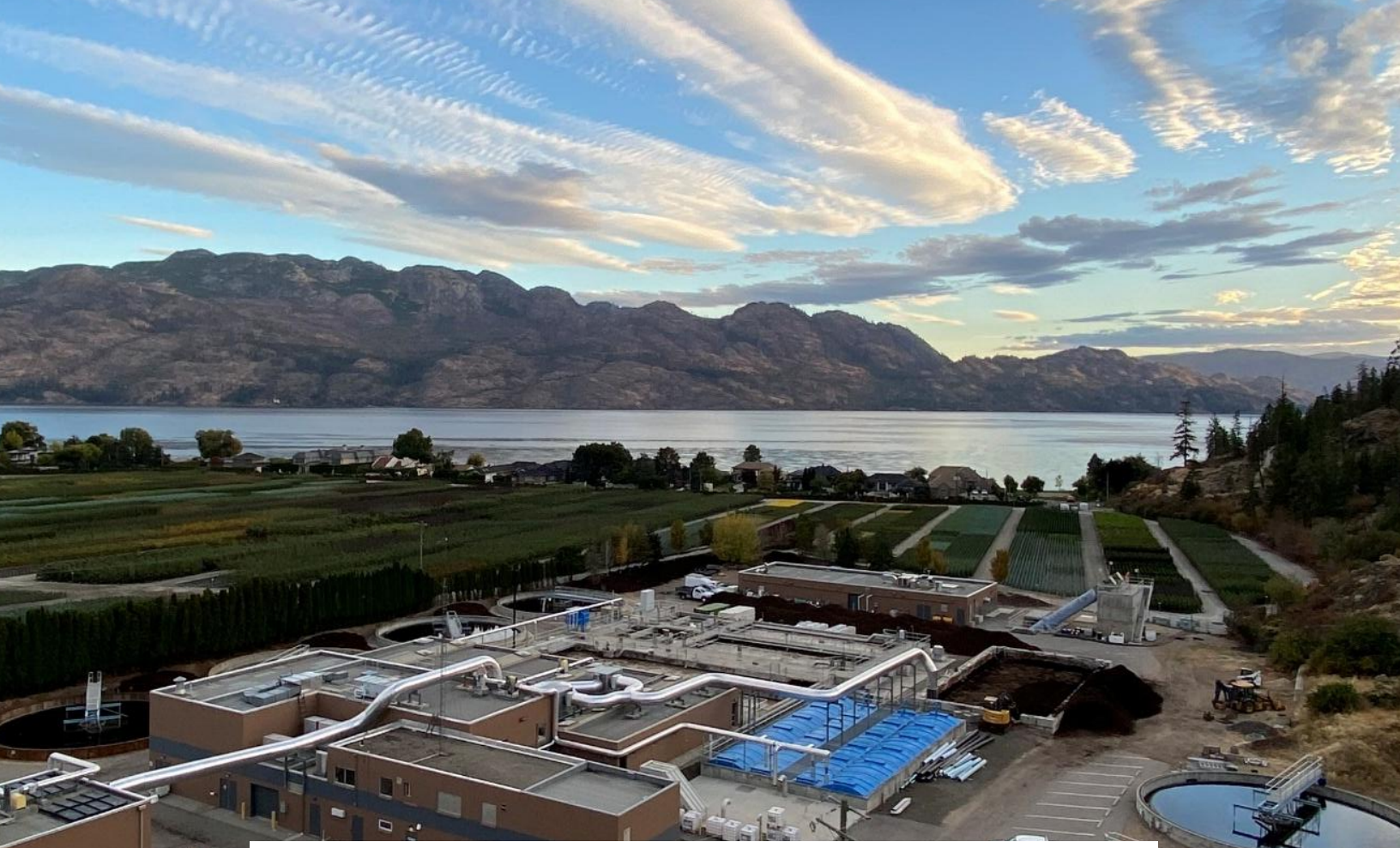

WESTSIDE WASTEWATER TREATMENT PLANT DEVELOPMENT COST CHARGE REVIEW

REGIONAL DISTRICT OF CENTRAL OKANAGAN

January 9, 2026

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APPENDICES

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EXECUTIVE SUMMARY

This report summarizes the Regional District's analysis for an updated Westside Regional Wastewater Treatment Plant (WRWTP) Development Cost Charge (DCC) to apply in the City of West Kelowna, District of Peachland, and Westbank First Nation Reserves #9 and #10 area. This report presents proposed updates to DCCs that reflect the expansion in capacity required to the Wastewater Treatment Plant in order to serve new growth.

The report consists of the following parts:

- **Part 1:** Outlines the purpose of the Westside Regional Wastewater Treatment Plant Development Cost Charge (DCC) review and includes information on the legislation enabling DCCs and the use of the DCC Best Practices Guide.
- **Part 2**: Outlines the guiding principles used to develop the DCC program and identifies DCC recoverable costs. This section discusses the time frame for the DCC program, the allocation of costs between existing and new development, the municipal assist factor, grant assistance, interim financing, and the basis for charging DCCs.
- **Part 3**: Based on the growth projections for the area, this section presents growth forecasts.
- **Part 4:** Summarizes the cost of the Westside Regional Wastewater Treatment Plant program. Part 4 also shows how the Westside Regional Wastewater Treatment Plant DCC rates are calculated using the information from Parts 2 and 3.
- **Part 5:** Summarizes the proposed DCCs, provides information on implementation issues such as exemptions to the bylaw, grace periods, DCC rebates and credits, and outlines suggestions for monitoring and accounting related to the DCC bylaw.
- **Part 6:** Reviews the public consultation process, once the consultation process is completed (to be completed).

The proposed Westside Regional Wastewater Treatment Plant DCC resulting from the calculations are set out in **Table ES-1** below.

Table ES-1: Westside Regional Wastewater Treatment Plant DCC Rate Summary

Use	Unit charged	Existing Charge Per Unit	Proposed Charge Per unit	% Change
Low Density Residential Parcel	For Each parcel Created at Subdivision	$4,787	$5,156	7.7%
Duplex, Triplex, Fourplex, Mobile Home, Modular Home, Manufactured Home	For Each Dwelling Unit	$4,787	$5,156	7.7%
Townhouse, Apartment, Secondary suite, Carriage Home	For Each Dwelling Unit	$3,191	$3,437	7.7%
Commercial	For each 100 sq.m. of gross floor area	$2,072	$2,234	7.8%
Industrial	For each 100 sq.m. of gross floor area	$2,072	$2,234	7.8%
Institutional	For each 100 sq.m. of gross floor area	$1,755	$1,891	7.7%

1.0 BACKGROUND

1.1 PURPOSE OF THIS ANALYSIS

The purpose of this analysis is to calculate Westside Regional Wastewater Treatment Plant DCCs for the area comprised of the City of West Kelowna, the District of Peachland and the Westbank First Nation Reserves #9 and #10. Potential growth in the area will trigger upgrades to the Westside Regional Wastewater Treatment Plant that can be paid for through DCCs.

The proposed Westside Regional Wastewater Treatment Plant DCC program itemizes the upgrades that are necessary to support new growth within the treatment plant service area. The proposed program ensures that the people who will use and benefit from the services provided pay their share of the costs in a fair and equitable manner. The proposed Westside Regional Wastewater Treatment Plant DCC program creates certainty by providing stable charges to the development industry and by allowing the orderly and timely construction of infrastructure.

It should be noted that the material provided in the background report is meant to provide information only. The Westside Regional Wastewater Treatment Plant Development Cost Charge Bylaw is the only source for the proposed DCC rates. Reference should be made to the bylaw for the specific Westside Regional Wastewater Treatment Plant DCC rate for all development within the City of West Kelowna, the District of Peachland and the Westbank First Nation Reserves #9 and #10.

1.2 GUIDING PRINCIPLES

Some guiding principles were established during the DCC update undertaken in 2017 and these principles continue to apply to this 2025 update, and they form an integral part of the report. These guiding principles are also set out in the Provincial DCC Best Practices Guide. The guiding principles are set out below:

- **Integration –** The Westside Regional Wastewater Treatment Plant DCC program fits with the many broader goals of a community. Other initiatives such as the goals in the *Local Government Act*, other provincial legislation, Regional Growth Strategies, and Official Community Plans should also be reflected. In dealing with land efficiency, housing affordability, and community sustainability, the Regional District uses DCCs as one of the ways to handle these issues. Community plans, land use plans, and corporate financial and capital infrastructure strategies must be taken into consideration when developing DCCs.
- **Benefiter Pays** – Those who benefit from the new infrastructure should pay for the installation of such systems.
- **Fairness and Equity** – Since DCCs should be shared amongst the benefitting parties, there should be mechanisms put in place to ensure fair cost distribution between existing users and new development. For those costs allocated to new development, DCCs should be used to ensure equitable distribution of the costs between the various land uses and different development projects.
- **Accountability** – To promote accountability, all information used for the development of DCCs should be accessible and understandable by the stakeholders.
- **Certainty** – The DCC program should be designed to ensure stable charges and timely construction of infrastructure. The development industry relies on the stability of DCC rates

when planning their projects. Certainty in DCC revenue helps ensure that infrastructure is constructed in a timely manner and helps avoid deferring or cancelling development.

- **Consultative Input** – Opportunities for input must be provided to the public and other interested parties when developing DCCs.

1.3 LEGISLATIVE AND REGULATORY BACKGROUND

Development cost charges are charges collected by local governments to help pay for infrastructure expenditures required to service growth. The *Local Government Act* provides the authority for Regional Districts to levy DCCs. The purpose of a DCC is to assist the Regional District with accommodating development by providing a dedicated source of funding for the capital costs for expansion and upgrades.

Regional Districts wanting to collect DCCs for Sewer must adopt a Sewer DCC bylaw that specifies the amount of the DCCs that will be collected. The charges may vary with respect to:

- different zones or different defined or specific areas;
- different uses;
- different capital costs as they relate to different classes of development; and
- different sizes or different numbers of lots or units in a development.

Funds collected through Sewer DCCs must be deposited in a separate reserve account. These funds may only be used to pay for the capital costs of the works and short-term financing costs of a debt incurred for capital works identified in the DCC program. The costs for capital works can include not only the actual construction of the works but also the planning, engineering and legal costs which are directly related to the works.

1.4 USE OF DCC BEST PRACTICES GUIDE

The Ministry of Housing and Municipal Affairs (the "Ministry") has prepared a Development Cost Charge Best Practices Guide (the "Best Practices Guide"). The purpose of the Best Practices Guide is to outline an accepted process for the development of a DCC program. This DCC Background report was developed under the direction set out in the Best Practices Guide.

2.0 DEVELOPING THE DCC PROGRAM AND COSTS

2.1 RELATIONSHIP TO OTHER DOCUMENTS

This DCC program has been developed to be consistent with the following legislation, plans, and policy guides:

- Local Government Act
- Development Cost Charges Best Practices Guide
- Regional Growth Strategy (RGS)
- Official Community Plan for West Kelowna
- Development Cost Charge population and unit projections for West Kelowna
- Development Cost Charge population and unit projections for Westbank First Nation
- Ongoing work on population and unit projections for Development Cost Charge updates for the District of Peachland

2.2 DCC TIME FRAME

The first step in determining DCC costs is to set a time frame for the DCC program. For all DCC programs, the DCC time frame is based on projections for population and capital expenditures. The capital expenditure forecast for this program will include the upgrades to the Westside Wastewater Treatment Plant that need to occur over the next 20 years, which generally extends to 2045. However, growth projections exceed the planned WRWTP plant capacity that is being created as part of the upgrades outlined in section 4.1 of this report. As a result the units of new development supported by the treatment plant and paying DCCs are related to the capacity increase of the Plant. See section 3.7 for more information.

2.3 AREA-SPECIFIC DCC CHARGES

The Regional District will levy Westside Regional Wastewater Treatment Plant DCCs specific to the area served by the Wastewater Treatment Plant system or connected to the system through expansion. This includes the area within:

- The City of West Kelowna;
- The District of Peachland; and
- The Westbank First Nation IR #9 and #10.

2.4 DCC RECOVERABLE COSTS

As specified by the *LGA*, DCC recoverable costs for projects include construction costs, contingency, engineering, administration and net GST. The capital costs included in this report do not include charges for interim financing or interest on long-term debt financing.

While interest on long-term debt has not been included in the capital costs presented in this report, it should be noted that the definition of "capital costs" includes interest in exceptional circumstances where borrowing is required. The Inspector of Municipalities will only allow interest costs in exceptional circumstances that necessitate the construction of specific infrastructure projects in advance of sufficient DCC cash flows (e.g., fixed-capacity infrastructure, out-of-sequence projects, or greenfield developments). In these cases, local governments or developers are required to front-end the cost of

the growth-related infrastructure, and recover their costs through DCCs as growth occurs. However, the Ministry continues to encourage local governments to adopt DCC programs that limit the need for borrowing to exceptional cases.

2.5 GRANTS AND COST SHARING

The Regional District has not assumed that a grant will be received for the Stage 4 upgrade. If a grant is eventually received for the Stage 4 upgrade, it will be subtracted from the total project cost, and the DCC will be updated.

2.6 INTERIM FINANCING

The capital costs shown in the report do not include interim financing.

2.7 ALLOCATION OF COSTS

For each proposed treatment plant upgrade component, costs are allocated between existing development and new growth. To determine the proper allocation for each project, individual projects can be divided into two broad categories:

- Level of service upgrades or resolving existing deficiencies; and
- Accommodation of new growth.

Projects in the first category provide some benefit to existing development, but they also benefit new growth. In order to allocate the degree of benefit equitably between the existing population and the new growth, the new growth is often expressed as a percentage factor (amount of new growth divided by total future population or equivalents).

Projects in the second category are a benefit to new growth only. In other words, they would not be contemplated if no new growth was forecast. One hundred percent (100%) of the benefit and cost of each project in this category has been allocated to new growth.

Table 2.1 indicates the percentage of the costs that are attributable to new growth for each component. The percentages indicate the degree to which projects are a benefit to both new growth and to the existing population. The number 100% indicates projects which benefit solely new growth for the most part. All of the projects set out in the program below are required due to growth. The projects would not be required if growth did not occur. By its very nature the Wastewater Treatment Plant expansion is required due to growth, therefore all of the expansion components are allocated 100% to growth.

Table 2.1: Allocation of Costs Attributable to New Growth

Project No	Location	Percentage Allocation to New Growth
S1	General	100%
S2	Screening	100%
S3	Primary Clarifiers 5 & 6	100%
S4	Bioreactors 7 & 8	100%
S5	Secondary Clarifiers 7 & 8	100%
S6	UV Disinfection System	100%
S7	Sludge Dewatering	100%
S8	DAF	100%
S9	Electrical and Instrumentation	100%
S10	Outfall Tideflex Check Valves Supply and Installation	100%
S11	Odour control	100%

2.8 MUNICIPAL ASSIST FACTOR

The *LGA* stipulates that an assist factor will be included as part of the calculation of the DCCs. An assist factor represents the Regional District's contribution towards the capital costs for the projects that are attributed to new development. This contribution is in addition to the costs that were allocated in the calculations to the existing population and that are to be paid by the Regional District. The portion of the costs that the Regional District will have to cover because of the assist factor will have to be financed through other means available to the Regional District.

The actual level of the assist factor is determined by the Regional District. While the Regional District can have a different assist factor for *each type of capital works*, i.e. sanitary, parks and roads, the Regional District cannot have a municipal assist factor that varies for *different land uses* within the Regional District, i.e. single family residential, townhouse residential, commercial, etc.

According to the *LGA*, the Regional District should consider the following factors when setting DCC rates:

- future land use patterns and development;
- the phasing of works and services;
- whether the charges are excessive in relation to the capital costs of prevailing standards of service;
- whether the costs will deter development; or
- whether the charges will discourage the construction of reasonably priced housing or the provision of reasonably priced serviced land, or discourage development designed to result in a low environmental impact.

The current Westside Regional Wastewater Treatment Plant DCC uses an assist factor of 1% and in consideration of all of the above matters, the assist factor has been kept the same at 1% for the updated Westside Regional Wastewater Treatment Plant DCC.

2.9 UNITS OF CHARGE

The units of charge have been revised in this update to consider provincial legislation and revised zoning regulations that permit up to 4 units on many low density residential lots to encourage Small Scale Multi Unit Housing (SSMUH) types of residential development.

Low density residential lots will be charged for one unit at subdivision. This accounts for construction of one dwelling unit on the lot. If more than one unit is constructed, either initially or in the future, DCCs will be charged for the additional units. This could include an extra charge for a duplex unit. If a duplex is constructed the charge for the first unit would have been covered by the charge at subdivision that covers one unit, and the charge for the second unit of the duplex would be paid at building permit. Similarly, if a triplex or fourplex is constructed, then the first unit is covered by the charge paid at subdivision and the charges for the additional 2 or 3 units are paid at building permit.

Townhouses will pay DCCs based on the number of townhouse units at building permit. Mobile Homes, Modular Homes, and Manufactured Homes will pay based on the number of dwelling units at building permit.

Apartment buildings will pay DCCs based on the number of apartment units at building permit because the number of units can be determined at this time. Secondary suites and Carriage homes will pay a charge per unit at building permit.

Commercial, Industrial, and institutional DCCs are levied at the time of building permit on the basis of square metre of gross floor area, because the building size and floor area can be determined at the time of building permit.

3.0 GROWTH PROJECTIONS

3.1 CURRENT DEVELOPMENT AND GROWTH PROJECTIONS

This section outlines the growth projections and related planning assumptions used as inputs for the DCC calculations described in section 4.0 of this report.

3.2 PAST AND CURRENT DEVELOPMENT

Population

Table 3.1 shows the historical population data for the three jurisdictions. Since 2011, the population of each jurisdiction has seen significant growth. The population growth for each jurisdiction within this time period is as follows:

- The City of West Kelowna = 16.8% (2011-2021)
- The District of Peachland = 11.3% (2011-2021)
- The Westbank First Nation = 59.3% (2011-2021)

Table 3.1: Historic Population and Percentage Growth

	West Kelowna Population	West Kelowna % Growth (Annual)*	Peachland Population	Peachland % Growth (Annual)*	WFN Population	WFN % Growth (Annual)*
2001	-	-	4,654	-	5,878	-
2006	-	-	4,883	4.9% (1.0%)	6,207	5.6% (1.1%)
2011	30,892	-	5,200	6.5% (1.3%)	7,068	13.9% (2.6%)
2016	32,655	5.7% (1.1%)	5,428	4.4% (0.9%)	9,028	27.7% (5.0%)
2021	36,078	10.5% (2.0%)	5,789	6.7% (1.3%)	11,260	24.7% (4.5%)
2011- 2021 Growth	5,186	16.8% (1.6%)	589	11.3% (1.0%)	4,192	59.3% (4.8%)
2001- 2021 Growth	-	-	1,135	24.4% (1.1%)	5,382	91.6% (3.3%)

*Annual growth rate is calculated based in the 5, 10, or 20 year growth rate annualized as single year average growth

CWK Stats – OCP & Census Data, Peachland – Census Data, WFN – Rennie Report

Dwelling Units

Table 3.2 displays the historical residential unit growth for the three jurisdictions. Since 2001, in most instances each jurisdiction has seen growth in new residential units that exceed the population growth. The dwelling unit growth breakdown since 2011 for each jurisdiction is as follows:

- The City of West Kelowna = 22.6% growth or 2,671 units over 10 years (2011-2021). This translates to an average annual growth rates in units from 2011 to 2021 of 2.1%.
- The District of Peachland = 27.1% or 626 units over 10 years (2011-2021). The growth from 2011 to 2021 translates into an average annual growth rate in dwelling units of 2.4%.

- The Westbank First Nation = 77.5% or 2,542 units over 10 years (2011-2021). The growth from 2011 to 2021 translates into an average annual growth rate in dwelling units of 5.9%

Table 3.2: Historic Residential Unit and Percentage Growth

	West Kelowna Residential Units	West Kelowna % Growth (Annual)*	Peachland Residential Units	Peachland % Growth (Annual)*	WFN Residential Units	WFN % Growth (Annual)*
2001	-	-	2,073	-	2,636	-
2006	-	-	2,150	3.7% (0.7%)	2,784	5.6% (1.1%)
2011	11,805	-	2,310	7.4% (1.4%)	3,280	17.8% (3.3%)
2016	13,190	11.7% (2.2%)	2,749	19.0% (3.5%)	4,461	36.0% (6.3%)
2021	14,476	9.7% (1.9%)	2,936	6.8% (1.3%)	5,822	30.5% (5.5%)
2011- 2021 Growth	2,671	22.6% (2.1%)	626	27.1% (2.4%)	2,542	77.5% (5.9%)
2001- 2021 growth	-	-	863	41.6% (1.8%)	3186	120.9% (4.0%)

*Annual growth rate is calculated based in the 5, 10 or 20 year growth rate annualized as single year average growth

Table 3.3 shows the estimated 2021 Census dwelling units and population. The estimated residential population of the area in 2021 was 53,127. The share of this total broken down by the three jurisdictions is as follows:

- The City of West Kelowna = 67.9%, or 36,078 persons.
- The District of Peachland = 10.9%, or 5,789 persons.
- The Westbank First Nation = 21.2%, or 11,260 persons.

The estimated number of dwelling units in the region, in the 2021 Census, was 22,747. The share of this total broken down by the three jurisdictions is as follows:

- The City of West Kelowna = 63.6%, or 14,476 dwelling units.
- The District of Peachland = 12.9%, or 2,936 dwelling units.
- The Westbank First Nation = 23.5% or 5,335 dwelling units.

Table 3.3: Current Development

Existing 2021 Population and Units				
	City of West Kelowna	Peachland	Westbank First Nation	Total
Total Population	36,078	5,789	11,260	53,127
Total Dwelling Units	14,476	2,936	5,335	22,747
Dwelling Unit size (person per unit)	2.5	2.0	2.1	2.3

Commercial, Industrial, and Institutional

Accurate and consistent figures are not available for the amount of past or existing Commercial, Industrial, and Institutional floor area for West Kelowna, Peachland or Westbank First Nation. However data does exist for the construction value of Commercial, Industrial, and Institutional development in West Kelowna and Peachland for years 2017 to 2024. Based on assumptions of average construction cost per square metre, those figures can be translated into estimates of square meters of building area.

The amount of development in West Kelowna over the 7 years from 2017 to 2024 inclusive is estimated as follows:

- Commercial = 33,000 sq.m.
- Industrial = 37,000 sq.m.
- Institutional = 20,000 sq.m.

The amount of development in Peachland over the 7 years from 2017 to 2024 inclusive is estimated as follows:

- Commercial = 1,120 sq.m.
- Industrial = 570 sq.m.
- Institutional = 130 sq.m.

Information on the floor area of Commercial, Industrial and Institutional buildings constructed from 2017 to 2024 was not readily available for Westbank First Nation, but these figures are not necessary since WFN does have projections from their DCC background report for these units going forward for use in this report.

3.3 GROWTH ASSUMPTIONS

The estimation of growth used in this Study is based on a variety of information sources. These information sources are described below.

City of West Kelowna, Residential & Non-Residential

The City of West Kelowna provided growth projections for population and dwelling numbers for residential and non-residential units over a 20 year period. This information was drawn from their 2022 Development Cost Charges update background report.

District of Peachland, Residential & Non-residential

The District of Peachland is currently updating their DCCs and the information from the update provided the source of residential growth projections as well as the commercial, industrial and institutional growth projections. These projections are based on a 20-year planning timeframe and are consistent with the District's current OCP.

Westbank First Nations, Residential & Non-residential

The projected growth on the Westbank First Nation Tsinstikeptum 9 and 10 is based on information provided in the Westbank First Nation Development Cost Charge background report prepared in November 2021.

Variability in Growth Projections

Growth projections of various jurisdictions can vary in terms of how conservative or how aggressive they can be. The level of projected growth depends on a number of assumptions and can relate to the amount of growth currently experienced and the amount of capacity in the community to accommodate growth. The information used in this report is based on the information provided or available for the various jurisdictions. Rather than question the growth projections, this report uses the projections made by the documents from each jurisdiction. Projected growth may not match actual growth and it is important to re-evaluate growth projections and resulting DCC calculations every 3-5 years in order to keep on track with actual growth.

This DCC analysis has neutralized the impacts of variable growth projections by creating calculations that, in the end, focus on the cost per unit of growth and the needs to expand the Treatment Plant. If growth occurs more rapidly than projected, then more money is collected earlier to pay for the expansion required earlier due to the growth. If growth occurs more slowly than projected, then it takes more time to collect the money, but then there is also more time until the expansion is required.

3.4 RESIDENTIAL GROWTH

Dwelling Units

Over the next 20 years, the number of dwelling units is estimated to increase by 11,094 units. The growth within the three jurisdictions is as follows:

- The City of West Kelowna = 5,865 dwelling units at an annual growth rate of 1.9%, based on City of West Kelowna 20-year DCC projections. This is slightly lower than the average annual growth rates in units from 2011 to 2021 which was 2.1%.
- The District of Peachland = 1217 dwelling units based on the projections for the ongoing Peachland DCC update. This projection is based on a recently completed Housing Needs Report.
- The Westbank First Nation = 4,012 dwelling units based on a review of potential and planned development on IR 9 and IR 10 provided by Westbank First Nation as background for a memo prepared by Urban Systems for Westbank First Nation dated August 9, 2024 on Regional Sanitary Sewer Model and Ferry Wharf LS Routing Analysis. The result was 184 low density residential lots and associated dwelling units and 3828 multi family and other forms of dwelling units over the next 20 years. The subject area of Westbank First Nation had a 2021 total of 5822 residential units. The growth of 4012 units from 5822 to 9834 over 20 years is an increase of approximately 2.7% per year over a 20 year projection period, which is less than the 20 year annual growth rate of 4.0% from 2001 to 2021. The projected growth represents a relatively conservative and realistic amount of growth over the next 20 years considering the growth that has occurred in the past.

3.5 NON-RESIDENTIAL GROWTH

Over the next 20 years, an anticipated 390,473 square metres of commercial, industrial and institutional space combined will be added across the region. For West Kelowna and Peachland, the growth projections are based on taking the average annual growth per year from 2017 to 2024 based on the information set out in section 3.2 above, and projecting this amount forward over 20 years. The projections for Westbank First Nation are based on the projections set out in the Westbank First Nation

DCC background report. The growth projected based on the sources noted above within the three jurisdictions is as follows:

- **The City of West Kelowna**
  - Commercial = 83,000 sq.m.
  - Industrial = 94,000 sq.m.
  - Institutional = 25,000 sq.m, plus 300 institutional care facility units at 80 sq.m. per unit for 24,000 sq.m., adding to a total of 49,000 sq.m.
- **The District of Peachland**
  - Commercial = 2,800 sq.m.
  - Industrial = 1,400 sq.m.
  - Institutional = 3,200 sq.m.
- **The Westbank First Nation**
  - IR 9
    - Commercial = 55,392 sq.m.
    - Industrial = 13,452 sq.m.
    - Institutional = 10,287 sq.m.
  - IR 10
    - Commercial = 74,045 sq.m.
    - Industrial = 0 sq.m.
    - Institutional = 3,897 sq.m.

3.6 COMBINED RESIDENTIAL AND NON RESIDENTIAL GROWTH

The combined residential and non- residential growth is summarized in **Table 3.4**.

Table 3.4: Residential and Non-Residential Growth

Growth 20 years (2025 – 2045)				
	City of West Kelowna	**Peachland**	**Westbank First Nation**	**Total**
Projected New Development (units)	5,865	1217	4,012	11,094
Low Density residential lots and associated dwelling units	1,964	491	184	2,639
Multi-Family Units including townhouses and apartments	3,901	726	3,828	8,455
Non Residential Floor Area (sq. m)				
Commercial	83,000	2,800	129,437	215,237
Industrial	94,000	1,400	13,452	108,852
Institutional	49,000	3,200	14,184	66,384

3.7 CALCULATION OF EQUIVALENT POPULATION

Equivalency in units is used to represent new population growth and the demands that new growth places on infrastructure. Each type of development will place a different pressure on the services, and equivalent units are used to compare the impacts.

Through the DCC analysis, growth has been projected in terms of both residential and non-residential development, and various equivalent unit values have been used to relate the impacts of different land uses. For residential demand, occupancy rates - or persons per dwelling unit - can be used to project demands. For non-residential land uses, an equivalency is used. **Table 3.5** outlines the equivalent population assumptions for sanitary sewer, by land use type:

Table 3.5: Equivalent Population Assumptions

Low Density Residential	3.00	persons per dwelling unit
Multiple Unit Residential, Secondary suite, Carriage Home	2.00	persons per dwelling unit
Commercial	0.0130	persons per square meter
Industrial	0.0130	persons per square meter
Institutional	0.0110	persons per square meter

The equivalency factors used in this update are maintained consistent with factors used in the 2019 WRWWTP DCC update. As noted in the 2019 update, with the exception of industrial land use, these equivalency factors are based on the values presented in the Provincial DCC Best Practices Guide. It is expected that the majority of new industrial development would be small in scale or of a light industrial variety, with primarily indoor use, as opposed to heavy industrial uses such as sawmills. Therefore, the equivalency factor for industrial uses is based on gross floor area of development - rather than total site area. A floor area ratio assumption of 0.3 for the industrial density was used and the equivalency factor has been set at the same rate as commercial land uses.

Furthermore, the equivalency factors used in the DCC analysis are the same as the factors used by the Regional District in the Regional Sewer System model. This point further justifies the use of these equivalency factors. The Regional Sewer System model uses these equivalency factors to project the flows generated by residential commercial, industrial and institutional uses, so it makes sense to use these equivalency factors in calculating the development cost charges.

3.8 RELATIONSHIP BETWEEN PLANT CAPACITY AND GROWTH PROJECTIONS

The memo set out in Appendix A on the Westside Regional Wastewater Treatment Plant Cost Estimate Summary set out the details of the capacity of the Stage 4 upgrade. The information from that memo relevant to the DCC calculations are set out below. The current capacity of the WRWTP = 16,800 m^3 per day. The new capacity after completion of the Stage 4 upgrade = 22,400 m^3 per day. This results in a capacity increase of 5,600 m^3 per day, which is calculated to be a capacity of 18,667 equivalent people (population units).

The projected growth over the 20-year period is 29,770 equivalent population units, which includes residential population and non-residential population equivalents (population equivalents are

explained in section 3.7 of this Study). It should be noted that the growth projections for each jurisdiction may be conservative on the high side in order for each jurisdiction to ensure that land use, infrastructure, financial and other planning is not underestimating growth. Regardless of whether the growth projections are high or not, they demonstrate that the Stage 4 additional plant capacity will be exceeded before 20 years. As a result, this Study uses the additional capacity provided by the stage 4 upgrade as a more appropriate calculation metric.

An adjusted DCC calculation approach is required because this is a unique situation that only occurs when a local government has a single project and a fixed number of equivalent units that project serves, along with a growing DCC reserve fund. The DCC Best Practices Guide indicates that the DCCs should be calculated by taking the capital cost and subtracting the amount in the DCC reserve fund. As the DCC reserve fund grows and there is a fixed capacity for the stage 4 upgrade, the amount the RDCO needs to collect declines, and the calculations need to account for the lower number of units remaining to pay for the upgrade in order to keep the cost equitable between those who already paid DCCs and those who still need to pay DCCs.

In order to ensure equitable calculation of the DCC rates, the calculations need to account for the number of units that have already paid into the reserve fund, and determine the remaining units that still need to pay DCCs for the capacity of the Stage 4 treatment plant upgrade. The calculations need to divide the remaining cost after subtracting the reserve fund amount by the remaining units that need to pay. This ensures that the units that pay DCCs later still pay an amount commensurate with the units who paid earlier before the reserve fund grew larger.

The remaining equivalent units that need to pay into the stage 4 plant are set out in **Table 3.6**, calculated based on the DCC reserve fund balance and the charge per equivalent unit. The calculations show that there are 10,362 remaining equivalent population units that need to pay for the plant.

Table 3.6: Remaining Equivalent Population Units that need to pay for the Stage 4 upgrade

Item	Amount
DCC reserve fund balance	$13,252,112
Existing Charge per SFD	$4,787
Equivalent units per SFD (people per SFD)	3.00
Charge per Equivalent Unit (charge per person)	$1,595.67
Number of Equivalent units (equivalent people) collected	8,305
Total capacity of Stage 4 - equivalent units (total equivalent people)	18,667
Minus Number of Equivalent units (equivalent people) collected	8,305
Remaining Equivalent population units that need to pay for the plant	10,362

Table 3.7 translates the remaining equivalent population units to lots, dwelling units and floor area of Commercial, Industrial and Institutional development for the DCC calculations. **Table 3.7** includes the following:

- Projected residential, commercial, industrial and institutional growth (Col.1).
- Equivalency per unit of measure (Col.3).
- Projected equivalent population units by type as well as the total value (Col.4).
- Calculation of the proportion of 20 year projected equivalent population units (Col.4)

- The Remaining Equivalent Population Units that need to pay for the Stage 4 Plant translated to equivalent population units by type (Col.5).
- The adjusted equivalent units of residential, commercial, industrial and institutional growth that need to pay for the capacity in the stage 4 plant (Col.6).
- The unit types (Col. 7)

Table 3.7: Adjusted Equivalent Population

Land Use	Col.(1)	Col.(2)	Col.(3)	Col.(4) = Col.(1) x Col.(3)	Col.(5) = Col.(4) x (c)	Col.(6) = Col.(5) / Col.(3)	Col.(7)
	Total Estimated Development	Unit	Equivalency per Unit of Measure	Equivalent Population	Adjusted Equivalent Population	Adjusted Equivalent Units	Unit
Low Density residential lots and associated dwelling units	2,639	dwelling units	3.00	7,917	2,756	919	dwelling units
Multi-Family Units including townhouses and apartments	8,455	dwelling units	2.00	16,910	5,886	2,943	dwelling units
Commercial	215,237	square meters	0.0130	2,798	974	74,916	square meters
Industrial	108,852	square meters	0.0130	1,415	493	37,887	square meters
Institutional	66,384	square meters	0.0110	730	254	23,106	square meters
Totals				**29,770**	**10,362**		

(a)	**Total Equiv. Population units**	29,770
(b)	Remaining Equivalent Population Units that need to pay for the Stage 4 Plant	10,362
(c)	(b) / (a)	0.3841

4.0 TREATMENT PLANT DCCS

4.1 WASTEWATER TREATMENT PLANT DCC

Cost estimates and growth projections drive the WRWTP DCC calculations. The projects included in the WRWTP upgrade were provided earlier in this report (see **Table 2.1**). **Table 4.1** below sets out the estimated cost for each upgrade, and more detail pertaining to each upgrade cost can be found in **Appendix A**. The costs in Table 4.1 vary slightly from the costs in Appendix A because in Table 4.1 the engineering and contingency costs are shown for each item and the total costs have not been rounded.

The costs of components that form part of the Wastewater Treatment plant upgrades to accommodate growth, which include the Stage 4 expansion, are set out in **Table 4.1**.

Table 4.1: Sewer DCC Projects

	Project	Project Costs including Engineering and Contingency
S1	General	$3,682,500
S2	Screening	$915,000
S3	Primary Clarifiers 5 & 6	$2,640,000
S4	Bioreactors 7 & 8	$5,223,150
S5	Secondary Clarifiers 7 & 8	$2,883,750
S6	UV Disinfection System	$1,591,500
S7	Sludge Dewatering	$2,924,100
S8	DAF	$2,820,000
S9	Electrical and Instrumentation	$4,200,000
S10	Outfall Tideflex Check Valves Supply and Installation	$150,000
S11	Odour control	$4,344,450
	Total	**$31,374,450**

The following **Table 4.2** summarizes the cost of the WWTP DCC Program in terms of the total project cost and the amount recovered through DCCs.

