AGENDA NO: i

MEETING DATE: June 13, 2018

THE FOLLOWING PUBLIC CORRESPONDENCE WAS RECEIVED BY THE CITY COUNCIL FOLLOWING POSTING OF THE AGENDA

From: Jeffery Heller
Sent: Monday, June 11, 2018 8:43 AM
To: Council
Cc: Dana Swanson; Lori Kudzma
Subject: Agenda Correspondence - MBCC Meeting 6/13/18 - Item i. WWRFCAC Member Selection

I highly recommend Stephen Carnes for this position. He is a longstanding and active member of the community, a highly qualified structural engineer whom I trust completely.

Jeff Heller

AGENDA NO: ii

MEETING DATE: June 13, 2018

THE FOLLOWING PUBLIC CORRESPONDENCE WAS RECEIVED BY THE CITY COUNCIL FOLLOWING POSTING OF THE AGENDA

From: Bart Beckman
Sent: Saturday, June 09, 2018 4:31 PM
To: Dana Swanson; Council; Scott Collins
Cc: Rob Livick; Jeffrey Heller; Barry Branin; Carole Truesdale; Kerrigan Mahan
Subject: Correspondence for the June 13 Special Council meeting
Attachments: Correspondence to 6-13-2018 Special Counsil Mtg.docx

Follow Up Flag: Follow up
Flag Status: Flagged

Dana

Please include this correspondence in the subject meeting.

Thank you.

Bart

Correspondence for the Special Meeting on June 13, 2018 for the Morro Bay City Council

1. **Please provide accountability for the funds that were authorized in the 2015 218 request for rate increases for water and sewer.**

   I have attached a summary of the items included in the prior 218 "vote". While the $75 Million ($57 Million for Morro Bay) has been discussed extensively, what has been buried is the approximately $17 Million for other issues such as sewer and water line repairs and the installation of automated meters. All of this was scheduled to be completed within a 5-year timeframe – this can be verified if one reviews the B&W rate study worksheets which were used as the basis for the rate increase request.

   As best I can determine, little or none of these items have been completed, much less started.

   Also, in reviewing the Proposed 2018/2019 Budget, I do not see that any of the items associated with the 218 approved items – again for about $17 Million.

   Thus who is managing the previously approved funds? There are clearly some debatable issues relative to how well the basic plant has been managed, but **who is managing this additional $17 Million – was accounting set up to accumulate into these buckets?** Or just 2 for the basic plant.

   And if there is a water accumulation fund based on this 218 rate increase, **does that mean that the $25 Million also in the B&W worksheets for a new water reclamation facility is already approved** as well (the cost expenditures for this was shown in the 6 – 10 year timeframe).

2. **Rate Study – What is to be included and for how much?**
   a. Basic Facility using the bid. (We were advised that the $69 Million included demo of existing plant, although it would still be bid to try to get a lower cost)
   b. Lift Station and piping estimate (are you still assuming Quintana?)
   c. Piping and injection system for water reclamation
   d. All, part, or none of the items previously approved
   e. All, part, or none of the items from the One Water Study – the Study appropriately indicated that some of this work should be considered for the rate study.

3. At the June 8, 2018 meeting Rob Livick indicated that the major known sewer line leak issue is on Quintana/Main as a rebuttal to my suggesting I had heard the big problem was on the Embarcadero.

   Why then is there a capital improvement budget item for the Embarcadero in the future, but not one for the Quintana/Main – and yes, I get that item is included in the One Water Study.

4. We attended a political event where Doug Gibson, in response to a question, said the permit from the County would specifically EXCLUDE the possibility of any building growth on the acquired property other than the plant itself (or possibly related items such as solar – this was added by me).

   City Manager concurred. Mr. Livick concurred and then curiously added," but that doesn't make any suggestion as to the other county property". Was not clear why he felt the need to add that comment.

   Thus, could you please go on the record to set minds at ease who think this site is a gateway to development by publicly stating no facilities other than the planned facility.

Respectively, Bart Beckman

2015 Morro Bay 218 Rate Increase for Water & Sewer Rates

Sewer Rates HAD been steadily increasing. Water rates had not been increased for 20 years.

APPROVED INCREASES FOR WATER

1. **Set in place annual water rate increases to address the budget deficit caused by prior Councils funding water rate deficits from the General Fund.**

   Comment: These rates have been implemented simply by not stopping them.

2. **Fund $6.5 Million of capital improvements over the next 5 years including:**
   $3.5 Million for Water Meters to be complete by 2016, and another
   $3.0 Million for new water storage tanks, pipeline improvements and desal plant rehabilitation and upgrades

   Comment: NONE of this has been addressed almost 3 years after the authorization

3. **Noted that if we needed the desal plant, it would be feasible**

   Comment: The desal plant is not a viable option for water

4. **$25 Million in Water Reclamation was identified in the Rate Study in the 5 – 10 year timeframe.**

   Comment: It is unknown if it is assumed that this expenditure has already been approved given that these values WERE in the Rate Study.

APPROVED INCREASES FOR SEWER

1. **$75 Million for a new wastewater treatment plant to be co-funded by Morro Bay and Cayucos. The Morro Bay share is on the order of $57 Million. This was to be designed and constructed over the next 5 years or by the end of the 2018/2019 Fiscal Year.**
   Comments:
   a. Cayucos suggested at the 2013 CCC meeting that Morro Bay and Cayucos withdraw their joint application and jointly create a new approach. Mayor Irons and the then Council rejected this plan.
   b. Morro Bay was unable to find a negotiated solution to working with Cayucos and declined to participate in mediated negotiations to find a cost-effective solution for both parties and communities.
   c. Cayucos has in hand an approved EIR and firm contracts to move forward with their Project at the Chevron site which the MB Council consultants said was not available. They also have acquired Right-of-Way to Whale Rock to potentially use it for a Water Reclamation alternative.
2. **$7.6 Million for sewer system infrastructure improvements within next 5 years.**
   Comments:
   a. Almost ALL of this WAS to have been completed by the end of this year – 2018.
   b. Virtually none of this has been accounted for either from a cost recovery point of view or a "what has been accomplished" point of view.
3. **$2.0 Million for deferred Maintenance on the existing Plant.**

   Comment: While it is possible that this was accomplished, there is no cost correlation that the Council has been able to offer.

LOW INCOME COST REDUCTION PROGRAM

While this was NOT part of the 218 vote, it has come to our attention the City has in place a program to provide rate offsets for water/sewer bills if the resident meets the PG&E requirements – this seems to be a well-kept secret.

