LS # 8

Roth Professional Solutions

LIFT STATION CONDITION ASSESSMENT FORM

Assessment Date: 25 April 2023

Location: 1210 Kronenwetter Dr, Mosinee, WI Municipality: Village of Kronenwetter LS Type: Duplex Submersible

Engineer: Roth Professional Solutions Technical & Equipment Assistance: B&M Technical Services

House Keeping: ■ Good ☐ N/A ☐ Poor Lighting ☐ Tripping Hazards Present ☐ No Fall Protection ☐ Exposure to Raw Wastewater in Dry Well
☐ Sump Pump Inoperable ☐ Electric Space Heater Inoperable ☐ Potential for Shock or Electrocution ☐ Other

Health and Safety Issues:

Other Observations: Influent Lines into Wet Well were Full / Possible Sedimentation; Flow Study Required
#2 Set to Lead Only per Field Setting; Ebara Pump not working, minimal, if any, performance

Asset Class	Asset Present	Year Installed	Cond. Rank	Perf. Rank	Field Observations/Comments
Site Improvement (SIM)					
* **Access Driveway**	X				
* **Parking**	X				
* **Gate and Fencing**	☐				
* **Site Drainage**	X				
* **Grounding System**	X				
* **Site Lighting**	☐				
* **Site Alarm Horn and Strobe Lighting**	X				

General Site Electrical Observations

Access Driveway Details: ■ Gravel or aggregate basecourse only ☐ Concrete Pavement ■ Bituminous Pavement Seal Coat

Parking Details: ☐ None ☐ Gravel ■ Paved

Fence Details: ☐ Chain Link ☐ Other Fencing Height (ft): Fencing Length (ft):

Gate Type: ☐ Single ☐ Double

Traffic: ☐ Other ☐ Site too Close to Traffic Okay

Grounding System Details : ■ Present ☐ Grounding Rings ■ Grounding Rods

If applicable, approximate parking area:

If applicable, approximate site area:

Other Notes:

Deep Valve Vault, some, infiltration; Long Run Times (Likely Explained in above notes); Random Power Fails

4" Gate Valve Operable, but Ticked

LS # 8

Roth Professional Solutions

LIFT STATION CONDITION ASSESSMENT FORM

Asset Class	CMMS Code	Asset Present	Year Installed	Cond. Rank	Perf. Rank	Utiliz. (%)	Field Observations/Comments
Structure and Wetwell (PST)							
* **Building**		☑					Valve Vault

Building Structures: ☐ None ☒ Concrete Walls ☒ Concrete Floor ☐ Doors Total Floor Area: Plan Floor Area:

Field Observations: ☒ Good ☐ N/A ☐ Roof Degraded ☐ Doors and Security Failing ☐ Needs Paint ☐ Cracks on the Wall ☐ Cracks on the Floor ☒ Other Deep, Some Water on Floor

* **Odor Control**		☑					

Odor Details: ☒ Vent Pipe ☐ Other ☐ Details

Field Observations: ☒ Operational and in use ☐ On site, but not required ☐ Does not operate, needs repair ☐ Other

* **Crane/Hoist**		☑					On Site

Crane Details: Manufacturer: Model: Serial Number:

Field Observations: ☒ Good operating condition ☐ Does not operate, requires repair ☐ Mounting Hardware intact ☐ Other

* **Bar Screen or Com minuter**	N/A	☐					

System Description: ☐ No Bar Screen ☐ Manually Raked Bar Screen ☐ Mechanically Raked Bar Screen ☐ Screen Bypass Provided?

Mechanical Bar Screens: ☐ Manufacturer: Model: Serial Number: Power Requirements (hp):

Odor Details: ☐ N/A ☐ Screens need frequent cleaning ☐ Short repsonse time ☐ Odor fly nuisance ☐ Screens not in use ☐ Other

* **Flow Meter**	N/A	☐					

Type: ☐ N/A Type: Manufacturer: Model: Serial Number:

Flow Meter Field Observations: ☐ Operational ☐ Location ☐ Other

* **Wet Well**		☑					

Walls: ☒ Concrete ☐ Steel ☐ Fiberglass

Slab/Cover: ☒ Reinforced Concrete ☐ Steel ☒ Pumps, motors and electric panel are mounted on cover/slab directly over wet well