Table 4.2: WWTP DCC Program Costs

	Sewer DCC Costs
Total Cost of Project Work	$31,374,450
DCC Recoverable	$31,060,706
Regional District Responsibility (Total Cost minus DCC Recoverable)	**$313,745**

The total cost of the improvements is $31,374,450, of which $31,060,706 is DCC recoverable and the remaining $313,745 needs to be financed through other methods.

4.2 SANITARY SEWER DCC CALCULATION

The Westside Regional Wastewater Treatment Plant DCC rates have been calculated according to the various principles and assumptions discussed earlier in this report. In order to calculate the Westside Regional Wastewater Treatment Plant DCC levy, it is necessary to determine the remaining equivalent units that need to pay for the Stage 4 Plant. This information serves as the basis for the Sanitary Development Cost Charge calculation. The basic calculation is shown in **Table 4.3**.

Table 4.3: Sanitary Sewer DCC Calculation

1. Total New Growth (by unit or sq. m.) x Equivalent Population (per unit or sq. m.) = Total Equivalent Population.

2. DCC Recoverable Costs / Total Equivalent Population = DCC Costs per Equivalent Population.

3. DCC Costs per Equivalent Population x Equivalent Population (per unit or sq. m.) = DCC Costs per Unit or Square Meter.

It should be reiterated that the equivalent population, and new growth, used in this DCC Study is actually adjusted to the value of remaining equivalent units that need to pay for the Stage 4 Plant, or 10,362 equivalent population. **Table 3.7** shows this calculation.

Table 4.4 titled "Sewer DCC Program Costs" provides a detailed overview of:

- The estimated cost for each upgrade;
- The percentage of the cost allocated to new growth;
- The assist factor;
- The total DCC recoverable; and,
- The total Regional District responsibility.

The projects or proportion of projects benefitting new growth are set out in the Regional District's capital plan and are included in this program to be funded by Development Cost Charge revenues.

The detailed Westside Regional Wastewater Treatment Plant DCC calculations for Regional District are included in **Table 4.5**.

Table 4.4: Sewer DCC Program Costs

SANITARY DCC PROGRAM							
Project No	**Description**	**Cost plus E&C per component**	**Percentage Allocation to New Growth**	**Benefit to New Dev.**	**Assist Factor 1%**	**DCC Recoverable**	**Total RDCO Responsibility[1]**
S1	General	$3,682,500	100%	$3,682,500	$36,825	$3,645,675	$36,825
S2	Screening	$915,000	100%	$915,000	$9,150	$905,850	$9,150
S3	Primary Clarifiers 5 & 6	$2,640,000	100%	$2,640,000	$26,400	$2,613,600	$26,400
S4	Bioreactors 7 & 8	$5,223,150	100%	$5,223,150	$52,232	$5,170,919	$52,232
S5	Secondary Clarifiers 7 & 8	$2,883,750	100%	$2,883,750	$28,838	$2,854,913	$28,838
S6	UV Disinfection System	$1,591,500	100%	$1,591,500	$15,915	$1,575,585	$15,915
S7	Sludge Dewatering	$2,924,100	100%	$2,924,100	$29,241	$2,894,859	$29,241
S8	DAF	$2,820,000	100%	$2,820,000	$28,200	$2,791,800	$28,200
S9	Electrical and Instrumentation	$4,200,000	100%	$4,200,000	$42,000	$4,158,000	$42,000
S10	Outfall Tideflex Check Valves	$150,000	100%	$150,000	$1,500	$148,500	$1,500
S11	Odour control	$4,344,450	100%	$4,344,450	$43,445	$4,301,006	$43,445
	Total	**$31,374,450**		**$31,374,450**	**$313,745**	**$31,060,706**	**$313,745**

[1] "Total RDCO Responsibility" equals percentage of costs allocated to existing development plus 1% assist factor.

Table 4.5: Sewer DCC Rate Calculation

A: SANITARY CALCULATION				
Land Use	Col.(1)	Col.(2)	Col.(3)	Col.(4) =Col.(1) x Col.(3)
	Total Adjusted Estimated Development	Unit of Measure	Equivalency per Unit of Measure	Equivalent Population
Low Density residential lots and associated dwelling units	919	dwelling units	3.00	2,756
Multi-Family Units including townhouses and apartments	2,943	dwelling units	2.00	5,886
Commercial	74,916	square meters	0.0130	974
Industrial	37,887	square meters	0.0130	493
Institutional	23,106	square meters	0.0110	254
			Total Equiv. Pop	(a) 10,362
B: UNIT SANITARY DCC CALCULATION				
Net Sanitary DCC Program Recoverable		$31,060,706	(b)	
Existing DCC Reserve Monies		$13,252,112	(c)	
Net Amount to be Paid by DCCs		$17,808,594	(d)=(b)-(c)	
DCC per Equivalent Population		$1,719	(e) = (d)/(a)	
C: RESULTING SANITARY DCCS				
Land Use	Equivalent	DCC per Unit		
Low Density residential lots and associated dwelling units	3.00	$5,156	per lot or unit	(e) x Col.(1)
Multi-Family Units including townhouses and apartments	2.00	$3,437	per unit	(e) x Col.(1)
Commercial	0.0130	$22.34	per square meter	(e) x Col.(1)
Industrial	0.0130	$22.34	per square meter	(e) x Col.(1)
Institutional	0.0110	$18.91	per square meter	(e) x Col.(1)

The existing and proposed Westside Regional Wastewater Treatment Plant DCC rates and the percentage changes are shown in **Table 4.6**.

Table 4.6: Proposed Sewer DCC Rates

Use	Unit charged	Existing Charge Per Unit	Proposed Charge Per unit	% Change
Low Density Residential Parcel	For Each parcel Created at Subdivision	$4,787	$5,156	7.7%
Duplex, Triplex, Fourplex, Mobile Home, Modular Home, Manufactured Home	For Each Dwelling Unit	$4,787	$5,156	7.7%
Townhouse, Apartment, Secondary suite, Carriage Home	For Each Dwelling Unit	$3,191	$3,437	7.7%
Commercial	For each 100 sq.m. of gross floor area	$2,072	$2,234	7.8%
Industrial	For each 100 sq.m. of gross floor area	$2,072	$2,234	7.8%
Institutional	For each 100 sq.m. of gross floor area	$1,755	$1,891	7.7%

5.0 DCC RATES SUMMARY AND IMPLEMENTATION

5.1 SUMMARY OF PROPOSED DCC RATES

Table 5.1 summarizes the Westside Regional Wastewater Treatment Plant DCC rate for the area served by the treatment plant.

Table 5.1: DCC Rate Summary

Use	Unit charged	Existing Charge Per Unit	Proposed Charge Per unit	% Change
Low Density Residential Parcel	For Each parcel Created at Subdivision	$4,787	$5,156	7.7%
Duplex, Triplex, Fourplex, Mobile Home, Modular Home, Manufactured Home	For Each Dwelling Unit	$4,787	$5,156	7.7%
Townhouse, Apartment, Secondary suite, Carriage Home	For Each Dwelling Unit	$3,191	$3,437	7.7%
Commercial	For each 100 sq.m. of gross floor area	$2,072	$2,234	7.8%
Industrial	For each 100 sq.m. of gross floor area	$2,072	$2,234	7.8%
Institutional	For each 100 sq.m. of gross floor area	$1,755	$1,891	7.7%

5.2 BYLAW EXEMPTIONS

The Local Government Act (LGA) is quite clear that a DCC cannot be levied if the proposed development does not impose new capital cost burdens on the Regional District, or if a DCC has already been paid in regard to the same development. However, if additional further expansion for the same development creates new capital cost burdens or uses up capacity, the DCCs can be levied for the additional costs.

The LGA further restricts the levying of the DCC at the time of application for a building permit if:

- the building permit is for a church or place of worship; and
- the value of the work authorized by the building permit does not exceed $50,000 or a greater amount as prescribed by bylaw.

The legislation allows local governments to charge DCCs on residential developments of four units or less, as long as such a charge is provided for in the local government's DCC bylaw. To enact this approach the DCC bylaw must include a specific provision as enabled under section 561(6) of the Local Government Act.

5.3 COLLECTION OF CHARGES – BUILDING PERMIT AND SUBDIVISION

Regional Districts can choose to collect DCCs at subdivision approval or building permit issuance. The Regional District will collect the Westside Regional Wastewater Treatment Plant DCCs for low density

residential parcels at subdivision approval. All other forms of residential development including duplexes, triplexes, fourplexes, townhouses, apartments, secondary suites, and carriage homes will be collected at building permit because the number of units can be determined at this time.

Industrial, institutional and commercial DCCs are levied at the time of building permit on the basis of square metre of gross floor area, because the building size and floor area can be determined at the time of building permit.

5.4 IN-STREAM APPLICATIONS AND GRACE PERIODS

The LGA requires that subdivision applications be provided a one-year protection from the proposed DCC rates, as long as the application is complete and application fees have been paid before the bylaw is adopted. These in-stream active subdivision applications will be exempted from any increase in DCCs for one year from the date of implementation of the new DCC bylaw, as long as the subdivision is approved within one year of the DCC bylaw adoption.

Building permits are also given the same in-stream exemptions as subdivision applications under the LGA. Complete building permit applications received before the bylaw is adopted will also be exempt from any increase in DCCs for one year from the date of implementation of the new DCC bylaw, as long as the building permit is approved within one year of the DCC bylaw adoption. The same in-stream exemptions provided for building permits and subdivision applications under the LGA have been extended further to include development permits and zoning bylaw amendments associated with building permits.

A grace period is a length of time offered as notification that new DCCs will be in effect. For example, the DCC bylaw may state that the effective date will be a time period (e.g. six months) from the date that the DCC bylaw is adopted. In order to have the changes to the East Trunk DCCs come into effect immediately, the Regional District proposes to have the DCCs come into effect the same day the bylaw is adopted.

5.5 DCC REBATES AND CREDITS

The LGA stipulates that should an owner pay for specific services outside of the boundaries of the land being subdivided or developed and these services are included in the calculation to determine the DCC, then the amount paid must be deducted from the class of DCC that is applicable to the service.

5.6 DCC MONITORING AND ACCOUNTING

The Regional District currently has a DCC tracking system in place. The Regional District should continue to use this system and update the amount of DCC fees collected and other relevant information on an ongoing basis relevant to this Wastewater Treatment Plant DCC.

5.7 DCC REVIEWS

In order to allow for more frequent increases in DCCs, the Regional District should undertake a three part program of regular DCC reviews:

- Annual Consumer Price Index increases;
- Minor DCC updates every 2 years; and
- Major DCC updates every 5 years.

The first part is to undertake annual Consumer Price Index increases. The process is relatively straight forward and can be done by having the Board adopt an amendment to the DCC bylaw. Further details on the Consumer Price Index approach are as follows:

- Needs to be adopted by bylaw.
- The bylaw is enabled under Development Cost Charge Amendment Bylaw Approval Exemption Regulation, (B.C. Reg. 130/2010) under the Community Charter and it allows a Local Government to increase their DCCs by the BC Consumer Price index.
- The bylaw does not require approval by the Inspector of Municipalities, but a copy of a DCC amendment bylaw must be filed as soon as is reasonable with the Inspector of Municipalities after the bylaw has been adopted.
- The CPI increase can only be done for up to 4 years from the date of the adoption of a new DCC bylaw approved by the Inspector.
- Can only be done once per year.
- The rate of inflation that can be included is the BC Consumer Price Index for the year preceding the bylaw. The Regional District cannot, for example, wait 2 years and then adopt a CPI increase that covers 2 years of inflation; it can only cover the inflation that has occurred during the one year before the bylaw. So it is important to update annually or else the Regional District will lose out on the opportunity to capture some of the inflationary increases.

The second part is to undertake regular Minor DCC updates approximately every two years. The characteristics of a Minor DCC update are as follows:

- Includes an update to project costs, often based on up to date construction cost information and unit prices for materials and labour.
- Does not allow for any changes to projects, growth projections, or other aspects of the DCC calculations. It simply takes the original DCC projects and updates the costs.
- Often takes about 3-4 months of work by the Regional District and it requires some engagement with stakeholders such as the development community.
- Needs to be adopted by bylaw and it requires approval by the Inspector of Municipalities under an expedited process which takes about another month after receiving the bylaw.

The third part is to conduct a major DCC update approximately every 5 years. The characteristics of a Major DCC update are as follows:

- Includes a complete review of growth projections, projects required to serve growth, capital costs, equivalency factors, assist factors, and updated rates.
- The process is quite extensive and often takes over a year or more.
- Generally requires more extensive stakeholder engagement than a minor DCC update.
- Needs to be adopted by bylaw and it requires approval by the Inspector of Municipalities which takes about 2-3 months after receiving the bylaw.
- Could also be done after significant changes to the information that impacts infrastructure such as updates to infrastructure plans.

6.0 PUBLIC CONSULTATION

6.1 PUBLIC CONSULTATION

Although the *LGA* does not require a public participation process, the Best Practices Guide states that meaningful consultation is a key expectation of the Inspector of Municipalities when reviewing a DCC bylaw for approval. The purpose of such a process is to allow those who are interested in or affected by the proposed Wastewater Treatment Plant DCCs to offer comments and input. The Best Practices Guide does not set a recommended format to be followed for public participation; instead, the type of public participation to be used is decided by the Regional District itself. The Best Practices Guide does recommend that the development of a DCC Bylaw should include a meaningful public process to obtain input from stakeholders. It notes that notifying affected parties about consultation meetings before passing the DCC bylaw, as well as informing them of the decision to adopt the bylaw, is critical for meaningful consultation.

Under Phase 1 of engagement the Regional District sent letters to impacted parties (Municipal partners and development community) in late November 2025. As of January 6, 2026, the Regional District had received no comments from Phase 1 of the engagement with the development community and impacted parties.

A second phase of engagement is planned, and a summary of the public consultation process will be included once this phase has been completed.

APPENDIX A:

WESTSIDE REGIONAL WASTEWATER TREATMENT PLANT COST ESTIMATE

MEMORANDUM

DATE: October 10, 2025
TO: Xavier Semmelink
CC: Clarke Kruiswyk
FROM: Jeremy Clowes, P.Eng and Carly Tremblay, EIT
FILE: 1179.0120.02
SUBJECT: Westside Regional Wastewater Treatment Plant Cost Estimate Summary_rev.1

1.0 INTRODUCTION

The Westside Regional Wastewater Treatment Plant's (WRWTP) capacity was reviewed, and a cost estimate was prepared for the planned Stage 4 expansion. This work was completed to support the 2025 Development Cost Charge (DCC) Update.

The Stage 4 WRWTP expansion scope was identified through past planning completed by RDCO and AECOM. Stage 4 Upgrades are intended to increase the WRWTP average daily flow (ADF) treatment capacity from 16,800 m^3/d to 22,400 m^3/d.

The WRWTP treats sanitary flow from the District of Peachland (Peachland), the Westbank First Nations (WFN) and the City of West Kelowna (CWK).

2.0 POPULATION FLOWS AND LOADS

Population drives the flows and loads experienced at the WRWTP. The total population in 2045 is projected to be 83,815 as described in Table 2.0.

Table 2.0: Total Projected Population in 2045

Location	Population Projections (2021 DCC)	Projected Population Growth (2025 - 2045 DCC)	Total Projected Population
District of Peachland	5,789	4,039	9,828
City of West Kelowna	36,078	16,427	52,505
Westbank First Nations	11,260	10,222	21,482
Total	53,127	30,688	83,815

The annual growth rates applied in Table 2.0 to estimate the 2045 population were 2.3% for the District of Peachland, 1.9% for the City of West Kelowna and 1.8% for WFN as provided in the 2025 RDCO DCC Update Report.

Table 2.1: 2024 WRWTP Influent Flows

	Total Flow
Average Day	10,946 m³/d
Max Month	11,541 m³/d

Four main loading parameters were considered including biochemical oxygen demand (BOD), total suspended solids (TSS), Total Kjeldahl Nitrogen (TKN), and total phosphorus (TP). TKN loading appears to govern when the WRWTP Stage 4 expansion will be triggered and the plant appears to be operating at or above the design limit under existing conditions.

Table 2.2: WRWTP Design Loading for Average Day Flows

	Design per Capita Loading (g/d/c)	Design Capacity (kg/d)	2024 Loads (kg/d)	Residual Capacity (kg/d)	Equivalent Population that can be added based on Design Per Capita Loading
BOD	90	3,780	3,654	126	1,399
TSS	90	3,780	3,236	544	6,040
TKN	15	630	663	0	0
TP	2.6	109	75	34	13,330

Notes:

1. Only average day loading reviewed.

3.0 STAGE 4 UPGRADE CAPACITY

The treatment facility has an existing capacity to treat an average day flow of 16,800 m³/d. The Stage 4 Upgrades will increase the average day flow capacity to 22,400 m³/d. Table 3.0 summarizes the overall WRWTP residual flow capacity after the Stage 4 Upgrades are completed.

Table 3.0: Flow Capacity Evaluation

	Existing Capacity	Stage 4 Upgrade Capacity	Estimated 2024 Flow	Available Capacity Stage 4 + Residual
Average Day Flow (m³/d)	16,800	22,400	10,946	11,454
Max Day Flow (m³/d)	25,200	33,600	15,120	18,480
Peak Hourly Flow (L/s)	389	519	350	169

We reviewed the expanded plant's capacity to accommodate growth based on flows and loading. Refer to Table 3.2. The following per capita allowances were used to estimate total equivalent populations that could be accommodated:

- Average Day Flow = 0.3 m^3/d/c (recommended based on 2024 flow data)
- BOD and TSS Loading = 0.9 kg/d/c
- TKN Loading = 0.015 kg/d/c
- TP Loading = 0.0026 kg/d/c

Table 3.1: Capacity for Growth Based on Average Day Flow

	Stage 4 Added Capacity
Average Day Flow (m^3/d)	5,600
Capacity for Growth (Total Equivalent People)	18,667
2045 Growth Population	30,688
Surplus/Deficit (Equivalent Population)	-12,021

Table 3.2: Capacity for Growth Based on Loads

	Stage 4 Added Capacity (kg/d)	Equivalent Population	Surplus/Deficit (Equivalent Population)
BOD	2,295	25,500	-5,188
TSS	2,295	25,500	-5,188
TKN	349	23,278	-7,410
TP	66	25,500	-5,188

From the above tables, the upgraded WRWTP can accommodate 18,667 people.

4.0 STAGE 4 UPGRADE DESCRIPTION

The Stage 4 Upgrade includes an additional screen, two primary clarifiers, two bioreactors, two secondary clarifiers, an upgraded UV disinfection system, sludge dewatering, a DAF, outfall valves and odour control upgrades. Please see Appendix A for supplier quotes that were received.

4.1 MECHANICAL SCREENS

An additional mechanical screen is installed to provide redundancy. Redundancy is not required under the MWR but is typically provided to allow for maintenance.

4.2 PRIMARY CLARIFERS

It is expected that the two additional primary clarifiers will match the capacity of each existing unit. A 50% redundancy of the max day flow is required to meet the MWR requirements.

A FRP flat cover was included in the cost estimate for the primary clarifiers, the quote for this can be seen in Appendix A from Mequipco. This alternative will aesthetically differ from the existing covers due to the grey colour and flat configuration. Barski Industries supplied the original FRP covers and likely could supply matching covers for the proposed primary clarifiers. This can be reviewed in preliminary design but the cost is expected to be similar.

4.3 BIOREACTORS

Two additional bioreactors are included in stage 4 and expected to match the capacity of the existing units. 75% of max day flow redundancy must be provided for the bioreactors as per the MWR.

Each bioreactor includes, air diffusers, mixers with jet rings and an internal recycle pump to achieve the proper flow and treatment parameters. In addition, an allowance for two blowers where included.

4.4 SECONDARY CLARIFIERS

Two additional 18 m secondary clarifiers are required to accommodate Stage 4 flows. The existing clarifiers use a rim drive motor configuration. Unfortunately, this equipment is no longer offered. The internal equipment included in the cost estimate was a centre drive mechanism. These upgrades will include a redundancy of 75% of the max day flow as per the MWR.

4.5 UV DISINFECTION

The two existing UV disinfection systems will be adequate to meet the Stage 4 Max Day Flow. The replacement cost for one entire UV system is included in Appendix A. This installation would have capacity for 400 L/s with 100% redundancy. The proposed UV system design criteria would match the existing units: 50 CFU/100 ml fecal coliform based on a 30-day geometric mean and 40 mL/cm² at 65% UVT. The need for replacing one unit can be confirmed in the preliminary design.

4.6 SLUDGE DEWATERING

An allowance for replacing one centrifuge is included the Stage 4 Upgrade costs. The proposed centrifuge is to match the performance of existing larger unit. A piston sludge pump and screw feeder are to be installed as well.

4.7 DISSOLVED AIR FLOTATION (DAF)

One additional dissolved air floatation (DAF) unit is included in the estimate. The WRWTP would have two DAFs in total after the Stage 4 upgrade.

4.8 OUTFALL

An additional five Tideflex check valves will be installed on the outfall to increase capacity to suit the Stage 4 Upgrade.

4.9 ODOUR CONTROL

In 2024, AECOM investigated four odour control upgrades. An excerpt from the report and related cost estimates are included in Appendix B. We have allowed for implementing Option 1 based on discussions with operations staff which includes adding a pre-humidification treatment step and replacing the odour bed biofilter with in-organic media.

4.10 ADMININSTRATION SPACE

The preliminary design for the Stage 4 upgrade should consider expanding administration space at the plant. It is expected that the estimated budget provided in this memorandum would allow for modest expansion of administration space.

5.0 TRIGGERS FOR UPGRADE

The plant is operating at or above capacity based on TKN loading under existing conditions. This should be reviewed further to better understand current loads which will be required to design the Stage 4 Upgrades.

6.0 COST ESTIMATE

The WRWTP Class D cost estimate can be found in Appendix C. The estimate is in 2025 Canadian dollars, includes PST, 15% engineering allowance, 35% contingency and excludes escalation costs.

Table 6.0: Capital Required for Stage 4 Upgrades.

Scope of Work	Class D Cost Estimate
Treatment Plant Upgrades	$28M
Odour Control (Option 1)	$4.35M
Total	$32.35M

7.0 CONCLUSION AND RECOMMENDATIONS

This report summarizes the components for upgrading the Westside Regional Wastewater Treatment Plant as part of the planned Stage 4 expansion. The upgrades are expected to cost a total of $32.35M and be capable of accommodating an additional 18,667 total equivalent population.

Sincerely,
URBAN SYSTEMS LTD.

Carly Tremblay, EIT
Water and Wastewater

Jeremy Clowes, P.Eng.
Principal, Water & Wastewater Engineer

/ct
Enclosure

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APPENDIX A – SUPPLIER QUOTES

610.374.5109
brentwoodindustries.com

BUDGETARY PROPOSAL #WG08552	WEST KELOWNA, BC - WESTSIDE REGIONAL WWTP - PRIMARY CLARIFIER EXPANSION

February 24, 2025

Attn: Carly Tremblay
Urban Systems
304-1353 Ellis St.
Kelowna BC V1Y 1Z9
Canada
Phone: 778-699-2573

email: ctremblay@urbansystems.ca

Re: West Kelowna, BC - Westside Regional WWTP - Primary Clarifier Expansion
Polychem™ Chain and Flight Sludge Collection System

BUDGETARY PROPOSAL

Brentwood Industries, Polychem Brand, proposes and offers to supply all materials and services as an Approved manufacturer and in general accordance with Brentwood's standard practices and specifications, clarifications, and information provided.

TECHNICAL SPECIFICATION(S): N/A

SECTION(S): N/A
ADDENDA RECEIVED: N/A

BRENTWOOD PROPOSES TO FURNISH POLYCHEM CHAIN AND FLIGHT EQUIPMENT AS FOLLOWS:

Two (2) Primary Longitudinal Collector Mechanisms, Approximately
21.6 M Long x 4 M Wide x 3.4 M AWD, 4 Shaft System

BRENTWOOD PROPOSES TO FURNISH POLYCHEM SCUM SKIMMING EQUIPMENT AS FOLLOWS:

Two (2) 304 SS Rotating Scum Troughs, Manual Lever Operated, Approximately
250 mm Diameter x 4 M Long

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BUDGETARY PROPOSAL #WG08552	WEST KELOWNA, BC - WESTSIDE REGIONAL WWTP - PRIMARY CLARIFIER EXPANSION

MANUFACTURER'S REPRESENTATIVE:
Please direct all questions regarding this proposal to Brentwood's local area sales representative:

Contact: Devlin Wing

Representative: Mequipco Ltd

Address: 305 - 1777 56th Street
Delta BC V4L 0A7
Canada

Phone Number: 604-273-0553 x 141

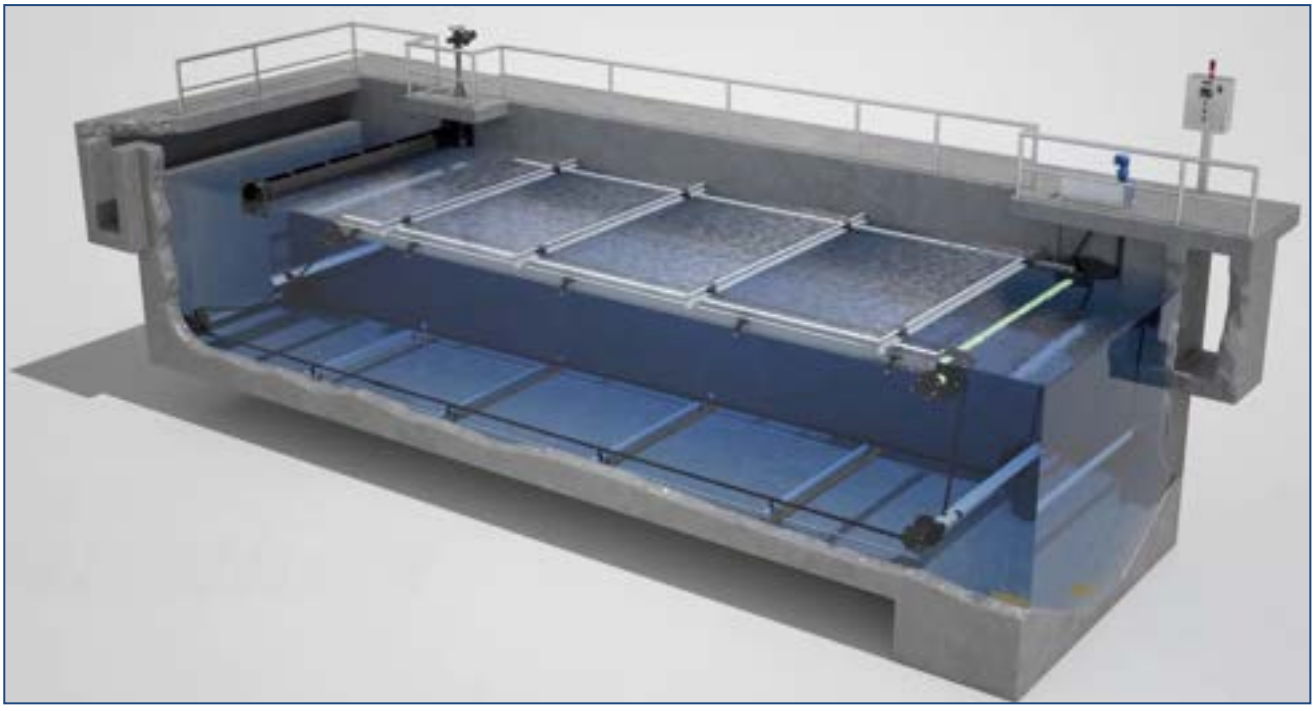
Email: dwing@mequipco.com

BRENTWOOD REGIONAL SALES MANAGER:

Contact: Charles Greeson

Phone Number: (610) 347-8557

Email: charles.greeson@brentwoodindustries.com



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BUDGETARY PROPOSAL #WG08552	WEST KELOWNA, BC - WESTSIDE REGIONAL WWTP - PRIMARY CLARIFIER EXPANSION

***ITEMS INCLUDED:**

COLLECTORS & GENERAL ITEMS	DESCRIPTION / MATERIAL
Drive Chain	NH78, Reinforced Nylon Resin w/ 303 SS Pins
Collector Chain Pins and Retainer Clips	Glass Reinforced Nylon Pins w/ Acid Resistant Polypropylene Retainer Clips
Collector Chain Links	NCS-720-S, Reinforced Thermoplastic Polyester Resin
Flight Attachment Links	NCS-720-S, Reinforced Thermoplastic Polyester Resin, F-22-8
Flights	3"x8" nominal C-Channel w/ Integral Lip, Fiberglass Reinforced Plastic, spaced at 10 Ft (3.05 m) intervals
Wear Shoes	Nylon 6-6
Hardware	316 SS
Fillerblocks	Polypropylene
Headshaft Spindles	Cast Nylon-6
Headshaft(s) - TrueSpan Field Adjustable	Biaxially Wrapped Fiberglass Epoxy Tube(s) w/ Internal UHMW-PE Tubular Bearings
Driven Sprocket(s)	NH78, 40T, Cast Nylon-6, w/integral teeth
Collector Sprockets for Headshaft(s)	NCS-720-S, 23T, Cast Nylon-6
Shaft Couplings	Fiberglass, Pre-drilled
Beaded Bushing Keys	Nylon
Collector Sprockets for Stub Shafts	NCS-720-S, 17T, Cast Nylon-6
Idler Stub Shafts	Cast Nylon-6 w/UHMW-PE Outer Journal Bearing
Retainer Plate for Stub Shafts	Polycarbonate
Wall Bracket Supports for Return Track	Glass Reinforced Nylon 6-6
Run Shoe to Splice Wall Bracket to Return Track	Nylon 6-6
Return Track	3" x 3" x 3/8" Angle, Fiberglass Reinforced Plastic

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BUDGETARY PROPOSAL #WG08552	WEST KELOWNA, BC - WESTSIDE REGIONAL WWTP - PRIMARY CLARIFIER EXPANSION

***ITEMS INCLUDED (Continued):**

COLLECTORS & GENERAL ITEMS	DESCRIPTION / MATERIAL
Wear Strip	UHMW-PE - 3/8" thick x 2-5/8" wide
Chain Tightener(s) for Drive Chain	Nylon 6-6 7T Sprocket w/ Cast Nylon-6 Arm and FRP Adjustable Mounting Bracket
Limit Switch	DPDT, Square D, Alum., NEMA 1,2,4,6,6P,12,13 / Class 1 Div 1 B/C/D, SS Arm
Drive Sprocket Shear pin Assembly	11T Nylon Sprocket Mounted to 304 SS Shear Pin Hub
Shear pin Kit(s)	Aluminum
Drive Unit Output Shaft	304 SS
Drive(s) - Single, Each Driving (1) Collector	SEW Eurodrive Helical-Bevel Gear box (DIN-ISO) with integral mount SEW Motor (IEC), 1/2 HP, 3 PH, 60 Hz, 575 VAC
Base Plate for Drive Unit(s)	304 SS
Chain Guard for Drive Chain	304 SS
Anchor System	316 SS
Adhesive for Anchors w/ Dispenser	Hilti
SCUM TROUGH SPECIFIC ITEMS	DESCRIPTION / MATERIAL
Slotted Scum Pipe	304 SS
End Bearing Support Plates for Scum Pipe	304 SS
Gaskets and Seals for Scum Pipe End Plates	Neoprene
Bearing for Scum Pipe	UHMW-PE
Manual Lever and Saddle	304 SS
*	Above Item Descriptions/Materials may vary slightly after engineering and consultant review.

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The following total estimated spare parts will be furnished for this project. After engineering, quantities may vary from quantities listed below. Spare Parts will be packaged separately and plainly identified.

SPARE PARTS INCLUDED	
QTY	**DESCRIPTION**
20	feet of drive chain
10%	of all collector chain furnished
10%	of all chain-to-flight attachment links furnished
12	shear pins for every drive sprocket assembly furnished
5	longitudinal flights complete with wear shoes, fillerblocks, and hardware
1	replacement 11T drive sprocket (sprocket plate only)

ITEMS SPECIFICALLY NOT INCLUDED	
1	SmartGuard Flight and Sprocket Monitoring System
2	Control Panel(s)
3	Effluent Troughs, Weirs, Baffles
4	Seismic Calculations
5	Hold Down Rail, 304 SS
6	Tank Measurements
7	PE Stamp of Submittals
8	Wall Sleeves For Scum Troughs
9	Scum Box or Scum Spray Systems

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BUDGETARY PROPOSAL #WG08552 | **WEST KELOWNA, BC - WESTSIDE REGIONAL WWTP - PRIMARY CLARIFIER EXPANSION**

EXISTING CONCRETE STRUCTURE (IF APPLICABLE):

Pricing and schedule are based on limited structural information provided at the time of quotation and assume the necessary existing tank dimensions will be provided by purchaser in a timely manner to facilitate the start of submittals. In lieu of customer supplied tank dimensions, purchaser may elect to procure Brentwood's Tank Measurement services. Should the verified tank dimensions and equipment conditions differ from the information provided for quotation, and/or require special bracketry or supporting structures, Brentwood reserves the right to revise pricing and schedule accordingly. Delays associated with receipt of complete tank measurements, incomplete information from RFI's, and release and approval to manufacture may result in changes to the price and schedule.

TANK MEASUREMENTS:

Tank Measurements are NOT included in this price or proposal, but can be provided and billed per attached published field labor and expense rates. If measurement services are purchased, Brentwood will require the assistance of one (1) person while on site to support tank measurements, and tanks must be completely drained and cleaned before entrance. In addition, customer / contractor shall supply all necessary equipment to safely access tanks (ladders, lighting, etc.). Tank measurement services require a minimum 2 week notice and are based on technician availability.

SUBMITTALS:

Shop drawing and submittal preparation will be in accordance with Brentwood's standard submittal practices, and will be based on one submittal for all tanks at one time. Should separate submittals for each tank be required at separate intervals, Brentwood reserves the right to revise pricing accordingly.

TIME AND DELIVERY:

1. Brentwood will furnish initial submittal drawings approximately ten (10) Weeks after receipt of executed purchase order and field verified structural dimensions and information. PE review, calculations and stamp (if required) may be sent at a later date under separate cover.
2. Estimated Submittal Review: Brentwood estimates a four (4) week review period by consultant or customer.
3. We further propose to furnish the equipment approximately fourteen (14) weeks after receipt of final engineering approval and returned submittal drawings and release to manufacturing.

FREIGHT:

Freight allowed, best way, point of manufacture to job site. Requests for specific methods of shipment will be at requestors' expense. On-site transportation, unloading, and storage costs by others.

WEIGHT AND VOLUME:

Estimated weight is 8,100 Lbs. Estimated volume is Two (2) Truck(s).

TAXES:

Pricing does not include GST, PST, HST, brokerage fees, duties, or commissions unless otherwise stated.

