



# **Teeswater Formosa Sewer System and Wastewater Treatment Plant**

**120003735**

**2025 Summary Report**

**February 9, 2026**

**Prepared by Veolia Water**

**For the Municipality of South Bruce**

## **Contents**

ECA (#0279-8Q8JD6) Reporting Requirements

## **Plant Description**

\*Currently the plant expansion is underway, and is aimed to be completed in 2026. Once this has been completed and a new ECA has been issued, this description will be updated.

The Teeswater Wastewater Treatment Plant is a Sequencing Batch Reactor plant with a Rated Capacity of 1,350 m<sup>3</sup>/day. Treated water is discharged into the Teeswater River. The facility receives waste from households, businesses and industries in Formosa and Teeswater included, but not limited to dairy waste from Gay Lea Food Co-operatives Limited and brewery waste from the Formosa Brewery

### **Teeswater Wastewater Treatment Plant**

- **Influent Works**

One (1) 600 mm wide and 1,300 mm deep screen channel equipped with a mechanically cleaned, 3 mm diameter perforated plate debris screen rated at 110 L/s and a bypass channel with an overflow weir and manual bar screen with custom aluminum rake.

One (1) 2.0 m diameter circular vortex grit removal unit rated with a *peak flow rate* of 110 L/s equipped with a grit removal system.

One (1) screw conveyor grit classifier serving the grit removal unit.

One (1) 9,500 L capacity alum solution storage tank, together with two (2) chemical metering pumps (one standby) each rated at 0 to 12 L/h, with an alum solution feed line to the grit tank outlet channel.

- **Secondary Treatment Facilities**

A 350 mm diameter inflow pipe connected to an influent splitter box designed to distribute the influent sewage evenly between two sequential batch reactors (SBR). The reactors are 29.5 m long x 10.5 m wide x 6.4 m (5.8 m top water level) deep parallel continuous inflow SBRs with a baffle wall at the upstream end of each tank to direct all influent into the bottom of the tank and equipped with a fine bubble aeration system.

One (1) motorized effluent decanter rated at 196 L/s peak rate for each SBR with, a fixed float scum guard, and discharging into a 26.7 m by 4 m equalization tank.

Two (2) submersible centrifugal waste activated sludge pumps for each SBR, each rated at 29 m<sup>3</sup>/h at a TDH of 8.0 m, with discharge line to the sludge digestion facility.

- **Air Blowers**

Three (3) positive displacement air blowers (one standby) serving as the compressed air supply for the SBR aeration system and sludge digestion system, each rated at 1860 m<sup>3</sup>/h at 69 kPa.

- **Effluent Filtration Systems**

Six (6) deep bed, continuous backwash effluent filters with total surface area of 27.87 m<sup>2</sup> rated at 3.3 L/m<sup>2</sup>/s for *Peak Flow Rate* of 92 L/s.

A 200 mm diameter inlet magmeter to allow supplementary flow-proportional chemical dosing to the filters;

One (1) 4,100 L chemical storage tank and two dosing pumps (one standby) to the inlet pipe to filters, each with a capacity range of 0 L/h to 12 L/h;

One (1) 2.4 m<sup>3</sup> flocculation (mixing chamber) ahead of filters equipped with a variable speed, 5 hp mixer.

Two (2) submersible, 7.5 hp well-type pumps each rated at 5 L/s at 73.7 m TDH for effluent water reuse in the headworks.

- **Effluent Disinfection Facilities**

A 4.41 m long x 406 mm wide x 780 mm deep indoor UV disinfection channel, equipped with a UV disinfection unit with a *peak flow rate* of 152 L/s, complete with a level control serpentine weir.

- **Plant Effluent Outfall Sewer**

A 525 mm diameter outfall sewer to Teeswater River;

- **Sludge Digestion and Storage Facilities**

One (1) 550 m<sup>3</sup> stage 1 sludge digestion tank and one (1) 245 m<sup>3</sup> stage 2 digestion tank, complete with aeration systems and decant assemblies.

Two (2) submersible centrifugal waste activated sludge pumps rated at 29 m<sup>3</sup>/h at a TDH of 14.5 m in digester 2, one for truck loading and one for discharge to the sludge storage facilities.

One (1) 4,461 m<sup>3</sup> capacity thickened sludge holding tank with cover.