From: Jeffery Heller
Sent: Sunday, June 10, 2018 9:59 PM
To: Council
Cc: Scott Collins; Dana Swanson
Subject: Agenda Correspondence for Item ii of MBCC Meeting of 6/13/18,

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Flag Status: Flagged

Mayor and councilmembers.

Item ii identifies the Filanc/Black & Veatch team as the preferred provider for the WRF design/build contract. I am not an attorney, but aren't you concerned that, in the hands of a smart attorney, that Black & Veatch would be considered ineligible to bid on the design/build contract, since they provided the "bridging documents" for the project in their November 2016 Draft Water Reclamation Facilities Master Plan, which is a clear violation of the California Public Contract Code?

Jeff Heller

From: Jeffery Heller
Sent: Monday, June 11, 2018 8:50 AM
To: Council
Cc: Dana Swanson; Lori Kudzma
Subject: Agenda Correspondence - 6/13/18 MBCC Meeting - Item ii--DB Design/Build contractor preference & CONFLICT OF INTEREST

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I am not an attorney, but I believe there is a conflict of interest if the City wants to award this contract to Filanc/Black & Veatch. Is the City aware of SB785 passed in 2015, which basically states that the City is required to develop a "Conflict of interest Policy" that precludes firms who develop "bridging documents" (e.g. Facilities Master Plans, etc.) on a project, from also bidding on the design/build contract.

Black & Veatch provided the draft WRF Master plan in November of 2016, which become the basis for the bid documents.

I will be submitting a Public Record Request for the City's abovementioned policy later this morning.

Regards

Jeff Heller

From: Kerrigan Mahan
Sent: Sunday, June 10, 2018 9:19 AM
To: Bart Beckman
Cc: Dana Swanson; Council; Scott Collins; Rob Livick; Jeffrey Heller; Barry Branin; Carole Truesdale
Subject: Re: Correspondence for the June 13 Special Council meeting

Well done, sir!… and who said "Don't hit a man when they're down!?" Hit 'em and keep hitting 'em!

Btw, nice job on the radio script contribution. It was a good dry run!
Kerrigan Mahan

On Jun 9, 2018, at 4:31 PM, Bart Beckman wrote:

Dana

Please include this correspondence in the subject meeting.

Thank you.

Bart
<Correspondence to 6-13-2018 Special Counsil Mtg.docx>

From: Mark Low
Sent: Monday, June 11, 2018 10:29 AM
To: Dana Swanson
Subject: TERRIFIC!: Plan B

I AGREE~

Thank you Dana.

From: "Dana Swanson" <dswanson@morrobayca.gov>
To: "Mark Low"
Sent: Monday, June 11, 2018 10:10:21 AM
Subject: RE: Plan B

Good morning,

Agenda correspondence is for communications related to an agenda item, received following the posting of the agenda. If you agree, I believe it would be more appropriate to include this as agenda correspondence for the June 13th meeting, which has a WRF related item.

Sincerely,

Dana Swanson

City Clerk/Risk Manager

City of Morro Bay

Phone (805) 772-6205

dswanson@morrobayca.gov

From: Mark Low
Sent: Thursday, June 07, 2018 1:53 PM
To: Dana Swanson <dswanson@morrobayca.gov>
Subject: Plan B

Dear Ms. Swanson,

Would it be possible to add "Plan B" attached to the June 12, 2018 correspondence for that meeting?

Your continuing alacrity and genuine kindness is appreciated by me.

With most kind regards,

Mark Low

Concerned Citizen

"Is it too much to ask that the 1MGD Generic Plant Description" be added as well?"

ECOfluid
Advanced Wastewater Treatment

1 MGD GENERIC PLANT DESCRIPTION

Prepared by:

ECOfluid Systems Inc.
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Issued:

August 16, 2017

CONTENTS

1 INTRODUCTION

This generic 1MGD wastewater treatment plant description[1] utilizes ECOfluid Upflow Sludge Blanket Filtration (USBF®) process technology. Since 1995, ECOfluid has provided approximately 200 advanced wastewater treatment systems throughout North America and the Caribbean serving municipalities, private developers and industry. Over time it has built a reputation for delivering high quality and effective treatment solutions of small to medium scale plant capacities at economical capital and operating costs.

In 1998, to fill a gap in the market, ECOfluid began an operations and maintenance services division. The division has added a very important dimension to the group by providing a close and immediate crosscheck between designers and operators and facilitating continuous improvement of technologies and processes.

In 2012, ECOfluid was acquired by Vancouver based NORAM Engineering and Constructors Ltd., a recognized worldwide leader in the fields of nitration, sulfuric acid and electrochemical plant design and construction. The acquisition has further strengthened ECOfluid's technical resources, in addition to providing strong financial backing.

2 SUMMARY OF THE PLANT FEATURES

The plant is designed to deliver highest quality treatment at efficient operating costs, while minimizing odors and noise. The plant design includes the following features.

2.1 Integrated Headworks

Typically separated headworks tasks such as fine mechanical screening, screenings wash, dewatering and bagging, sand and grit removal, and fat and grease skimming are all integrated within one system. The advantage is reduced footprint, relatively 'clean' working environment, and ease of operation and maintenance.

2.2 USBF® Bioreactors

Many USBF® bioreactors have been installed and are in successful operation throughout North America and the Caribbean. The USBF® process itself presents a number of innovative features.

- The upflow sludge blanket filter introduces a substantially higher specific rate of separation than other commonly used separation techniques. Unlike conventional clarifiers, influent enters at the bottom and flows upwards. As the cross sectional area increases, the upflow velocity decreases until the activated sludge flocs become stationary and thus form a filtering

[1] The description is an updated copy of a 1 MGD plant pre-engineered submitted to a client in 2013.

media for activated sludge flowing through. High filtration efficiency is achieved and even particles with settling velocities too low to be removed by settling alone are filtered out.