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SCHEDULE OF VALUES & PAYMENT TERMS:

1. 100% Net 30 Days from i)shipment of material or ii) Seller's notification to Buyer of finished materials ready for shipment & being held at Brentwood's facility beyond scheduled shipment date, whichever occurs first.
2. These terms are not contingent upon or in conjunction with any agreement purchaser has with other parties.
3. For Brentwood Water & Wastewater Standard Terms and Conditions visit: https://www.brentwoodindustries.com/terms/

ESCALATION:

The price(s) quoted are subject to adjustment to reflect increases in material cost(s), should these increases in price exceed 3% during the specified Schedule of Construction. Increases are based on price indexes for PVC (ChemData) and Stainless Steel (MEPS International), which can be provided upon request. It is understood and agreed that it will be Brentwood's option whether to invoke escalation, should the price exceed this amount.

BILL AND HOLD:

If Purchaser fails to take delivery on any scheduled delivery date based on the terms of the executed purchase Agreement, Brentwood reserves the right to reallocate any Product to other projects and reschedule production for the delayed Product. Purchaser will be required to accept any increase in price associated with the repurchase of material to fulfill the purchased Product requirements and the Product Delivery Date will be rescheduled in conjunction with current production schedules.

If the Purchaser requests that Brentwood holds Product in excess of an agreed upon delivery date and Brentwood agrees to hold the Product, Purchaser will provide written notification to Brentwood to store the Product at its facilities for a period of time prior to shipment ("Bill and Hold"). Brentwood will provide written confirmation of the Bill and Hold to Purchaser, including a Statement of Transfer of Title and invoice.

Payment for the Bill and Hold material is due in accordance with the agreed upon terms in the executed purchase Agreement except to the extent dates must be adjusted due to delivery rescheduling, in which case adjusted dates will be shown on the invoice. All payments will be made in accordance with the invoiced payment terms and instructions. For all Bill and Holds, Purchaser acknowledges that (i) they have made a fixed commitment to purchase the Product, (ii) risk of ownership for the Product passes to Purchaser upon signing Statement of Transfer, (iii) Purchaser has requested that the Product be on a Bill and Hold basis for legitimate business purposes, (iv) if no delivery date is determined at the time of invoicing and Statement of Transfer and Brentwood does not receive a request for delivery within two (2)months from the Bill and Hold invoice date, Brentwood has the right to release the shipment upon written notice to Purchaser any time following the two (2) month period from Bill and Hold invoice date. Brentwood shall be entitled to storage charges of 1 ½% per month of the purchase value of stored material beginning 30 days after Bill and Hold invoice date and continuing until the Product is picked up by Purchaser or shipped by Brentwood. Upon receipt of request from Purchaser to ship the stored Product, Brentwood shall use commercially reasonable efforts to ship the Product within two (2) to 4 (four) business weeks following confirmed receipt of such request.

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VALIDITY:

This proposal is valid for a period not to exceed 90 days from latest date shown above unless extended by Brentwood in writing. Pricing on this project is based upon shipment schedule as shown above. Extensions to delivery timelines or requests for staged shipments may require renegotiation of pricing.

FIELD SERVICE STARTUP AND TRAINING:

The services of a qualified Brentwood field technician is included to assist in inspection of installed equipment, startup and field testing, certification, and operator training, if required by specification. Duration limited to Two (2) trip(s) for Two (2) man-day(s) on site total. Non use of contractual field service days does not generate a credit on this project. Field service requires a minimum 2 week notice and is based on technician availability. Less notice may be accommodated with additional costs.

OPERATION AND MAINTENANCE MANUALS:

Unless otherwise specified, one (1) digital copy of our O&M manual and installation and layout drawings will be furnished on or before shipment of equipment. Digital copy can be downloaded from our FTP site or finished on a USB Flash drive. Digital copy of O&M shall be in Adobe pdf format and be locked and uneditable.

WARRANTY:

Brentwood warrants material supplied on this project to be free from defects in workmanship or materials for a period of twelve (12) months from date of certification by an authorized Brentwood representative or eighteen (18) months from date of shipment, whichever shall occur first. Warranty excludes labor to install or remove parts. Chain and flight system is designed for continuous operation, and intermittent operation is not recommended due to potential for excess sludge build up. Damage resulting from intermittent operation of chain and flight equipment is not covered under this warranty. Brentwood recommends limiting the the rotation of the scum pipe to no more than once every 4 hours to mantain the longevity of the equipment.

PAINTING AND COATINGS:

Stainless Steel and plastic equipment shall not be painted. Unless otherwise specified, all ferrous wetted components will be provided with a surface preparation of SSPC-SP10 Near White Metal and a shop primer 1 coat of Sherwin Williams Dura-Plate 235 Multi-Purpose Epoxy @ 4 Mils D.F.T. It is the responsibility of the contractor to ensure finish paint is compatible with specified primer. Any adhesion issues between coats are not the responsibility of Brentwood. The top coat must be applied within 6 months of the prime coat, otherwise the assembly surface will need to be abraded or the primer will need to be removed and surface preparation redone prior to application of the top coat, by others. OEM components above deck (drive units, bearings, actuators, etc.) shall be furnished with manufacturer's factory finish.

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GENERAL EXCLUSIONS*:

1. Contractor/customer shall be responsible for field verification of all dimensions.
2. Foundations, supports for Polychem equipment (diaphragm plates) or special mounting plates.
3. Bid, performance, supply, or maintenance bonds.
4. Installation of equipment and anchor systems, concrete, sealing compounds, shim stock or grout.
5. Grouting behind idler stub shafts, head shaft spindles, & return track wall brackets is not included, but is required for these systems.
6. Tools or spare parts (unless listed elsewhere in this Proposal).
7. All reducer oil, bearing grease, or other lubricants.
8. Field paint, touch-up, finish painting, or finish coatings.
9. Unloading, hauling, erection, and storage of equipment.
10. Grease line piping (unless listed elsewhere in this Proposal) or grease guns.
11. Any electrical components or controls not shown in items included section of this Proposal.
12. All control panels (unless listed elsewhere within this Proposal), unistrut supports / mounting for control panels, electrical conduit, wires, or wiring, wire fittings, or boxes.
13. Wall Sleeves for scum troughs, weirs, baffles, overflow weirs, effluent troughs.
14. Anchor pull out testing.
15. PI&D drawings
16. Conduit sizing or drawings.
17. Detailed specific storage plans or maintenance schedules for installed equipment outside of Brentwood's standard maintenance and preventative maintenance information.
18. Factory assembly of components.
19. Any component shown or described on a drawing and not included in the Items Included section of this Proposal, or any component or service not shown in this Proposal.

**unless above items are listed as included elsewhere in this Proposal, they are excluded.*

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PRICING SUMMARY:

LUMP SUM BUDGETARY BASE PRICE: $294,900.00 USD

$ 421,970.94 CAD

Proposal Submitted By:

Charles Greeson

Charles Greeson, Regional Sales Manager - Mid West
Brentwood Industries, Polychem Brand
email: charles.greeson@brentwoodindustries.com

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FIELD SERVICE RATES

EFFECTIVE
2022 - 2025

Domestic Daily Rates per 8 Hour Day

SERVICE SPECIALIST	2022	2023	2024	2025
Straight Time	$1,890.00	$2,003.00	$2,123.00	$2,250.00
OT and Saturday	$2,827.00	$2,996.00	$3,175.00	$3,365.00
Sunday and Holiday	$3,780.00	$4,006.00	$4,246.00	$4,500.00

International Daily Rates per 8 Hour Day

SERVICE SPECIALIST	2022	2023	2024	2025
Straight Time	$2,268.00	$2,404.00	$2,548.00	$2,701.00
OT and Saturday	$3,402.00	$3,606.00	$3,822.00	$4,051.00
Sunday and Holiday	$4,538.00	$4,810.00	$5,099.00	$5,404.00

Definition of Labor Rates

Straight time applies to first eight (8) hours worked and traveled Monday through Friday. Any time worked over 8 hours, up to four (4) hours worked and traveled past eight (8) on Monday through Friday, first twelve (12) hours worked on Saturday will be charged at overtime rate. Standby time will be charged at the applicable rate. In case of long-term assignments, Field Service personnel will be rotated at Buyer's expense.

Expenses

Meals, lodging, and incidental expenses will be billed at cost + 15%. Employee travel expenses will be charged at cost +15% for airfare, rental vehicles, taxis and freight. Mileage rate is $0.95 per mile. Rental of lifting or other special equipment, outside inspection services, additional sub contracted services, etc. will be cost +15%.

Notes:

1. This rate sheet supersedes all previously issued rate sheets.
2. All prices in US dollars.
3. Any "site-specific" training required will be billed as time worked.
4. Customer to furnish water, oils, solvents and will dispose of same. Customer will also furnish power and air, parts, ladders, access to job-site, overhead crane upon request, and all necessary work permits.
5. Rates are "Portal-to-Portal". Travel time, to and from the site, will be considered hours worked and billed at the applicable rate.
6. Stand-by time will be considered hours worked and billed at the applicable rates according to the following:
a. Stand-by from home base – 8 hours per day.
b. Stand-by while mobilized and in the field – 8 hours per day.
7. A 4-hour minimum will apply to all service work.
8. Rates quoted are subject to adjustment without notice to conform to Seller's published rates in effect at the time service is performed.
9. This offer is subject to Buyer's acceptance of the Conditions above.
10. This offer and any work performed as a result are exclusively governed by our Terms and Conditions attached. Any additional or conflicting terms contained in any document or purchase order issued authorizing work are expressly objected to in advance and shall not apply, except with the express written consent from Brentwood Industries.

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Brentwood Water Group (Water & Wastewater) Standard Terms and Conditions of Sale

Applicability and Acceptance

These terms and conditions of sale ("Terms) are the only terms which govern the sale of product ("Product") by Brentwood Industries, Inc. ("Brentwood") to Purchaser ("Purchaser"). Brentwood and Purchaser together are the "Parties" and each a "Party" herein. Brentwood's accompanying quotation or proposal (collectively "Proposal") and these Terms (collectively this "Agreement"), comprise the entire agreement between the Parties and supersede all understandings, agreements, negotiations, representations, or communications. In the event of a conflict between these Terms and a Proposal, the terms and conditions in the Proposal prevail. Brentwood's commencement of work or service does not constitute acceptance of any Purchase Order. No Purchase Orders will be binding upon Brentwood without express written acceptance by an authorized Brentwood employee. These Terms will be the sole, controlling terms for Purchaser's Purchase Order ("Purchase Order") and no other terms and conditions will apply.

Pricing and Payment:

Payment to be 100% prepayment of goods before shipment unless a credit application has been completed and an extension of credit has been approved. Approved payment terms shall be due in full within thirty (30) days from invoice date. Pricing is in accordance with Brentwood's Proposal. Brentwood reserves the right to adjust the Proposal price at any future time due to raw material and/or labor cost fluctuations greater than +/- 3%.

Shipment and Title:

The shipment terms unless stated otherwise in Brentwood's Proposal will be EXWORKS. Risk of loss and title transfer at Brentwood's facility. Brentwood may, without liability or penalty, make partial shipments of Products to Purchaser.

Inspection and Claims:

Upon delivery of Product, Purchaser must inspect the Product for freight damage and must notify Brentwood in writing within five (5) days after delivery. Furthermore, Purchaser agrees to inspect and accept the Product within a reasonable timeframe. Brentwood may waive claims not made in accordance with the above terms in this section.

Default:

Purchaser's failure to make payment as agreed and according to invoices or Purchaser's failure to perform any of its other obligations under this Agreement constitutes a default. In the event of default, Brentwood will provide written Notice of the default (in accordance with the Notices section of this Agreement) to Purchaser. If Purchaser does not i) correct the default or ii) address how it plans to correct the default in writing to Brentwood within five (5) business days from receipt of Notice of default, Purchaser will remain in default and Brentwood may do any of the following, (i) exercise any and all other rights and remedies of a secured Party under Article 9 of the UCC or applicable law ; (ii) suspend any further Product deliveries or provision of services until Purchaser pays its obligations in full; iii) be excused from any of its performance obligations under this Agreement resulting from Purchaser's delays or inability to complete its obligations; iv) send Purchaser's past due invoice(s) to collections for nonpayment of obligations and report Purchaser's non-payment to appropriate credit agency.

Delays: :

Delays in project schedule beyond the expected ship date not caused by Brentwood which result in additional costs not included in quoted price may be invoiced by Brentwood to Purchaser.

Storage Fees:

Unless otherwise agreed upon by Brentwood and Purchaser, in the event Purchaser notifies Brentwood it cannot take delivery on the agreed upon delivery date on the face of Purchaser's Purchase Order, Brentwood will store the Product free of charge for up to thirty (30) days after the initially agreed delivery date. After the thirtieth (30th) day, Purchaser agrees to pay a monthly storage fee equal to one and one-half (1.5%) percent of the invoice price of the Product. The monthly storage fee will be due in full upon receipt of invoice for the storage fee regardless of whether Purchaser has been invoiced or has paid for the Product.

Termination:

Brentwood or Purchaser may terminate this Agreement if either Party defaults by materially breaching its obligations in this Agreement, provided the breaching Party does not commence correction of the breach within five (5) business days from receipt of written notice of default. The Parties will agree upon a reasonable amount of time to correct the breach. In the event the Party in default fails to correct the breach within the agreed upon time frame, the other Party may terminate the Agreement by providing written notification to the Party in default. In the event of termination, the Purchaser agrees to pay Brentwood cancellation charges in accordance with the table below based on the Purchase Order Value.

Contracted Shipment (weeks)	Elapsed Time – from date of Executed Purchase Order to date of Cancellation (weeks)															
	0 - 2	2.01 - 4	4.01 - 6	6.01 - 8	8.01 - 12	12.01 - 16	16.01 - 20	20.01 - 24	24.01 - 28	28.01 - 32	32.01 - 36	36.01 - 40	40.01 - 44	44.01 - 48	48.01 - 52	52.01 - 56
Up to 8	20	50	75	100												
8.01 - 12	15	40	60	80	100											
12.01 - 16	10	25	45	60	85	100										
16.01 - 20	10	15	25	45	65	85	100									
20.01 - 24	10	10	20	25	50	70	90	100								
24.01 - 28	10	10	15	20	25	50	70	90	100							
28.01 - 32	10	10	10	15	20	35	60	75	90	100						
32.01 - 36	10	10	10	15	20	25	50	60	85	95	100					
36.01 - 40	10	10	10	10	15	25	50	60	70	85	95	100				
40.01 - 44	10	10	10	10	15	25	45	55	65	80	90	95	100			
44.01 - 48	10	10	10	10	15	25	45	55	60	65	80	90	95	100		
48.01 - 52	10	10	10	10	15	20	40	50	55	60	70	85	90	95	100	
52.01 - 56	10	10	10	10	15	20	35	50	55	60	70	80	85	90	95	100

Changes:

Purchase Order changes are subject to Brentwood's written approval, and additional time and charges may apply. Brentwood will not be liable for any delays due to change order requests. Brentwood may make changes to its Product without obligation, apply or manufacture such changes in any Product manufactured prior thereto. Brentwood may make such changes to any ordered Product as does not, in Brentwood's reasonable judgment, interfere with the satisfactory operation of the Product.

Taxes:

All government charges upon the production, shipment or sale of the Product, including, without limitation, sales, use, occupation, export and import taxes, and any other impositions by any government whatsoever, direct or indirect, including those required to be collected by Brentwood, will be paid by Purchaser or, in lieu thereof, Purchaser will furnish Brentwood with an exemption certificate acceptable to the taxing authority. Brentwood reserves and Purchaser disclaims all rights to drawback of duties paid on materials used in the manufacture of the Product. Purchaser will supply Brentwood with proof of exportation and all other documents necessary and otherwise cooperate to obtain payment thereof.

Returns:

No Product may be returned for credit or otherwise unless Purchaser receives Brentwood's authorization. Product authorized for return or credit must be returned in good condition, in its original packaging with completed identification and with all supporting documentation detailing of any claimed defect as required by Brentwood. All shipping and freight charges shall be prepaid by the Purchaser. The returned Product may be subject to a restocking charge of 30%.

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Warranty:
Brentwood warrants against defects in materials and workmanship. Warranty coverage is contingent on proper storage, installation, use, operation, maintenance, and shutdown procedures, all occurring under ordinary conditions and in compliance with good industry standards, the approved design criteria, Brentwood's approved Submittal and Operation and Maintenance Manual. The Warranty period shall be limited to twelve (12) months from Product shipment. The terms of this Warranty shall be modified only through written agreement by an authorized Brentwood employee. The remedy for a covered defect during the Warranty period shall be limited, at Brentwood's option and control, to repair or replacement of defective Parts and Components, including shipping costs. The remedy excludes costs of labor, removal of non-conforming Products, and expenses related to installation of the replacement Products.
THE TERMS OF THIS WARRANTY ARE THE SOLE AND EXCLUSIVE OBLIGATION OF BRENTWOOD TO PURCHASER OR THIRD PARTY FOR CLAIMS RELATED TO THE PRODUCT. UNDER NO CIRCUMSTANCE SHALL BRENTWOOD BE LIABLE TO ANY PERSON OR ENTITY FOR ANY INCIDENTIAL, CONSEQUENTIAL, SPECIAL, OR INDIRECT DAMAGES OR ANY OTHER LOSS, COST, OR EXPENSE OTHER THAN SPECIFICALLY STATED IN THIS WARRANTY. OTHER THAN THE EXPRESS LIMITED WARRANTIES MADE HEREIN, BRENTWOOD EXPRESSLY DISCLAIMS ANY AND ALL OTHER WARRANTIES, EXPRESS OR IMPLIED BY LAW, WITH RESPECT TO ANY SERVICE OR DELIVERABLE, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AS WELL AS ANY WARRANTIES WHICH MAY ARISE FROM PRIOR COURSE OF DEALING, CUSTOM, TRADE USAGE, PROVISION OF SAMPLES, PRODUCT LITERATURE OR WEBSITE CONTENT.

Limitation of Liability:
REGARDLESS OF THE FORM OF ACTION, BRENTWOOD'S LIABILITY RELATING TO THE PRODUCT OR THE MANUFACTURE, SHIPPING, SALE OR USE OF THE PRODUCT SHALL NOT EXCEED THE PRICE PAID BY PURCHASER FOR THE SPECIFIC PRODUCT GIVING RISE TO THE CAUSE OF ACTION. BRENTWOOD, ITS AFFILIATES, AND THEIR OFFICERS, DIRECTORS, EMPLOYEES AND AGENTS SHALL NOT BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, EXEMPLARY, PUNITIVE OR CONSEQUENTIAL DAMAGES, INCLUDING, WITHOUT LIMITATION, LOSS OF PROFITS, LOSS OF USE, DOWNTIME, FAILURE TO DETECT ANY FLAW IN ANY SUBJECT MATTER OF ANY TEST, LOSS OF GOODWILL, BUSINESS INTERRUPTION, DELAY IN PERFORMANCE, OR LOST OPPORTUNITIES. REGARDLESS OF THE FORM OF ACTION, WHETHER IN CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT PRODUCT LIABILITY OR OTHERWISE IN CONNECTION WITH THE SUPPLY OR SUBSEQUENT USE OR POSSIBILITY OF SUCH DAMAGES.

Indemnification:
Purchaser will at all times indemnify, defend and hold harmless Brentwood, its officers, directors, employees, agents, servants and representatives from and against any and all damages, liabilities, losses, claims, suits, penalties, fines, costs, and expenses, including attorneys' fees (collectively, "Claims") arising directly or indirectly out of or in connection with any (a) infringement or misappropriation of any patent, trademark, or other intellectual property right, including third Party rights, arising from Brentwood's adherence to Purchaser's Specifications; (b) use, operation or possession of Brentwood Product, except to the extent the Claim arises from the gross negligence or willful misconduct of Brentwood; or (c) breach by Purchaser of any provision of any Agreement with or obligation to Brentwood.

Brentwood will at all times indemnify, defend and hold harmless Purchaser from and against loss, injury, damage and liability arising directly in connection with bodily injury death, or destruction of tangible or real property, including loss of use directly resulting from or caused by Brentwood or Brentwood's product, its negligent act, error, omission or for damages arising from Brentwood's gross negligence or willful misconduct in performance of its obligations under this Agreement. Claims and damages are limited to Brentwood's proportionate percentage of negligence and/or fault.

Insurance:
Brentwood will maintain and carry insurance including, but not limited to Commercial General Liability in a sum of $1,000,000 per occurrence and Workers Compensation in amounts as required by applicable statute. Additional coverages may be available. Upon request, Brentwood will provide to Purchaser a certificate of insurance evidencing its coverages.

Confidential Information:
All non-public, confidential and proprietary information ("Confidential Information"), whether disclosed orally or reduced to writing, whether or not marked or otherwise designated or not identified as such. Confidential Information does not include information which: (i) is or becomes available to the public generally (other than as a result of a disclosure by the Purchaser in violation of this Agreement); (ii) is subject to public disclosure under any federal, state or local law, ordinance or regulation; (iii) becomes available to Purchaser on a non-confidential basis from a source other than Brentwood; or (iv) was known by or was available to Purchaser prior to or at the time Brentwood disclosed it.

Purchaser agrees to protect and safeguard all Confidential Information with at least the same degree of care as the Purchaser would protect its own Confidential Information, but in no event with less than a commercially reasonable degree of care. Purchaser shall hold all Confidential Information in confidence and shall disclose it only to its employees needing to use the Confidential Information for the limited purposes of this Agreement and said employees shall be bound to the confidentiality Terms of this Agreement. No other disclosure of Confidential Information is allowed unless written permission is granted by Brentwood. Purchaser agrees not to use Brentwood's Confidential Information for any purpose other than this Agreement. Purchaser agrees not to use the Confidential Information in any manner to Brentwood's detriment, including without limitation, to reverse engineer, disassemble, analyze, decompile, copy, modify, develop, or design.

Force Majeure:
Brentwood shall not be liable or responsible to Purchaser, nor be deemed to have defaulted under or breached this Agreement, for any failure or delay in fulfilling or performing any term of this Agreement to the extent Brentwood's failure or delay is caused by or results from a force majeure event, including, acts of God; flood, fire, earthquake, pandemics, disease outbreaks, explosions or other natural disasters; war, invasion, hostilities, terrorist acts, civil unrest; government orders or actions; embargoes or blockades in effect on or after the date of this Agreement; national emergency; strikes, labor stoppages or slowdowns, or other industrial disturbances; shortage of adequate raw materials, labor, power, or transportation facilities; and other similar events beyond the reasonable control of Brentwood.
Brentwood shall give notice within fourteen (14) days of the force majeure event or as soon as reasonably practicable to Brentwood, stating the period of time the occurrence is expected to continue. Brentwood shall use diligent efforts to end the failure or delay and ensure the effects of such are minimized. Brentwood shall resume the performance of its obligations as soon as reasonably practicable after the removal of the cause. In the event Brentwood remains unable to perform its obligations within ten (10) weeks from notice of force majeure event Purchaser may terminate the Agreement.

Governing Law and Jurisdiction:
This Agreement shall be construed under the laws of the Commonwealth of Pennsylvania without reference to conflicts of law principles. The Parties hereby agree that disputes hereunder shall be subject to the exclusive jurisdiction and venue of the courts of Berks County, Pennsylvania, in either the Pennsylvania Court of Common Pleas or the United States District Court for the Eastern District of Pennsylvania. The Purchaser waives any objections based on personal or subject matter jurisdiction or venue.

Export Control:
Purchaser will not use, distribute, transfer, or transmit any Product, components or technical information (even if incorporated into other products) provided in connection with this transaction except in compliance with U.S. export laws and regulations (the "Export Laws"). Purchaser will not, directly or indirectly export or re-export the following items to any country which is in the then-current list of prohibited countries specified in any applicable Export Laws: (a) the Product, components or technical data disclosed or provided to Purchaser by Brentwood; or (b) any improvements or variations of such Product, components or technical data. Purchaser agrees to promptly inform Brentwood in writing of any written authorization issued by the U.S. Department of Commerce office of export licensing to export or re-export any such items referenced in (a) or (b). The obligations stated above in this clause will survive the expiration, cancellation or termination of this Agreement.

Translation:
This document may be translated into one or more languages; however, the English translation shall be the official version and shall prevail over other translations. All dollar amounts are United States currency unless specified otherwise. Purchaser shall abide by the United States Foreign Corrupt Practices Act of 1997, as amended.

Assignment:
Purchaser shall not assign or delegate its obligation hereunder without Brentwood's written consent, and any attempted assignment or delegation without such written consent shall be void.

Waiver:
No waiver by Brentwood of any of the provisions of this Agreement is effective unless explicitly set forth in writing and signed by Brentwood. No failure to exercise, or delay in exercising, any right, remedy, power or privilege arising from this Agreement operates, or may be construed, as a waiver thereof. No single or partial exercise of any right, remedy, power or privilege hereunder precludes any other or further exercise thereof or the exercise of any other right, remedy, power or privilege.

610.374.5109
brentwoodindustries.com

Severability:
If any term or provision of this Agreement is invalid, illegal or unenforceable in any jurisdiction, such invalidity, illegality or unenforceability shall not affect any other term or provision of this Agreement or invalidate or render unenforceable such term or provision in any other jurisdiction.

Notices:
All notices, requests, consents, claims, demands, waivers and other communications hereunder (each, a "Notice") shall be in writing and addressed to the Parties at the addresses set forth on the face of the Proposal or to such other address that may be designated by the receiving Party in writing. All Notices shall be delivered by personal delivery, nationally recognized overnight courier (with all fees pre-paid or certified or registered mail (in each case, read receipt requested, postage prepaid). Except as otherwise provided in this Agreement, a Notice is effective only (a) upon receipt of the receiving Party, and (b) if the Party giving the Notice has complied with the requirements of this Section.

Authority:
The individual assenting to or executing any documents or orders, whether as a hard copy or, on behalf of Purchaser acknowledges, represents and warrants that he or she has read and understands these Terms and Conditions and has been duly authorized by the Purchaser to execute such on behalf of the Purchaser and bind the Purchaser to these Terms and Conditions.

Relationship of the Parties:
The relationship between the Parties is that of independent contractors. Nothing contained in this Agreement shall be construed as creating any agency, partnership, joint venture or other form of joint enterprise, employment or fiduciary relationship between the Parties, and neither Party shall have authority to contract for or bind the other Party in any manner whatsoever**.**

Survival:
Provisions of this Agreement which by their nature should apply beyond their terms will remain in force after any termination or expiration of this Agreement.

Amendment and Modification:
This Agreement may only be amended or modified in writing by Brentwood and executed by an authorized representative of each Party.

By signing below both Parties accept Brentwood Water Group (Water and Wastewater) Standard Terms and Conditions of Sale.

BRENTWOOD INDUSTRIES, INC.
By: _____
Print Name: _____
Title: _____
Brentwood Industries, Inc.

PURCHASER
By:_____
Print Name: _____
Title:_____
Company:_____

Jeremy Clowes

From: Brian Duong <brian.duong@atlascopco.com>
Sent: February 20, 2025 9:44 AM
To: Carly Tremblay
Subject: RE: Screw Blowers Quote

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Carly,
As a budgetary price for qty 2 units to match the existing units on site you can use a price of $128,750 per unit. You will also need to consider an additional $9,250 per each harmonic filter which would need to be included per blower. This works out to a total budgetary cost of $276,600.

Would you like me to put this into a formal budgetary proposal format? Or do you just need the numbers for now.

Best regards,

Brian Duong
Technical Sales Representative

Address: Unit 276, 2880 – 45 Avenue SE
T2B 3M1 - Calgary
Alberta, Canada

Phone: 780-238-4251
E-mail: brian.duong@atlascopco.com

Visit Atlas Copco at: http://www.atlascopco.com/en-ca
Follow us at: Facebook - LinkedIn - Twitter - YouTube - Instagram

Home of Industrial Ideas

From: Carly Tremblay <ctremblay@urbansystems.ca>
Sent: February 19, 2025 2:34 PM
To: Brian Duong <brian.duong@atlascopco.com>
Subject: RE: Screw Blowers Quote

Jeremy Clowes

From:	serviceemps@shawcable.com
Sent:	February 20, 2025 8:38 AM
To:	Carly Tremblay
Subject:	RE: Submersible Mixers Quote
Follow Up Flag:	Follow up
Flag Status:	Flagged

Good morning, Carly,

I spoke with Bob who handles our Flygt orders this morning about this, and he had been working on this with Bryan Mazda at the treatment plant. Here are the options he had provided...

Flygt Mixer w/ Jet Ring
4630.412.0524.
SR083705SJ 2.5/600/3 16m 316 FLS
Cost: $14,410.00 each + taxes FOB EMPS

Or

Flygt Mixer w/out Jet Ring
4630.412.0634
SR083705SF 2.5/600/3 16m 316 FLS
Cost: $11,793.00 each + taxes FOB EMPS

Delivery estimated 10-14 weeks. 50% deposit due at time of order.

We do not install the mixers, the guys at the treatment plant take care of this. In respect to related equipment, if it is a Flygt product we can provide, however, we would require the part #'s for whatever else it is you may need. When Bryan had reached out to Bob, he was only asking about the pumps as listed above.

Cheers,

Ryan Grantham
EMPS
ELECTRIC MOTOR & PUMP SERVICE LTD
PHONE: (250) 765-4998 FAX: (250) 765-3998
1-675 EVANS COURT, KELOWNA, BC V1X 6G4

* Delivery times are estimated only; EMPS is not responsible for delayed orders
* Re-stocking fee may be applied to items if returned new & unused

Jeremy Clowes

From:	Cassia Jean <cjean@ramtech.ca>
Sent:	March 7, 2025 9:16 AM
To:	Carly Tremblay
Cc:	Sales Management
Subject:	Re: Westside Kelowna WWTP Blowers and Screening
Attachments:	11-7516 E dwgs.pdf
Follow Up Flag:	Follow up
Flag Status:	Flagged

Hi Carly,

Please see below for Budgetary pricing to provide identical aeration to Grids 1-3 in Bio-reactors 5 & 6 as discussed is $230,917 CAD and includes:

Grid Type 1: (2) total grids, one per tank, each with:
- (1) 150 mm, 12 ga 304L SS Dropleg
- (1) 100 mm Sch 40 equivalent PVC Manifold
- (7) 100 mm Sewer Size SDR 24 (0.173") wall PVC Air Distributors
- (182) 9" SSII Membrane Disc Diffusers
- 304SS seismic supports

Grid Type 2: (2) total grids, one per tank, each with:
- (1) 150 mm, 12 ga 304L SS Dropleg
- (1) 100 mm Sch 40 equivalent PVC Manifold
- (6) 100 mm Sewer Size SDR 24 (0.173") wall PVC Air Distributors
- (138) 9" SSII Membrane Disc Diffusers
- 304SS seismic supports

Grid Type 3: (2) total grids, one per tank, each with:
- (1) 150 mm, 12 ga 304L SS Dropleg
- (1) 100 mm Sch 40 equivalent PVC Manifold
- (6) 100 mm Sewer Size SDR 24 (0.173") wall PVC Air Distributors
- (115) 9" SSII Membrane Disc Diffusers
- 304SS seismic supports

Misc.
- Estimated freight to jobsite (DAP per incoterms 2020)
- (3) days field service
- Seismic calcs for above grid types

Excluded
- Installation, OTE testing, air main
- Any and all items and services not specifically included.

Please note that the pricing and design are based on providing matching equipment to existing as shown in attached drawings. Design is not based on any provided criteria.

Let me know if you have any questions!

Cassia Jean
Applications Engineer E.I.T.
Typical Working Hours: 8:00am – 4:00pm PST/PDT
Ramtech Environmental Products

AB 403-221-8585 | BC 604-282-6358 | **Mobile 604-698-7603**
Mailing address and courier service: Mailbox #2468, 246 Stewart Green SW Calgary, Alberta T3H 3C8

From: Carly Tremblay <ctremblay@urbansystems.ca>
Sent: Thursday, March 6, 2025 1:56 PM
To: Cassia Jean <cjean@ramtech.ca>
Cc: Sales Management <salesmanagement@ramtech.ca>
Subject: RE: Westside Kelowna WWTP Blowers and Screening

Thank you, Cassia!

Thank you for the meeting this morning as well. That was perfect.

Cheers,

CARLY TREMBLAY (she/her/hers)
Communities and Municipal EIT | urbansystems.ca
t 778-699-2573 | c 250-864-3010

From: Cassia Jean <cjean@ramtech.ca>
Sent: March 6, 2025 11:49 AM
To: Carly Tremblay <ctremblay@urbansystems.ca>
Cc: Sales Management <salesmanagement@ramtech.ca>
Subject: Re: Westside Kelowna WWTP Blowers and Screening

Hi Carly,

Here's the links for the files I have regarding westside. Most of them are pulled from the UV bid but hopefully there's some info on the aeration as it was around the same time.

