	Test and clean	Sitewide	Annually									
Housekeeping	Perform a walk around of the entire facility looking for vandalism, breaches in security systems and maintenance needs. Clean or washdown process rooms, SBR walkways, etc. as needed.	Sitewide	Weekly									

Peshastin WWTF - Preventative Maintenance Checklist

Daily Rounds **Week of:**

Item	Action	Location	Interval	Routine Check	Preventative Maintenance	Mon	Tue	Wed	Thu	Fri	Sat	Sun
				Check applicable category		*Record date above for each day; initial or record value below for each item*						
Collection System												
Mainline Valves	Exercise all mainline valves annually	Collections	Annually									
Fruit Packer Rinse Tanks	Pump out rinse tanks annually	Collections	Annually									
General System STEP Tanks	Pump out each on approximately a 10-year interval; pump out one tenth of all tanks annually	Collections	Annually									