- Most traditional plants operate at low or medium sludge concentrations, typically 2,500 – 3,500 mg/l. USBF® process by contrast operates at higher sludge concentrations, typically 4,000 – 6,000 mg/l resulting in smaller footprint and increased biological efficiency.
- Most conventional technologies carry out processes of nitrification, denitrification, clarification and sludge stabilization in a number of dedicated vessels. By contrast, USBF® process incorporates these processes inside a compact bioreactor, reducing equipment size and liquid handling requirements.
- The USBF® process features an internal anoxic compartment for biological reduction of nitrogen and phosphorus by nitrification, denitrification and 'luxury uptake' processes respectively.
- The integral denitrification process facilitates partial recovery of alkalinity lost during nitrification. As well, the anoxic selector is used to control filamentous bacteria growth within the system.
- USBF® process does not require primary clarification prior to biological treatment. Proper screening facility is all that is required upstream of the bioreactors.
- The sludge blanket filter prism or cone shape not only allows other treatment processes to take place around it, but it also facilitates superior hydraulic flexibility. The process easily accommodates high peak flows and flow swings in a self-regulating manner; the higher the flow, the higher the sludge blanket rises and the larger the filtration area becomes.
- Modularity of design allows owners to stage plant development and ensures that plants can be quickly expanded if and when growth demands.
- The compact design, minimal amount of moving parts and self-regulating hydraulics result in reduced supervision requirements, contributing to lower operating and maintenance costs.
- Aerobic conditions throughout the bioreactor and extended sludge age eliminate or dramatically reduce odor. USBF® plants have been located within populated areas without odor issues arising.
- Low microbial loading (extended sludge age of 25-35 days) produces less excess sludge, which is aerobically stabilized, and which is characterized by improved structure and better dewatering capability.

2.3 Sludge Pre-Thickeners

Originally introduced to pre-thicken waste sludge, these proprietary devices are becoming increasingly more valuable in easing plant operation. They are simple, yet very effective in automatically controlling SRT by simple timer settings.

2.4 Ultrafiltration Membranes

In recent years, membrane filtration has been widely adopted by the wastewater treatment industry predominantly using immersed hollow fiber or panel membranes. The immersed membranes however, come with significant compromises involving costs, simplicity, flexibility, and

more. Costly, 'special requirement influent fine screening' needs to be provided, and steps such as lifting and removing the membranes out of the bioreactor when required for maintenance are disruptive to routine plant operation. Additionally, membranes immersed in the bioreactor make optimization of the biological and the filtration processes difficult.

TORAY pressurized "outside-in" 0.01 micron pore are proposed. They have an excellent track record in California, including the North City Water Reclamation Plant where the units were installed as part of a side-by-side comparison with multiple vendors to evaluate performance, compare full-scale reliability, and determine the most economical, energy-efficient treatment approach for a potential full-scale facility.

The proposed USBF® Biology – External Membrane arrangement, builds on the treatment efficiency of the USBF® process and utilizes external membranes for final polishing filtration. The configuration reduces or eliminates many of the immersed membrane compromises. No special pre-treatment is required, and the membrane energy input is kept low by the membranes design and by the fact that the TSS of effluent from the USBF® sludge blanket filter is already about 10 mg/l. The result is a membrane quality effluent, including giardia and cryptosporidium removal and turbidity reduction to below 0.5 NTU, with significantly improved reliability, flexibility and simplicity of operation, and reduced capital and operating costs.

The system brings together the best of the biological and the membrane processes including:

- High Membrane Flux Rate (Less energy)
- Reduced Fouling (Less energy and reduced O&M)
- Multi-Barrier Two Stage Filtration (Greater reliability)
- Easy and Economical Membrane Cleaning and Maintenance. The external membrane maintenance is safe, easy and dry. There is no exposure to chemicals and sludge and no cranes are required.
- Modular and Flexible Design (Easy expansion)

2.5 UV Disinfection

The TrojanUVFit™ is the latest UV solution introduced for wastewater reuse. The pressurized reactor is well-suited for membrane filtered effluent, where effluent is already under pressure. The compact reactor design minimizes footprint and head loss (reduced power), while ensuring that maintenance activities such as lamp replacement are performed easily and safely. The TrojanUVFit™ reactor has undergone stringent bioassay validation in accordance with industry protocols published by the (US) National Water Research Institute – enabling Trojan to fully guarantee disinfection performance.

2.6 Control System

The control system is provided with reliability enhancing and maintenance mitigating features including:

- Redundant Controllers which will essentially ensure no "plant down" situations. PLC can fail and the plant will keep running.
- Redundant HMI/SCADA Servers providing the following benefits:
  - Allowing for changes to the HMI (graphics, trends, etc) to be made without the operator going "blind to the plant". i.e. he never sees that changes are being made
  - Should a PC fail the operator again will not go blind and archiving will not be lost since the second server takes over. (The latter here is important as archived data does not mean much if there are large gaps in it. Typically this is addressed by offering RAID 1, 2 or 3 PCs but all this does is offer multiple hard drives. It still does not prevent motherboard failures or simple Windows lockup)
  - If a PC goes down, alarm notifications will continue
- "Smart" Instruments (Profibus DP and PA) resulting in benefits such as:
  - VFD and Smart overloads on Profibus DP allow for configuration from one location (the control room).
  - Increased diagnostics such as VFD temperatures can be brought to the HMI and used as preventative measures
  - Instruments on Profibus PA - same as above for central configuration and diagnostics.
- Mobile Thin Clint allowing the operator to view the plant from wherever in the plant he is.
- Web Access to the HMI - on alarm call outs, maintenance personnel can view the HMI with a web browser and make informed decisions as to the need to go to the plant or wait. Saves on unnecessary trips to the plant or trips by the wrong personnel.

2.7 Energy Efficiency

Energy efficiency is achieved by several ways including:

- Due to among other gravity flow through the USBF® process, the process, when compared to other biological processes in the past, has shown itself to have superior energy efficiency
- The air supply to the plant biological treatment is controlled by a Dissolved Oxygen (DO) Monitor / Blower VFD control loop. Energy consumption is thus modulated with the plant biological loadings variations and effectively optimized.
- Due to membranes receiving high quality secondary effluent from the USBF® process, membrane flux rate is increased, and the filtration energy consumption reduced.
- TrojanUVFit™ low-pressure high intensity amalgam lamps system is provided with an automatic dose pacing control system. As UV demand decreases by a change in operating conditions the power level of the lamps decreases accordingly. The dose pacing system minimizes power consumption while the target dose is maintained ensuring disinfection at all times.

3 DESIGN CRITERIA

3.1 Influent / Effluent Parameters:

For purposes of this generic plant description the following design parameters have been selected (based on an earlier plant pre-design).

Parameter	Unit	Influent	Effluent
Average Dry Weather Flow	[MGD]	1.0	
Max Day	[MGD]	1.5	
BOD_5	[MG/L]	280	< 5
TSS	[MG/L]	315	< 5
TKN	[MG/L]	63	
TN	[MG/L]		< 10 *
Turbidity			<1
Fecal Coliform	[MPN/100 ML]		Median 1 Max 14
pH		6.5-8	
Temperature	[DEG F]	50-65	

Notes:

* Total Nitrogen reduction to a long term average of 5-6 mg/l has been achieved

4 PROCESS & PLANT DESCRIPTION

4.1 Headworks

The proposed headworks consist of an Integrated Headwork System [IHS] combining screening, screening rejects wash and dewatering, sand & grit removal, and fat & grease collection and removal. [2]

The system is provided with a control panel with connectivity to central SCADA System, and it is installed within a building provided with HVAC, and fire detection system. In case of the system malfunction, the sewage overflows to the Equalization Tank [EQT].