Tender specs

Cassia Jean
Applications Engineer E.I.T.
Typical Working Hours: 8:00am – 4:00pm PST/PDT

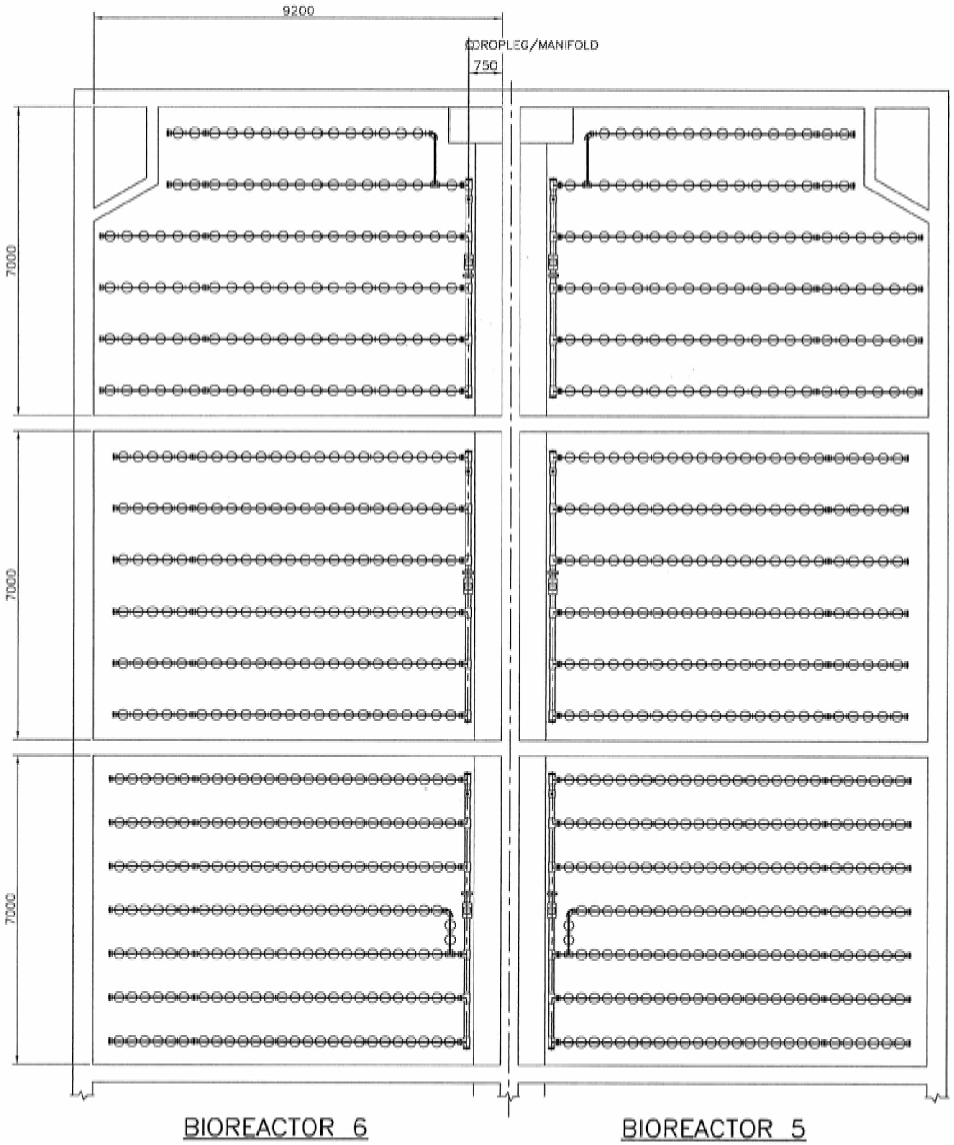
8/3/2011

APPROVED FOR CONSTRUCTION

4/24 REVERSIBLE DISC AERATION SYSTEM MATERIAL AND MANUFACTURING SPECIFICATIONS (304L, PVC)

ITEM	MATERIAL SPECIFICATION	MANUFACTURING SPECIFICATION	NOTES
DROPLEG	304L STAINLESS STEEL ASTM A240	FITTINGS: ASTM A774 TUBULAR PRODUCTS: ASTM A778 DIMENSIONS: ASTM A554	150# DRILLED FOR TERMINATION FLANGE CONNECTION. SCH 10S PIPE AND CUT WALL THICKNESS ON DROPLEG. *SEE BELOW
SUPPORTS	[illegible]	———	"L" GRADE NOT REQUIRED FOR NON-WELDED PARTS
BOLTS, NUTS, WASHERS	18-8 STAINLESS STL.	———	———
FIXED JOINT O-RING	NATURAL RUBBER/SBR	———	45 ± 5 DUROMETER SHORE A COMPRESSION SET 5% MAX
LOWER DROPLEG AND MANIFOLDS	PVC, ASTM D1784 COMPOUND 12454-B	PIPE: ASTM D1785 FITTINGS: ASTM D2466	———
AIR DISTRIBUTORS	PVC, ASTM D3915 COMPOUND 124524	PIPE: ASTM D3034 FITTINGS: ASTM D3034	MINIMUM 2% TITANIUM DIOXIDE
DIFFUSER HOLDER BASEPLATE, RETAINING RING	PVC, ASTM D3915 COMPOUND 125521	———	MINIMUM 2% TITANIUM DIOXIDE
DIFFUSER ELEMENT	EPDM	———	———
PVC SOLVENT WELDING	ASTM D2564	ASTM D2855	———

*STAINLESS STEEL DROPLEG FABRICATION
FACTORY WELD ONLY WITH MIG, TIG, OR PLASMA-ARC WELDING INERT GAS PROCESSES. FULL PENETRATION BUTT WELDS. ER 316L FILLER WIRE. AFTER FABRICATION FINISH CLEAN ALL WELDED STAINLESS STEEL ASSEMBLIES BY FULL IMMERSION CLEANING TECHNIQUES IN ACCORDANCE TO 6.2.11 OF ASTM A380-06. THE ACID FOR USE DEFINED BY TABLE A2.1 OF ANNEX A2 OF ASTM A380. FINAL RINSE AND DRY IN ACCORDANCE TO SECTION 8.3 OF ASTM A380. ALL WELDED SURFACES TO CONFORM TO AISI NO. 2D FINISH.



GRID TYPE 3
SHEET 4

GRID TYPE 2
SHEET 3

GRID TYPE 1
SHEET 2

WARNING
SANITAIRE DOES NOT ACCEPT RESPONSIBILITY FOR UNDOCUMENTED CUSTOMER INITIATED CHANGES TO ELECTRONICALLY TRANSMITTED DRAWINGS
07/28/11

VIEW,SECTION OR DETAIL NUMBER
2 / 3
SHEET NUMBER ON WHICH VIEW, SECTION OR DETAIL IS FOUND

BIOREACTORS 5 & 6
(1) REQ'D AS SHOWN
KEY PLAN (1)

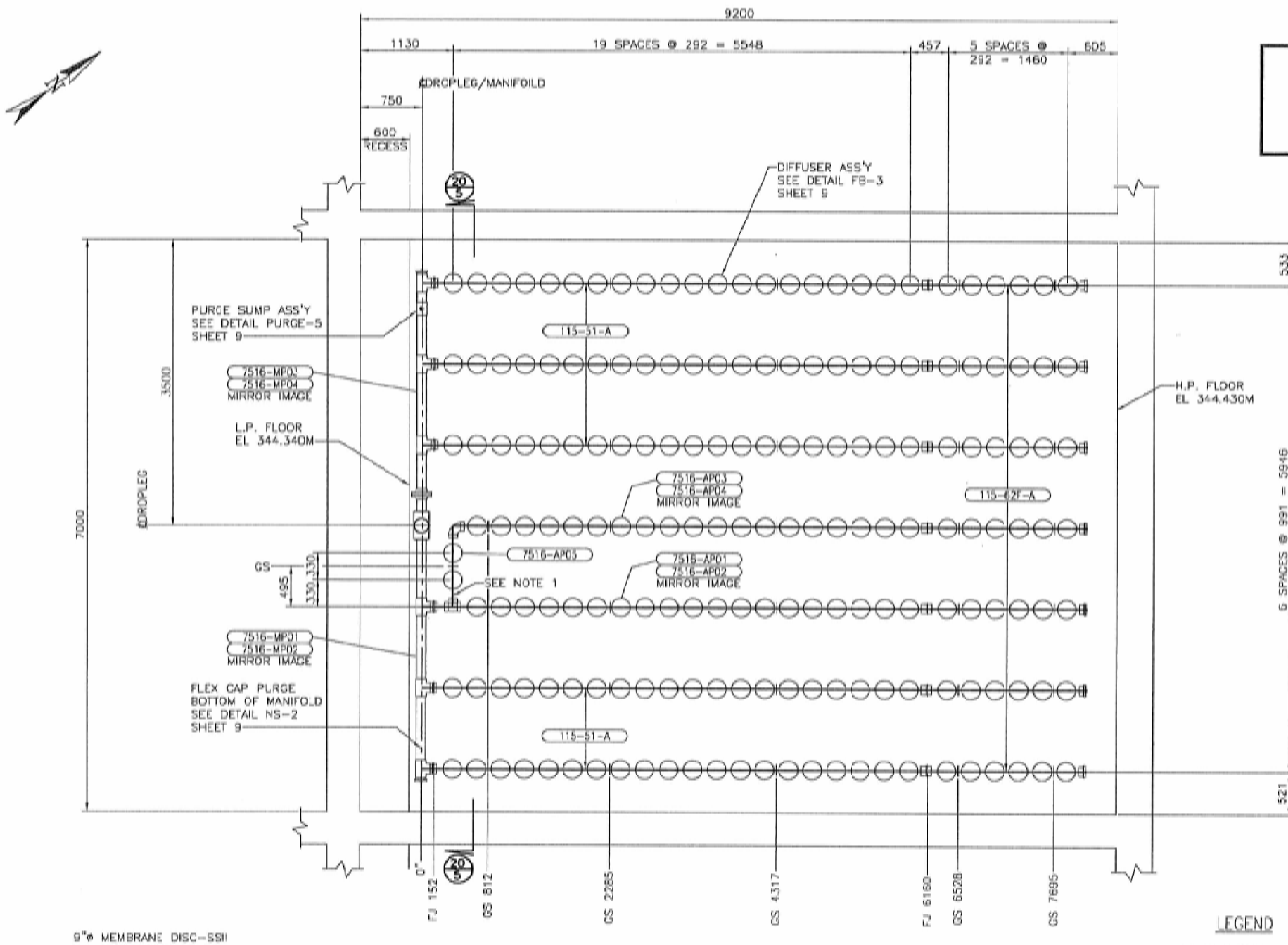
NO.	DATE	REVISION	BY
4			
3			
2			
1			

REGIONAL DISTRICT OF CENTRAL OKANAGAN
WESTSIDE REGIONAL WWTP
PROJECT NO. 114812
KELOWNA, BC, CANADA

BIOREACTORS 5 & 6
KEY PLAN

ITT Water & Wastewater
Sanitaire Products

DRWN BY BLF DATE 7-26-11 | EQUIP. MEM | JOB 11-7516SC
CHKD BY MM DATE 7-28-11 | STD. |
APPVD BY MM DATE 7-28-11 | SIZE D | REV. | DWG E-1 | SHT. 1 OF 9



WARNING

SANITAIRE DOES NOT ACCEPT RESPONSIBILITY FOR UNDOCUMENTED CUSTOMER INITIATED CHANGES TO ELECTRONICALLY TRANSMITTED DRAWINGS

07/28/11

NOTE: SUPPORT SPACING

Every attempt has been made to insure locational dimensions of the supports are correct. However, after one line of air distributor anchors for any grid type have been installed, the locations must be checked for proper clearances by installing the supplied air headers. Spacing between lines must be checked for fit with the cross manifold and drain line. Any discrepancies or interferences must be brought to the attention of SANITAIRE prior to further installation.

The actual support anchor locations must be indexed from the centerline of the manifold. The actual accumulative dimensional error from the manifold to the anchor bolt must not exceed ± 3/4".

NOTES:
1. CONTRACTOR TO CUT PIPE TO SUIT AND SOLVENT WELD AS REQ'D IN THE FIELD.

9"ø MEMBRANE DISC-SSII

GRID TYPE '1'

2 =TANK(S)
1 =GRID(S) PER TANK
7 =AIR DISTRIBUTORS PER GRID
VARIES =DIFFUSERS PER AIR DISTRIBUTOR
182 =DIFFUSERS PER GRID
364 =TOTAL DIFFUSERS INSTALLED FOR THIS GRID TYPE

GRID TYPE 1

BIOREACTOR 5 SHOWN
BIOREACTOR 6 MIRROR IMAGE

PLAN VIEW (5)

LEGEND

FJ= FIXED JOINT
SEE DETAIL FB-10A
SHEET 8

GS= GUIDE SUPPORT
SEE DETAIL SUP-2
SHEET 8

FOR TYPICAL AIR DISTRIBUTOR DETAIL
SEE DETAIL FB-22C
SHEET 8

NO.	DATE	REVISION	BY
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REGIONAL DISTRICT OF CENTRAL OKANAGAN
WESTSIDE REGIONAL WWTP
PROJECT NO. 114812
KELOWNA, BC, CANADA

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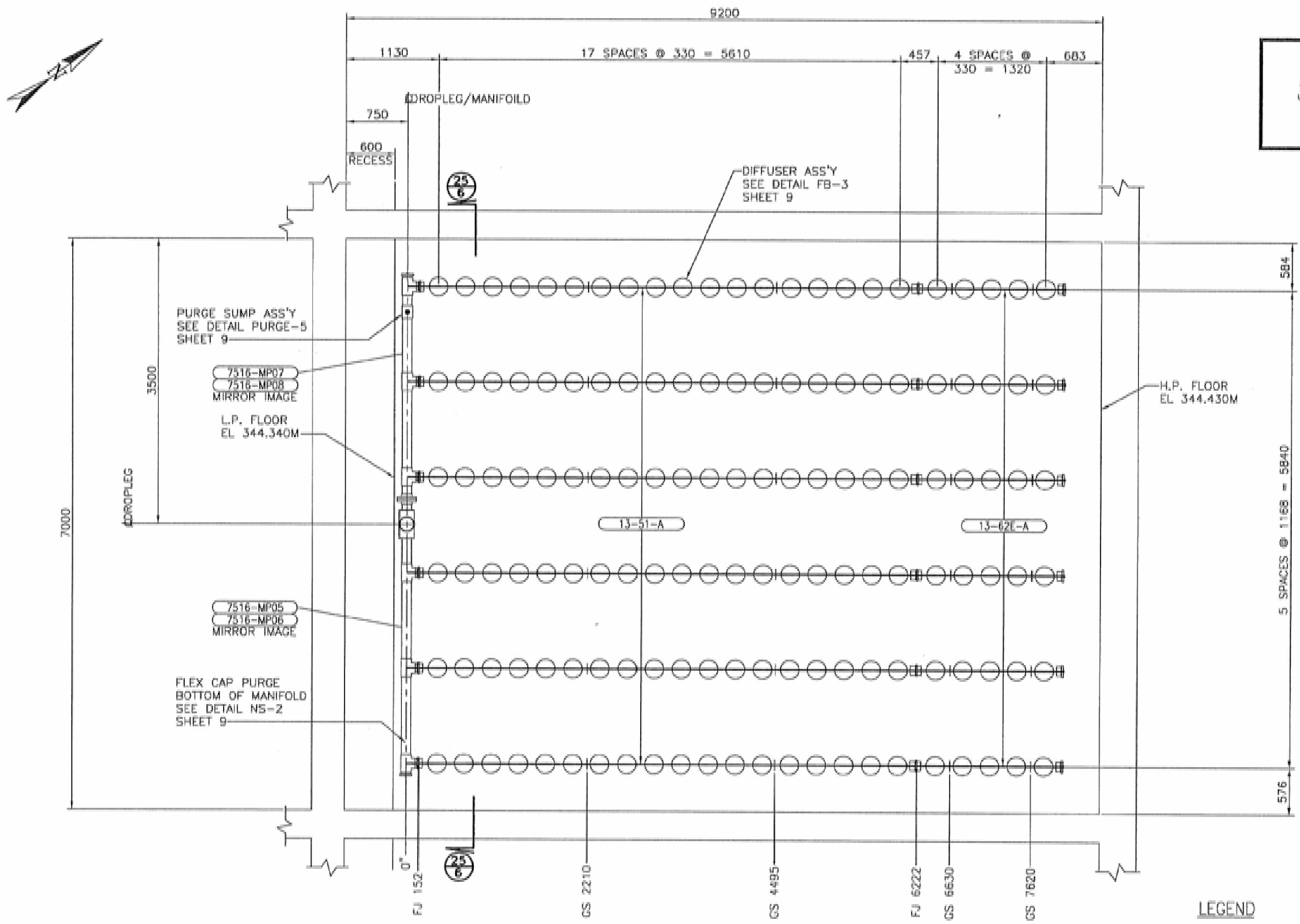
BIOREACTORS 5 & 6
GRID TYPE 1
PLAN VIEW

ITT
Water & Wastewater
Sanitaire Products

DRWN BY BLF	DATE 7-28-11	EQUIP. MDN	dwg 11-7516SC
CHKD BY MH	DATE 7-28-11	SCALE N/A	
APPVD BY MH	DATE 7-28-11	SIZE D REV.	dwg E-2

APPROVED FOR CONSTRUCTION



WARNING

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07/28/11

NOTE: SUPPORT SPACING

Every attempt has been made to insure locational dimensions of the supports are correct. However, after one line of air distributor anchors for any grid type have been installed, the locations must be checked for proper clearances by installing the supplied air headers. Spacing between lines must be checked for fit with the cross manifold and drain line. Any discrepancies or interferences must be brought to the attention of SANITAIRE prior to further installation.

The actual support anchor locations must be indexed from the centerline of the manifold. The actual accumulative dimensional error from the manifold to the anchor bolt must not exceed ± 3/4".

9"ø MEMBRANE DISC-SSII

GRID TYPE '2'

2-TANK(S)
1-GRID(S) PER TANK
6-AIR DISTRIBUTORS PER GRID
23-DIFFUSERS PER AIR DISTRIBUTOR
138-DIFFUSERS PER GRID
276-TOTAL DIFFUSERS INSTALLED FOR THIS GRID TYPE

GRID TYPE 2

BIOREACTOR 5 SHOWN
BIOREACTOR 6 MIRROR IMAGE

PLAN VIEW (10)

LEGEND

FJ- FIXED JOINT
SEE DETAIL FB-10A
SHEET 8

GS- GUIDE SUPPORT
SEE DETAIL SUP-2
SHEET 8

FOR TYPICAL AIR DISTRIBUTOR DETAIL
SEE DETAIL FB-22C
SHEET 8

NO.	DATE	REVISION	BY
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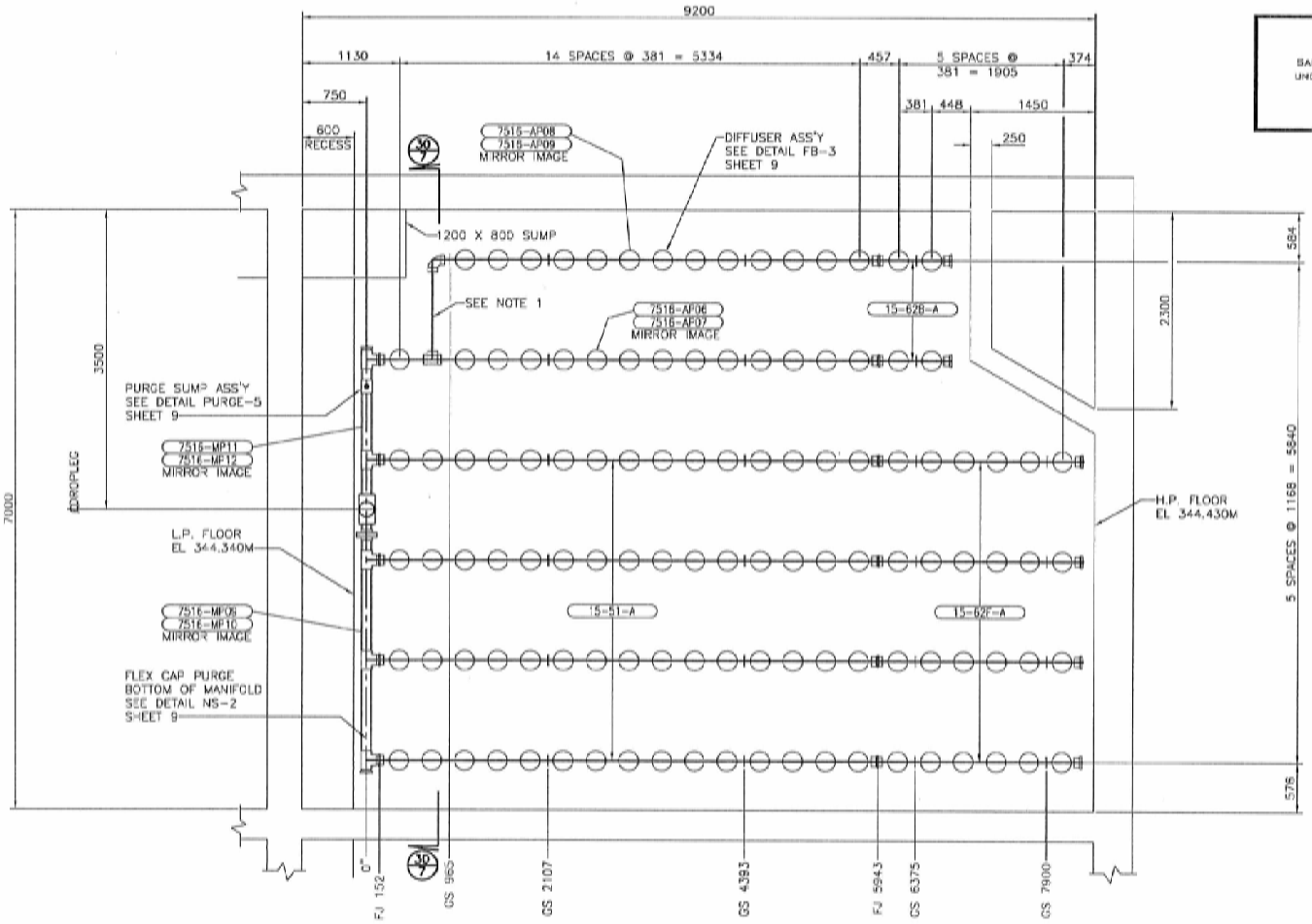
REGIONAL DISTRICT OF CENTRAL OKANAGAN
WESTSIDE REGIONAL WWTP
PROJECT NO. 114812
KELOWNA, BC, CANADA

BIOREACTORS 5 & 6
GRID TYPE 2
PLAN VIEW

ITT Water & Wastewater
Sanitaire Products

JOB 11-7516SC
DWG E-3
SHT 3 OF 9



WARNING

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07/28/11

NOTE: SUPPORT SPACING

Every attempt has been made to insure locational dimensions of the supports are correct. However, after one line of air distributor anchors for any grid type have been installed, the locations must be checked for proper clearances by installing the supplied air headers. Spacing between lines must be checked for fit with the cross manifold and drain line. Any discrepancies or interferences must be brought to the attention of SANITAIRE prior to further installation.

The actual support anchor locations must be indexed from the centerline of the manifold. The actual accumulative dimensional error from the manifold to the anchor bolt must not exceed ± 3/4".

NOTES:
1. CONTRACTOR TO CUT PIPE TO SUIT AND SOLVENT WELD AS REQ'D IN THE FIELD.

9"ø MEMBRANE DISC-SSII
GRID TYPE 3

2 - TANK(S)
1 - GRID(S) PER TANK
6 - AIR DISTRIBUTORS PER GRID
VAR ES - DIFFUSERS PER AIR DISTRIBUTOR
115 - DIFFUSERS PER GRID
230 - TOTAL DIFFUSERS INSTALLED FOR THIS GRID TYPE

GRID TYPE 3
BIOREACTOR 5 SHOWN
BIOREACTOR 6 MIRROR IMAGE
PLAN VIEW (15)

LEGEND

FJ= FIXED JOINT
SEE DETAIL FB-10A
SHEET 8

GS= GUIDE SUPPORT
SEE DETAIL SUP-2
SHEET 8

FOR TYPICAL AIR DISTRIBUTOR DETAIL
SEE DETAIL FB-22C
SHEET 8

NO.	DATE	REVISION	BY
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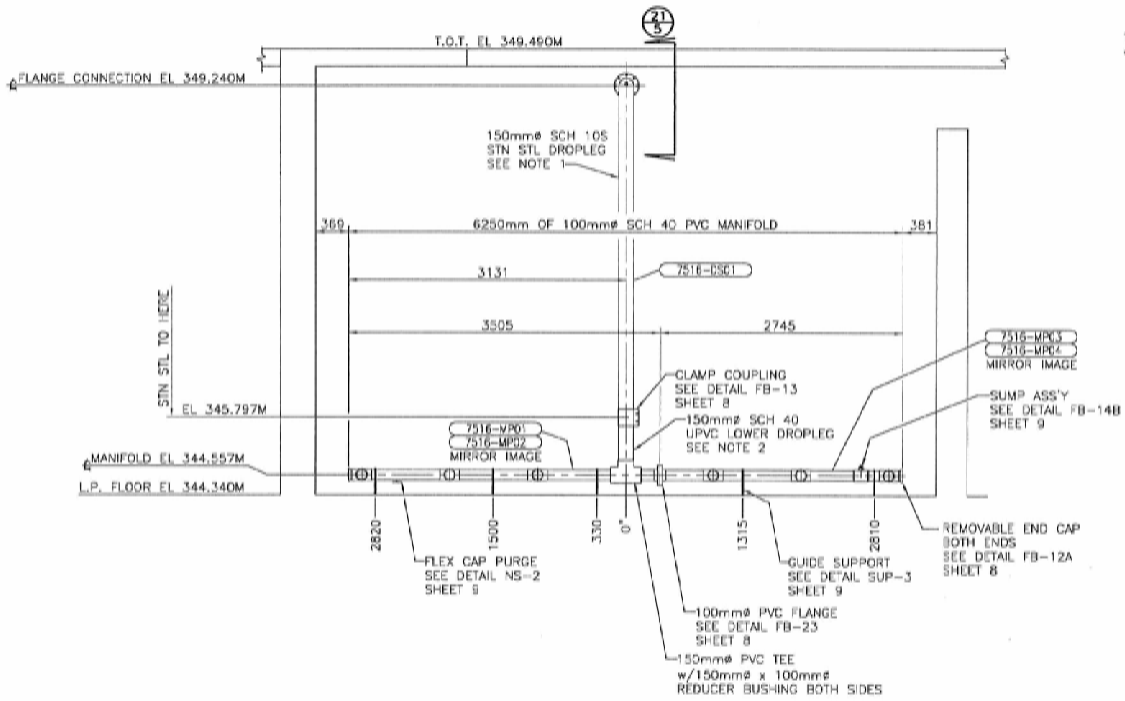
REGIONAL DISTRICT OF CENTRAL OKANAGAN
WESTSIDE REGIONAL WWTP
PROJECT NO. 114812
KELOWNA, BC, CANADA

BIOREACTORS 5 & 6
GRID TYPE 3
PLAN VIEW

ITT
Water & Wastewater
Sanitaire Products

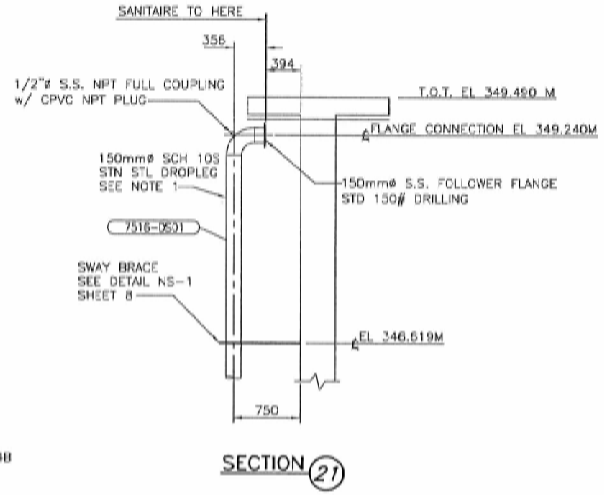
DRWN BY MLF	DATE 7-28-11	CHKD MEM	JOB 11-7516SC
CHKD BY RH	DATE 7-28-11	DES.	
APPVD BY RH	DATE 7-28-11	SCH B REV.	DWG E-4



DROPLEG/MANIFOLD–GRID TYPE 1

BIOREACTOR 5 SHOWN
BIOREACTOR 6 MIRROR IMAGE

SECTION (20)



SECTION (21)

NOTES:

1. INSTALLATION OF THE DROPLEG REQUIRES A PROPERLY SUPPORTED AIR MAIN AND CONNECTION.
2. UPVC DROPLEG WILL BE SHIPPED TO JOBSITE 152 mm LONGER THAN REQUIRED, TO ACCOUNT FOR TANK VARIANCES. CONTRACTOR TO CUT TO SUIT AND SOLVENT WELD INTO MANIFOLD TO MAINTAIN 3 mm MAXIMUM GAP BETWEEN STAINLESS STEEL AND UPVC DROPLEGS.

WARNING

SANITAIRE DOES NOT ACCEPT RESPONSIBILITY FOR UNDOCUMENTED ELASTOMER INITIATED CHANGES TO ELECTRONICALLY TRANSMITTED DRAWINGS

07/28/11

NO.	DATE	REVISION	BY
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REGIONAL DISTRICT OF CENTRAL OKANAGAN
WESTSIDE REGIONAL WWTP
PROJECT NO. 114812
KELOWNA, BC, CANADA

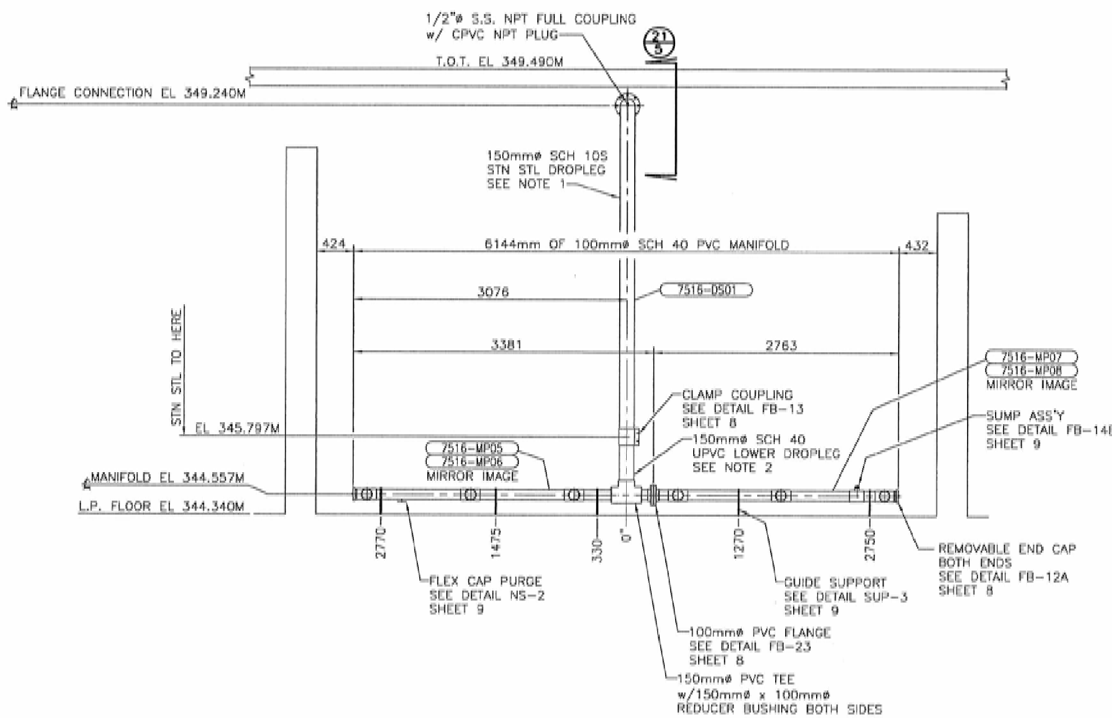
BIOREACTORS 5 & 6
GRID TYPE 1
DROPLEG/MANIFOLD SECTION

ITT
Water & Wastewater
Sanitaire Products

DRWN BY SLF	DATE 7-28-11	CHKD MEM	JOB 11-75165C
CHKD BY TBH	DATE 7-28-11	SHT	
APPD BY TBH	DATE 7-28-11	SIZE D REV	DWG E-5

8/3/2011

APPROVED FOR CONSTRUCTION



DROPLEG/MANIFOLD-GRID
TYPE 2
BIOREACTOR 5 SHOWN
BIOREACTOR 6 MIRROR IMAGE
SECTION 25

NOTES:

1. INSTALLATION OF THE DROPLEG REQUIRES A PROPERLY SUPPORTED AIR MAIN AND CONNECTION.
2. UPVC DROPLEG WILL BE SHIPPED TO JOBSITE 152 mm LONGER THAN REQUIRED, TO ACCOUNT FOR TANK VARIANCES. CONTRACTOR TO CUT TO SUIT AND SOLVENT WELD INTO MANIFOLD TO MAINTAIN 3 mm MAXIMUM GAP BETWEEN STAINLESS STEEL AND UPVC DROPLEGS.

WARNING

SANITAIRE DOES NOT ACCEPT RESPONSIBILITY FOR UNDOCUMENTED CUSTOMER INITIATED CHANGES TO ELECTRONICALLY TRANSMITTED DRAWINGS

07/28/11

NO.	DATE	REVISION	BY
4			
3			
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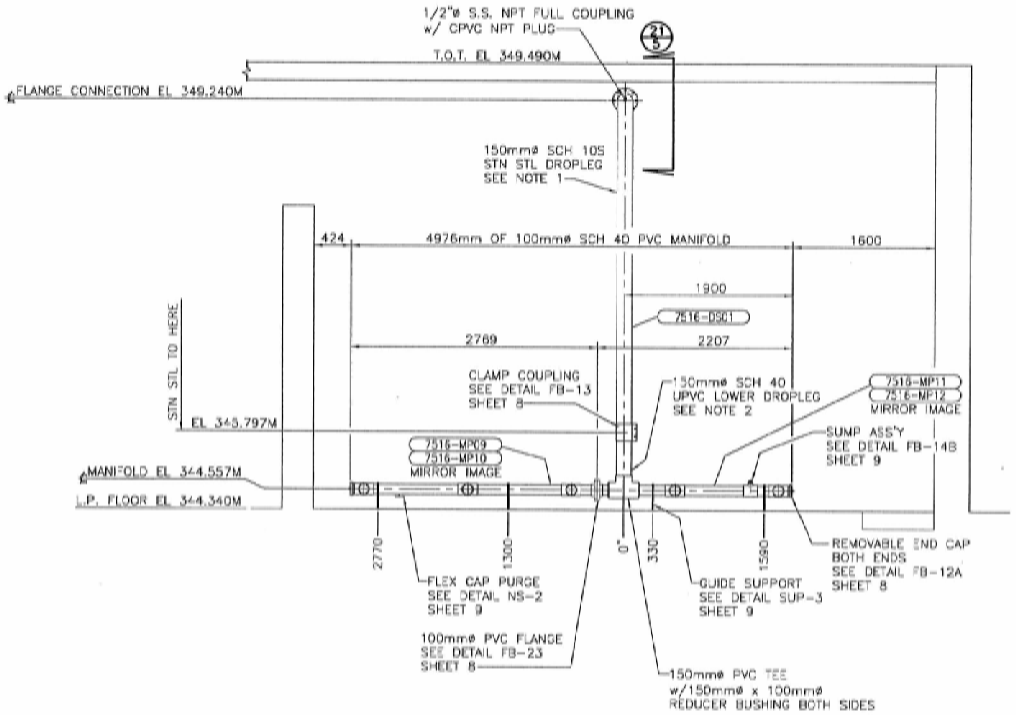
1			

REGIONAL DISTRICT OF CENTRAL OKANAGAN
WESTSIDE REGIONAL WWTP
PROJECT NO. 114812
KELOWNA, BC, CANADA

BIOREACTORS 5 & 6
GRID TYPE 2
DROPLEG/MANIFOLD SECTION

ITT Water & Wastewater
Sanitaire Products

11-7516SC
E-6
6 OF 9



DROPLEG/MANIFOLD-GRID TYPE 3

BIOREACTOR 5 SHOWN
BIOREACTOR 6 MIRROR IMAGE

SECTION 30

NOTES:

1. INSTALLATION OF THE DROPLEG REQUIRES A PROPERLY SUPPORTED AIR MAIN AND CONNECTION.
2. UPVC DROPLEG WILL BE SHIPPED TO JOBSITE 152 mm LONGER THAN REQUIRED, TO ACCOUNT FOR TANK VARIANCES. CONTRACTOR TO CUT TO SUIT AND SOLVENT WELD INTO MANIFOLD TO MAINTAIN 3 mm MAXIMUM GAP BETWEEN STAINLESS STEEL AND UPVC DROPLEGS.