One (1) 20 hp sludge mixer and an option for an additional second mixer if required.

- **Emergency Power Supply System**

One (1) 360 kW diesel engine standby power generator with integral fuel storage.

- **On-Site Wastewater Pumping Station**

An on-site wastewater pumping station equipped with two (2) 20 hp solids chopping centrifugal submersible sewage pumps (one standby) for pumping Formosa sewage, septage, filter backwash, domestic sewage and digester decant to the inlet works.

Includes a septage receiving station with manual bar screen and stainless steel custom rake.

### **Teeswater Sewage Collection System**

- **Teeswater Main Sewage Pumping Station**

A wet well/dry well style sewage pumping station located at the northwest corner of Mill Street and Hillcrest Street East at 6 Mill Street, Teeswater that is equipped with 2 submersible pumps, a backup generator and inlet manual bar screen complete with custom stainless steel rake.

- **Teeswater Local Sewage Pumping Station A1**

Located at the intersection of Reid Street and Logan Street, a duplex E-One grinder pump station and a 50 mm diameter forcemain along Logan Street to a maintenance hole east of Wright Street.

- **Teeswater Local Sewage Pumping Station A2**

Located at the end of Riverview Terrace, a duplex E-One grinder pump station and a 50 mm diameter forcemain along Riverview Terrace to a maintenance hole on Hillcrest Street E

- **Teeswater Local Sewage Pumping Station A3**

Located at the end of Andrew Street, a duplex pump station with grinder style centrifugal sewage pumps and a 75 mm diameter forcemain along Andrew Street to a maintenance hole on Hillcrest Street W  
This station is equipped with a backup diesel generator.

### **Formosa Sewage Collection System**

- **Formosa Main Sewage Pumping Station**

A 3.0 m diameter precast concrete wet well sewage pumping station, located on the east side of Bruce Road No. 12 at 1114 Bruce Road 12 and approximately 150 m south of Council Road equipped with two (2) submersible pumps, a backup generator, flow meter, bypass piping and alarms.

- **Formosa Teeswater Sewage Transmission Line** – a 200 mm diameter sanitary forcemain along Bruce Road 12, Concession 10, Sideroad 1B and Concession Road 8 from the pumping station to a grit removal chamber which discharges to a 300 mm/250 mm diameter gravity sewer along Concession Road 8, followed by a 250 mm/200 mm diameter sag sewer along Concession Road 8, with intermediate flush chambers, followed by a 250 mm diameter gravity sewer along Concession Road 8, followed by a second 250 mm/200 mm diameter sag sewer along Concession 8 and Sideroad 10A with intermediate flush chambers, followed by a 250 mm diameter gravity sewer along Sideroad 10A and finally discharges to the on-site sewage pumping station at the wastewater treatment plant;

- **Formosa Low Pressure Sanitary Sewer System** – Low pressure Sewers Serviced with Grinder Pumps at individual service locations.