Screened sewage flows to EQT provided with coarse bubble aeration, level switches, pH and temperature probes, and two sets of Equalization Pumps [EQP] each serving dedicated bioreactors [BR]. Controlled by level switches and timers, influent wastewater is pumped to the anoxic compartments of the bioreactor modules. The entire system is fabricated from 316 stainless steel.

[2] The proposed system is identical to several installed and in successful operation in Florida.

4.2 Biological Treatment

4.2.1 USBF® Bioreactor

Biological treatment takes place in the Upflow Sludge Blanket Filtration (USBF®) bioreactors. Raw sewage enters the anoxic compartment where it is mixed with activated sludge recycled from the bottom of the sludge blanket filter by RAS air lift pumps.

RAS flow of each Sludge Blanked Filter [SBF] can be individually measured and set by RAS Flow Measuring Box [RMB].

Submersible mixers [ANM] ensure adequate mixing is provided and maintain solids in suspension. From the compartment the mixed liquor flows to the aerobic compartment, which is equipped with fine bubble aeration diffusers. Aerated and moved in a plug flow manner, it eventually enters the bottom of the sludge blanket filter.

The mixture of microbial cells and water enters the filter at the bottom and, as it rises, upward velocity decreases until the flocs of cells become stationary and thus form a filtering media. A high degree of filtration efficiency is achieved as colloid and very fine particles are filtered out. As the flocs become large and heavy, they descend to the bottom and subsequently are recycled back into the anoxic zone.
USBF® has a substantially higher specific rate of separation than sedimentation. In addition, the technology accommodates high peak flows and flow swings in a self-regulating manner – the higher the flow, the higher the sludge flocs rise and the larger the filtration area becomes. The entire Sludge Blanket Filters are fabricated from stainless steel.

Treated effluent is collected in a trough on top of the sludge blanket filter and flows by gravity to Secondary Effluent Tank [SET] provided with Membrane Feed Pumps [MFP], level monitoring, and overflow to ocean outfall.

If and when required the surface of the Sludge Blanket Filter can be skimmed to remove undigested floaters and/or oily patches etc. The skimmings are transferred by gravity to Skimmer Tank [SKT] and form there pumped to Sludge Holding Tank-Biology [SHTB].

4.2.2 Nitrogen Reduction

Nitrogen is removed by nitrification and denitrification processes. Nitrification is autotrophic and all USBF® integrated bioreactors deliver complete nitrification of ammonia to nitrate provided that a certain minimum temperature is maintained and sufficient alkalinity is available.[3]

Denitrification is heterotrophic and requires carbon source. The USBF® technology "single sludge denitrification" approach uses an endogenous carbon source to maintain the denitrifiers. Influent is combined with nitrified mixed liquor in the anoxic compartment providing the carbon source needed for denitrification. [4]

4.2.3 Phosphorus Reduction

One of the beneficial features of the USBF® technology is increased efficiency of phosphorus removal. This is due to the fact that a significant amount of the influent phosphorus is reduced by biological phosphorus uptake.

The mechanics of biological phosphorus uptake, known as "luxury uptake", is due to exposure of activated sludge to alternating oxide and anoxic/anaerobic conditions. Under the conditions, the cells store more energy in the form of phosphorus than needed for their survival. If strictly oxide conditions are maintained during subsequent clarification, phosphorus is retained by the cells and is eventually removed with excess sludge. Upflow sludge blanket clarifiers maintain oxide conditions in the clarifiers and phosphorus reduction of up to 60% by biological uptake has been achieved.

For further phosphorus reduction phosphorus precipitant chemicals such as aluminum sulfate, ferrous sulfate or other salts are used. In most domestic wastewater phosphorus is present in three forms, orthophosphate, polyphosphate and organic phosphorus. Polyphosphate and organic phosphorus cannot be readily precipitated but both are converted to orthophosphate during biological treatment, which can. Since the bulk of phosphorus reduction is accomplished by biological uptake, the small polishing dosages of metal salt precipitant do not significantly increase waste sludge production.

In simultaneous chemical precipitation metal salts are dosed into the anoxic compartment of the USBF® bioreactor. Continuous sludge internal circulation and mixing ensure efficient precipitation.

4.3 Post-Secondary Filtration

From the secondary effluent tank the effluent is pumped to the membrane modules [UFM]. Particulate matter, including virus, giardia and cryptosporidium cysts, remain on the outside of

[3] Nitrification consumes 7.1 mg/l of alkalinity as $CaCO_3$ for each mg/l of ammonia oxidized (Denitrification reactions produce 3.57 mg/l as $CaCO_3$)
[4] Reduction of I gram of nitrogen requires approximately 3 – 6 grams of BOD (or equivalent carbon)

the membrane fiber while permeate enters through to the inside of the hollow fibers and exits the top port of the membrane module.

The filtration cycle continues for approximately 30 minutes, depending on recovery and flux, and then the particulate / suspended solids are removed from the module during the backwash cycle.
In the backwash cycle, feed to the module stops and filtrate from the Tertiary Effluent Tank [TET] is pumped using Membrane Backwash Pumps [MBP] into the hollow fibers for approximately 30 – 60 seconds. The top-side port is open allowing the excess water to overflow to Drain Tank [DT]. Next air bubbles scour the membranes for 30 – 60 seconds and then the module is drained. The overall backwash cycle requires approximately 3.25 minutes. Chemicals (typically sodium hypochlorite) may be added to the backwash water if required.

The entire operation is controlled by a local PLC control panel with connectivity to the central SCADA control panel.

Additionally, Toray Maintenance Cleaning (TMC) is performed periodically as required. TMCs are initiated after the backwash cycle and involve soaking the membranes in a concentrated chemical solution for approximately 20 minutes. During the soak period air bubbles scour the membrane every 5 minutes for approximately 30 seconds. The cleaning solution is neutralized in a neutralizing tank [NT] by sodium hydroxide and transferred to Drain Tank. The overall TMC cycle requires approximately 30 minutes.