NO.	DATE	REVISION	BY
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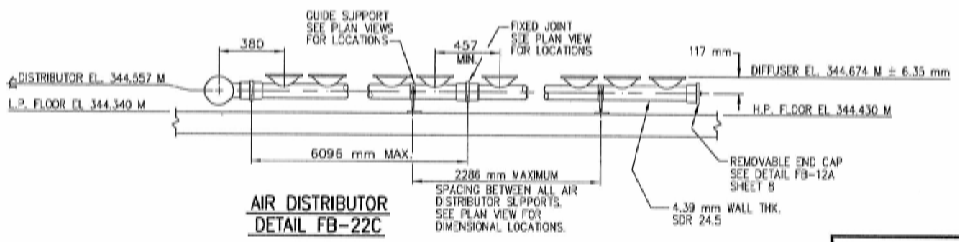
REGIONAL DISTRICT OF CENTRAL OKANAGAN
WESTSIDE REGIONAL WWTP
PROJECT NO. 114812
KELOWNA, BC, CANADA

BIOREACTORS 5 & 6
GRID TYPE 3
DROPLEG/MANIFOLD SECTION

ITT
Water & Wastewater
Sanitaire Products

DRAWN BY MF	DATE 7-28-11	CHKD. MM	JOB 11-7516SC
CHKD BY MM	DATE 7-28-11	APVD.	
APPVD BY MM	DATE 7-28-11	SIZE D	DWG E-7

SHT 9 OF 9

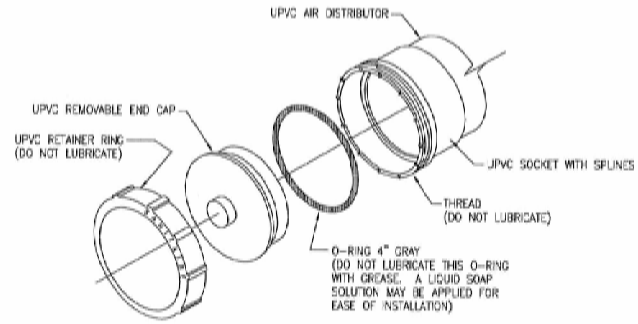


AIR DISTRIBUTOR
DETAIL FB-22C

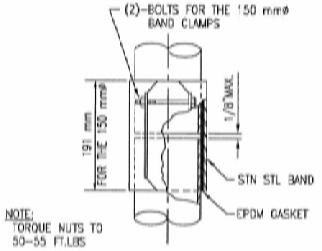
WARNING

SANITAIRE DOES NOT ACCEPT RESPONSIBILITY FOR UNDOCUMENTED CUSTOMER INITIATED CHANGES TO ELECTRONICALLY TRANSMITTED DRAWINGS

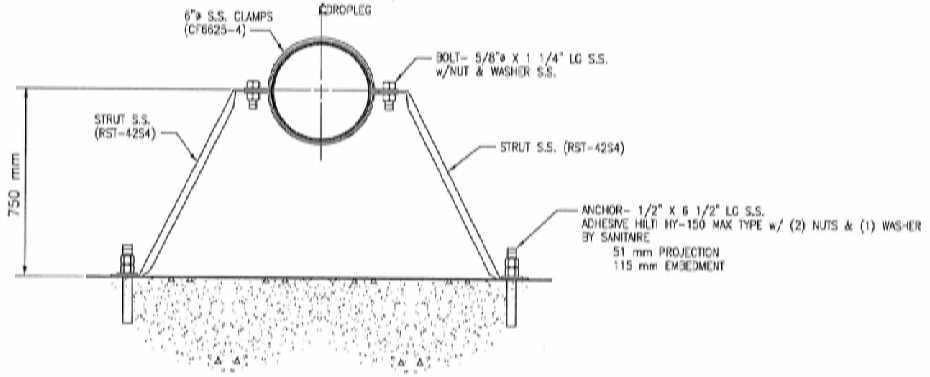
07/28/11



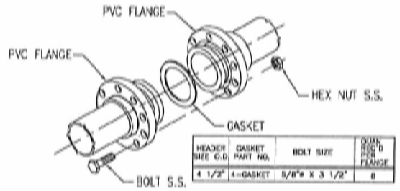
PVC REMOVABLE END CAP
DETAIL FB-12A



CLAMP COUPLING
DETAIL FB-13

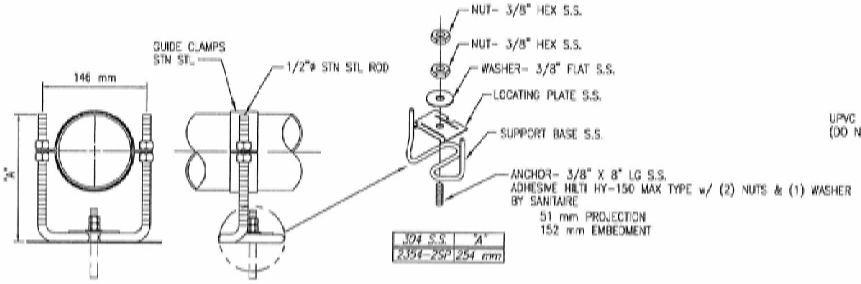


SWAY BRACE
DETAIL NS-1



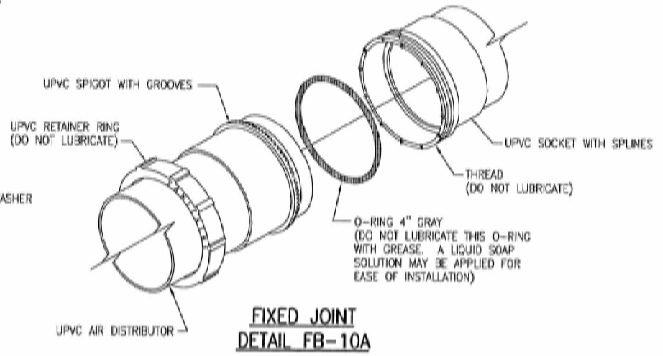
HEADER SIZE O.D.	GASKET PART NO.	BOLT SIZE	QUAN. PER FLANGE
4 1/2"	I-GASKET	5/8"ø X 3 1/2"	8

PVC FLANGE
DETAIL FB-23



304 S.S.	"A"
2354-25ø	254 mm

GUIDE SUPPORT
DETAIL SUP-2



FIXED JOINT
DETAIL FB-10A

NO.	DATE	REVISION	BY
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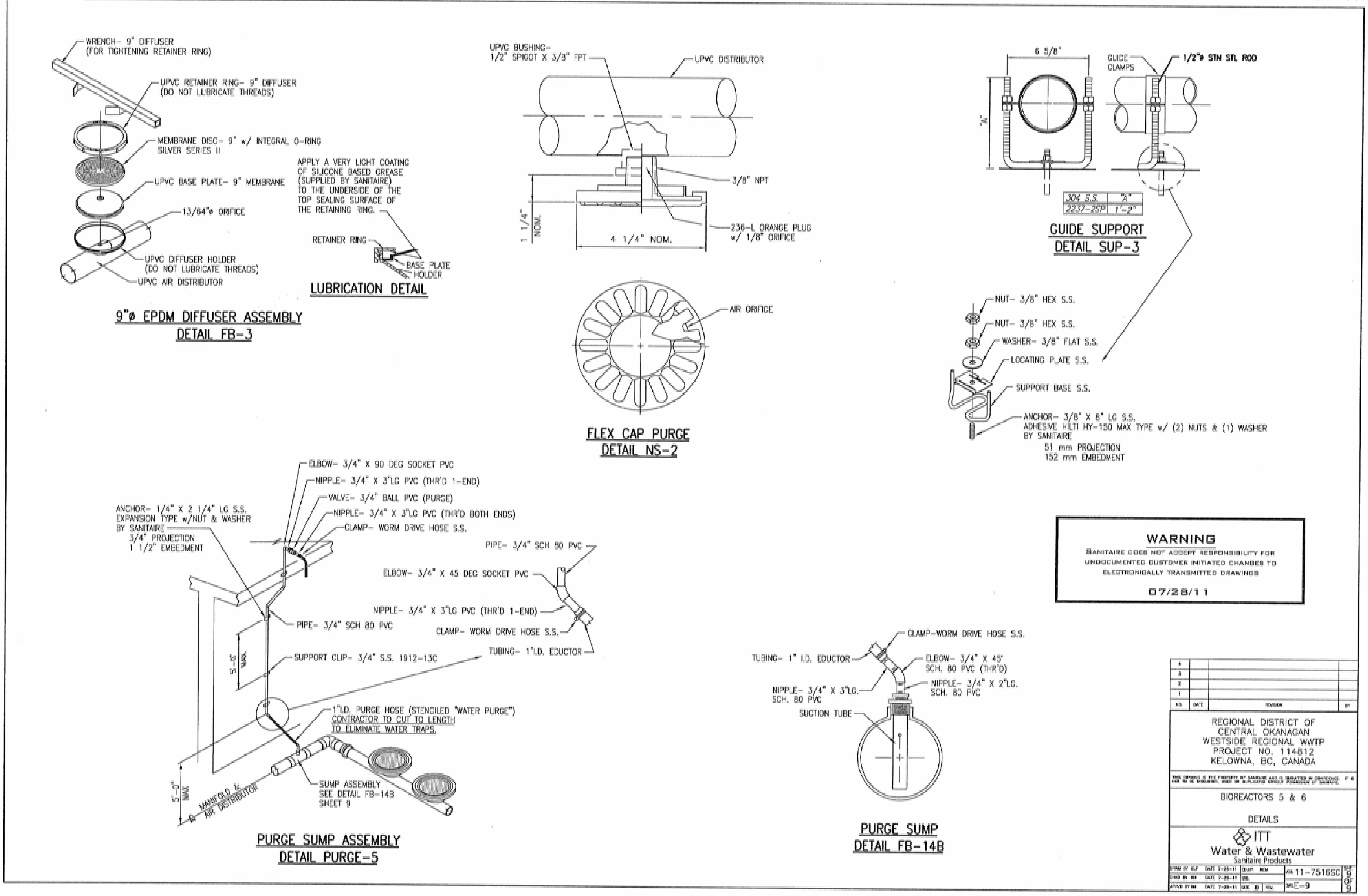
REGIONAL DISTRICT OF
CENTRAL OKANAGAN
WESTSIDE REGIONAL WWTP
PROJECT NO. 114812
KELOWNA, BC, CANADA

BIOREACTORS 5 & 6
TYPICAL DISTRIBUTOR DETAIL
& DETAILS

ITT
Water & Wastewater
Sanitaire Products

DRWN BY GLF	DTE 7-28-11	SCALE: NOM	11-7516SC
CHKD BY RH	DTE 7-28-11	SIZE	
APVD BY RH	DTE 7-28-11	SIZE D	REV. E-8


WRENCH- 9" DIFFUSER (FOR TIGHTENING RETAINER RING)
UPVC RETAINER RING- 9" DIFFUSER (DO NOT LUBRICATE THREADS)
MEMBRANE DISC- 9" w/ INTEGRAL O-RING SILVER SERIES II
UPVC BASE PLATE- 9" MEMBRANE
13/64"ø ORIFICE
UPVC DIFFUSER HOLDER (DO NOT LUBRICATE THREADS)
UPVC AIR DISTRIBUTOR
APPLY A VERY LIGHT COATING OF SILICONE BASED GREASE (SUPPLIED BY SANITAIRE) TO THE UNDERSIDE OF THE TOP SEALING SURFACE OF THE RETAINING RING.
RETAINER RING
BASE PLATE HOLDER
LUBRICATION DETAIL
9"ø EPDM DIFFUSER ASSEMBLY
DETAIL FB-3
UPVC BUSHING- 1/2" SPIGOT X 3/8" FPT
UPVC DISTRIBUTOR
3/8" NPT
236-L ORANGE PLUG w/ 1/8" ORIFICE
1 1/4" NOM.
4 1/4" NOM.
AIR ORIFICE
FLEX CAP PURGE
DETAIL NS-2
6 5/8"
"A"
GUIDE CLAMPS
1/2"ø STN STL ROD
304 S.S. | "A"
2237-2SP | 1'-2"
GUIDE SUPPORT
DETAIL SUP-3
NUT- 3/8" HEX S.S.
NUT- 3/8" HEX S.S.
WASHER- 3/8" FLAT S.S.
LOCATING PLATE S.S.
SUPPORT BASE S.S.
ANCHOR- 3/8" X 8" LG S.S. ADHESIVE HILTI HY-150 MAX TYPE w/ (2) NUTS & (1) WASHER BY SANITAIRE
51 mm PROJECTION
152 mm EMBEDMENT
ELBOW- 3/4" X 90 DEG SOCKET PVC
NIPPLE- 3/4" X 3"LG PVC (THR'D 1-END)
VALVE- 3/4" BALL PVC (PURGE)
NIPPLE- 3/4" X 3"LG PVC (THR'D BOTH ENDS)
CLAMP- WORM DRIVE HOSE S.S.
ANCHOR- 1/4" X 2 1/4" LG S.S. EXPANSION TYPE w/NUT & WASHER BY SANITAIRE
3/4" PROJECTION
1 1/2" EMBEDMENT
PIPE- 3/4" SCH 80 PVC
ELBOW- 3/4" X 45 DEG SOCKET PVC
NIPPLE- 3/4" X 3"LG PVC (THR'D 1-END)
CLAMP- WORM DRIVE HOSE S.S.
TUBING- 1"I.D. EDUCTOR
PIPE- 3/4" SCH 80 PVC
SUPPORT CLIP- 3/4" S.S. 1912-13C
5'-0" MAX
1"I.D. PURGE HOSE (STENCILED "WATER PURGE") CONTRACTOR TO CUT TO LENGTH TO ELIMINATE WATER TRAPS.
SUMP ASSEMBLY SEE DETAIL FB-14B SHEET 9
MANIFOLD & AIR DISTRIBUTOR
5'-0" MAX
PURGE SUMP ASSEMBLY
DETAIL PURGE-5
CLAMP-WORM DRIVE HOSE S.S.
TUBING- 1" I.D. EDUCTOR
ELBOW- 3/4" X 45° SCH. 80 PVC (THR'D)
NIPPLE- 3/4" X 2"LG. SCH. 80 PVC
NIPPLE- 3/4" X 3"LG. SCH. 80 PVC
SUCTION TUBE
PURGE SUMP
DETAIL FB-14B
WARNING
SANITAIRE DOES NOT ACCEPT RESPONSIBILITY FOR UNDOCUMENTED CUSTOMER INITIATED CHANGES TO ELECTRONICALLY TRANSMITTED DRAWINGS
07/28/11
REGIONAL DISTRICT OF CENTRAL OKANAGAN
WESTSIDE REGIONAL WWTP
PROJECT NO. 114812
KELOWNA, BC, CANADA
BIOREACTORS 5 & 6
DETAILS
ITT
Water & Wastewater
Sanitaire Products
11-7516SC
E-9

Proposal

Westside Regional WWTP

British Columbia, Canada

Representative
Kevin Richardson
Waste'n WaterTech, Ltd.
Calgary, Alberta, Canada
kevin@watertech.ca
(403) 252-9056

Engineer
Urban Systems, Ltd.
Vancouver, British Columbia, Canada
(604) 235-1701

Owner
Regional District of Central Okanagan

Secondary Clarifier Mechanics

Contact
Brad Hansen
bhansen@westechwater.com
(801) 290-1197

Logan Kiefer
lkiefer@westechwater.com
(801) 290-1452

Proposal: 2560070.B_Rev1
Tuesday, March 11, 2025

WesTech®

Swire Water

Table of Contents

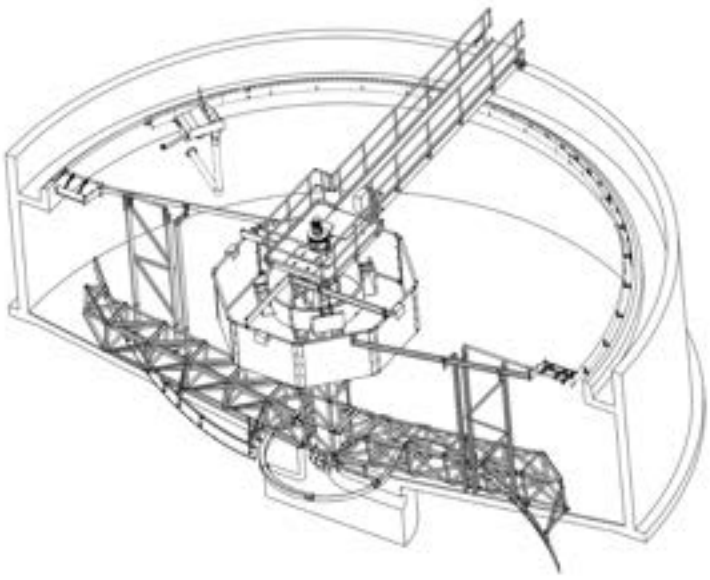
Item A – Clarifier Mechanisms, Model COPC2G

General Scope of Supply

Item	Unit	Value/Description
Number of Mechanisms	Each	2
Application	-	Activated Sludge Secondary
Tank Diameter	m	18
Tank Side Wall Depth	m	5.7
Tank Side Water Depth	m	5
Tank Bottom Slope	-	0.2
Average Flow Rate	m^3/day	4408.9
Design Flow Rate	m^3/day	5511.2
Max Flow Rate	m^3/day	8817.7
Peak Flow Rate	m^3/day	11022.0
Influent MLSS Concentration	mg/L	3000**
SVI	mL/g	130**

**Assumed Values

The WesTech COPC2 clarifier mechanism is designed specifically to treat secondary wastewater. It combines multiple proven components in an optimized combination that produces the highest quality effluent possible for secondary wastewater. WesTech's knowledgeable process engineers can assist in appropriate application and sizing, while our extensive installation list and ISO 9001 certified quality system ensure you of a consistently high-quality product.



The WesTech COPC2G Clarifier mechanism includes a Sludge Ring and Dual Gate EDI

Detailed Scope of Supply – Each Mechanism Includes the Following

Item	Qty	Size/Description	Material
Walkway Bridge	1	914.4mm wide Beam Bridge	Steel
Walkway Handrail	-	2 Rail Component Handrail, Machine Screw	Aluminum
Walkway Flooring	-	31.75mm Grating	Aluminum
Drive Platform	1	609.6mm Minimum Drive Clearance	Steel
Platform Handrail	-	2 Rail Component Handrail, Machine Screw	Aluminum
Platform Flooring	-	6.35mm Checker Plate	Aluminum
Center Column	1	609.6mm dia. x 6.35mm thick	Steel
Center Cage	1	0.91m Square	Steel
Dual Gate EDI	1	2.13m dia. x 0.76m deep x 4.76mm plate	Steel
Feedwell	1	4.27m dia. x 1.52m deep x 4.76mm plate	Steel
Full Radius Rake Arms	2	Box Truss w/ Spiral Scrapers	Steel
Sludge Withdrawal Ring	1	20% Tank Diameter w/ Evenly Spaced Ports	Steel
Skimmer Blade & Supports	2	Extends from feedwell to hinged skimmer	Steel
Hinged Skimmer Assembly	2	With neoprene wipers	HDG/304 SS/Alum
Scum Box & Supports	1	0.91m Scum Box	Steel
Scum Flushing Valve	1	Skimmer Actuated	Polymer/SS
Effluent Weir	1	228.6mm deep x 6.35mm thick	FRP
Scum Baffle & Supports	1	304.8mm deep x 6.35mm thick	FRP
Electrical Control Panel	1	NEMA 4X	304 SS
Drive Unit	1	See Drive Unit Table for description	
Anchor Bolts & Fasteners	-	-	304 SS

Electrical Control Panel

The clarifier controls will be housed in a single NEMA 4X, wall-mount, stainless steel enclosure with painted steel back panel, and mounting feet. Hand/Off/Auto switch, run light, motor overload light, drive cutout light, alarm silence and reset pushbuttons are provided on the door. The panel will contain a magnetic combination motor starter with externally reset thermal overloads, a main circuit breaker with rotary disconnect handle, fuses, fuse blocks, relays, timer, and other supporting hardware. A control power transformer will provide 120VAC for internal controls. The transformer will have both primary legs fused, and one secondary leg on a circuit breaker.

A top mounted, amber strobing alarm light and horn shall provide indication of a high torque condition. A door mounted reset pushbutton clears all interlocks after the high torque conditions have been removed.

The control panel is wired to accept a single 575VAC, 3 phase, 60 Hertz power feed from the customer. A 3-pole molded case circuit breaker with pad-lockable disconnect handle is provided for short circuit protection. All wiring for field connections will be brought to a terminal strip. All interconnecting wiring is to be by others.

Drive Unit

Description	Unit	Value/Description
Drive Type	C31	Cage Drive w/ Precision Bearing
Housing Material	-	Fabricated Steel
Continuous Rated Torque	Nm	19,931
Momentary Peak Torque	Nm	39,861
Rake Tip Speed	m/min	3.6
Motor Size	W	746
Motor Voltage/Frequency/Phase	V / Hz / Phase	575 / 60 / 3
Torque Control Settings	Alarm: Nm Motor Cutout: Nm	100%: 19,931 120%: 23,917
Main Gear and Pinion Lubrication	-	Oil
Main Bearing and Reducer Lubrication	-	Grease

Surface Preparation and Coating

Application Surfaces	Surface Preparation	Finish
Submerged	SSPC-SP10	One (1) Coat Tnemec N140-1255, 4-6 mils DFT, and One (1) Coat Tnemec N140-B5712, 4-6 mils DFT
Non-Submerged	SSPC-SP10	One (1) Coat Tnemec N140-1255, 4-6 mils DFT, and One (1) Coat Tnemec 1094, 3-5 mils DFT
Drive Unit	SSPC-SP10	One (1) coat Tnemec Series 21-1255 Epoxy, 4-8 mils DFT, and one (1) coat Tnemec Endura-Shield 1090-B5712 Polyurethane, 3-5 mils DFT

Approximate Weights

Item	Weight	Unit
Center Column	900	kg
Center Cage, Rake Arms, Spiral Rake Blades	2200	kg
Dual Gate EDI, Feedwell, Feedwell Supports	1700	kg
Standard Skimmer, Scum Box & Supports	750	kg
Bridge & Platform	750	kg
Drive Unit	1000	kg
Heaviest Single Item (Drive Unit)	**1000**	**kg**

Additional Services and Equipment

WesTech has included on-site technical assistance for inspection, observation of torque testing, startup, and instruction of plant personnel. Additional on-site services may be purchased at standard WesTech daily rates plus travel and living expenses.

On-Site Technical Service

Item	Quantity
Total Number of Trips	2
Total Number of Days	2

Items Not Included in WesTech's Base Scope of Supply (unless specifically noted)

- Access Stairs and Landings
- Concrete/Grout
- Concrete and Anchor Reinforcement
- Conduits and Wiring
- Erection or Assembly
- Lubricants
- Piping, Valves, or Fittings
- Unloading or Storage

Clarifications and Exceptions

General Clarifications

Terms & Conditions: This proposal, including all terms and conditions contained herein, shall become part of any resulting contract or purchase order. Changes to any terms and conditions, including but not limited to submittal and shipment days, payment terms, and escalation clause shall be negotiated at order placement, otherwise the proposal terms and conditions contained herein shall apply.

Escalation: If between the proposal date and actual procurement and through no fault of the Seller, the relevant cost of labor, material, freight, tariffs, and other Seller costs combined relating to the contract, increase by greater than 2.5% of the overall contract price, then the contract price shall be subject to escalation and increased. Such increase shall be verified by documentation and the amount of contract price escalation shall be calculated as either the actual increased cost to the Seller or, if agreed by the Parties, the equivalent increase of a relevant industry recognized third-party index, and in both cases without any additional profit or margin being added.

USA Tariffs and Current Trade Laws: All prices are based on current USA and North America tariffs and trade laws/agreements as of Jan 1, 2025. Any changes in costs due to USA Tariffs and trade laws/ agreements will be passed through to the purchaser at cost.

Paint: If your equipment has paint included in the price, please take note to the following. Primer paints are designed to provide only a minimal protection from the time of application (usually for a period not to exceed 30 days). Therefore, it is imperative that the finish coat be applied within 30 days of shipment on all shop primed surfaces. Without the protection of the final coatings, primer degradation may occur after this period, which in turn may require renewed surface preparation and coating. If it is impractical or impossible to coat primed surfaces within the suggested time frame, WesTech strongly recommends the supply of bare metal, with surface preparation and coating performed in the field. All field surface preparation, field paint, touch-up, and repair to shop painted surfaces are not by WesTech.

Exceptions

Not applicable

Commercial Proposal

Proposal Name: Westside Regional WWTP
Proposal Number: 2560070
Tuesday, March 11, 2025

1. Bidder's Contact Information

Company Name	WesTech Engineering, LLC
Primary Contact Name	Brad Hansen
Phone	(801) 265-1000
Email	bhansen@westechwater.com
Address: Number/Street	3665 S West Temple
Address: City, State, Zip	Salt Lake City, UT 84115

2. Budget Pricing

Currency: CAD

Scope of Supply

A	Clarifier Mechanisms, Model COPC2G	$958,200
	Taxes (sales, use, VAT, IVA, IGV, duties, import fees, etc.)	Not Included

Prices are valid for a period not to exceed 30 days from date of proposal.

Additional Field Service

Daily Rate (Applicable Only to Field Service Not Included in Scope)	$1,750

Pricing does not include field service unless noted in scope of supply but is available at the daily rate plus expenses. The greater of a two week notice or visa procurement time is required prior to departure date. Our field service policy is subject to change and can be provided upon request.

3. Payment Terms

Purchase Order Acceptance and Contract Execution	10%
Submittals Provided by WesTech	15%
Release for Fabrication	35%
Notification of Ready to Ship	40%

All payments are net 30 days. Partial shipments are allowed. An approved Letter of Credit is required if Incoterms CIF, CFR, DAP, CIP, or CPT are applicable. Payment is required in full for all other Incoterms prior to international shipment. Other terms per WesTech proforma invoice. Please note that the advising bank must be named as: Wells Fargo Bank, International Department, 9000 Flair Drive, 3rd Floor, El Monte, California 91731, USA.

4. Schedule

Submittals, after Purchase Order Acceptance and Contract Execution	10 to 12 weeks
Ready to Ship, after Receipt of Final Submittal Approval	26 to 28 weeks
Estimated Weeks to Ready to Ship	**36 to 40 weeks***

*Customer submittal approval is typically required to proceed with equipment fabrication and is not accounted for in the schedule above. Project schedule will be extended to account for time associated with receipt of customer submittal approval. Due to supply chain disruptions and volatility, delivery schedule is a best estimate only and may be improved or hampered based on date of contract execution, scope selection, and materials availability.

5. Freight

Incoterms 2020	DDP	
From	**Final Destination**	**Number of Trucks / Containers**
WesTech Shops	West Kelowna, BC, Canada	Approximately 7

One-Year Warranty

Equipment manufactured or sold by WesTech Engineering, LLC, once paid for in full, is backed by the following warranty:

Subject to the terms below, WesTech warrants all new equipment manufactured or sold by WesTech Engineering, LLC to be unencumbered and free from defects in material and workmanship, and WesTech will replace or repair, F.O.B. its factories or other location it chooses, any part or parts returned to WesTech which WesTech's examination and analysis determine have failed within the warranty period because of defects in material and workmanship. The warranty period is either, one calendar year immediately following start-up, or eighteen (18) months from when WesTech sent its ready-to-ship notification to the purchaser, whichever expires sooner. All repair or replacement parts qualifying under this warranty shall be free of charge. Purchaser will provide timely written notice to WesTech of any defects it believes should be repaired or replaced under this warranty. WesTech will reject as untimely any warranty defect claim that purchaser submits more than thirty (30) days after the possible warranty defect first occurred. Unless specifically stated otherwise, this warranty does not cover normal wear, consumables, or coatings. Purchasers are invited to inspect the equipment in the shop for proper surface preparation and coating application prior to shipment. This warranty is not transferable.

This warranty shall be void and shall not apply where the equipment or any part thereof

- has been dismantled, modified, repaired, or connected to other equipment, outside of a WesTech factory, or without WesTech's written approval, or
- has not been installed in complete adherence to all WesTech's or parts manufacturer's requirements, recommendations, and procedures, or
- has been subject to misuse, abuse, neglect, or accident, or has not at all times been operated and maintained in strict compliance with all of WesTech's requirements and recommendations therefor, including, but not limited to, the relevant WesTech Operations & Maintenance Manual and any other of WesTech's specified guidelines & procedures, or
- has been subject to force majeure events; use of chemicals not approved in writing by WesTech; electrical surges; overloading; significant power, water or feed supply fluctuations; or non-compliance with agreed feedwater or chemical volumes, specifications or procedures.

In any case where a part or component of equipment under this warranty is or may be faulty and the component or part is also covered under the warranty of a third party then the purchaser shall provide reasonable assistance to first pursue a claim under the third-party warranty before making a claim under this warranty from WesTech. WesTech Engineering, LLC gives no warranty with respect to parts, accessories, or components purchased other than through WesTech. The warranties which apply to such items are those offered by the respective manufacturers.

This warranty is expressly given by WesTech and accepted by purchaser in lieu of all other warranties whether written, oral, express, implied, statutory, or otherwise, including without limitation, warranties of merchantability and fitness for particular purpose. WesTech neither accepts nor authorizes any other person to assume for it any other liability with respect to its equipment. WesTech shall not be liable for normal wear and tear, corrosion, or any contingent, incidental, or consequential damage or expense due to partial or complete inoperability of its equipment for any reason whatsoever. The purchaser's exclusive and only remedy for breach of this warranty shall be the repair and or replacement of the defective part or parts within a reasonable time of WesTech's accepting the validity of a warranty claim made by the purchaser.

Terms and Conditions

Terms and Conditions appearing in any order based on this proposal which are inconsistent herewith shall not be binding on WesTech Engineering, LLC. The sale and purchase of equipment described herein shall be governed exclusively by the foregoing proposal and the following provisions:

1. SPECIFICATIONS: WesTech Engineering, LLC is furnishing its standard equipment as outlined in the proposal and as will be covered by final approved drawings. The equipment may not be in strict compliance with the Engineer's/Owner's plans, specifications, or addenda as there may be deviations. The equipment will, however, meet the general intention of the mechanical specifications of these documents.

2. ITEMS INCLUDED: This proposal includes only the equipment specified herein and does not include erection, installation, accessories, nor associated materials such as controls, piping, etc., unless specifically listed.

3. PARTIES TO CONTRACT: WesTech Engineering, LLC is not a party to or bound by the terms of any contract between WesTech Engineering, LLC's customer and any other party. WesTech Engineering, LLC's undertakings are limited to those defined in the contract between WesTech Engineering, LLC and its direct customers.

4. PRICE AND DELIVERY: All selling prices quoted are subject to change without notice after 30 days from the date of this proposal unless specified otherwise. Unless otherwise stated, all prices are F.O.B. WesTech Engineering, LLC or its supplier's shipping points. All claims for damage, delay or shortage arising from such equipment shall be made by Purchaser directly against the carrier. When shipments are quoted F.O.B. job site or other designation, Purchaser shall inspect the equipment shipped, notifying WesTech Engineering, LLC of any damage or shortage within forty-eight hours of receipt, and failure to so notify WesTech Engineering, LLC shall constitute acceptance by Purchaser, relieving WesTech Engineering, LLC of any liability for shipping damages or shortages.

5. PAYMENTS: All invoices are net 30 days. Delinquencies are subject to a 1.5 percent service charge per month or the maximum permitted by law, whichever is less on all past due accounts. Pro rata payments are due as shipments are made. If shipments are delayed by the Purchaser, invoices shall be sent on the date when WesTech Engineering, LLC is prepared to make shipment and payment shall become due under standard invoicing terms. If the work to be performed hereunder is delayed by the Purchaser, payments shall be based on the purchase price and percentage of completion. Products held for the Purchaser shall be at the risk and expense of the Purchaser. Unless specifically stated otherwise, prices quoted are for equipment only. These terms are independent of and not contingent upon the time and manner in which the Purchaser receives payment from the owner.

6. PAYMENT TERMS: Credit is subject to acceptance by WesTech Engineering, LLC's Credit Department. If the financial condition of the Purchaser at any time is such as to give WesTech Engineering, LLC, in its judgment, doubt concerning the Purchaser's ability to pay, WesTech Engineering, LLC may require full or partial payment in advance or may suspend any further deliveries or continuance of the work to be performed by the WesTech Engineering, LLC until such payment has been received.

7. ESCALATION: If between the proposal date and actual procurement and through no fault of the Seller, the relevant cost of labor, material, freight, tariffs, and other Seller costs combined relating to the contract, increase by greater than 2.5% of the overall contract price, then the contract price shall be subject to escalation and increased. Such increase shall be verified by documentation and the amount of contract price escalation shall be calculated as either the actual increased cost to the Seller or, if agreed by the Parties, the equivalent increase of a relevant industry recognized third-party index, and in both cases without any additional profit or margin being added.

8. APPROVAL: If approval of equipment submittals by Purchaser or others is required, a condition precedent to WesTech Engineering, LLC supplying any equipment shall be such complete approval.

9. INSTALLATION SUPERVISION: Prices quoted for equipment do not include installation supervision. WesTech Engineering, LLC recommends and will, upon request, make available, at WesTech Engineering, LLC's then current rate, an experienced installation supervisor to act as the Purchaser's employee and agent to supervise installation of the equipment. Purchaser shall at its sole expense furnish all necessary labor equipment, and materials needed for installation.

Responsibility for proper operation of equipment, if not installed by WesTech Engineering, LLC or installed in accordance with WesTech Engineering, LLC's instructions, and inspected and accepted in writing by WesTech Engineering, LLC, rests entirely with Purchaser; and any work performed by WesTech Engineering, LLC personnel in making adjustment or changes must be paid for at WesTech Engineering, LLC's then current per diem rates plus living and traveling expenses.

WesTech Engineering, LLC will supply the safety devices described in this proposal or shown in WesTech Engineering, LLC's drawings furnished as part of this order but excepting these, WesTech Engineering, LLC shall not be required to supply or install any safety devices whether required by law or otherwise. The Purchaser hereby agrees to indemnify and hold harmless WesTech Engineering, LLC from any claims or losses arising due to alleged or actual insufficiency or inadequacy of the safety devices offered or supplied hereunder, whether specified by WesTech Engineering, LLC or Purchaser, and from any damage resulting from the use of the equipment supplied hereunder.

10. ACCEPTANCE OF PRODUCTS: Products will be deemed accepted without any claim by Purchaser unless written notice of non-acceptance is received by WesTech Engineering, LLC within 30 days of delivery if shipped F.O.B. point of shipment, or 48 hours of delivery if shipped F.O.B. point of destination. Such written notice shall not be considered received by WesTech Engineering, LLC unless it is accompanied by all freight bills for said shipment, with Purchaser's notations as to damages, shortages and conditions of equipment, containers, and seals. Non-accepted products are subject to the return policy stated below.

11. TAXES: Any federal, state, or local sales, use or other taxes applicable to this transaction, unless specifically included in the price, shall be for Purchaser's account.

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12. TITLE: The equipment specified herein, and any replacements or substitutes therefore shall, regardless of the manner in which affixed to or used in connection with realty, remain the sole and personal property of WesTech Engineering, LLC until the full purchase price has been paid. Purchaser agrees to do all things necessary to protect and maintain WesTech Engineering, LLC's title and interest in and to such equipment; and upon Purchaser's default, WesTech Engineering, LLC may retain as liquidated damages any and all partial payments made and shall be free to enter the premises where such equipment is located and remove the same as its property without prejudice to any further claims on account of damages or loss which WesTech Engineering, LLC may suffer from any cause.

13. INSURANCE: From date of shipment until the invoice is paid in full, Purchaser agrees to provide and maintain at its expense, but for WesTech Engineering, LLC's benefit, adequate insurance including, but not limited to, builders risk insurance on the equipment against any loss of any nature whatsoever.

14. SHIPMENTS: Any shipment of delivery dates recited represent WesTech Engineering, LLC's best estimate but no liability, direct or indirect, is assumed by WesTech Engineering, LLC for failure to ship or deliver on such dates.

WesTech Engineering, LLC shall have the right to make partial shipments; and invoices covering the same shall be due and payable by Purchaser in accordance with the payment terms thereof. If Purchaser defaults in any payment when due hereunder, WesTech Engineering, LLC may, without incurring any liability therefore to Purchaser or Purchaser's customers, declare all payments immediately due and payable with maximum legal interest thereon from due date of said payment, and at its option, stop all further work and shipments until all past due payments have been made, and/or require that any further deliveries be paid for prior to shipment.