	<b>Teeswater Wastewater Compliance Report 2025</b>												Facility Classification: Class 3 Waste Water Treatment Rated Capacity: 1350 m3/day Peak Flow: 7949 m3/day (92 l/s) Receiving Waters: Teeswater River				
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Minimum	Average	Maximum	Limit
<b>Flow</b>																	
Total Raw Flow (m3/mth)	31,898	27,105	32,350	32,084	31,562	29,921	30,152	31,582	32,397	31,484	32,283	32,386	375,204		31,267		
Raw Average Day Flow (m3/d)	1,029	968	1,044	1,069	1,018	997	973	1,019	1,080	1,016	1,076	1,045			1,028		1350
Raw Max Day Flow (m3/d)	1,493	1,207	1,325	1,303	1,262	1,272	1,204	1,278	1,334	1,302	1,399	1,482					1,493
<b>Biochemical O2 Demand</b>																	
Influent Average BOD (mg/L)	481	560	455	490	488	548	455	485	778	425	623	512		243.0	525.7	1,310.0	
Effluent Average CBOD (mg/L)	3	2	2	2	2	2	2	2	3	2	2	2			2.2	5.0	10
Percent Removal	99.4	99.6	99.6	99.6	99.6	99.6	99.6	99.5	99.6	99.5	99.7	99.6			99.6 %		
<b>Suspended Solids</b>																	
Influent Average TSS (mg/L)	246	356	199	205	254	272	354	292	243	120	280	189			250.6	779.0	
Effluent Average TSS (mg/L)	3	5	5	7	7	4	4	6	8	3	4	4			4.9	16.0	10
Percent Removal	98.7	98.5	97.3	96.7	97.3	98.7	98.9	98.1	96.5	97.9	98.7	98.0			97.9 %		
<b>Phosphorus</b>																	
Influent Average TP (mg/L)	3.42	6.14	4.17	4.35	4.76	6.98	7.59	6.01	6.08	2.26	7.44	3.92			5.28	20.50	
Effluent Average TP (mg/L)	0.07	0.08	0.10	0.13	0.14	0.10	0.08	0.08	0.13	0.11	0.09	0.06			0.10	0.37	0.15
Percent Removal	98.0	98.8	97.6	97.1	97.2	98.6	99.0	98.6	97.8	95.3	98.8	98.5			97.9 %		
<b>Nitrogen Series</b>																	
Influent Average NH3+4 (mg/l)	23.88	29.35	25.28	28.98	29.03	33.00	36.68	33.75	35.84	33.18	36.85	31.34			31.57	42.80	
Influent Average TKN (mg/L)	36.65	52.55	44.08	45.68	40.78	55.40	56.60	54.33	56.72	46.88	61.80	46.20			49.92	96.00	
Effluent Average NH3+NH4 (mg/L)	1.08	7.22	1.41	0.33	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.72			1.06	9.70	2
Effluent Average Nitrate (mg/L)	4.38	6.42	4.83	2.93	4.60	5.86	9.72	7.53	7.22	8.48	2.64	5.28			5.82	12.40	
Effluent Average Nitrite (mg/L)	0.46	0.80	0.07	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.02	0.12			0.13	1.03	
Effluent TKN (mg/L)	1.93	11.65	2.64	1.18	0.93	0.80	0.83	0.73	1.28	0.80	1.05	1.86			2.10	12.90	
<b>pH</b>																	
Influent Average pH	7.10	6.99	7.21	7.24	7.35	7.21	7.25	6.79	6.93	7.40	7.10	6.93		6.37	7.12	7.61	
Effluent Average pH	7.84	7.97	8.15	8.11	8.13	8.13	8.00	8.09	8.15	8.10	8.06	7.96		7.73	8.06	8.45	
UV Disinfection																	
Average UV Intensity	13.19	14.11	8.45	20.29	25.49	29.33	24.42	15.40	16.05	7.73	12.37	38.73			18.8	58.8	
<b>Disinfection</b>																	
E.Coli Geo.Mean per 100mL	1	1	1	2	1	1	2	2	6	2	3	1			Geo. Mean 3	49	100

\* Note: The Effluent Ammonia limit from December 1<sup>st</sup> to April 30<sup>th</sup> is 4 mg/l  
 Values exceeding Monthly Effluent limits have been highlighted red  
 Values exceeding Monthly Effluent Objectives have been highlighted yellow

## **Effluent Limits**

In 2025 the effluent limit for Ammonia was exceeded for the Month of February. The suspected cause was related to an issue at the Gay Lea Foods facility. Veolia and Gay Lea Staff worked together and were able to limit the exceedance to this single month occurrence.

## **Effluent Objectives**

In 2025 there were 4 months (April, May, August & September) that the Total Phosphorus (0.10 mg/l) objective was not met. The objective for Total Suspended Solids (5mg/l) was not met for the months of April, May, August, and September. The limit for Ammonia + Ammonium (2 mg/L) was exceeded in the month of February with an average of 7.22 mg/L. See the Teeswater Compliance Report (Page 5) for more details.

## **Operating Problems**

During 2025 there were no major Operating problems.

## **Maintenance and Events**

Additional maintenance other than routine maintenance included:

**2025 Throughout** - Sodium Hypochlorite was added to the plant to help improve settling of solids

**April 7, 2025** - Hays replaced Teeswater Sewage Pumping Station (SPS) pump 1 controller transformer, as pump was not working.