Pump Control System: ☒ Floats ☐ Bubbler System ☐ Ultrasonic & Transducer

Measurement (PPM): 0-5 PSI MPC

Wet Well Field Observations: ☒ Good ☐ PN/A ☐ Hatch Damaged or Difficult to Open ☐ Wet Structure Spalling or Cracked ☐ Evidence of Concrete Corrosion ☐ Wet Well Needs Cleaning - Solids/Grease ☐ Other

Hatch Field Observations: ☒ Good ☐ Fair: Minor Corrosion to Hatches, Hinges, or Latches ☐ Poor:Corroded or Broken Hatches, Hinges, or Latches ☐ Other

Wet Well Ladder Observations: ☐ Good ☐ Fair: Surface Corrosion; Steps Intact and Solid; Minor Anchor Bolt Corrosion ☐ Poor: Corroded or Broken Steps; Corroded or Broken Wall Anchors ☐ Other

Wet Well Wall Observations: ☒ Good ☐ Fair: Concrete Sealant Peeled or Cracked; Concrete Soft at Surface ☐ Poor: Exposed/Missing Aggregate; Exposed/Missing Re-bar ☐ Other

Slab/Cover Observations: ☐ Good ☒ Fair: Concrete or Aluminum Grate Slightly Corroded But Safe ☐ Poor: Concrete Aggregate Missing/Exposed; Grate Corroded or Warped; Debris Over Platform ☒ Other Not a Concern

LS # 8

Roth Professional Solutions

LIFT STATION CONDITION ASSESSMENT FORM

Asset Class	CMMS Code	Asset Present	Year Installed	Cond. Rank	Perf. Rank	Utiliz. (%)	Field Observations/Comments
Influent Pipe Observations: ☐ Good ☐ Fair: Slight Corrosion; Pipe Intact ☐ Poor: Severe Pipe Corrosion ■ Other High Level Tailwater							
Alarm Float Observations: ■ Good ☐ Fair: Some Grease But Operating Properly ☐ Poor: Covered in Grease or Broken ☐ Other							
Pump Vent Line Observations: ☐ Good ☐ Fair: Slight Corrosion But Operates Properly; Needs Sealant Around Opening ☐ Poor: Any One Vent Does Not Operate; Corroded or Broken Off at Wall ☐ Other							
* **Dry Well**		☑					Valve Vault
Location Type: ☐ None ☐ Underground pump vault with access tube and ladder ■ Located below grade inside building Lighting: ☐ Yes ■ No Cathodic Protection ■ Not Required ☐ None ☐ Yes							
Access Tube and Ladder Field Observations: ☐ N/A ■ Good ☐ Fair: Surface Corrosion; Steps Intact and Solid; Minor Anchor Bolt Corrosion ☐ Poor: Corroded or Broken Steps; Corroded or Broken Wall Anchors ☐ Other							
Underground Vault Observations: ☐ N/A ■ Good ☐ Fair: Surface Corrosion ☐ Poor: Corrosion ☐ Other							
Building Floor Slabs: ☐ N/A ■ Good ☐ Fair: Concrete Sealant Peeled or Cracked; Concrete Soft at Surface ☐ Poor: Exposed/Missing Aggregate; Exposed/Missing Re-bar ☐ Other							
Staircases/Stairwells: ☐ N/A ☐ Good ☐ Fair: Concrete Cracked; Concrete Soft at Surface ☐ Poor: Exposed/Missing Aggregate; Exposed/Missing Re-bar ☐ Other							
Building Walls: ☐ N/A ■ Good ☐ Fair: Concrete Sealant Peeled or Cracked; Concrete Soft at Surface ☐ Poor: Exposed/Missing Aggregate; Exposed/Missing Re-bar ☐ Other							
Sump Pump: ☐ No ☐ Yes Type Model: Power (hp): TDH: Serial: Field Observations: ☐ Not Operational ☐ Poor Floor Drainage ☐ Other							
* **Cathodic Protection**	N/A	☐					
Field Observations: ☐ Disconnected ☐ Other							
HVAC (HVA)							
* **Dry Well HVAC**	N/A	☐					
Asset Size: Field Observations: ☐ Good ☐ N/A ☐ Old ☐ Ventilation Inoperable ☐ Makes Noise ☐ Fans Vibrate ☐ Ventilation Duct Work Corroded ☐ Belts Loose or Torn ☐ Louvers ☐ Roof Vents ☐ Other							
* **Wet Well HVAC**	N/A	☐					
Asset Size: Field Observations: ☐ Good ☐ N/A ☐ Old ☐ Ventilation Inoperable ☐ Makes Noise ☐ Fans Vibrate ☐ Belts Loose or Torn ☐ Ventilation Duct Work Corroded ☐ Louvers ☐ Roof Vents ☐ Other							
Electrical Systems (ELE)							
* **Control Panel**		☑					Need Pump Tags & Manuals in Panel