If Purchaser requests postponements of shipments, the purchase price shall be due and payable upon notice from WesTech Engineering, LLC that the equipment is ready for shipment; and thereafter any storage or other charge WesTech Engineering, LLC incurs on account of the equipment shall be for the Purchaser's account.

If delivery is specified at a point other than WesTech Engineering, LLC or its supplier's shipping points, and delivery is postponed or prevented by strike, accident, embargo, or other cause beyond WesTech Engineering, LLC's reasonable control and occurring at a location other than WesTech Engineering, LLC or its supplier's shipping points, WesTech Engineering, LLC assumes no liability in delivery delay. If Purchaser refuses such delivery, WesTech Engineering, LLC may store the equipment at Purchaser's expense. For all purposes of this agreement such tender of delivery or storage shall constitute delivery.

15. WARRANTY: WesTech Engineering, LLC warrants equipment it supplies only in accordance with the attached WesTech Warranty. This warranty is expressly given by WesTech and accepted by purchaser in lieu of all other warranties whether written, oral, express, implied, statutory or otherwise, including without limitation, warranties of merchantability and fitness for particular purpose. WesTech neither accepts nor authorizes any other person to assume for it any other liability with respect to its equipment. WesTech shall not be liable for normal wear and tear, corrosion, or any contingent, incidental, or consequential damage or expense due to partial or complete inoperability of its equipment for any reason whatsoever. The purchaser's exclusive and only remedy for breach of this warranty shall be the repair and or replacement of the defective part or parts within a reasonable time of WesTech's accepting the validity of a warranty claim made by the purchaser.

16. PATENTS: WesTech Engineering, LLC agrees that it will, at its own expense, defend all suits or proceedings instituted against Purchaser and pay any award of damages assessed against it in such suits or proceedings, so far as the same are based on any claim that the said equipment or any part thereof constitutes an infringement of any apparatus patent of the United States issued at the date of this Agreement, provided WesTech Engineering, LLC is given prompt notice in writing of the institution or threatened institution of any suit or proceeding and is given full control of the defense, settlement, or compromise of any such action; and Purchaser agrees to give WesTech Engineering, LLC needed information, assistance, and authority to enable WesTech Engineering, LLC so to do. In the event said equipment is held or conceded to infringe such a patent, WesTech Engineering, LLC shall have the right at its sole option and expense to a) modify the equipment to be non-infringing, b) obtain for Purchaser the license to continue using said equipment, or c) accept return of the equipment and refund to the Purchaser the purchase price thereof less a reasonable charge for the use thereof. WesTech Engineering, LLC will reimburse Purchaser for actual out-of-pocket expenses, exclusive of legal fees, incurred in preparing such information and rendering such assistance at WesTech Engineering, LLC's request. The foregoing states the entire liability of WesTech Engineering, LLC, with respect to patent infringement; and except as otherwise agreed to in writing, WesTech Engineering, LLC assumes no responsibility for process patent infringement.

17. SURFACE PREPARATION AND PAINTING: If furnished, shop primer paint is intended to serve only as minimal protective finish. WesTech Engineering, LLC will not be responsible for the condition of primed or finish painted surfaces after equipment leaves its shops. Purchasers are invited to inspect paint in shops for proper preparation and application prior to shipment. WesTech Engineering, LLC assumes no responsibility for field surface preparation or touch-up of shipping damage to paint. Painting of fasteners and other touch-up to painted surfaces will be by Purchaser's painting contractor after mechanism installation.

Motors, gear motors, and other components not manufactured by WesTech Engineering, LLC will be painted with that manufacturer's standard paint system. It is WesTech Engineering, LLC's intention to ship major steel components as soon as fabricated, often before drive, motors, and other manufactured components. Unless Purchaser can ensure that shop primed steel shall be field painted within thirty (30) days after arrival at the job site, WesTech Engineering, LLC encourages the Purchaser to order these components without primer.

WesTech Engineering, LLC's prices are based on paints and surface preparations as outlined in the main body of this proposal. In the event that an alternate paint system is selected, WesTech Engineering, LLC requests that Purchaser's order advise of the paint

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selection. WesTech Engineering, LLC will then either adjust the price as may be necessary to comply or ship the material unpainted if compliance is not possible due to application problems or environmental controls.

18. CANCELLATION, SUSPENSION, OR DELAY: After acceptance by WesTech Engineering, LLC, this proposal, or Purchaser's order based on this proposal, shall be a firm agreement and is not subject to cancellation, suspension, or delay except upon payment by Purchaser of appropriate charges which shall include all costs incurred by WesTech Engineering, LLC to date of cancellation, suspension, or delay plus a reasonable profit. Additionally, all charges related to storage and/or resumption of work, at WesTech Engineering, LLC's plant or elsewhere, shall be for Purchaser's sole account; and all risks incidental to storage shall be assumed by Purchaser.

19. FORCE MAJEURE: Neither party hereto shall be liable to the other for default or delay in delivery caused by extreme weather or other act of God, strike or other labor shortage or disturbance, fire, accident, war or civil disturbance, act of government, pandemic, delay of carriers, failure of normal sources of supply, complete or partial shutdown of plant by reason of inability to attain sufficient raw materials or power, and/or other similar contingency beyond the reasonable control of the respective parties. The time for delivery specified herein shall be extended during the continuance of such conditions, or any other cause beyond such party's reasonable control. Escalation resulting from a Force Majeure event shall be equitably adjusted per the escalation policy stated above.

20. RETURN OF PRODUCTS: No products may be returned to WesTech Engineering, LLC without WesTech Engineering, LLC's prior written permission. Said permission may be withheld by WesTech Engineering, LLC at its sole discretion.

21. BACKCHARGES: WesTech Engineering, LLC will not approve or accept backcharges for labor, materials, or other costs incurred by Purchaser or others in modification, adjustment, service, or repair of WesTech Engineering, LLC furnished materials unless such back charge has been authorized in advance in writing by a WesTech Engineering, LLC purchase order, or work requisition signed by WesTech Engineering, LLC.

22. INDEMNIFICATION: Purchaser agrees to indemnify WesTech Engineering, LLC from all costs incurred, including but not limited to court costs and reasonable attorney fees, from enforcing any provisions of this contract, including but not limited to breach of contract or costs incurred in collecting monies owed on this contract.

23. ENTIRE AGREEMENT: This proposal expresses the entire agreement between the parties hereto superseding any prior understandings, and is not subject to modification except by a writing signed by an authorized officer of each party.

24. MOTORS AND MOTOR DRIVES: In order to avoid shipment delays of WesTech Engineering, LLC equipment, motors and drives may be sent directly to the job site for installation by the equipment installer. Minor fit-up may be required.

25. EXTENDED STORAGE: Extended storage instructions will be part of information provided to shipment. If equipment installation and start-up is delayed more than 30 days, the provisions of the storage instructions must be followed to keep WARRANTY in force.

26. LIABILITY: Professional liability insurance, including but not limited to, errors and omissions insurance, is not included. In any event, liability for errors and omissions shall be limited to the lesser of $100,000 USD or the value of the particular piece of equipment (not the value of the entire order) supplied by WesTech Engineering, LLC against which a claim is sought.

27. ARBITRATION NEGOTIATION: Any controversy or claim arising out of or relating to the performance of any contract resulting from this proposal or contract issued, or the breach thereof, shall be settled by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association, and judgment upon the award rendered by the arbitrator(s) may be entered to any court having jurisdiction.

ACCEPTED BY PURCHASER

Customer Name: _____

Customer Address: _____

_____

Contact Name: _____

Contact Phone: _____ Contact Email: _____

Signature: _____ Printed Name: _____

Date: _____ Title: _____

West Kelowna, BC
Quotation No.: 2025053
February 27, 2025

PROPOSAL

Prepared for:

Carly Tremblay

Urban Systems

Project:

Biosolids Pumping Equipment

Westside Regional WWTP

Engineered to Excel

350 SMC DRIVE
SOMERSET, WI 54025
PH: (715) 247-3433
FAX: (715) 247-3438
www.schwingbioset.com

A message from our President/CEO:

Thank you for your inquiry. We are honored you have chosen to discuss how a Schwing Bioset solution can solve your specific challenges. We feel you will soon discover our contributions will provide recognizable value, and our solution will provide the long-term peace of mind only felt when quality products have been selected. Along each step of the way, we are sure your confidence will build that you have made the right choice in selecting Schwing Bioset to assist with the development, design, and execution of your project.

Schwing Bioset has been solving the challenges faced by Wastewater Treatment Plants and Biosolids Management professionals for over thirty years from our simple beginnings as a piston pump supplier. Now in our fourth decade, we offer a wide range of products with best-in-class performance and reliability that we feel is unmatched by anyone in our industry.

Additionally, Schwing Bioset offers best-in-class aftermarket service and spare parts to support our ever expanding customer base. After all, without the support of quality trained service technicians and rapid spare parts delivery, the best technology in the world can't do its job if you can't turn it on.

But we aren't stopping here. Schwing Bioset continues to invest in Research & Development to continually improve our current products and to develop and identify new technology that will help sustain our Cities for the next generations to come. Reducing power demands, recovering nutrients, increased efficiency, and creating value-added products from biosolids are just a few of the many ways we are evolving from our beginnings in this business as a pump supplier.

And speaking of our business, it is guided by the Core Values shared on the following page. These values act as a beacon to guide us into the future as we grow, keeping us in line with our original goals. Also included is your list of primary contacts into our company. As you communicate your challenges and work towards a solution with us, know that each of these individuals, along with everyone else in our Company, was hired with these Core Values as a benchmark. This team of experts, collectively known as Schwing Bioset, will be working diligently to make your project a success.

Continually looking to the future, we believe the solution offered in this proposal will prove to be your most cost effective and sustainable option to implement within your project. We look forward to your favorable review and to welcoming you to the hundreds of other Wastewater Plants whom already enjoy the benefits of a Schwing Bioset solution. We are *Engineered to Excel.*

Sincerely,
Thomas Anderson
President/CEO

Core Values:

- Caring: Every employee has pride of ownership in their work with a genuine interest in our Client's success. We offer a workplace that allows a healthy balance between work and home life to inspire exceptional performance.
- Decent People: We are true professionals who respect the people we work with, both inside and outside of the company, and earn the respect of others.
- Dedicated Experts: We are comprised of the top talent in our respective fields, recruited and trained for the singular goal of contributing to the success of our Clients and our Company.
- Solutions Above and Beyond: We develop, provide, and support customer solutions that surpass our Client's expectations.
- Absolute Customer Satisfaction: We sleep well knowing our customers are happy.

Your Schwing Bioset, Inc. Contacts:

Great Lakes
Eric Wanstrom
203-731-0977
ewanstrom@schwingbioset.com

Northeast
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715-243-9723
azaidi@schwingbioset.com

Central
Kevin Bauer
715-243-4597
kbauer@schwingbioset.com

West
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jdivalentino@schwingbioset.com

Southeast
Tom Welch
239-216-1776
twelch@schwingbioset.com

Outside US & Canada
Chuck Wanstrom
612-805-8664
cwanstrom@schwingbioset.com

Service
James Runyon
715-500-1888
jrunyon@schwingbioset.com

Spare Parts
Brad Dopp
715-350-6912
bdopp@schwingbioset.com

Capabilities:

(Click the images below to link to web page)

350 SMC DRIVE
SOMERSET, WI 54025
PH: (715) 247-3433
FAX: (715) 247-3438
www.schwingbioset.com

February 27, 2025

Urban Systems
304–1353 Ellis St.
Kelowna, British Columbia, V1Y 1Z9

Attention: Carly Tremblay - Communities and Municipal EIT

Reference: Biosolids Pumping Equipment - Westside Regional WWTP

Subject: Schwing Bioset, Inc. Quotation No. 2025053

Schwing Bioset, Inc. is pleased to propose the following as our scope of supply for the above referenced project:

PISTON PUMP

Quantity:	One (1)
Model:	KSP 25 V(HD)L
Pumping Stroke Length:	39.4 inches (1000 mm)
Diameter - Material (Pumping) Cylinders:	7 inches (180 mm)
Diameter - Differential (Hydraulic) Cylinders:	4.9 inches (125 mm)
Cylinder Ratio:	2.07
Diameter - Suction Poppets:	8.3 inches (210 mm)
Diameter - Discharge Poppets	5.9 inches (150 mm)
Number of Discharges:	One (1)

Scope includes:

1. The pump shall be a hydraulically driven, twin-cylinder, reciprocating piston pump equipped with Poppet Valves to match existing equipment.
2. The Sludge Pump is equipped with a discharge connection; the discharge connection includes an adapter to 8-inch, 600# flange and a 2-inch pressure bleed valve.
3. The Sludge Pump water box has 1-inch connection for water supply and 1.5 inch overflow/drain. Water lines and valves shall be supplied by others.
4. Retractable casters provided on pump frame.
5. Local maintenance panel is furnished, mounted on the Sludge Pump, wiring by others. The panel includes MAINTENANCE MODE ON / OFF switch, FORWARD / OFF / REVERSE switch, PUMP JOG pushbutton, and E-STOP pushbutton. The two-hand control system simplifies routine ram changing service and prevents service personnel from putting their hands in the water box when ram motion is possible.

TWIN SCREW FEEDER

Quantity:	One (1)
Model:	SD 350HD
Material of Construction:	A36 Carbon Steel
Diameter of Flights:	13 inches / 330mm
Inlet Length:	48 inches / 1220mm
Inlet Width:	24 inches / 610mm

Scope includes:

1. The Twin-Screw Feeder shall be twin-auger screw feeder as manufactured by Schwing Bioset, Inc. The Twin-Screw Feeder feeds sludge cake into the Sludge Pump. The Twin-Screw Feeder is driven by the Hydraulic Power unit.
2. The Twin Screw Feeder is equipped with a three-position solenoid valve to control the augers (FORWARD / STOP / REVERSE) located in the Hydraulic Power Unit.
3. The Twin-Screw Feeder is furnished with hanger bearings to support the end of the screw auger shafts.
4. Twin-screw feeder is equipped with auto-greaser to lubricate the hanger bearings and rope packings seals.
5. The Twin-Screw Feeder transition includes a pressure transducer to automatically control the screw feeder speed. A local LED pressure display is included at the screw feeder.

   Does not include hopper, radar level sensor, or flex connector above screw feeder inlet flange.

HYDRAULIC POWER UNIT

Quantity:	One (1)
Model:	440L – 50HP
Reservoir Size:	115 gallons / 440 litres
Motor Size:	50 HP / 37 kW
Hydraulic Pump (Sludge Pump):	Rexroth A11VO130
Hydraulic Pump (Screw Feeder):	Rexroth A11VO40
Electrical Service:	575 Volt / 3 Phase / 60 Hertz

Scope includes:

1. Rexroth axial piston pumps are supplied to drive the separate hydraulic circuits for the Sludge Pump and Screw Feeder.
2. Recirculating hydraulic oil conditioning loop includes the following:
   - A constant volume hydraulic pump.
   - A water-cooled heat exchanger with water supply and drain connections. (Air-cooled type may be provided in lieu of water-cooled upon request.)
   - Shutoff valves (water piping and drain piping beyond the shutoff valves shall be furnished by the installing contractor).
   - Temperature sensor and solenoid valve to regulate water flow.
3. Electric drive motor is Premium efficient and TEFC.
4. Power Unit includes initial fill of oil, pressure gauge, temperature and pressure sensors, relief valves, clean-out cover, and oil level sight gauge.
5. Hydraulic hoses provided to connect new equipment to existing hydraulic field piping.

CONTROL PANEL

Quantity:	One (1) per Pump
Electrical Service:	575v/3∅/60Hz

Scope includes:

1. Panel is NEMA 4X, 304 SS, panel has CSA label and be factory mounted to the HPU.
2. Allen Bradley Compactlogix PLC with 10" Panelview Plus HMI is used to control all panel functions.
3. Schwing Bioset standard input and output devices shall be supplied.
4. Panel controls Hydraulic Power unit, Sludge Pump, and Screw Feeder.
5. Full voltage motor starter provided.
6. Internal barrier in panel provided between 3 phase and single phase components.

SPECIAL TOOLS

None included.

SPARE PARTS

Schwing Bioset recommends changing out the hydraulic oil filter after the first 50 hours of Hydraulic Power Unit operation. The following spare parts are furnished for this purpose.

Item:	Quantity:
Hydraulic Oil Filters	One (1) set

No other spare parts are included with this quotation.

FIELD SERVICE

Schwing Bioset can provide a trained service technician to supervise system installation, assist start-up, and / or to train the owner's personnel in the operation and maintenance of the Schwing Bioset supplied equipment.

The service technician shall be made available for Nine (9) days over Three (3) trips.

If required, additional service may be purchased at the prevailing rates at the time service is performed. Current service rates are as follows:

- US $198.00 per hour – standard eight (8) hour day.
- US $297.00 per hour – overtime (over and above the standard eight (8) hour day.)
- US $396.00 per hour – Sundays and holidays.
- Travel and per diem (i.e., hotel, food, car) expenses at cost + 15%.

PAINTING

Schwing Bioset standard primer and finish coatings shall be factory applied unless otherwise noted above. All field touch-up painting of equipment shall be performed by others.

COMPLETE SCOPE OF SUPPLY SUMMARY

Sludge Pump:	One (1)
Screw Feeder:	One (1)
Power Unit:	One (1)
Control Panel:	One (1)
Tools	Not included
Spare Parts	One (1) lot
Service	(9) days, (3) trips
Cost:	**$ 424,800**

All prices are quoted:
DAP jobsite Incoterms® 2020
Price is valid for 30 days
Price is in US dollars

TERMS:

30% due at time of order
25% due at time of submittal approval
40% due at time goods are shipped
5% due upon acceptance of goods, not to exceed 90 days from shipment

Payment terms offered are subject to final credit approval.

UNFORESEEN MARKET CONDITIONS

Unforeseen Market Conditions shall mean an increase in the price of a finished material or equipment due to an increase in the price of the materials used to fabricate said materials or equipment which occurs after the date of the quotation due to either inflation, governmental charge, or any other reason.

The OWNER recognizes the potential for Unforeseen Market Conditions. Bids submitted are based on current pricing available at the time of bidding. Should actual costs, or appropriate Producer Index, increase more than 3% between the date of the quotation and major equipment deliveries the OWNER will allow a change of cost through a Change Order. The escalation shall be based upon increases in labor and material and other costs to Schwing Bioset, Inc. that occur in the time-period between quotation and shipment by Schwing Bioset, Inc. Buyer agrees to this potential escalation regardless of contradicting terms in the contract.

Any claim of Unforeseen Market Conditions shall include one of the following as substantiation:

1. Copy of the actual quote(s) used for the basis of the bid compared to current quote(s).
2. In the case of customized or structural items where finished product quotes are not available at time of quotation, an appropriate Producer Index such as those listed below managed by the US Bureau of Labor & Statistics (https://data.bls.gov/PDQWeb/pc) shall apply:
    a. Steel Product Manufacturing from Purchased steel; code 3312
    b. Conveyor & Conveyor Equipment Manufacturing; code 333922

c. Pump and Compressor Manufacturing; code 33391
d. Other agreed upon representative Index

3. Supporting information from Vendors and Suppliers providing further detail on the reported increase in costs.

SUBMITTALS:

Submittal delivery based on engineering backlog at time order is received; current estimated time is 12-16 weeks. One (1) electronic copy shall be provided.

DELIVERY:

Equipment delivery based on production backlog at time submittals are approved; current estimated time is thirty-eight (38) to forty-six (46) weeks after submittals are approved.

OPERATION & MAINTENANCE MANUALS:

Two (2) final hard copies and one (1) electronic copy shall be furnished with the equipment. O&M Manuals will be delivered four (4) weeks after equipment delivery.

EQUIPMENT AND SERVICES TO BE PROVIDED BY OTHERS

1. Installation, offloading, field assembly, and erection of the Schwing Bioset, Inc. (SBI) supplied equipment.
2. Storage of equipment and/or costs for long term storage (longer than 3 months).
3. Racks, trays or supports for hydraulic lines, sludge lines, or control wiring.
4. Miscellaneous metal.
5. Field painting of any of the SBI supplied equipment. All touch up painting required due to normal wear and tear during shipping shall the responsibility of others.
6. Field-routed grease tubing
7. Supports for grease tubing, conduit or control wiring.
8. Field wiring of any kind.
9. Labor and material (e.g., polymer flocculant) for preliminary, final field, system performance and system integrity tests.
10. **Anchor bolts**, nuts, and washers for the SBI supplied equipment unless otherwise stated. Anchor design and embedment by others.
11. Cost for Engineer, Owner, or Contractor to witness any shop test.
12. Additional costs to supply alternate products other than specifically mentioned in this scope.
13. Networking, hardware, communication modules, or power supplies not specifically mentioned in this scope.
14. PLC programming software or software licenses not specifically mentioned in this scope.
15. It is the contractor's responsibility to field verify building dimensions, equipment access and that equipment layout /dimensions are suitable to accommodate the Schwing Bioset supplied equipment.
16. Field service technicians or special tools not specifically mentioned in this scope.
17. Water and drain piping of any kind.
18. Motor starters or variable frequency drives not specifically mentioned in this scope.
19. Spare parts not specifically mentioned in this scope.
20. **Supports, cake chutes, and local disconnects** not specifically mentioned in this scope.

If you have any questions, please don't hesitate to contact me by cellular phone (612-867-4429), or E-mail (jdivalentino@Schwingbioset.com).

Yours very truly,
Schwing Bioset, Inc.

Joshua R. DiValentino, MS, MBA
Senior Sales Manager, Western Region

Schwing Bioset, Inc. New Equipment Sales Terms and Conditions

1. Acceptance and Prices. These terms and conditions are an integral part of Schwing Bioset,Inc ("Seller")'s firm offer and form the basis of any agreement resulting from Seller's proposal. The proposal is subject to acceptance within thirty days from its date, and the prices are subject to change without notice prior to acceptance by the party to whom this offer is made, or its authorized agent ("Buyer"). Following acceptance without addition of any other terms and conditions of sale or any other modification by Buyer, the prices stated are firm provided that notification of release for immediate production and shipment is received at Seller's factory not later than five months from Seller's submittals. If through no fault of Seller, the order is not released for manufacture within 5 months from Seller's submittals, Seller reserves the right to increase the price of the order. Any delay in shipment caused by Buyer's actions will subject prices to increase equal to the percentage increase in list prices during that period of delay. Seller also reserves the right to increase price of any purchase order or contract previously accepted should any modification to Government imposed fees such as tariffs or taxes occur during the life of the contract and those changes directly affect the project. In no event will prices be decreased.

Acceptance will have occurred if Buyer: signs Seller's proposal; issues written order pursuant to submission of proposal; or permits or accepts performance; or other commercially reasonable manner. If Buyer's order is an acceptance of Seller's proposal, Seller's return of such order with these terms and conditions attached serves as an acknowledgement and confirmation of receipt of order. If order is expressly conditioned upon Seller's acceptance or assent to terms other than those expressed herein, return of order by Seller with these terms and conditions attached serves as notice of objection to such terms and a counter-offer to provide equipment in accordance with scope and terms of the original proposal. If Buyer does not reject or object within ten days, counter-offer will be deemed accepted. If Buyer permits or accepts performance, such terms will be deemed accepted. In order for Seller's acknowledgement of order to be valid it must be made at the corporate level.

2. Performance. Seller shall be obligated to furnish only the goods described in Seller's proposal, and submittal data (if such data is issued in connection with this order), and Seller may rely on the acceptance of proposal and submittal data as acceptance of the suitability of the equipment for the particular project. Seller's duty to perform under any order and the price thereof is dependent upon Seller's corporate approval of the order and Seller shall not be responsible for delays in contract formation caused by inclusion of new or different terms by Buyer, or delays in credit approval due to delayed or incomplete credit information by Buyer. Seller's duty to perform is contingent upon the non-occurrence of an Event of Force Majeure. If the order is not approved at the corporate level, Seller may elect to delay performance or to renegotiate with Buyer. If Seller and Buyer are unable to agree on revised prices or terms, the order may be canceled without any liability. If Seller shall be unable to carry out any material obligation under this Agreement due to an Event of Force Majeure, this Agreement shall at Seller's election (i) remain in effect but Seller's obligations shall be suspended until the uncontrollable event terminates or (ii) be terminated upon ten (10) days' notice to Buyer, in which event Buyer shall pay Seller for all parts of the Work furnished to the date of termination. An "Event of Force Majeure" shall mean any cause or event beyond the control of Seller. Without limiting the foregoing, "Event of Force Majeure" includes: acts of God; acts of terrorism, war or the public enemy; flood; earthquake; tornado; storm; fire; civil disobedience; pandemic insurrections; riots; labor disputes; labor or material shortages; sabotage; restraint by court order or public authority (whether valid or invalid); and action or non-action by or inability to obtain or keep in force the necessary governmental authorizations, permits, licenses, certificates or approvals if not caused by Seller; and the requirements of the United States Government in any manner that diverts either the material or the finished product to the direct or indirect benefit of the Government.

3. Escalation. In the event of a significant delay or price increase of material, equipment or energy occurring during the performance of the contract through no fault of Seller, the Contract Sum, time of completion or contract requirements shall be equitably adjusted by Change Order. A change in price of an item of material, equipment or energy will be considered significant when the price of an item increases 10% between the date of this Contract and the date of shipment of the goods. The amount of the price increase shall be capped at 10%. Such price increases shall be documented through quotes, invoices, receipts or a generally accepted index as offered by a US federal or state government agency. All pricing offered is only allowed based on the quoted validity date.

4. Taxes. No taxes are included in this quote/order. The amount of any applicable present or future state/local sales/use tax, tariff or other government charge upon the production, sale, shipment, and/or use of the goods covered by this quotation shall be paid directly to the taxing authorities by purchaser, and paid tax receipts will be furnished to Schwing Bioset upon request, unless purchaser provides us with an exemption certificate acceptable to the taxing authorities. In the event of the of new taxes, tariffs or other government charges implemented after order/contract acceptance, Seller reserves the right to collect all costs from the Customer and Customer accepts liability for all.

5. Warranty and Liability. Seller warrants its new equipment against defects in material and workmanship under normal use and service, and which shall not have been subject to misuse, negligence, or accident, for a period of one (1) year that shall commence upon startup or ninety (90) days from delivery, whichever occurs first. Seller will replace or repair free of charge, F.O.B. jobsite, such part or parts thereof as in its sole judgment shall be deemed defective. Due to the specialized nature of Seller material handling equipment, Seller field service technicians shall not be restricted in adjusting or repairing Seller furnished equipment, regardless of collective bargaining agreements entered into by other parties. This warranty shall not apply to any equipment manufactured by us which shall have been loaded or operated beyond its rated capacity as specified by Seller Damage resulting from improper installations or alterations outside our plant will be considered as misuse and not as a defect. Certain parts of the equipment provided by Seller such as the pumping cylinders, valves, pumping rams, screw flights, sliding frame components, trough liners for screws etc. in contact with material, are subject to normal wear. This normal wear is not covered under this warranty. Seller shall not be liable for consequential damages or injuries of any kind, or for expenses, losses, or delays incidental to any failure. Seller reserves the right to make changes and improvements in its product without incurring any obligation to install any such changes or improvements in its products previously manufactured. All warranty is void if equipment is not serviced by a Schwing Bioset certified technician from delivery through termination of warranty period. In the event of a defect or issue with Schwing Bioset supplied equipment, buyer shall notify Schwing Bioset in writing of said defect and offer Schwing Bioset reasonable opportunity to cure. This warranty is in lieu of any other warranty expressed or implied or any other obligation or liability on the part of Seller, and no other person is authorized to make any representations or warranties beyond those herein expressed. Without limiting the generalities of the foregoing, **THERE IS NO IMPLIED WARRANTY OF MARKETABILITY AND NO IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.**

6. Indemnity. Seller agrees to indemnify and hold Buyer harmless from the amount of any final judgment entered against Buyer for injury or death to any person (including employees of Buyer and Seller) or damage to tangible property of Buyer and based solely upon: (a) Seller's defective manufacture of equipment sold to Buyer; (b) Seller's violation of any applicable laws, rules or regulations in connection with the manufacture of said equipment, or (c) Seller's gross negligence or intentional misconduct. The duty to indemnify will continue in full force and effect, notwithstanding the expiration or early termination hereof, with respect to any claims based on facts or conditions that occurred prior to expiration or termination.

7. Insurance. Seller agrees to maintain the following insurance during the term of the contract with limits not less than shown below and will, upon request from Buyer, provide a Certificate of Insurance evidencing this coverage:

Commercial General Liability	$2,000,000 per occurrence
Automobile Liability	$2,000,000 CSL
Workers Compensation	Statutory Limits

In the event Seller agrees to name Buyer or others as an additional insured, Seller will do so but only under its primary Commercial General Liability policies to the extent of the indemnity obligation assumed herein. In no event does Seller waive its right of subrogation.

8. Liability Disclaimer. NOTWITHSTANDING ANY PROVISION TO THE CONTRARY, IN NO EVENT SHALL SELLER BE LIABLE FOR ANY SPECIAL, INCIDENTAL, LIQUIDATED, CONSEQUENTIAL (INCLUDING WITHOUT LIMITATION LOST REVENUE OR PROFITS), OR PUNITIVE DAMAGES. This exclusion applies regardless of whether such damages are sought based on breach of warranty, breach of contract, negligence, strict liability in tort, or any other legal theory. Should Seller nevertheless be found liable for any damages they shall be limited to the purchase price of the equipment under the order. **SELLER DISCLAIMS ANY LIABILITY FOR DAMAGES OF ANY KIND (WHETHER DIRECT OR INDIRECT) ARISING FROM MOLD, FUNGUS, BACTERIA, MICROBIAL GROWTH, OR ANY OTHER CONTAMINATES OR AIRBORNE BIOLOGICAL AGENTS.**

9. Patent Indemnity. The Seller shall protect and indemnify the Buyer from and against all claims, damages, judgments and loss arising from infringement or alleged infringement of any United States patent by any of the articles or material delivered hereunder, provided that in the event of suit or threat of suit for patent infringement, Seller shall promptly be notified and given full opportunity to negotiate a settlement. Seller does not warrant against infringement by reason of Buyer's design of the articles or the use thereof in combination with other materials or in the operation of any process. In the event of litigation Buyer agrees to reasonably cooperate with Seller. In connection with any proceeding under the provisions of this Article all parties concerned shall be entitled to be represented by counsel at their own expense.

10. Shipment Dates. Shipment dates are estimates only. No valid contract may be made to ship within or at a specified time unless in writing, signed by an authorized signatory of Seller. Shipments shall be f.o.b. factory or warehouse at named shipping point with title and risk of loss passing to Buyer upon delivery to the carrier unless quoted otherwise and stated as such in our formal written offer. Seller shall not be liable for damages of any kind including Liquidated, Consequential, and/or Incidental.

11. Cancellation. If, following acceptance of proposal by Buyer, all or any portion of the resulting order is canceled by Buyer without default on the part of Seller or without Seller's written consent, Buyer shall be liable to Seller for cancellation charges including but not limited to Seller's incurred costs and such profit as would have been realized by Seller from the transaction had the agreement not been breached by Buyer.

12. Payment. Pending Credit approval, Payment terms are 30% due at time of order, 25% due at time of submittal approval, 40% due at time goods are shipped, and 5% due upon acceptance of goods, not to exceed 90 days from shipment, unless otherwise expressly agreed to in writing by Seller. Seller reserves the right to add to any account outstanding for more than 30 days a service charge the lesser of 1-1/2% of the principal amount due at the end of each month, or the maximum allowable legal interest rate. Buyer shall be liable to Seller for all collection expenses, including reasonable attorney's fees and court costs, incurred by Seller in attempting to collect any amounts due from Buyer. If requested, Seller will provide appropriate lien waivers upon receipt of payment. Seller reserves the right to suspend or terminate performance in the event of Buyer's non-payment.

13. Returns. Products may be returned only with permission of Seller and shall be subject to a 25% restocking fee.

14. Applicable Law. Any agreement resulting from Seller's proposal will be governed and construed according to Minnesota law.

15. U.S. Government Work. This provision applies only to indirect sales by Seller to the US Government. If the Work is in connection with a U.S. Government contract, Buyer certifies that it has provided and will provide current, accurate, and complete information, representations and certifications to all government officials, including but not limited to the contracting officer and officials of the Small Business Administration, on all matters related to the prime contract, including but not limited to all aspects of its ownership, eligibility, and performance. Anything herein notwithstanding, Seller will have no obligations to Buyer unless and until Buyer provides Seller with a true, correct and complete executed copy of the prime contract. Upon request, Buyer will provide copies to Seller of all requested written communications with any government official related to the prime contract prior to or concurrent with the execution thereof, including but not limited to any communications related to Buyer's ownership, eligibility or performance of the prime contract. Buyer will obtain written authorization and approval from Seller prior to providing any government official any information about Seller's performance of the work that is the subject of this offer or agreement, other than this written offer or agreement.

16. Storage at SBI. Should the customer desire to store the equipment purchased at SBI's facilities, these services can be completed at a rate of $250.00 per week, or $1,000 per calendar month. Customer shall issue the original equipment purchase order with a contingency of 12 months storage that can be drawn from if required. These funds will not be utilized unless written approval from customer is offered. Terms for Storage Fees are 100% N30 from invoice date. Retainages and/or offsets do not apply.

Non-Binding quotation

Alfa Laval Decanter Aldec 55

Quotation number: QU-2502-FWD-1266598

Customer: Urban Systems Ltd.

Project: Westside Regional WWTP Centrifuge

Date: February 20th /2025

Revision: 01

Representative:

Derek Gluschenko
Regional Sales Manager BC
Food and Water division

Tel: +1 604-868-5666
derek.gluschenko@alfalaval.com
Alfa Laval Inc.- Canada

Contents

Dear Carly:

Thank you very much for the inquiry. Please find enclosed our Non – binding quotation for your consideration as requested.

1. Scope of supply - Decanter Model Aldec 55

The intended unit is for Blended sludge: WAS and primary, for the expansion of the system, duplicated or next size of the Decanter installed, Aldec G3-95 Serial Number 5025020. Following some process parameters to consider:

- Operating hours: 44 h/7 d
- Peak thickened waste activated sludge solids: 2,880 kg/d
- Peak thickened waste activated sludge flow: 72 m3/d
- Peak fermented primary sludge solids: 2,359 kg/d
- Peak fermented primary sludge flow: 39.3 m3/d
- Blended sludge feed rate (excluding polymer): 4.9 L/s

General Product Description

The Alfa Laval ALDEC range of decanter centrifuges are designed with a focus on cost-efficiency, reliability and easy operation. They are used for thickening and dewatering sludge from municipal and industrial water and waste treatment plants. ALDEC decanter centrifuges are capable of handling a wide range of flow rates. They are designed to be efficient, simple to install, easy to maintain and straightforward to operate. Installation, operating and service life costs are minimal.

Standard Design

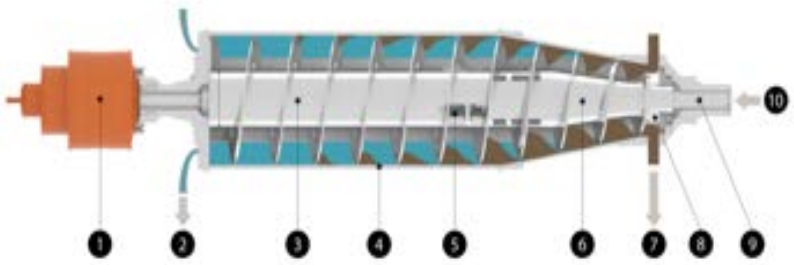
Alfa Laval designed the decanter centrifuge with a focus on easy access, reliability and low noise levels. The rotating assembly is mounted on a compact welded box beam frame with main bearings at both ends. The cover is designed to ensure easy access. The in-line motor is flange-mounted on the decanter, with adjustable brackets for belt tension adjustment.