CIP Cleaning is performed when the TransMembrane Pressure (TMP) approaches the maximum of 29 psi. CIP cleaning is similar to a TMC except the soak period is longer and the chlorine concentration is higher. Typical duration for a CIP cleaning is 4-6 hours once or twice per year.

Drains from the membrane backwash are collected in the Drains Tank [DT], and controlled by level switches, are pumped to EQT. Drains from TMC and CIP cleaning can first be neutralized in the Neutralization Tank [NT], before transfer to DT and ultimately to EQT.

4.4 UV Disinfection

Pressurized reactor type UV disinfection is proposed. The Trojan UVFit™ uses low pressure high intensity amalgam lamps to provide an energy efficient solution. Two reactors are provided, one duty and one full standby. The system is provided with a UVT monitor, and automatic mechanical sleeve wiping. UV lamps are automatically dimmed and banks can be turned off during periods of low flow, increasing the lamps

operating life and reducing power consumption. The entire operation is monitored and controlled by the vendor's System Control Center with connectivity to the central SCADA control panel. Filtrate flows through the banks of lamps into Tertiary Effluent Tank [TET].

4.5 Reclaimed Water Reuse

Reclaimed water can be used for irrigation, stream augmentation, environmental enhancements such as ponds and fountains, and other non-direct contact uses.

The proposed process is flexible in that it allows for the reclaimed water production build-up as it becomes identified. Before such, secondary treated effluent can 'leave' the process by overflow into the ocean outfall from the secondary treated effluent tank [SET], [5] by-passing the membrane filtration and UV disinfection and resulting in significant operating costs savings. [6]

Using Tertiary Effluent Pumps, tertiary effluent is pumped through Hypochlorite Puck Feeder into the Plant Water Reuse Tank. The chlorine content is monitored and maintained at predetermined level by a chlorine monitoring system and by a chlorine make-up loop consisting of chlorine analyzer, Hypochlorite Puck Feeder and Chlorine Make-up Pumps.

4.6 Air Management

Air required for the biology (in the fine bubble aeration diffusers) is supplied by three positive displacement blowers (two duty, one standby) [ABM]. The air supply is controlled by DO monitors located in the aerobic compartments which regulate the blowers RPM via variable frequency drives (VFD). The control loop optimizes aeration efficiency and power consumption.

Two separate smaller blowers, one duty and one standby, are provided to supply air to equalization tank, sludge holding tank for post stabilization should it be required, and for RAS airlift pumps.

4.7 Waste Sludge Management

Since the age of activated sludge in the bioreactors is in excess of 25 days, less excess sludge is generated, it is stabilized and its dewatering characteristics significantly improve. The bioreactors are provided with sludge pre-thickeners located in the aeration compartments, which pre-thicken the sludge to approx. 1% d.s. Controlled by timers the pre-thickened waste sludge (WAS) is

[5] USBF secondary treatment alone will meet the Permit toxicity requirement. Specifically, the effluent will pass 96-hour biassay test with mortality rate of no more than 50%
[6] Alternatively only membrane filtration can be by-passed should disinfection of secondary effluent be desired

periodically pumped into the sludge transfer tank. This simple device is also effectively used to control SRT by timer settings.

4.8 Instrumentation, Controls & SCADA

4.8.1 PLC

The Automation system will be a Siemens S7-400 System consisting of a Redundant Main PLC with remote I/O (RIO) drops. Communications to the IO drops will be via redundant Profibus DP connections.
A redundant PLC system provides the best assurance against plant failure. In the event of a CPU, Rack or Power supply failure in the "Master" PLC there is an automatic switchover to the "Standby" PLC. The switchover is "bump less" i.e. there is no impact on the process. The standby PLC then switches to "Master" status. The failed PLC system can then be repaired. After the repair and on power up it takes on the "Standby" status. For maintenance and programming purposes the redundant system behaves as a single PLC. The programs are automatically synchronized. All online monitoring is done as if it was only one PLC. PLC failures and Master/Standby switchovers are reported to the SCADA system.

The redundancy of the PLC system is further enhanced by providing redundant Profibus connections to the RIO drops. This approach effectively eliminates the potential for a complete RIO failure. There are two physical cable connections and two communication modules at the PLC and at each RIO. Since the RIO drops are on a Profibus connection, enhanced diagnostics are available at the SCADA as to health and status of not only each drop but each I/O module at the drop.

4.8.2 Motor Control

The traditional approach to VFD control has been via 4-20mA for speed control and discrete signals for start/stop and forward/reverse. The same applied to direct starters except for the speed control. This method would only allow for discrete error signals to be sent back to SCADA. Any further diagnostics meant physically connecting to the VFDs locally with a software package. The same applied if parameter modification of a VFD was required.

For this project, all VFDs will be equipped with Profibus Modules. All direct starters will be equipped with intelligent overloads. This approach will allow for:

- Enhanced diagnostics information at the SCADA. Exact cause of errors at the VFD and/or direct starter will be reported to SCADA
- all programming/monitoring of VFDs and/or intelligent overloads can be done centrally from the control room

- reduced wiring (single pair cable daisy chained from the local RIO to the VFDs and Intelligent overloads)
- Easier troubleshooting

4.8.3 Instruments

Once again the traditional approach to instrument connection to the PLC system has been via 4-20mA. This approach only allowed for a PV value to be available to the PLC/SCADA.

For this project, wherever possible, instruments (PITs, TITs, FITs, etc) will be "SMART" Instruments. This approach will allow for:

- Enhanced diagnostics information at the SCADA. Exact cause of errors at the instrument will be reported to SCADA. Preventative maintenance data can also be reported to SCADA
- all programming/monitoring of VFDs and/or intelligent overloads can be done centrally from the control room
- reduced wiring (single pair cable daisy chained from the local RIO to the VFDs and Intelligent overloads)
- Easier troubleshooting

4.8.4 SCADA System

The SCADA system will be a Siemens WinCC Redundant Server/Client System. Redundant servers will be utilized to ensure integrity of logged data. As with the PLC system, these servers operate in a Master/Standby configuration. Failure of a Master server causes an automatic and seamless switch to the Standby server which then assumes the Master status. All archived data is automatically synchronized between the two servers. Operator access to the servers is via direct clients and via web clients.