Replaced SPS pump 1 VFD fan and filters

**May 13, 2025** - Installed diaphragm kit on flow paced headworks alum pump

**July 24, 2025** - Hays Electric onsite at the Teeswater SPS to wire rebuilt sewage pump 1.

**September 15, 2025** - Hays Electric onsite, installed new power source for digester truck loading pump

**November 5, 2025** - Installed the rebuilt pump 2 at Formosa Lift Station

## **QA/QC Measures**

1. Dissolved Phosphorus tests were used to indicate the required Alum dosage.
2. pH measurements were taken to ensure levels were between 6.0 and 9.0 and water quality.
3. Dissolved oxygen was measured to ensure that adequate aeration is being carried out.
4. Mixed liquor suspended solids and 30 minute settling tests are used to determine adequate microbiological populations and to set the sludge wasting rates.

All required regulatory and ECA analyses were performed by SGS Labs. In addition, routine in house laboratory sampling was undertaken to ensure compliance. These tests include: 30 minute Settling, Suspended Solids, Final Effluent Total Phosphorus, pH, and

temperature.

Filamentous Bacteria analysis was completed by GAP Labs.

## **Monitoring Equipment**

The following is a list of the monitoring equipment at the Teeswater WWTP:

- Hach DR 2800 – Total Phosphorus, Dissolved Phosphorus, Ammonia, Total Solids (Effluent)
- Hach HQ 40d– pH, Dissolved Oxygen, Temperature (Effluent, and SBR Tanks)
- Endress Hauser online Analyzer - Dissolved Oxygen, Temperature (SBR Tanks)
- Digital Scale for MLSS and TSS (Effluent, SBR Tanks)
- Lab Oven for MLSS and TSS (Effluent, SBR Tanks)

## **Calibration and Service of Equipment**

- February 24, 2025 - Sommers onsite for biennial generator inspection
- July 3, 2025 – Annual inspection of lifting equipment.
- May 29, 2025 - Calibration of flow monitoring equipment at the Wastewater Treatment Plant and Collection System
- May 21, 2025 - Calibration of gas detectors by Hetek
- November 19, 2025 – Calibration of gas detectors by Hetek

## **Bio Solids Volume**

In 2025 approximately 4,814 m<sup>3</sup> of Biosolids were hauled and land applied. Based on the volume of Sludge that was in the holding tank compared to the prior year the total volume generated was approximately 4,621 m<sup>3</sup>. The hauled Bio-Solids were applied to the following sites: Gowland (NASM #24460), Batte (NASM#23697), Gowland (NASM #22521), Batte (NASM#24928).

Overall the Biosolids production decreased by 935 m<sup>3</sup> in 2025 compared to 2024. Biosolids production can vary due to a number of factors. Based on plant operations and biosolids production so far in 2026 we expect the total volume to increase slightly in 2026.

## **Customer Complaints**

2025 (Throughout) – Odor complaints continued to be received from Formosa residents, however the number of residents with complaints appears to have been reduced. Veolia and South Bruce will continue to take additional measures to further reduce odor complaints. Several sewer deodorizing units have been installed into suspect man holes. Additionally, more frequent sewer main flushing has been implemented. In 2025 evaluations continued toward a permanent solution. A tentative plan to re-route the pressurized system directly to the sewage pumping station is being reviewed.

**Information for the District Manager**

No additional information was known to have been requested from the District Manager.

**Recommendations**

No significant recommendations at this time.

**By-Passes**

There were no by-passes or spills to report for 2025.

**Table 2 BYPASS AND OVERFLOW SUMMARY FOR 2025**

MONTH	Primary Bypass			Secondary Bypass			Plant Overflows			Collection System Overflows		
	No. of Events (events)	Duration (hours)	Volume (1000m3)	No. of Events (events)	Duration (hours)	Volume (1000m3)	No. of Events (events)	Duration (hours)	Volume (1000m3)	No. of Events (events)	Duration (hours)	Volume (m3)
January	0			0			0			0		
February	0			0			0			0		
March	0			0			0			0		
April	0			0			0			0		
May	0			0			0			0		
June	0			0			0			0		
July	0			0			0			0		
August	0			0			0			0		
September	0			0			0			0		
October	0			0			0			0		
November	0			0			0			0		
December	0			0			0			0		
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

Note: An 'Event' means an occurrence or occurrences of a bypass or overflow separated by a period of more than 12 hours between the occurrence(s) or the event(s) and the previous event, at each location.