Bowl Assembly

The bowl is driven by an electric motor and V-belt transmission. Bowl, conveyor, casing, inlet tube, outlets and all other parts in contact with the process media are made (as standard) from stainless steel. Prior to final machining, all surfaces are examined for cracks, shrinkage, porosity or other defects.

Conveyor Assembly

The conveyor is fabricated from high food grade stainless steel and is concentrically suspended within the centrifuge bowl. The conveyor includes a highly advanced feed zone, which is specially developed for food processing. The feed zone gives low shear and avoids breakage of this fine agglomerated material.



Cross section of the interior of the decanter - the rotating assembly

1: Gearbox
2: Liquid outlet
3: Screw conveyor
4: Wall of the bowl
5: Inlet distributor
6: Conical end
7: Sludge outlet
8: Discharge ports
9: Feed tube
10: Feed inlet

Frame and Casing

The frame is a box beam profile type with integral casing with hinges. The material of the casing and cover is AISI 316 stainless steel. The inside surface of the casing is fitted with stainless steel liners in the solids discharge areas and SS clad in the neutral compartment. Casing gaskets can be selected from a multiple choice material as NBR, FKM or EPDM, all available also in FDA approved version. The material of the frame is painted mild steel. Due to its particularly smart design, Alfa Laval decanter centrifuge can be quickly serviced. It takes less than 3 hours to exchange a complete rotor assembly. Where top hygiene level is a must, Alfa Laval developed a package in stainless steel including frame and all other components (as damper, junction box, etc.). This elevates the already high sanitary level of our decanters.

The cover of rotating assembly is hinged and manufactured in AISI 316 SS.

Process Optimization

The decanter centrifuge can be adjusted to suit individual requirements by varying:

- bowl speed — to ensure the best G force required for optimized separation,
- conveying speed — for optimized balance between liquid clarity and solids discharge capacity,
- pond depth in the bowl — for optimized balance between liquid clarity, solids dryness, and inter-phase setting between heavy and light liquid phases, and
- feed flow — Alfa Laval decanter centrifuges are designed to deal with a wide range of flow rates.

2. Special Features

Power Tubes

Decanter power consumption naturally depends on a lot of different parameters including decanter size and flow rate. One effective way to reduce the process power consumption of a facility's decanter is to adjust the way the liquid leaves the decanter bowl. By replacing conventional plate dams with Power Tubes, Alfa Laval has created a beneficial solution to this challenge.

When liquid leaves the decanter bowl, it is fully accelerated moving in the direction of the bowl rotation. A Power Tube saves energy by reducing the velocity of discharged liquid. It turns the discharge velocity into the opposite direction of the bowl rotation instead of running perpendicular to the hub. This in turn reduces the total velocity of the discharged liquid and saves power.

Savings can generally run up to 15 percent of flow dependent power in a typical food application. Decanters with larger bowl diameter has a higher saving potential compared to smaller sizes. The power tubes also help easy changing of pond levels without the need of dismantling of standard plate dams.

BD1 — Baffle Disc

The liquid level inside the decanter bowl can be set by changing dam plates or power tubes. The level can be positive, neutral or negative. With a positive pond setting, the discharge level of liquid is lower than the discharge level of the solids discharge. This creates a dry beach in the solids end – where the solids are scrolled out of the liquid.

With a negative pond setting the discharge level of the liquid is higher than the solids discharge. This means that the liquid can run out at the solids discharge.

Often a process requires operating with a negative pond setting and will result in a better performance. When operating with negative pond setting, we need a Baffle Disc to create a seal to prevent the liquid running out of the solids end. As a result, drier solids and higher throughput can be achieved.

360–degree Solids Outlet

To ensure a smooth discharge of solids from the decanter, Alfa Laval has invented a so called 360-degree solids outlet. That ensures a trouble-free discharge of solids, free of edges and corners that either can cause wear or potentially block up the outlet zone.

It is of utmost importance that the solids can leave the decanter bowl in a smooth and continuous way.

When looking for solutions to treat a large number of heavy solids, the 360-degree solids outlet design is the correct answer to this challenge. Optionally, wear liners are fitted for extra protection.

Transport Aids — Ribs on the Bowl Inside

Ribs inside the bowl are present for two purposes:

- To create friction for conveying the solids by the conveyor.
- To add a wear protection to the inner bowl wall.

The wear prevention on the bowl wall is done a bit like the protection on the conveyor – by adding an exchangeable material layer. Several ribs in stainless steel are welded on the inner side of the bowl in the full length. In some models, we even apply a larger number of ribs for better friction effect and upgraded wear protection.

People think, that the ribs avoid, that the conveyor touches the bowl when spinning around and that this is the root course of wear, but this is not the reality. The conveyor does not touch the ribs and a layer of solids is formed over the ribs on the inner side of the bowl. That layer is not moved or scraped to the front so there is no scrolling wear on the inner side of the bowl. If any wear is seen, it will be on the upper side of the ribs, and they can be changed when worn.

Drain Hole

A drain hole in the bowl wall is an extra security that can be used in situations where the decanters is foreseen to be out of service for a longer period. It is specifically important in applications where the slurry inside is organic and can be a source of bacteria growth.

Inspection Hole

An inspection hole can be helpful in order to check the condition of the flights and protection in the solids end of the decanter. The area between the horizontal and conical section of the bowl is where most wear occur and following the development through the inspection hole is an easy way to monitor it on a frequent basis.

Fully Flame Sprayed Conveyor

Alfa Laval's decanters have different protection grades of the flights depending on the application. Temperature, pH and the abrasiveness of the solids are determining the level of protection needed. The tip of the conveyor flights or the tip and couple of centimetres of the flights are flame sprayed with Cr-Ni allow with tungsten carbides as a wear protection against abrasive product.

3. Decanter Control and Automation

The Alfa Laval decanter control system is designed to integrate seamlessly with the control system of any plant. It also shares the same standard hardware and operability with control systems across the Alfa Laval product range. This ensures serviceability of the highest order as well as ease of use for operators already familiar with the Alfa Laval control system.

The Decanter is supplied with the controller IO modules mounted on the leg of the centrifuge (alternatively, remote mounting in a panel) with specific sensors placed strategically to control and monitor the decanter's operation. Likewise, it includes HMI (human-machine interface) with touch screen which provides an operator interface to adjust control parameters as well as providing a suite of graphic displays, alarms and trends. The system trends all main signals of the decanter process, including bearing temperature and vibration level. Convenient on-screen reminders alert operators whenever service, including routine greasing and lubrication, is required. Communication to an external system can be established using Remote Bus or hardwired communication. Several remote bus protocols are available.

Control Panel has stainless steel enclosure (IP54) with built-in components of Alfa Laval Decanter Management System. The main drive, which drives the bowl, is controlled by a Variable Frequency Drive allowing for soft starting, reduced motor size, reduced cabling and a lower peak current demand. The differential speed is controlled by varying the speed of the back drive motor with a Variable Frequency Drive. Both Variable Frequency Drives are controlled by the Alfa Laval system, which limits the maximum torque and speed, whilst operation in differential speed or auto control mode. Auto control mode allows the differential speed to modulate whilst keeping the torque constant, optimising/maximising performances.

The Decanter Controller contains control sequences which have been tailored based on 20 years of decanter operation and is your and our guarantee to maximum performance and safe operation. Flexibility and scalability are key design components of the Alfa Laval control system, which makes it easy to add or remove options as required.

Decanter Automation Plus

Hardware	Plus
HMI type	15´ Color Touch Screen (Brand B&R)
Controller type	Compact I/O slice system (Brand B&R)
External communication	
Bus communication with customer system	Modbus TCP/IP (IF, Ext), Profibus DP, Allen Bradley Ethernet IP, Profinet
Hardwired communication with customer system	Yes (via optional analog and digital modules)
Variable frequency drive (VFD)	
Fullly integrated VFD type	ABB ACS 880 (ACS800)
Suppport for other VFD types	Yes — via optional hardware VFD module
Mounting options	
Mounting of I/O module	Decanter frame, VFD control panel or remote mounting
Controller mounting	Decanter frame, VFD control panel or remote mounting
Auxiliary equipment I/O	
Feed pump interlock	Yes (Via optional process module)
Additive pump interlock	Yes
Diverter gate or inclined conveyor control	Yes
Cake conveyor interlock	Yes
Measurements	
Temperature sensors	Yes
Vibration monitor (mounted on decanter frame)	No
Vibration monitor (mounted on bearing housing)	Yes
Torque measurement — load cell	Default for DD gearbox
VFD torque measurement	Optional
Speed sensors	Yes
Cover switch	Optional
Power loss ride through	Optional
Automatic greasing system	Optional

Decanter Automation Plus Features

Monitoring:

- Multiple languages
- Priority information screen for fast centrifuge data monitoring
- Screen dumps
- Digital bus communication

Trends:

- Real time data logging, 15 minutes of vibration, temperature, torque, diff speed and bowl speed values
- 5 second values loggings, 2 hours of operation values
- 30 seconds values logging, 5 hours of operation values
- Trends recording with export possibility

CIP/Flush:

- Optional with ‘CIP module’ that allows for configuration of CIP sequence
- Low tumbling sequence for flush and CIP included
- Automatic flush mode, based on vibration or torque values
- Flush water addition in starting sequence based on rpm

Service:

- Operation timers for maintenance reminders based on actual hours in operation e.g., for greasing and service
- Service videos available within operator screen
- Alfa Laval contact information available in operator screen
- Automatic lubrication on main bearing; low speed greasing

Process:

- Paring disc
    - Back pressure configuration – for paring disc backpressure valve
    - Paring disc cleaning with high speed after low speed flush
- Special start up sequence for baffle disc and steep cone machines
- Offline timeout, for automatic speed reduction when running idle
- Alternative vibration alarm levels during start-up
- Control of down-stream installed solids conveyor
- Optional with ‘Process module’ that allows:
    - Possibility to control feed pumps with Process Module
    - Auto-tuning of pump controls
    - Feed flow monitoring

Options:

- Decanter Connectivity — Remote support and monitoring

Accessories:

- One set of special tools for lifting and maintenance.
- One (1) set of spare parts for one (1) year operation.
- Flexible connections in the inlet and outlet lines.

Documentation:

One electronic copy of Standard documentation package with the following documentation:

- Decanter Operating & Maintenance manual
- Decanter Spare Parts catalogue
- Control Panel circuit drawings
- Dimensional Drawings of Decanter Centrifuge.

Documentation not described above must be requested and may incur additional cost.

Freight: DAP Freight to jobsite, Canada.

Site Services:

Services of a factory trained field service technician for installation inspection start-up performance verification and training.

Maximum Five (5) days included over one (1) trip.

4. Clarifications and Exclusions

This proposal includes only items specified as being within the section “Price and scope of supply”. The following equipment and services are excluded from this quotation:

- Slide gate slop diverters
- Platform to elevate the centrifuges
- Acoustic enclosures
- Pipework and valves
- Electrical cabling
- Mechanical installation
- Inlet manifold
- Water boost pumps
- Water filters
- Centrate pump

- Pressure relief valves
- Lagging, heating & lighting
- Lifting Beams
- Odour control equipment and ducting
- Holding tanks
- Hazardous environment requirements
- Building or civil engineering work
- Customer's nameplates and pipe/cable identification
- Consumables
- Attendance at site
- Costs incurred by the client's engineer to the contract.

5. Price and Scope of Supply

Item	Description	Qty	Unit price (CAD)	Total (CAD)
1	Alfa Laval Decanter Aldec 55, main drive 75Hp and back drive 30 Hp, with Control panel plus.	1	363,950	$ 363,950
2	One set of special tools for lifting and maintenance.	Set	Included	Included
3	Major kit for main and Conveyor bearings.	Set	Included	Included
4	Lubrications kit	Set	Included	Included
5	Flexible connections in the inlet and outlet lines.	Set	Included	Included
6	Documentation	Set	Included	Included
7	Start up and Training (Max. 5 days/1 trip).	5	Included	Included
	Total			$ 363,950

6. Services

Alfa Laval offers you different types of services, which are briefly described below.

Service Agreements

Alfa Laval Service Agreements are tailor-made service solutions that combine any of our services, based on your specific needs. To maximize your performance and reduce your operating costs, these agreements bring you peace of mind by minimizing the risk of unexpected breakdowns. They also give you full control over your maintenance budget.

A quotation for a Service Agreement tailored to your requirements can be provided if of interest. For more information on Service Agreements and our local Service Organization, which includes 38 Service Centres, hundreds of factory-trained field service engineers, 4 global distribution centres, and our 24/7 365 days Technical HelpDesk; visit our website: www.alfalaval.com.

Installation Supervision, Commissioning and Performance Validation

The supervision is intended to secure that the decanter is installed in a safe and correct way, according to the Alfa Laval installation guidelines, to avoid operational problems and risks. It includes, amongst other things, checking of the following areas:

- Foundation and lifting devices
- Delivered equipment and documentation from Alfa Laval
- Connections of utilities
- In & outlet connections of the decanter and downstream equipment
- Special tools and lubrication oil
- Electrical supervision of MCC & HMI control system, ConditionAlert
- Remote bus communication.

Commissioning of the Decanter and Performance Verification will be carried out by our Senior Field Service Engineers. Performance Verification secures that the separation process is optimized by testing with product. The following activities will be done on site:

- Field I/O test. Parameter settings
- Initial start-up. Dry Run test
- Tune up of parameters
- Remote communication set up
- Production Water test & CIP
- Product test including sampling of product
- Checking of Flush and/or CIP efficiency.

Connected Services

Alfa Laval Connected Services are tailor-made service solutions that combine any of our services, based on your specific needs. To maximize your performance, increase or secure your uptime and reduce your operating costs. Alfa Laval Connected Services helps you to:

- Secure your uptime
- Ensure more efficient service planning
- Maximize decanter performance
- Reduce costs.

Remote Support and Monitoring

Remote Support and Monitoring allows you to remotely monitor and analyse your decanter technical running data. This is achieved through a web-based portal.

Benefits:

- Faster and more accurate troubleshooting for increased uptime.
- Remote visualization of your Decanter's operational conditions.

ConditionAlert TM

ConditionAlert™ is a maintenance decision support system. Alfa Laval will send you an event report within one week of a bearing damage being detected, the report includes recommended corrective actions to prevent the bearing damage turning into a bearing failure.

The main and conveyor bearings are monitored by ConditionAlert™ 24/7 real time, as long as the differential speed is kept above a minimum of 6 [rpm]. Below this speed the accuracy of monitoring the conveyor bearings is proportionally reduced.

As we further develop this system, in addition to the bearings other decanter components will be monitored too. The system will also be able to make sharp predictions about the remaining lifetime of monitored components. Some of these

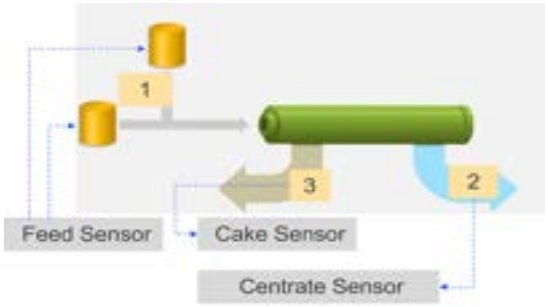
upgrades will be delivered seamlessly to the decanter user via a Software update. Other upgrades may require some additional hardware or sensors to be installed in the decanter.

Main benefits:

- Reduce the risk of unplanned stops and increase uptime.
- Optimise service intervals.

Process Optimization

Constant Solids Load — controls the speed of the feed pump. The aim is to keep a constant solids flow through the Decanter, thus allowing a better and more stable performance.



Adaptive Polymer Control — modify the speed of the polymer pump depending on the concentration of solids.

For these two services, it is necessary to have the corresponding feed sensors in place (solids and flow).

7. Terms and Conditions

Delivery:

Estimated at this time delivery to ALDEC 55 is 34 - 38 weeks DAP – customer site, Canada via truck (According to Incoterms 2010) after a technically and commercially clear order.

Proposed Payment Schedule:

- 35% with order
- 65% on delivery at the point decribed above upon approval of credit

Currency clause:

The Price quoted for the Equipment is based on the current foreign currency exchange rate. On the date your purchase order is received, if the value of the EUR in relation to the Canadian dollar has increased by more than 2% , the Price for the Equipment will be adjusted by an amount equivalent to such increase in the value of the foreign currency.

Materials:

The price is subject to revisions in the event Alfa Laval's costs of materials, including but not limited to steel, stainless steel and titanium have increased between the date of quotation and the date of manufacturing. In the event the manufacturing of the goods occurs at different times and a defined part of the price is referable to the part of the goods manufactured at any such manufacturing event, price revisions may occur in respect of each such part of the price.

Terms and Conditions:

According to Alfa Laval standard conditions of sale attached. Payment is due 30 days after date of invoice. Receipt by Alfa Laval of a purchase order for the items quoted constitutes your acceptance. Terms of Customer's purchase order which vary from the terms and conditions of this Quotation are not part of the contract unless specifically and expressly accepted by Alfa Laval.

Cancellation:

% of days from the order to the delivery	% of payment
10%	15%
10-30%	30%
30-50%	60%
More than 50%	100%

Validity:

60 days from date of Non – biding quotation. Alfa Laval has the right to decline an order based on part of the items quoted. This Non – biding quotation shall become a contract upon receipt by Alfa Laval of Customer's acceptance.

Please feel free to call to Marc Hunt at 416-318-2925, if you have any additional questions. Thank you very much for your interest.

On behalf of Alfa Laval

Marc Hunt,
Business Developer Waste water
Food and Water
Tel: +1 416 318 2925
marc.hunt@alfalaval.com
Alfa Laval Inc., Canada

Attachments:

Aldec_55- Dimesnional drawing

8. Alfa Laval Inc., Canada Standard Terms & Conditions of Sale.

1. These Standard Terms and Conditions apply to all equipment, services, parts and materials (“Products”) supplied by Alfa Laval Inc. (“Alfa Laval”) to its Customers unless otherwise agreed to by Alfa Laval in writing with respect to a transaction.
2. In these Standard Terms and Conditions, “Price” means the full amount to be paid to Alfa Laval in the transaction including any trade in or other special allowance in the transaction, quoted in Canadian currency, DAP Customer Site (Incoterms 2010), unless otherwise specified.

   “Technical Specifications” means Alfa Laval’s specifications for the Products being supplied.
3. TAXES. Unless otherwise specified, Price is exclusive of taxes, duties and charges. Customer will pay or reimburse Alfa Laval for same.
4. CREDIT APPROVAL/OVERDUE PAYMENTS. Each transaction is subject to approval of Customer’s credit by Alfa Laval. If granted, credit terms are Net 30 Days, payable from date of invoice, unless otherwise specified. Overdue payments bear interest at 18% per annum. To secure payment of the Price, Customer grants and Alfa Laval retains a security interest in, and in Quebec hypothecates, the Products and the proceeds thereof for the amount of the Price, plus interest thereon at the aforementioned rate. Customer authorizes Alfa Laval to prepare and file any documents reasonably necessary to register this security interest and hypothec. In the event of default by the Customer, Alfa Laval may repossess and may deal with the Products as it sees fit and Customer shall be responsible for all costs and remain liable for any deficiency.
5. DELIVERY. Time for delivery of Products is approximate and starts to run at later of the date specified in the order confirmation, the resolution of all technical terms including approval of drawings and commercial terms, the receipt by Alfa Laval of any advance payment, credit approval and any requested security for the balance of the Price. Except for any late delivery penalty to which Alfa Laval may explicitly have agreed for a specific supply, Alfa Laval is not liable for losses of any kind incurred by Customer for delays in or failure to deliver all or any part of the Products. If prior to delivery Alfa Laval has concern regarding timely payment of the Price because of an adverse change in Customer’s circumstances or otherwise, it may require payment of all or additional parts of the Price before shipment.

   Delivery of Products is deemed complete upon shipment per agreed Incoterms. If Customer is unable or unwilling to accept physical delivery at the time specified, Alfa Laval may store Products at Customer's cost and delivery of such Products shall be deemed complete as of the date of storage. Unless otherwise specified in writing, risk of loss or damage to the Products including any repaired or replaced items and the responsibility for the payment of insurance premiums and freight passes to Customer upon delivery by Alfa Laval.
   If Customer does not perform any material obligation, Alfa Laval may, in addition to any other remedy, suspend its performance until Customer has performed its outstanding obligations. All times for delivery of Products, but not the schedule for payment, will be extended accordingly. Customer will be responsible for Alfa Laval's costs and damages caused by Customer's failure to perform.
6. INSPECTION AND ACCEPTANCE. Customer will inspect Products immediately at delivery. Alfa Laval may, at its option, be present at such inspection. Customer shall immediately notify both the carrier and Alfa Laval of any missing, damaged or defective Products, failing which Customer is deemed to have accepted such Products as delivered and shall have no claim for same. Customer's notification of missing, damaged or defective Products does not constitute conclusive evidence of Products' condition at the time of delivery.
7. MECHANICAL WARRANTY. For all new and Fully Factory Refurbished equipment, Alfa Laval warrants to Customer that the Products meet the Technical Specifications in all material respects and are, together with any replacements of defective Products, free from defects in material and workmanship for a period, unless specified in writing, of one (1) year from the date of initial delivery of the Products. For all repairs, parts and services, Alfa Laval warrants to Customer that the Products meet the Technical Specifications in all material respects and are free from defects in material and workmanship for a period, unless otherwise specified in writing, of one hundred and eighty (180) days from the date of initial delivery of the Products.

   Alfa Laval will, at its option, repair, replace or refund the Price of any Products found to be defective during the warranty period. This is Customer's only remedy for Products which do not meet this warranty. Customer must notify Alfa Laval in writing of the claimed defect promptly after the appearance thereof and in no event later than ten (10) days after the expiry of the warranty period. Customer will bear risk of loss of, or damage to, defective Products in shipment to Alfa Laval. Customer will reimburse Alfa Laval at Alfa Laval's customary rates for service personnel attending to any warranty claim at Customer's premises.
   The warranty does not apply to ordinary wear and tear or to erosion or corrosion and shall be null and void if Products are used for unintended purpose, are misused, abused, improperly stored, installed, maintained, operated or repaired, are operated by Customer other than in accordance with Alfa Laval's instructions, if any, or under abnormal conditions or are exposed to radioactive materials.
8. OTHER WARRANTIES. Products will conform with applicable federal, provincial and local laws in effect on the date of acceptance of order. Alfa Laval may increase Price to reflect increased costs resulting from changes to laws or regulations. Products will not infringe any patent, copyright, trade secrets or other proprietary rights of any third party and, except as provided for under section 4 above shall be free from liens and encumbrances.

   Alfa Laval will use its commercially reasonable best efforts to remedy or resolve at its cost any violation of the warranties in this section 8. If Customer is permanently unable to use any of the Products or their use is

unreasonably restricted, Customer's sole remedy is the right to return such Products against a full refund of the Price.

9. NO OTHER WARRANTIES. CUSTOMER ACCEPTS THE LIMITED WARRANTIES SET OUT IN THESE STANDARD TERMS AND CONDITIONS OF SALE AS THE ONLY WARRANTIES PROVIDED BY ALFA LAVAL WITH RESPECT TO THE SALE, DELIVERY, INSTALLATION, PERFORMANCE AND SERVICING OF THE PRODUCTS. THESE WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES, WHETHER WRITTEN, SPOKEN OR IMPLIED BY ALFA LAVAL OR ITS AGENTS, PRESCRIBED BY STATUTE OR OTHERWISE IMPLIED BY LAW INCLUDING WITHOUT LIMITATION AS TO FITNESS FOR CUSTOMER'S PURPOSE. NO OTHER MATERIALS, EXCEPT AN EXPRESS PERFORMANCE OR EXTENDED WARRANTY SIGNED BY ALFA LAVAL FOR A SPECIFIC SUPPLY, SHALL GIVE RISE TO ANY WARRANTY OF ALFA LAVAL.
10. WARRANTIES ON RESALE. Customer shall make no representation or warranty in any resale of the Products or sale of any product incorporating the Products other than those contained in these terms and conditions. Customer shall indemnify, defend and hold Alfa Laval harmless against any and all claims, actions and expenses (including all lawyers' fees) in connection with any unauthorized representations or warranties or in connection with any claim of process patent infringement relating to a process in which the Products are used as a component part.
11. LIMIT ON LIABILITY. Alfa Laval shall have no liability for any loss, damage or expense incurred including, without limitation, special, consequential or incidental damages or lost production, sales or profits caused directly or indirectly by the use, maintenance, repair, service, adjustment or repossession of the Products or any of them or by Alfa Laval's failure to provide any of them whether alleged in contract, negligence or otherwise.
12. PERMITS. Customer must obtain at its expense all licenses, permits and approvals for the purchase, delivery and installation of any Products.
13. FORCE MAJEURE ETC. Either party may be excused from the timely performance of its obligations in the sale or other supply of any Products if its performance is impeded or prevented by circumstances beyond its control and it is taking all reasonable steps to mitigate the effect of the delay. The party claiming relief from its obligations must notify the other party promptly upon the occurrence of and upon the termination of the circumstances giving rise to the claim. Either party may terminate the agreement for the supply of the Products affected if such circumstances continue for more than 6 months. Notwithstanding anything in this section 13, the Customer must extend any security for the payment of the Price for a period equal to the delay in Alfa Laval's performance and pay Alfa Laval for that portion of the Products manufactured or delivered to the date of the initial notice. If by no fault of Alfa Laval or its affiliates it is delayed in delivering any Products, it is entitled to increase the Price to reflect any actual costs incurred because of the delay.
14. SOFTWARE. If software is included in the Products, Alfa Laval grants to Customer a nonexclusive, royalty-free license only for use of the software provided with the Products. Under this license, Customer may (i) use the software only in machine readable object code and only in connection with the Products; (ii) copy the software in machine readable object code for backup purposes in support of the use of the Products; (iii) create one additional copy of the software for archival puposes only. This licence may not be assigned, sublicenced or otherwise transferred without the prior written consent of Alfa Laval. Customer hereby acknowledges that the software provided comprises a valuable trade secret and/or copyright property of Alfa Laval (or its licensor) and covenants that it will take all reasonable precautions against unauthorized access to or disclosure of the software.
15. INTELLECTUAL PROPERTY. All drawings, designs and specifications provided by Alfa Laval are the sole property of Alfa Laval, and are furnished in order to provide full documentation and on the condition that they shall not be reproduced or copied in any manner whatsoever, in whole or in part, nor shall they be used, in whole or in part, for furnishing information to others or for any purpose not specifically authorized in writing by a corporate officer of Alfa Laval Inc.
16. CUSTOMERS DRAWINGS AND TECHNICAL SPECIFICATIONS. All drawings and specifications provided by Customer must be submitted in English and conform with Alfa Laval's standard drafting procedures. Customer may not make any changes to drawings accepted by Alfa Laval without its prior written consent. Changes without Alfa Laval's consent may void any warranty adversely affected thereby.
17. CONFIDENTIAL INFORMATION. Proprietary or confidential information disclosed for supply of any Products must not be used or disclosed by the recipient other than for the express purpose for which it was disclosed.
18. ASSIGNMENT. Neither party may assign all or any part of an agreement for sale of Products without the prior consent of the other party, except Alfa Laval may assign any portion to an affiliated company without the prior consent of Customer.
19. WAIVER. No act or omission shall act as a waiver of an unperformed obligation of the other party or constitute an agreement to allow future breaches of the applicable provision.
20. ENTIRE AGREEMENT. Products are sold only pursuant to a written or verbal order on terms expressly accepted by Alfa Laval which, together with any schedules identified therein and these Standard Terms and Conditions contain the entire agreement of the parties with respect to the sale or other supply of the Products and supersedes all other statements, understandings or the like. Alfa Laval rejects any differing or supplemental terms which may be printed or otherwise found in any of Customer's purchase order or other documents. Any alteration of an agreement must be in writing and signed by an authorized representative of each party. Descriptive data found in any advertisement, catalogue, brochure, circular or the like are approximate and must not be considered as any warranty or legal obligation as to Technical Specifications unless specifically included in performance criteria expressly warranted in the transaction.
21. SUSPENSION OR CANCELLATION. Subject to section 13 hereof, any agreement for sale or other supply of Products may not be cancelled or suspended by Customer without the express written consent of Alfa Laval, such consent to be granted in Alfa Laval's sole discretion and upon such terms, including the payment of all costs incurred and profits foregone, as Alfa Laval may reasonably require.

22. INTERPRETATION. If there are contradictions or inconsistencies between statements made in any order confirmation and documents related to a specific sale and supply, all documents shall be read so as to give priority to the specific statement accepted by Alfa Laval by the signature of an authorized officer over the general statement, but if the contradiction is with any of these Standard Terms and Conditions of Sale, the Standard Terms and Conditions of Sale shall prevail unless Alfa Laval has expressly stated that the term or condition contradictory to the Standard Terms and Conditions of Sale shall prevail.
23. GOVERNING LAW. The sale of the Products and all contracts related thereto are governed by the laws of the Province of Ontario and the laws of Canada applicable therein.
24. LANGUAGE. *Cette convention est disponible en version française*. This Agreement is available in the French language. *Si vous choisissez de signer la version anglaise de cette convention, vous serez réputé avoir exigé que cette convention et tous documents y afférents soient rédigés en langue anglaise seulement*. If you choose to execute the English language version of this Agreement, you will be deemed to have required that the Agreement and all related documents be drafted in English only.

SUMMIT
SUMMIT VALVE AND CONTROLS INC.

QUOTATION

DATE:	2025-05-22	**QUOTE #:**	Q3-10697
REVISION:	0	**VALID FOR:**	30 days
REVISION DATE:		**PAGE:**	1 of 5

BILL TO	SHIP TO
The Trade (BC Branch) TBA TBA, BC TBA TBA	The Trade (BC Branch) TBA TBA, BC TBA TBA

CUSTOMER RFQ	PAYMENT TERMS	INCOTERMS	CURRENCY
Q3-10697 - Kelowna Westside Regional Wastewater Treatment Plant.	Cash on Delivery	FCA Collect : Summit Location	CAD

OUTSIDE SALESPERSON	INSIDE SALESPERSON
Colin Robins (778) 879-9889 crobins@summitvalve.com	Vincent Wirasaputra (778) 285-7590 vwirasaputra@summitvalve.com

COMMENTS
This is a BUDGETARY Quote only.

LINE	DESCRIPTION	QTY	UOM	UNIT PRICE	EXT. PRICE
0101	Quote: Tideflex | Check Valve COMMENT: 6" Tideflex 35W TideFlex Duckbill Check Valves Body Style: FRW - Flared Bill, Wide (Series 35-W) End Connection: F1 - Flanged Drilling; ASME Class 150 Sleeve Material: CR - Chloroprene Pressure Rating: L - Contact Red Valve Engineering for proper sizing. Weight (Approx): 0 lbs/ 0 kgs Setup Text: Valve for use on an Effluent Diffuser Outfall, sized to Hydraulic Code: HC368 Hardware: Rings - 316 Stainless Stee	5.00	Each	$4,965.00	$24,825.00

SUMMIT
SUMMIT VALVE AND CONTROLS INC.

QUOTATION

DATE:	2025-05-22	**QUOTE #:**	Q3-10697
REVISION:	0	**VALID FOR:**	30 days
REVISION DATE:		**PAGE:**	2 of 5

NOTES	PRICING SUMMARY	
Summit Valve and Controls Inc. reserves the right to revise the quotation: a) in the event of the application of any trade tariffs on or by Canada that affect the actual landed costs of the goods being quoted, or; b) if any variation exceeds +/-3% from today's Bank of Canada USD/CAD Noon Rate. Any orders not released to production within 45 days of PO acceptance may be subject to revised pricing. As a result of ongoing market volatility, Summit Valve, and Controls Inc. reserves the right to revise the initial confirmed delivery dates for goods impacted by the current global supply chain and/or market conditions.	Sub Total: GST/HST: PST: **Total:**	$24,825.00 $1,241.25 $1,737.75 **$27,804.00**

AT SUMMIT, WE CARE.

Thank you for the opportunity to provide this quotation.

SUMMIT
SUMMIT VALVE AND CONTROLS INC.

QUOTATION

DATE:	2025-05-22	**QUOTE #:**	Q3-10697
REVISION:	0	**VALID FOR:**	30 days
REVISION DATE:		**PAGE:**	3 of 5

Customer Terms and Conditions

1. Contracts: By ordering or accepting any goods from Summit Valve and Controls Inc. (hereafter referred to as "Summit"), Buyer agrees to the terms and conditions set forth herein and in any attachments hereto. It is agreed that any purchase order or other document made or issued by Buyer incorporates these terms and conditions and excludes all other terms and conditions. Purchase orders and other documents which modify, make additions to, contradict, or are in any way inconsistent with the terms and conditions stated herein are not considered accepted, and thus a contract, until acknowledged in writing by Summit and delivered to Buyer. Subject to the foregoing, any different or additional terms in a purchase order or other document of Buyer are hereby expressly rejected, notwithstanding Summit's act of shipping or delivering goods or similar act of Summit. Summit's agreement to provide Goods is expressly conditioned upon Buyer's acceptance of the terms and conditions contained herein. Quotations by Summit are for immediate acceptance unless Summit states in writing a definite time period of validity within which the quotation may be accepted (in whole) to be valid.

2. Prices: **LIST PRICES AND DISCOUNT SCHEDULES OF ALL SUMMIT PRODUCTS ARE SUBJECT TO CHANGE WITHOUT NOTICE. ALL ORDERS WILL BE INVOICED AT THE PRICES IN EFFECT AT THE TIME AN ORDER IS ACCEPTED BY SUMMIT.** Any order whose delivery is delayed as per Buyer's request or is scheduled by Summit in excess of one hundred and twenty days will be invoiced at the published list prices and discounts effective at the shipment time or at the prices specifically agreed upon at the time of order acceptance by Summit.

3. Taxes: Unless otherwise indicated, prices are exclusive of all municipal, provincial and federal taxes, customs, duties and other levies. All taxes, customs, duties and other levies, either present or future that Summit may be required to pay or collect under any existing or future law upon or with respect to the sale, purchase, delivery, shipment, storage, processing, use or consumption of any of the Goods, including but not limited to taxes upon or measured by the receipts from sale, use, excise, value added and other similar taxes, thereof, shall be for the account of Buyer. Buyer shall indemnify Summit for any amounts which Summit is required to make payment of due to Buyer's failure to do so.

4. Ownership: Title and ownership of all Goods will remain with Summit until full payment to Summit of all accounts due with respect to the Goods. However, all risk of loss of the Goods will be assumed by Buyer upon delivery to Buyer in accordance with these terms and conditions. Buyer shall keep the Goods fully insured with loss payable to Summit from the time of passage of risk until the purchase price has been fully paid by Buyer. Upon request, Buyer shall furnish to Summit evidence of insurance as required by this section 4.

5. Intellectual Property: Summit and its third party suppliers retain all right, title and interest in and to the specifications for and other technical information regarding the Goods and any other intellectual property rights in the Goods.

6. Clerical Errors: Summit reserves the right to correct all clerical errors or omissions in any documents whether quotations, invoices, etc.