The SCADA system offers:

- graphical interface to the process
- Integrated User administration - access rights can be assigned to functions, screens, operations, etc. Up to 999 different authorizations are available
- Alarm logging:
    - up to 10 text blocks to describe an alarm
    - up to 10 process values at the occurrence of an alarm
    - sorting and selection options
    - user-specific filters
    - color coding for In/Out/Acknowledged
- Data Archiving
- Trending

- Reporting
- Web access
    - log onto the process from anywhere in the world via Internet Explorer
    - Same user administration functionality as via direct client
- Thin Client access - netbooks, Tablets, etc.
- Optional Audit Trail

4.8.5 Autodialer

The Autodialer system will be Specter Instruments Win911 with Mobile 911 Option. This system offers:

- voice dial out
- Email notification
- paging
- SMS notification
- multiple phone directories and notification schedules
- notification and acknowledgement via smart phones

4.9 Odor & Noise

Equalization and Sludge Holding Tanks

- Foul air from the tanks is piped into the suction of the air blowers and subsequently scrubbed when passing through the mixed liquor of USBF® Bioreactors

USBF® Bioreactors

- Aerobic conditions throughout the bioreactors and extended sludge age eliminate or dramatically reduce the potential for odor. USBF® plants have often been located in close proximity to residential areas without any odor issues.

Noise issues are dealt with two ways (a) by providing noise emanating equipment with high efficiency noise attenuating enclosures wherever possible, and (b) by sound attenuating building design and construction.

5 PLANT BUDGET PRICE CONSIDERATIONS

The 2013 all-inclusive price for the plant as presented was estimated to be approximately **USD $20 million.**

APPENDIX A PLANT COMPONENTS AND EQUIPMENT LIST

Integrated Headworks IHS (1)

Objective:	Screen out fine debris; remove sand and grit; convey, wash and dewater screenings.
Design Considerations:	The system is a compact integrated system provided with a coarse bar screen by-pass to equalization tank, and c/w screenings backwash and compaction, sand and grit removal, classification and receptacle, fat collection and transport, and coarse bubble aeration
Make:	Fontana IHP 150.
Screen Openings:	6 mm
Capacity:	140 L/s peak flow
Material:	All 316 Stainless Steel / plastic lamellas
Drives:	0.25 kW, 115/1/60 screen main drive 0.18 kW, 115/1/60 screen brushes drive 1.5 kW, 575/3/60 screenings screw drive 1.5 kW, 575/3/60 sand screws drive 1.5 kW, 575/3/60 grit screw drive 0.55 kW, 115/1/60 aeration blower 0.75 kW, 115/1/60 fat and grease pump

Alkalinity Solution Feed System ASF (1)

Objective:	Feed alkalinity solution into Equalization Tank.

Equalization Tank EQT (1)

Objective:	Provide residence time for flow equalization.
Design Consideration:	Screened wastewater passes into the equalization tank provided with coarse bubble aeration, temperature and pH probes. The tank bottom is well sloped and it is provided with pump wells accommodating pumping requirement. The tank is provided with concrete cover.
Capacity:	750 m^3 (active)
Dimensions:	9.0 x 21.0 x 4.0 m deep (active)
Material:	Concrete
Accessories:	Coarse bubble aeration

Equalization Tank Pumps EQP (4)

Objective:	Pump the contents of the equalization tank into the anoxic tanks of the bioreactors. Each set of two pumps (one duty one standby) transfers influent into the respective one of two anoxic compartments.
Design Consideration:	The pump is a submersible pump.
Make:	ABS or equal

Capacity:	50 L/s @ 7 m TDH
Drive:	7.5 kW, 575/3/60
Accessories:	Stainless steel lift-out system, seal leak detector, timer

Air Blower Main ABM (3)

Objective:	Provide air for fine bubble aeration.
Design Consideration:	Three high efficiency blowers are provided, each capable of serving two bioreactor modules. Two blowers are duty blowers, the third is a common standby. The air supply to the bioreactor aeration is controlled by a dissolved oxygen (DO) monitor located in the aerobic compartment which regulates the blower RPM via a Variable Frequency Drive (VFD).
Make:	Aerzen Delta GM50L DN200
Capacity:	2700 Nm^3/h @ 55 kPa
Material:	All iron
Drive:	75 kW, 575/3/60, VFD
Accessories:	Acoustic enclosure, inlet filter/silencer, pressure relief valve, easy remove check valve, V-belt drive (self-tensioning) and guards, pressure gauge c/w isolation ball valve, dirty filter indicator, temperature switch, thermistor/phase motor protection.

Air Blower Auxiliary ABA (2)

Objective:	Provide air for coarse bubble aeration and RAS air lifts.
Design Consideration:	Two blowers are provided, one duty and one standby.
Make:	Aerzen Delta GM 105
Capacity:	500 Nm^3/h @ 55 kPa
Material:	All iron
Drive:	15 kW, 575/3/60, VFD
Accessories:	Acoustic enclosure, inlet filter/silencer, pressure relief valve, easy remove check valve, V-belt drive (self-tensioning) and guards, pressure gauge c/w isolation ball valve, dirty filter indicator, temperature switch, thermistor/phase motor protection.

Bioreactor BR (4)

Objective:	Provide conditions for wastewater biological treatment and for mixed liquor flocculated sludge and treated effluent separation.
Design Considerations:	Four bioreactors are installed, each two sharing one anoxic compartment. Each aeration compartment is provided with two stainless steel sludge blanket filters (SBF). The filters are equipped with adjustable effluent weir troughs and surface skimmer systems. The skimmings are transferred to skimmer tank.
Size:	Aerobic: 4 @ 15 m x 18 m x 4.5 m each Anoxic: 2 @ 6 m x 18 m x 4.5 m each

Material:	The sludge blanket filters are fabricated from stainless steel. Tanks are concrete.
Accessories:	Fine and coarse bubble diffusers respectively within aerobic and anoxic compartments - EPDM flexible membrane, plastic pipe headers and drops

RAS Flow Measuring Box [RMB] (4)

Objective:	Provide means to measure and control RAS flow rate(s).
Design Consideration:	The measuring box is provided with a v-notch and flow interpolating water level scale.
Material:	Stainless steel

Anoxic Mixer ANM (4)

Objective:	Mix incoming wastewater and recycled mixed liquor.
Design Considerations:	The submersible mixers ensure incoming wastewater and recycled mixed liquor are mixed and kept in suspension.
Vendor/Make:	ABS, KSB, ITT Flygt or equal
Material:	Stainless steel propeller and shroud, cast iron body
Drive:	1.7 kW, 575/3/60
Accessories:	Stainless steel lift-out system, leak sensor, thermal sensor

Secondary Effluent Tank SET (1)

Objective:	Secondary effluent holding tank.
Design Consideration:	The tank bottom is sloped and it is provided with pump wells accommodating pumping requirement.
Capacity:	200 m^3 (active)
Dimensions:	7.0 m x 9.5 m x 4.5 m deep
Material:	Concrete