Asset Size (Volts) 208 ☐ Single phase ■ Three Phase

Manufacturer: US Filter Model: FPI Serial Number: 307257

Power Supply Manufacturer: Model: Type:

LS # 8

Roth Professional Solutions

LIFT STATION CONDITION ASSESSMENT FORM

Asset Class	CMMS Code	Asset Present	Year Installed	Cond. Rank	Perf. Rank	Utiliz. (%)	Field Observations/Comments

Field Observations: ☑ Good ☐ Panel Corroded ☐ Old / Outdated / Obsolete ☐ Contacts Loose ☐ Cables Fatigued Checked ☐ Dust Inside Panel ☐ Exposed Wires ☐ Shop Drawings Available ☐ UL Listed ☐ Uncovered Holes ☐ Surge Protection ☐ Grounded ☐ Wiring Labelled ☐ Panel Labelled ☐ Other

* **Lighting Panel**	N/A	☐					

Asset Size (Volts)

Manufacturer: Model: Serial Number:

Field Observations: ☐ Good ☐ Panel Corroded ☐ Old / Outdated / Obsolete ☐ Contacts Loose ☐ Cables Fatigued Checked ☐ Dust Inside Panel ☐ Exposed Wires ☐ Switch Gear Worn ☐ Bus and.or lugs corroded ☐ Spare Spaces Available ☐ Breakers Labelled ☐ Panel Grounded ☐ Panel Labelled ☐ Other

* **Main Switch**		☑					

Asset Size (Volts) 208 VAC

Manufacturer: GE Model: TEB 1321 Serial Number:

Field Observations: ☐ Good ☐ Panel Corroded ☐ Old / Outdated / Obsolete ☐ Contacts Loose ☐ Cables Fatigued Checked ☐ Dust Inside Panel ☐ Exposed Wires ☐ Switch Gear Worn ☐ Lugs Corroded ☐ Panel Grounded ☐ Panel Labelled ☐ Other

* **Transfer Switch**		☑					Manual

Asset Size (Volts Manual Portable Generator 208

Manufacturer: Model: Serial Number:

Field Observations: ☑ Good ☐ Panel Corroded ☐ Old / Outdated / Obsolete ☐ Contacts Loose ☐ Cables Fatigued Checked ☐ Dust Inside Panel ☐ Exposed Wires ☐ Switch Gear Worn ☐ Lugs Corroded ☑ Panel Grounded ☑ Panel Labelled ☐ Other

* **Motor Control Center**	N/A	☐					

Asset Size (Volts)

Manufacturer: Model: Serial Number:

Field Observations: ☐ Good ☐ Panel Corroded ☐ Old / Outdated / Obsolete ☐ Contacts Loose ☐ Cables Fatigued Checked ☐ Dust Inside Panel ☐ Exposed Wires ☐ Switch Gear Worn ☐ Lugs Corroded ☐ Panel Labelled ☑ Other

* **Junction Box**		☑					

Asset Size (Volts) 48x36x12 Mounted, US Filter

Manufacturer: Hoffman Model: Type 3R Serial Number:

Field Observations: ☐ Good ☐ Panel Corroded ☑ Old / Outdated / Obsolete ☐ Contacts Loose ☐ Cables Fatigued Checked ☐ Dust Inside Panel ☐ Exposed Wires ☐ Switch Gear Worn ☐ Lugs Corroded ☑ Panel Grounded ☑ Panel Labelled ☐ Other

* **Miscellaneous Panel 1**		☑					Replace Back-up Controllers; 1-2x a yr; 11 STA