7. Warranty: All products sold by Summit are manufactured by persons other than Summit. **SUMMIT MAKES NO WARRANTIES OF ANY KIND AND DISCLAIMS ALL EXPRESSED AND IMPLIED WARRANTIES REGARDING THE GOODS WHETHER CONTRACTUAL, LEGAL, STATUTORY OR OTHERWISE, INCLUDING WITHOUT LIMITATION, ALL IMPLIED WARRANTIES OF MERCHANTABILITY, QUALITY, DURABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IF ANY MODEL OR SAMPLE WAS SHOWN TO OR PROVIDED BY BUYER, SUCH MODEL OR SAMPLE WAS USED MERELY TO ILLUSTRATE THE GENERAL TYPE AND QUALITY OF GOODS AND NOT TO REPRESENT THAT THE GOODS WOULD NECESSARILY CONFORM TO THE MODEL OR SAMPLE AND THERE IS NO WARRANTY MADE THEREBY.** To the fullest extent permitted by law and by the manufacturers, Summit extends to Buyer the manufacturer's warranty given to Summit by the manufacturer(s) of the Goods, however, Summit does not in any way represent, warrant or guarantee that any such manufacturer's warranties are enforceable or effective to remedy any defect in such Goods. Claims under any manufacturer's warranty must be made in accordance with the manufacturer's requirements regarding the return, repair, or replacement. Summit agrees to use reasonable efforts to cooperate with Buyer in processing any such claims.

8. LIMITATION OF LIABILITY AND REMEDIES: **THE TOTAL LIABILITY OF SUMMIT AND THE MANUFACTURERS OF THE GOODS WITH RESPECT TO THIS AGREEMENT AND THE GOODS FURNISHED HEREUNDER, AND IN CONNECTION WITH THE PERFORMANCE OR BREACH THEREOF, AND FROM THE MANUFACTURE, SALE, DELIVERY, INSTALLATION, REPAIR, REPLACEMENT OR TECHNICAL DIRECTION OR SERVICES COVERED BY OR FURNISHED UNDER THIS AGREEMENT, WHETHER BASED ON CONTRACT, WARRANTY, TORT, NEGLIGENCE, INDEMNITY, STRICT LIABILITY OR OTHERWISE, SHALL NOT EXCEED THE PURCHASE PRICE OF THE GOODS UPON WHICH SUCH LIABILITY IS BASED. IN ADDITION, AND NOT IN LIMITATION OF ANY OTHER TERM OF THESE TERMS AND CONDITIONS, SUMMIT SHALL NOT BE LIABLE TO BUYER OR ANY OTHER PERSON FOR ANY CONTINGENT, SPECIAL, INDIRECT, INCIDENTAL, PUNITIVE, EXEMPLARY OR CONSEQUENTIAL DAMAGES, SUCH AS, BUT NOT LIMITED TO LOSS OF GOODWILL, PROFITS, REVENUE OR SALES, FOR THE LOSS OF THE USE OF PROCESS, FACILITIES, EQUIPMENT, PLANT, OR PRODUCT OF BUYER OR THE END USER REGARDLESS OF CAUSE, INCLUDING WITHOUT LIMITATION, THAT ARISING OUT OF, WHETHER PARTIALLY OR OTHERWISE, DEFECTS, BREACH OF WARRANTY OR CONTRACT OR NEGLIGENCE, BY OPERATION OF LAW OR OTHERWISE. THE REMEDIES OF BUYER SET FORTH HEREIN ARE EXCLUSIVE, AND IN LIEU OF ANY OTHER RIGHTS OR REMEDIES AVAILABLE TO BUYER AT LAW, IN EQUITY OR OTHERWISE.**

9. Force Majeure: In no event shall Summit be liable for any losses, costs, damages or other expenses resulting from failure or delay in delivery due to (i) orders bearing priority rating established pursuant to law, (ii) strikes, lockouts, differences with workmen, local labour shortages or other labour dispute, (iii) fire, flood, severe weather conditions or other casualty or other acts of God, (iv) riots, strife, war, insurrection, civil disturbance or acts of terrorism (including impeding threat of any of the foregoing), (v) government regulations or requirements or acts of government (foreign or domestic) including embargoes or blockades, (vi) interruption, delay, shortages or failure of raw materials, supplies, fuel, power, or transportation, breakdown of equipment, or (vii) any other causes beyond Summit's control, whether similar or dissimilar to those enumerated. Summit shall have such additional time as may be reasonably necessary to perform its obligations hereunder in the event of the occurrence of any of the events described above.

10. Default: If Buyer fails to fulfill the terms of payment related to the Goods, Summit may at its option (i) defer further deliveries or shipments relating to any other order until such payments are made, (ii) cancel this sale or any other order, (iii) repossess the Goods; (iv) recover all costs of collection including, but not limited to, reasonable attorneys' fees; and (v) combine any of the rights and remedies described in this document as may be permitted by applicable law, such remedies being in addition to all other remedies available at law or in equity. Summit further reserves the right, even after partial delivery or shipment on account of any order, to require from Buyer satisfactory security for performance of Buyer's obligations, and refusal to furnish such security will entitle Summit to suspend deliveries or shipments until such security is furnished, and, at Summit's option to cancel any order.

11. Claims Notice: Upon receipt of shipments from Summit, Buyer should inspect all Goods for shortages and incorrect materials. Any claims for shortages or incorrect materials must be filed in writing and received by Summit within ten (10) days from the time such shipment was received by Buyer and, in such case, Buyer must afford Summit the opportunity to inspect same or the Goods will be conclusively deemed to have been received by Buyer without shortage or defect and with conformity with order and no claims will be allowed. Any claim, whether receiving or warranty in nature, must be made in writing and received by Summit within ten (10) days from the time such shipment was received by Buyer or such claim will be forever waived. Buyer waives any right to revoke its acceptance of Goods.

12. Delivery: Delivery times are approximate only and shall depend on prompt receipt by Summit of all information necessary to proceed with the Goods immediately and without interruption. If the Parties agree in writing to require Summit's delivery to Buyer's premises or jobsite, the price quoted and delivery is conditional upon free ingress and egress to the location and upon the location being readily accessible. Summit reserves the right to make delivery in installments, and a delay with respect to any installment shall not affect any other installments. Any delivery of Goods that is delayed at Buyer's request, by causes within Buyer's control or due to Buyer's inability to accept delivery may be placed in storage by Summit at Buyer's risk, and Buyer shall be responsible for all freight, storage, insurance, and other expenses incurred thereby. In no instance does Summit guarantee delivery times, nor will Summit assume any and Buyer releases Summit for a liability for damages, losses, or expenses resulting from Summit's failure to deliver products within estimated delivery times. Any orders on hold more than sixty days may be treated by Summit as a canceled order and returned goods.

13. Change Orders or Cancellations: Orders received and accepted by Summit may not be changed or canceled except on terms satisfactory to Summit which prevent Summit from incurring any loss. Changes or cancellations of products considered non-standard or special, including without limitation, orders for Goods specially built or manufactured to Buyer specifications or orders for substantial quantities, will not be accepted without full reimbursement of all related expenses incurred to date. All cancellations and change orders must be made in writing to and approved by Summit subject to appropriate charges to Buyer.

14. Return of Goods: No Goods will be taken back and credited without prior written approval from Summit. Any return of Goods to Summit shall be subject to Summit's approval and to such Goods being in the same condition as when they originally left Summit's facility for shipment to Buyer. In issuing credits, Summit will deduct up to 50% restocking fees, shipping and reconditioning expenses from the Buyer's credit.

15. Design Changes: Summit and its manufacturers reserve the right to change, discontinue, or alter the design and construction of any product without prior notice and to have no obligation or liability for such changes, alterations, or discontinuance of products previously or subsequently sold.

16. Shipments: All prices are quoted FCA (Incoterms) Summit. Summit's responsibility for Goods ends upon delivery to the stated delivery point. Summit does not insure shipments beyond the point to such transportation company and, therefore, all claims of lost or damaged products in transit must be filed directly with the transportation company by Buyer.

17. Miscellaneous Charges: The minimum billing per order is $75.00. Any extra expenses incurred by Summit such as engineering, tagging, taxes, service calls, export crating, or other expenses will be added to the invoice after notification to Buyer of the extra costs.

18. Payment Terms: All invoices for Canadian buyers are due and payable in the lawful currency of Canada thirty (30) days from the date printed on the invoice unless otherwise stated by Summit. All amounts past due of Buyer will be charged interest at the lesser of the rate of 1¾ % per month (21% per annum) or the maximum annual rate allowable by law. The acceptance of any Buyer's order is subject to approval of Summit's Credit Department, and Summit may at any time decline to make any shipment or delivery or perform any work except upon receipt of payment or security or upon terms and conditions satisfactory to Summit's Credit Department. Credit card payments for past due invoices or credit card transactions over $5,000 will be subject to a 3% processing fee.

19. Published Data: All published dimensions, weights, temperatures, pressure ratings, and other data are approximate.

20. Quotations: The quantities listed on our quotations are to be considered estimates only; actual quantities should be confirmed based on the requirements of the project.

21. Conflict with Applicable Law; Severability: If any provision of these terms and conditions shall be judged by a court or body of competent jurisdiction to be invalid, illegal or unenforceable in any respect, such adjudication shall not effect or modify any other provision of these terms and conditions and the effect thereof shall be confined to the provision as to which such adjudication is made.

22. Set-off: Buyer shall not set off against any amounts due to Summit, any amounts claimed by Buyer against Summit for any reason whatsoever.

23. Import/Export: All Goods sold and shipments made hereunder shall at all times be subject to the export control laws and regulations of Canada and any other applicable jurisdictions, and any amendments thereof. Buyer is responsible for compliance with all import and export control laws and regulations. Buyer will obtain import, export, and re-export approvals and licenses required for the Goods delivered and will retain documentation evidencing compliance with those laws and regulations. Buyer agrees that it shall not, except as said laws and regulations expressly permit, make any disposition of Canadian origin Goods or technical information obtained from Summit

(directly or indirectly), by way of trans-shipment, re-export, diversion or otherwise, other than in and to the ultimate country of destination specified in the invoice or order and/or declared as the country Buyer's freight forwarder will export on Buyer's behalf and Buyer will be responsible for any failure of Buyer's freight forwarder to comply with all applicable export requirements.

24. Assignment: This document and Buyer's obligations hereunder may not be delegated or assigned by Buyer without Summit's written consent, and any assignment attempted without such consent shall be deemed to be null and void and shall effect, at Summit's option, a cancellation of all of Summit's obligations hereunder. Summit may assign this document and its interest therein, without the consent of Buyer.

25. Interpretation: This document shall be governed by and construed in accordance with the laws of the Province of the Summit division through which the transaction takes place, and the Parties agree to attorn to the exclusive jurisdiction of the courts located in such Province. The application of the United Nations Convention on Contracts for the International Sale of Goods is excluded.

26. Acceptance Of Waivers And Limitations: Buyer acknowledges that: (i) he, she or it is a sophisticated purchaser of goods of the types described herein, (ii) he, she or it fully understands the nature and extent of the waivers and limitations on Buyer's rights and remedies set out herein and it accepts such waivers and limitations, and (iii) any rule of construction to the effect that any ambiguity contained herein is to be resolved against a drafting party shall not be applicable to the interpretation of these terms and conditions.

27. Electronic Transactions: The Parties agree to permit and recognize the execution or acceptance of this document and the order by means of an "electronic signature" as that term or similar term is defined in the Electronic Transactions Act or equivalent legislation of the governing jurisdiction. Accordingly, the absence of a manual signature in ink by any Party hereto shall not affect the written electronic communication that constitutes this Agreement in any respect, provided that an electronic signature is transmitted herewith. Notices required or permitted hereunder may be delivered in an electronic form, and if so delivered, shall satisfy the notice requirements set forth herein or arising under applicable law.

28. Language: Buyer and Summit hereby declare that they have specifically requested and do hereby confirm their request that the present order and terms and conditions be drafted and executed in the English language. *Les parties aux présentes déclarent qu'elles ont spécifiquement demandé que la présente commande et ses modalités soient rédigés en langue anglaise, et par les présentes confirme leur dite demande.*

APPENDIX B – ODOUR CONTROL UPGRADE ALLOWANCE

7 Odour Treatment Options

The WRWTP currently has an organic media biofilter that provides centralized foul air treatment for the high strength odour sources at the plant. As discussed in Section 4, the biofilter is operating beyond its capacity and should be upgraded. This section presents options for foul air collection and treatment.

7.1 Option 1 – Inorganic Media into Existing Biofilter

Option 1 consists of retrofitting the existing biofilter enclosure with inorganic media and installing pre-humidification. This is the lowest cost option, but it also provides the lowest level of service.

This option would treat all foul air from the plant at the retrofitted biofilter. This would have the capacity to treat systems already connected, plus the additional existing systems to be connected (Influent Gate, and Primary Effluent Channel of Bioreactors #1 and #2), and future processes. The expected capacity required for these systems is 40,665 m^3/hr @ 5 ppm average and 12 ppm peak H_2S loading. The existing enclosure is 28 m long by 12 m wide. Inorganic media would require a minimum 0.95 m depth. The media replacement is sized to provide >99% removal of H_2S and >90% removal of other odour causing compounds. This option continues to rely on the distribution headers and laterals buried in the media have the potential to become plugged which could impact performance. The in-duct humidifier requires 80 psi supply pressure and is anticipated to be less effective when compared to a trickling tower.

Option 1 generally consists of the following:

- Retrofit the existing biofilter with inorganic media. Initial vendor sizing indicates that the existing biofilter footprint would not change.
- Humidification vessel: a 3.0 to 3.6 m diameter circular vessel sized for air flow velocity below 2 m/s (400 ft/min), complete with mist eliminator. Note that the conceptual location for the humification vessel may conflict with future piping for Bioreactors 7 and 8.
- Duty/standby pumps to recirculate humidifier water to the top of the humidification tower.
- Replace the 60 hp duty/standby FOA blowers at their current location to accommodate the high flow and change in pressure drop across inorganic media.
- Reinstate the existing inlet and outlet H_2S sensors on the biofilter.
- Not included is the option to add a partition wall and modify the header in the biofilter to convert to two cells.
- A cloth structure cover (e.g., Quonset building) to help manage moisture within the biofilter.
- The existing FOA collection system piping is generally unchanged, however, it should be noted that the existing 900 mm diameter piping is near capacity.

The estimated capital cost for Option 1 is $4,350,000 including profession fees and contingency for budgetary planning. The cost estimate breakdown is provided in **Appendix B.** A summary of the key advantages and disadvantages for Option 1 are presented below.

Advantages	Disadvantages
❖ Lowest cost	❖ Potentially more operator intensive to manage moisture and plant growth
❖ Reuse of existing biofilter structure	❖ Direct bury distribution piping may plug
❖ Inorganic media has a long life	❖ The existing biofilter is located above mixed liquor, RAS and scum piping
❖ Pre-humidification to improvement treatment performance	❖ Existing biofilter cannot be used while staging the work
❖ Option to split into 2 cells (not costed)	

7.1.1 Phased Approach for Option 1

The objective of this phased approach is to manage the capital costs of odour upgrades over multiple phases of implementation.

The phased approach is as follows:

- Phase 1 – Pre-humidification:
  - Install humidification vessel south of the existing biofilter.
  - Install pumps in the Stage 3 tunnel to recirculate humidifier water.
  - Extend overhead FOA piping to the humidification vessel.
  - Modify the buried FOA header piping to split the existing biofilter into two cells. Install a basic partition wall to split the cells.
  - A cloth structure cover (e.g., Quonset building) to help manage moisture within the biofilter.
  - It is assumed that the existing FOA blowers can be adjusted to meet any change in duty point (such as VFD speed adjustment or belt shiv change).
  - Phase 1 capital cost estimate is $2,180,000.
- Phase 2 – Inorganic Media:
  - Retrofit the existing biofilter with inorganic media.
  - It is assumed that the existing FOA blowers can be adjusted to meet any change in duty point (such as VFD speed adjustment or belt shiv change).
  - Phase 2 capital cost estimate is $1,610,000.

The feasibility of this phased approach would be confirmed through detailed design. Detailed design should also seek capital cost efficiencies whether by design or procurement approach.

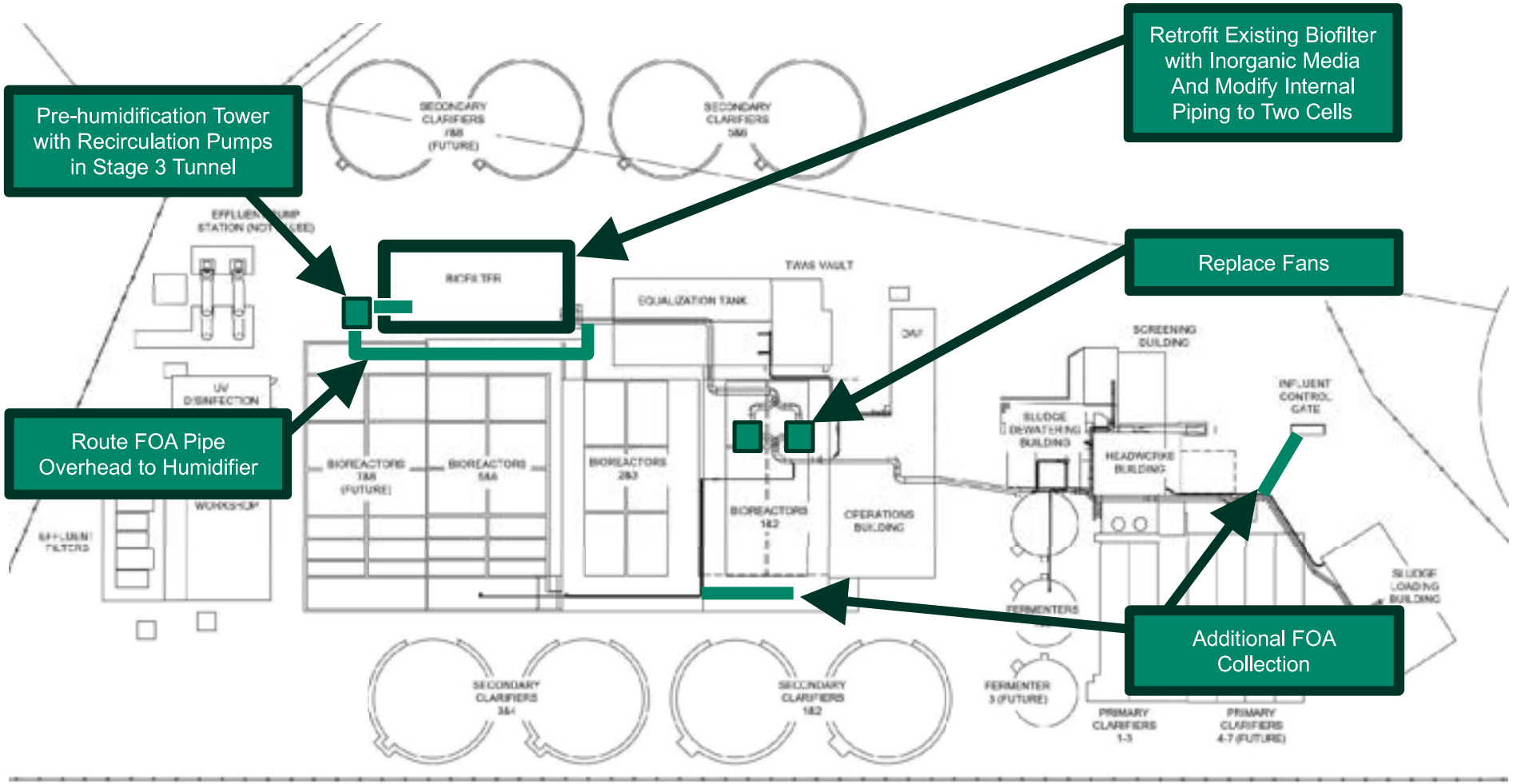


Figure 15 Option 1 General Layout

7.5 Review of Options

The options developed above all provide an inorganic media biofilter for treatment of process foul air. Options 1, 2 and 3 would treat all foul air through a centralized biofilter. Option 4 would split the foul air to treat process air in a biofilter and room space air in a dry scrubber.

Table 7 below summarizes the estimated costs of each option. Key considerations for each option are as follows:

- **Option 1** would provide the lowest cost but also the lowest level of service by simply retrofitting the existing lock block biofilter to treat all foul air from the plant. This option provides a less effective humidification approach, would not be comparable with a dispersion stack, and is potentially more operator intensive to maintain effective operation.
- **Options 2 and 3** would each provide a cast-in-place biofilter to treat all foul air from the plant. Option 2 would retrofit the biofilter into the EQ Tank and construct a new EQ Tank at the southeast corner of the plant site. The costs of Options 2 and 3 are comparable, and the benefit of Option 2 is the initial works to expand equalization storage.
- **Option 4** would separate process foul air and room space foul air. Higher concentration process foul air would be sent to a biofilter. Room space foul air, while high volume and load, would be sent to a dry scrubber. Option 4 is the lowest cost option to provide a new enclosed biofilter.

Table 7 Options Cost Summary

Odour Control Upgrades					
Item	**Description**	**Option 1 Reuse Ex. Biofilter**	**Option 2 Retrofit EQ Tank**	**Option 3 New Biofilter**	**Option 4 Biofilter & Scrubber**
1.0	**General Requirements**	$ 590,000	$ 1,760,000	$ 1,760,000	$ 1,500,000
2.0	**Civil**	$ 45,000	$ 178,000	$ 160,000	$ 220,000
3.0	**Structural**	$ 20,000	$ 2,913,500	$ 1,137,100	$ 20,000
4.0	**Process**	$ 1,738,000	$ 4,404,000	$ 4,294,000	$ 4,072,200
5.0	**Electrical**	$ 240,000	$ 900,000	$ 900,000	$ 1,100,000
	Sub-Total	**$ 2,633,000**	**$ 8,229,000**	**$ 8,251,000**	**$ 6,912,000**
	Professional Services (estimate at approx. 15%)	$ 390,000	$ 1,230,000	$ 1,240,000	$ 1,040,000
	Construction Contingency (approx. 50%)	$ 1,320,000	$ 4,110,000	$ 4,130,000	$ 3,460,000
	TOTAL ESTIMATED CAPITAL COST	**$ 4,350,000**	**$ 13,570,000**	**$ 13,630,000**	**$ 11,420,000**

Notes (a) Class D cost estimates to be used for options comparison.
(b) Land acquisition not included.

A phased approach to Option 1 is presented to mitigate high capital costs. The feasibility of phasing the work must be vetted through detailed design. The phased approach is as follows:

- Phase 1 – Implements pre-humidification, split the existing biofilter into 2 cells, maintain the existing FOA blowers. Estimated capital cost is $2,180,000.
- Phase 2 – Retrofit inorganic media into the existing biofilter, maintain the existing FOA blowers. Estimated capital cost is $1,610,000.

8 Recommended Approach

The recommended approach for a new biofilter is Option 4. This option is the lowest cost option that provides an enclosed inorganic biofilter. Additionally, the separation of process foul air and room space foul air could provide construction flexibility to stage implementation.

An alternative that would help mitigate capital costs is to proceed with Option 1 – Phased Approach. This would be to first install pre-humidification for the existing biofilter and then second to retrofit the existing biofilter enclosure with inorganic media. A disadvantage of this approach is that this location may conflict with construction of the Stage 4 bioreactors and secondary clarifiers. Current planning estimates that the Stage 4 upgrades will be required in 2035[5]. The humidifier and inorganic biofilter media could be relocated at that time.

It is also recommended to improve foul air collection at the plant:

- Confirm that the room spaces with odour potential have sufficient foul air extraction and negative pressure is maintained (Headworks Building, Sludge Dewatering Building, Screening Building and Sludge Handling Building). Where processes are adjacent room spaces, such as the screened raw sewage channel, the process space should have more negative pressure than the room space.
- New foul air connections are proposed at the PE Channel at Bioreactors 1&2 and at the influent gate.

[5] AECOM. Thickened Waste Activated Sludge Vault Pre-design and Clarifier Repair. June 27, 2019.

Appendix B – Odour Control Option Cost Summaries

12-Nov-24

Regional District of Central Okanagan
Westside Regional Wastewater Treatment Plant - Odour Control Upgrades

Odour Control Upgrades

Item	Description	Option 1 Reuse Ex. Biofilter	Option 2 Retrofit EQ Tank	Option 3 New Biofilter	Option 4 Biofilter & Scrubber
1.0	**General Requirements**	$ 590,000	$ 1,760,000	$ 1,760,000	$ 1,500,000
2.0	**Civil**	$ 45,000	$ 178,000	$ 160,000	$ 220,000
3.0	**Structural**	$ 20,000	$ 2,913,500	$ 1,137,100	$ 20,000
4.0	**Process**	$ 1,738,000	$ 4,404,000	$ 4,294,000	$ 4,072,200
5.0	**Electrical**	$ 240,000	$ 900,000	$ 900,000	$ 1,100,000
	Sub-Total	**$ 2,633,000**	**$ 8,229,000**	**$ 8,251,000**	**$ 6,912,000**
	Professional Services (estimate at approx. 15%)	$ 390,000	$ 1,230,000	$ 1,240,000	$ 1,040,000
	Construction Contingency (approx. 50%)	$ 1,320,000	$ 4,110,000	$ 4,130,000	$ 3,460,000
	TOTAL ESTIMATED CAPITAL COST	**$ 4,350,000**	**$ 13,570,000**	**$ 13,630,000**	**$ 11,420,000**

1. Class D (+/-50%) cost estimates to be used for options comparison.
2. Land acquisition not included.

12-Nov-24

Regional District of Central Okanagan
Westside Regional Wastewater Treatment Plant - Odour Control Upgrades **Option 1 Reuse Existing Biofilter**

Option 1 Odour Control Upgrades

Item	Description	Quantity	Unit	Unit Price	Extension ($)
1.0	**General Requirements**				
	Mobilization and Demobilization	1	LS	$ 50,000	$ 50,000
	Bonding, Insurance, Profit, Soft Costs, Etc. (20% Subtotal)	1	LS	$ 520,000	$ 520,000
	Survey and Record Drawings	1	LS	$ 20,000	$ 20,000
	Total 1.0 - General Requirements				**$ 590,000**
2.0	**Civil**				
	Yard Piping Allowance	1	LS	$ 15,000	$ 15,000
	Site Restoration	1	LS	$ 10,000	$ 10,000
	Existing Media Removal and Disposal	1	LS	$ 20,000	$ 20,000
	Total 2.0 - Civil				**$ 45,000**
3.0	**Structural**				
	Biofilter Fabric Covering (Quonset Style Shelter)	1	LS	$ 20,000	$ 20,000
	Total 3.0 - Structural				**$ 20,000**
4.0	**Process**				
	Foul Air Booster Fans (100HP, Class 1 / Div 1)	2	ea	$ 97,000	$ 194,000
	Humidification Tower Package System incl. C3 Pumps	1	LS	$ 424,000	$ 424,000
	Synthethic Media	1	ea	$ 720,000	$ 720,000
	Process Installation Allowance (incl. Biofilter Header Changes)	1	LS	$ 400,000	$ 400,000
	Total 4.0 - Process				**$ 1,738,000**
5.0	**Electrical**				
	Electrical Allowance	1	LS	$ 240,000	$ 240,000
	Total 5.0 - Electrical				**$ 240,000**
	Odour Control Upgrades Sub-Total				**$ 2,633,000**
	Professional Services (estimate at approximately 15%)				$ 390,000
	Construction Contingency (approximately 50%)				$ 1,320,000
	TOTAL ODOUR CONTROL UPGRADES CAPITAL COST				**$ 4,350,000**

APPENDIX C– COST ESTIMATES

Class D Cost Estimate for RDCO WWTP Stage 4 Upgrades.rev1

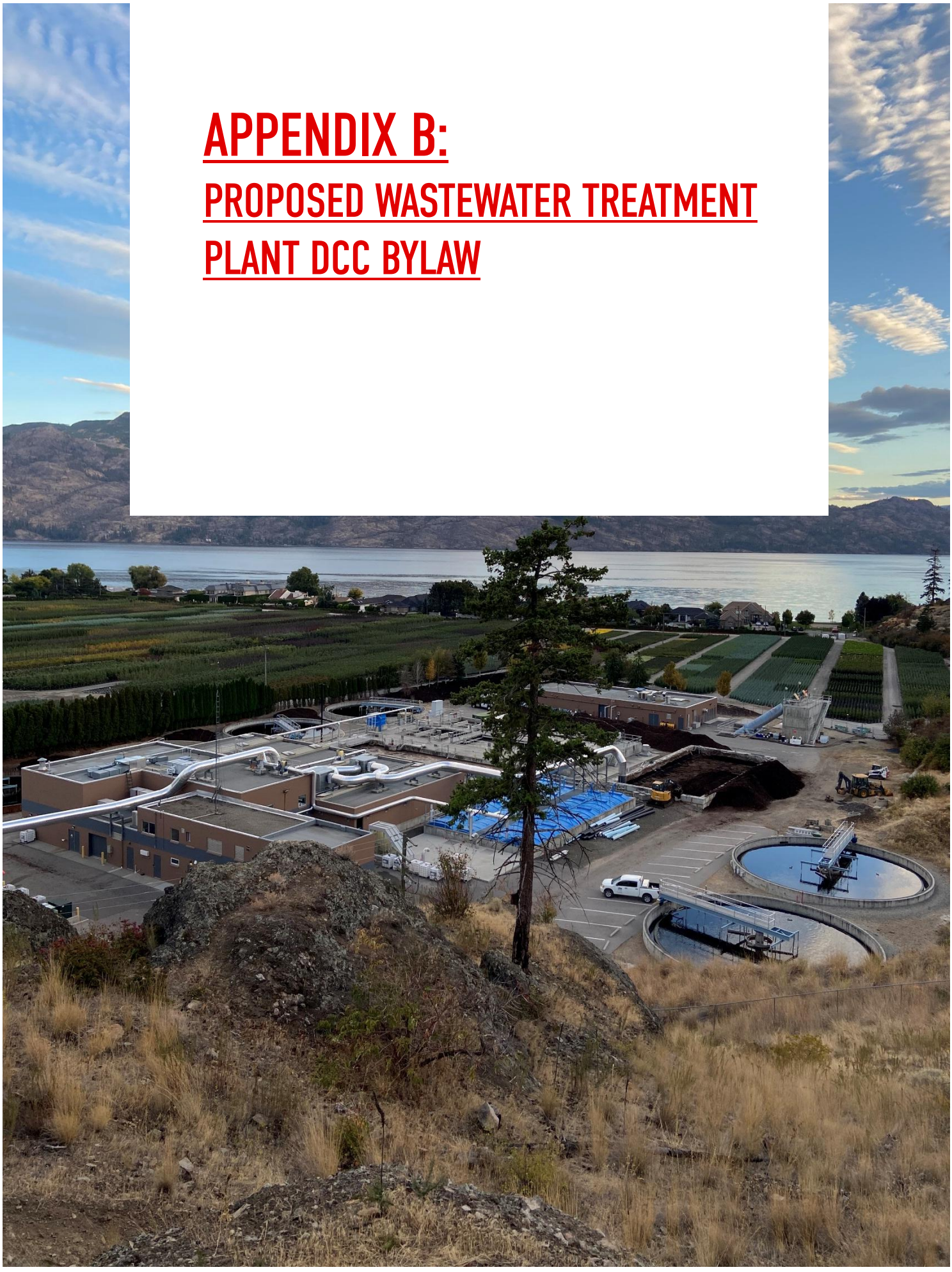
Job No: **1179.0120.01**
Date: **14-Aug-25**

Prepared by: C. Tremblay
Checked by: J.Clowes

ITEM	DESCRIPTION	QTY	UNIT	$/UNIT	EXTENDED
1.0	**General**				
	Mobilization / Demobilization	1	LS	$430,000	$ 430,000
	Insurance and Bonding	1	LS	$215,000	$ 215,000
	Programming and Comissioning	1	LS	$290,000	$ 290,000
	Rock Removal and Dewatering	1	LS	$250,000	$ 250,000
	Yard Piping	1	LS	$600,000	$ 600,000
	Misc Civil (Common Ex, Grading, Access improvements, Landscaping)	1	LS	$600,000	$ 600,000
	O&M Manual	1	LS	$20,000	$ 20,000
	Bypass Pumping	1	LS	$50,000	$ 50,000
	SUBTOTAL				**$ 2,455,000**
2.0	**Screening**				
	Screening Equipment	1	LS	$610,000	$ 610,000
	SUBTOTAL				***$ 610,000***
3.0	**Primary Clarifiers 5 & 6**				
	FRP Tank Covers	2	ea	$230,000	$ 460,000
	Concrete	204	m3	$2,500	$ 510,000
	Internal Equipment Supply and Install	1	LS	$780,000	$ 780,000
	GritShield Chain	1	LS	$10,000	$ 10,000
	SUBTOTAL				***$ 1,760,000***
4.0	**Bioreactors 7 & 8**				
	Concrete	511	m3	$2,500	$ 1,277,500
	Gates	2	ea.	$68,800	$ 137,600
	Aeration Equipment - Diffusers	1	LS	$400,000	$ 400,000
	Screw Blowers	2	ea.	$240,000	$ 480,000
	Mixers with jet ring	3	ea.	$30,000	$ 90,000
	Piping and Valving	1	LS	$525,000	$ 525,000
	Misc. Metals (Handrails, checker plate, grating and stairs)	1	LS	$168,000	$ 168,000
	Building Mechanical (HVAC and Plumbing in Tunnels)	1	LS	$84,000	$ 84,000
	Internal Recycle Pump	1	LS	$320,000	$ 320,000
	SUBTOTAL				***$ 3,482,100***
5.0	**Secondary Clarifiers 7 & 8**				
	Concrete	97	m3	$2,500	$ 242,500
	Clarifier Internal Equipment. Includes handrails and grating	2	ea.	$840,000	$ 1,680,000
	SUBTOTAL				***$ 1,922,500***
6.0	**UV Disinfection System**				
	UV System Installed in Existing Channel	1	LS	$849,000	$ 849,000
	Misc. Metals and Concrete Work	1	LS	$212,000	$ 212,000
	SUBTOTAL				***$ 1,061,000***
7.0	**Sludge Dewatering**				
	Centrifuge	1	LS	$660,000	$ 660,000
	Process Piping and Valving	1	LS	$134,400	$ 134,400
	Removal of Existing Centrifuge	1	LS	$50,000	$ 50,000
	Sludge Cake Pump	1	LS	$1,105,000	$ 1,105,000
	SUBTOTAL				***$ 1,949,400***
8.0	**DAF**				
	Building	1	LS	$280,000	$ 280,000
	DAF including process pipe allowance	1	LS	$1,600,000	$ 1,600,000
	SUBTOTAL				***$ 1,880,000***
9.0	**Electrical and Instrumentation**				
	Electrical and instrumentation allowance for equipment	1	LS	$2,800,000	$ 2,800,000
	SUBTOTAL				***$ 2,800,000***
10.0	**Outfall**				
	150 mm Outfall Tideflex Check Valves Supply and Installation	1	LS	$100,000	$ 100,000
	SUBTOTAL				***$ 100,000***
				Subtotal	$ 18,020,000.00
				Engineering and Contingency (50%)	$ 9,010,000.00
				Total	$ 27,030,000.00
				Rounded Total	$ 28,000,000.00

APPENDIX B:

PROPOSED WASTEWATER TREATMENT PLANT DCC BYLAW



APPENDIX C:

ENGAGEMENT MATERIALS