Membrane Feed Pump MFP (2)

Objective:	Pump the contents of the secondary effluent tank into the UF membrane modules.
Design Consideration:	Two submersible pumps are provided, one duty and one standby.
Make:	ABS or equal
Capacity:	53 L/s @ 30 m TDH
Drive:	25 kW, 575/60/3, VFD
Accessories:	Stainless steel lift-out system, seal leak sensor

Ultrafiltration Membrane Module UFM (50)

Objective:	Provide for tertiary ultrafiltration.
Design Considerations:	The units are ‘outside-in’ pressurized hollow fiber UV membranes.
Make:	Toray HFU-2020N
Arrangement:	2 Trains, 1 Rack per Train, 30 Modules per Rack

Capacity:	53 L/m^2/h each
Size:	72 m^2 each, 0.1 micron nominal pore opening
Material:	PVDF

Membrane Backwash Pump MBP (2)

Objective:	Provide for backwash of the UF membrane modules.
Design Considerations:	Two submersible pumps are provided, one duty and one standby. Filtrate is pumped to the hollow fibers for approx. 30-60 seconds. The top side port of the UF modules is open allowing the excess water to overflow to the drains tank.
Make:	ABS or equal
Type:	Submersible
Capacity:	60 L/s @ 30 m TDH
Material:	Cast iron body and impeller
Drive:	28 kW, 575/3/60, VFD

Membrane Air Scrubbing Blower MASB (2)

Objective:	Provide air at the bottom of the UF membrane module for membrane scrubbing after backwash.
Design Considerations:	Two blowers, one duty and one standby are provided. After backwash, the air exhaust valve and air scrubbing valve are opened and air scrubbing occurs for approx. 30-60 seconds. Normal air flow rate at pressure is 6 Nm^3/hr.
Make:	Aerzen Delta GM105 DN80
Capacity:	300 Nm^3/hr @ 40 kPa
Material:	Cast iron
Compressor Drive:	7.5 kW, 575/3/60, VFD
Accessories:	Acoustic enclosure, inlet filter/silencer, pressure relief valve, easy remove check valve, V-belt drive (self-tensioning) and guards, pressure gauge c/w isolation ball valve, dirty filter indicator, temperature switch, thermistor/phase motor protection

Clean-in-Place System CIP (1)

Objective:	Provide for periodic UF membrane maintenance cleaning using a concentrated chemical solution.
Design Considerations:	The system consists of chemical tank (1), chemical feed pumps (2), and mixer (1). Depending on the pollutant citric acid or sodium hypochlorite are used. CIP duration is approx. 4 – 6 hours, once or twice per year as required.
Drive:	0.37 kW, 115/1/60, mixer 0.25 kW, 115/1/60, chemical feed pump

Sodium Hypochlorite Feed System HYPO (1)

Objective:	Feed sodium hypochlorite to membrane modules as part of the cleaning process.
Design Considerations:	The system consists of chemical tank (1), and chemical feed pumps (2+2).
Drive:	0.37 kW, 115/1/60, mixer 0.25 kW, 115/1/60, chemical feed pump 1.0 kW, 575/3/60, chemical feed pump

Sodium Hydroxide Feed System CAUSTIC (1)

Objective:	Provide for membrane drains neutralization in the Neutralization Tank.
Design Considerations:	The system consists of chemical tank (1), chemical feed pumps (2) and mixer (1)
Drive:	0.37 kW, 115/1/60, mixer 0.25 kW, 115/1/60, chemical feed pump

Citric Acid Feed System CITRIC (1)

Objective:	Provide for in place cleaning of membranes.
Design Considerations:	The system consists of chemical tank (1), chemical feed pumps (2), and mixer (1)
Drive:	0.37 kW, 115/1/60, mixer; 0.25 kW, 115/1/60, chemical feed pump

Neutralization Tank NT (1)

Objective:	Provide conditions for acidic drains neutralization after chemical cleaning.
Design Consideration:	Below ground concrete tank within the Process Building. The tank is provided with mixer.
Capacity:	15 m^3
Dimensions:	1.5 x 5.0 x 3.0 m deep
Material:	Concrete
Drive:	0.37 kW, 115/1/60, mixer

Neutralization Tank Pump NTP (2)

Objective:	Transfer neutralized drains to Drains Tank.
Design Considerations:	Two submersible pumps are provided one duty and one standby.
Make:	ABS or equal
Type:	Submersible
Capacity:	5 L/s @ 3 m TDH
Material:	Cast iron body and impeller
Drive:	1 kW, 575/3/60

Drains Tank DT (1)

Objective:	Provide for containment of drains before transfer to EQT.
Design Consideration:	Below ground concrete tank within the Process Building.
Capacity:	15 m^3
Dimensions:	1.5 x 5.0 x 3.0 m deep
Material:	Concrete

Drains Tank Pump DTP (2)

Objective:	Transfer membrane drains to EQT.
Design Considerations:	Two submersible pumps are provided one duty and one standby.
Make:	ABS or equal
Type:	Submersible
Capacity:	10 L/s @ 6 m TDH
Material:	Cast iron body and impeller
Drive:	1.5 kW, 575/3/60

UV Disinfection UV (2)

Objective	Effluent disinfection.
Design Considerations:	Pressurized reactor type system is provided. The system consists of two UV reactors, one duty and one standby. The system uses low pressure high intensity amalgam lamps for improved energy efficiency.
Make:	Trojan UVFit
Capacity:	80 L/s @ 65% UVT
Disinfection Limit:	1 fecal Coliform per 100 ml, based on 7 day median
Power:	5.2 kW (average power draw)
Accessories:	System Control Center c/w UV intensity monitor, elapsed time meter, online UVT monitor

Tertiary Effluent Tank TET (1)

Objective:	Hold tertiary treated wastewater before transfer for reuse, and provide sufficient water quantity for UF membranes backwash.
Design Considerations:	The tank is constructed of concrete. Tertiary treated effluent is pumped to Plant Reclaimed Water Tank; any excess overflows to ocean outfall.
Capacity:	45 m^3
Size:	6.0 m x 5.0 m x 3.0 m deep
Material:	Concrete

Tertiary Effluent Pump TEP (2)

Objective:	Pump reclaimed water to Plant Reclaimed Water Tank.
Design Considerations:	Two pumps are provided one duty and one standby.
Make:	ABS or equal

Type:	Submersible
Capacity:	15 L/s @ 3 m TDH
Material:	Cast iron body and impeller
Drive:	1.5 kW, 575/3/60