Asset Size

Manufacturer: Model: Serial Number:

Field Observations: ☐ Good ☐ Panel Corroded ☐ Old / Outdated / Obsolete ☐ Contacts Loose ☐ Cables Fatigued Checked ☐ Dust Inside Panel ☐ Exposed Wires ☐ Switch Gear Worn ☐ Lugs Corroded ☐ Panel Grounded ☐ Panel Labelled ☑ Other Motor Starters replaced 2020

LS # 8

Roth Professional Solutions

LIFT STATION CONDITION ASSESSMENT FORM

Asset Class	CMMS Code	Asset Present	Year Installed	Cond. Rank	Perf. Rank	Utiliz. (%)	Field Observations/Comments
Generator (GEN)							
* **Emergency Generator**		☐					
* **Emer. Gen. Connector**		☑					Portable Off-Site

Asset Size: Manufacturer: Model: Serial: Generator Type:

Field Observations: ☐ Good ☐ N/A ☐ Contacts Loose ☐ Cables Fatigued Checked ☐ Engine Fluids Low ☐ Poor Housekeeping ☐ Poor Accessibility ☐ Panel Grounded ☐ Panel Labelled ☐ Diesel Containment ☐ Other

Instrumentation (INS)							
* **Auto Dialer**		☑					

Manufacturer: SensaPhone Model: 800 Phone Number: 715-693-8244

Alarms: ☒ High Level ☒ Low Level ☐ Generator Running ☐ Power Fail ☒ Other Transducer 0-5 PSI

* **Float Controls**	2 Float	☐	Back up				
* **Bubbler Controls**		☐					

Manufacturer: Model:

* **Submersible Level Controls**		☐					0-5 PSI

Field Observations: ☒ Good ☐ N/A ☐ Bubbler Compressor Failing ☐ Air Lines Clogged / Full of Moisture ☐ Drain Condensate Traps in Air System ☐ Floats Tangled ☐ Controls Obsolete ☐ Other

SCADA (SCA)

Field Observations: ☐ Good ☒ N/A ☐ Obsolete ☐ Other

Variable Frequency Drive							
* **Control Panel - VFD**	N/A	☐					
* **Harmonic Filter**	N/A	☐					
* **Output Filter**	N/A	☐					

Asset Size: Manufacturer: Model: Observed RPM:

Field Observations: ☐ Good ☐ N/A ☐ Makes Noise ☐ Obsolete ☐ Panel Corroded / Dusty / Leaky ☐ Other

Motors (MTR)

* **Motor 1**		☑					

Asset Size (HP) 10

Manufacturer: Shinmayway Pumps Model: 4CNX Serial Number:

Field Observations: ☒ Good ☐ N/A ☐ Makes Noise ☐ Vibrates ☐ Shaft Bearing Noise ☐ Opposite End Bearing Noise ☐ Overheating ☐ Needs Lubrication ☐ Over Lubricated ☐ Mount Failing ☐ Leaking ☐ Emergency Stop Button in Dry Well Inoperable ☐ Other

* **Motor 2**	N/A	☐					

Asset Size (HP): Manufacturer: Model: Serial Number:

Field Observations: ☐ Good ☐ N/A ☐ Makes Noise ☐ Vibrates ☐ Shaft Bearing Noise ☐ Opposite End Bearing Noise ☐ Overheating ☐ Needs Lubrication ☐ Over Lubricated ☐ Mount Failing ☐ Leaking ☐ Emergency Stop Button in Dry Well Inoperable ☐ Other

LS # 8

Roth Professional Solutions

LIFT STATION CONDITION ASSESSMENT FORM

Asset Class	CMMS Code	Asset Present	Year Installed	Cond. Rank	Perf. Rank	Utiliz. (%)	Field Observations/Comments
Hor/Vert Centrifugal Pumps							
* **Pump 1**	N/A	☐					

Manufacturer: Model: Serial Number:

Discharge Size (in) Suction Diameter (in) Pump Size (GPM) TDH

Priming Pump ☐ Manufacturer: Model: Serial No.: Size (hp):

Pressure Gauge ☐ Manufacturer: Pressure Range: PressureReading:

Field Observations: ☐ Good ☐ N/A ☐ Seals Leaking ☐ Vibrating ☐ Shaft Deflection ☐ Cavitating ☐ Belts Loose
☐ Bearing Noise ☐ Mount Failing ☐ Evidence of Pipe Strain ☐ Other

* **Pump 2**	N/A	☐					

Discharge Size (in) Suction Diameter (in) Pump Size (GPM) TDH

Priming Pump ☐ Manufacturer: Model: Serial No.: Size (hp):

Pressure Gauge ☐ Manufacturer: Pressure Range: PressureReading:

Field Observations: ☐ Good ☐ N/A ☐ Seals Leaking ☐ Vibrating ☐ Shaft Deflection ☐ Cavitating ☐ Belts Loose
☐ Bearing Noise ☐ Mount Failing ☐ Evidence of Pipe Strain ☐ Other

Submersible Pumps (SUB)							
* **Pump 1**		☑					

Manufacturer: EBARRA Model: Serial:

Discharge Size (in) 4" Suction Diameter (in) Pump Size (GPM) 110 TDH 7.5 HP

Field Observations: ☐ Good ☐ N/A ☐ Rail System Corroded ☐ Does Not Seat Well ☐ Cables Corroded or Failing
☒ Other Not Performing in Drawndown Test

* **Pump 2**		☑					

Manufacturer: Shinmaywa Model: Serial: 2020

Discharge Size (in) 4" Suction Diameter (in) Pump Size (GPM) TDH 5 HP

Field Observations: ☒ Good ☐ N/A ☐ Rail System Corroded ☐ Does Not Seat Well ☐ Cables Corroded or Failing
☐ Other

Check Valves							
* **Pump 1**		☑					

Size (in): 4" Manufacturer: Model: Serial No:

Field Observations: ☒ Good ☐ N/A ☐ Valve Operator Stuck ☐ Valve Seat Leaking ☐ Flanges Leaking
☐ Check Valve Not Seating ☐ Check Valve Not Operating ☐ Evidence of Pipe Strain
☐ Other

* **Pump 2**		☑					

Size (in): 4" Manufacturer: Model: Serial No:

Field Observations: ☒ Good ☐ N/A ☐ Valve Operator Stuck ☐ Valve Seat Leaking ☐ Flanges Leaking ☐ Other
☐ Check Valve Not Seating ☐ Check Valve Not Operating ☐ Evidence of Pipe Strain

LS # 8

Roth Professional Solutions

LIFT STATION CONDITION ASSESSMENT FORM

Asset Class	CMMS Code	Asset Present	Year Installed	Cond. Rank	Perf. Rank	Utiliz. (%)	Field Observations/Comments
Piping and Valves Suction Isolation Valves							
* **Pump 1**	N/A	☐					
Size (in):	Manufacturer:		Model:		Serial No:		
Field Observations:	☐ Good ☐ N/A ☐ Valve Operator Stuck ☐ Valve Seat Leaking ☐ Flanges Leaking ☐ Check Valve Not Seating ☐ Check Valve Not Operating ☐ Evidence of Pipe Strain ☐ Other						
* **Pump 2**	N/A	☐					
Size (in):	Manufacturer:		Model:		Serial No:		
Field Observations:	☐ Good ☐ N/A ☐ Valve Operator Stuck ☐ Valve Seat Leaking ☐ Flanges Leaking ☐ Check Valve Not Seating ☐ Check Valve Not Operating ☐ Evidence of Pipe Strain ☐ Other						
Discharge Isolation Valves							
* **Pump 1**		☑					
Size (in): 4"	Manufacturer:		Model:		Serial No:		
Field Observations:	■ Good ☐ N/A ☐ Valve Operator Stuck ☐ Valve Seat Leaking ☐ Flanges Leaking ☐ Check Valve Not Seating ☐ Check Valve Not Operating ☐ Evidence of Pipe Strain ☐ Other						
* **Pump 2**	N/A	☐					
Size (in):	Manufacturer:		Model:		Serial No:		
Field Observations:	☐ Good ☐ N/A ☐ Valve Operator Stuck ☐ Valve Seat Leaking ☐ Flanges Leaking ☐ Check Valve Not Seating ☐ Check Valve Not Operating ☐ Evidence of Pipe Strain ☐ Other						