Hypochlorite Puck Feeder HPF (1)

Objective:	Provide for minimum chlorine residual of reclaimed water.
Make:	Norweco or equal
Capacity:	10 L/s

Plant Water Reuse Tank PWRT (1)

Objective:	Hold reclaimed water for reuse within the plant.
Design Considerations:	Below ground concrete tank within the Process Building.
Capacity:	75 m^3
Size:	5.0 m x 6.0 m x 3.0 m deep
Material:	Concrete

Chlorine Makeup Pump CMP (2)

Objective:	Maintain reclaimed water desired chlorine residual level.
Design Considerations:	Two pumps are provided one duty and one standby.
Make:	ABS or equal
Type:	Submersible
Capacity:	6 L/s @ 4 m TDH
Material:	Cast iron body and impeller
Drive:	0.37 kW, 115/1/60

Plant Water Reuse Pump PWRP (2)

Objective:	Pump reclaimed water to plant services.
Design Considerations:	Two pumps are provided, one duty and one standby.
Make:	ABS or equal
Type:	Self-priming
Capacity:	10 L/s @ 50 m TDH
Material:	Cast iron body and impeller
Drive:	7.5 kW, 575/3/60

Plant Water Pressure Tank PWPT (1)

Objective:	Provide 7-10 kPa reclaimed water pressure to plant services.
Design Considerations:	Bladder type tank

Sludge Pre-Thickener SPT and Pre-Thickeners Pumps SPP (4)

Objective:	Pre-thicken and pump waste activated sludge from aeration compartment to sludge holding tank.
Design Consideration:	Pre-thickener is a large diameter pipe inserted within the aerobic compartment. The pipe is provided with two openings, at the top and midway down. Sludge enters on the top and thickens to approx. 1-1.5% below the lower opening. Controlled by a timer the pre-thickened sludge is periodically pumped into Sludge Holding Tank-Biology [SHTB].
Pump Type:	Submersible, grinder
Pump Make:	ABS or equal
Pump Capacity:	3.2 L/s @ 6 m TDH
Pump Material:	Cast iron body and impeller
Pump Drive:	1.5 kW, 575/3/60
Pump Accessories:	Base elbow c/w carrier and guide rails, timer

Sludge Holding Tank SHT (1)

Objective:	Provide containment for waste sludge
Design Considerations:	The tank is constructed of concrete. It is provided with coarse bubble aeration.
Capacity:	200 m^3 Active
Size:	7.2 m x 7.0 m x 4.5 m deep
Material:	Concrete

Sludge Holding Tank Pump SHTP (2)

Objective:	Transfer WAS to the Sludge Blending Tank.
Design Considerations:	Two pumps are provided one duty and one standby.
Make:	ABS or equal
Type:	Submersible, grinder
Capacity:	3.2 L/s @ 6 m TDH
Material:	Cast iron body and impeller
Drive:	1.5 kW, 575/3/60

Equipment	Motor kW	VFD	Number Installed	Number Operating	Hours / Day	Load Factor	kWh / Day (1)	Essential Service (3)
Headworks								
Integrated Headworks (IHS) Screen	0.25	-	1	1	4.00	0.90	0.90	Yes
IHS Brushes	0.18	-	1	1	4.00	0.90	0.65	Yes
IHS Screenings Screw	1.50	-	1	1	4.00	0.90	5.40	Yes
IHS Grit Screw	1.50	-	1	1	24.00	0.90	32.40	Yes
HIS Sand Screw	1.50	-	1	1	24.00	0.90	32.40	Yes
IHS Aeration Blower	0.55	-	1	1	4.00	0.90	1.98	Yes
IHS FOG pump	0.75	-	1	1	4.00	0.90	2.70	Yes
Equalization Pump (EQT)	7.50	-	4	2	11.00	0.90	148.50	Yes
Alkalinity Solution Feed (ASF) **(2)**	Fract.	-	2	2	-	-	-	No
Headworks Total							**224.93**	
Secondary Treatment								
Air Blower Main (ABM)	75.00	VFD	3	2	24.00	0.70	2520.00	No
Air Blower Auxiliary (ABA)	15.00	VFD	2	1	24.00	0.80	288.00	Yes
Anoxic Mixer (ANM)	1.70	-	4	4	24.00	0.90	146.88	Yes
Secondary Treatment Total							**2,954.88**	
Tertiary Treatment								
Membrane Feed Pump (MFP)	25.00	VFD	2	1	13.90	0.80	278.00	Yes
Air Scrubbing Blower (MASB)	7.50	VFD	2	1	0.30	0.90	2.03	Yes
UV Disinfection (UV)	5.20	-	2	1	24.00	0.60	74.88	Yes
Drains Tank Pump (DTP)	1.50	-	2	1	4.70	0.90	6.35	Yes
Membrane Backwash Pump (MBP)	28.00	VFD	2	1	0.30	0.80	6.72	Yes
Neutralization Tank Pump (NTP)	1.00	-	2	1	0.10	0.90	0.09	No
Clean-in- place (CIP)	Fract	-	-	-	-	-	-	No
Citric Feed System (CITRIC)	Fract	-	-	-	-	-	-	No
Hypo Feed System (HYPO)	Fract	-	-	-	-	-	-	No
Caustic Feed System (CAUSTIC)	Fract	-	-	-	-	-	-	No
Tertiary Treatment Total							**368.06**	
Reclaimed Water In-Plant Reuse								
Tertiary Effluent Pump	1.50	-	2	1	2.00	0.90	2.70	Yes
Supply Pump (SP)	12.00	-	2	1	0.50	0.90	5.40	No
Chlorine Make-up Pump (CMP)	0.37	-	2	1	1.00	0.90	0.33	Yes
Plant Water Reuse Pump (PWRP)	7.50	-	2	1	2.00	0.90	13.50	Yes
Reclaimed Water In-Plant Reuse Total							**21.93**	
Waste Sludge Management								
Pre-Thickener Pump (SPP)	2.20	-	4	4	0.70	0.90	5.54	No
Sludge Hold Tnk Pump (SHTP)	1.50	-	2	1	1.50	0.90	2.03	No
Waste Sludge Management Total							**7.57**	
Total Plant Power Consumption (kWh/Day)							**3,577.37**	
kWh / 1000 Gallons							**3.57**	

NOTES:

1. All calculations are based on 100% Plant hydraulic & bilogical design loadings.
2. Chemicals dosing stations typically include feed pumps and mixers. Motors are typically fractions of kW and used in batch fashion. Power consumption is small and not included at this time.
3. 'Essential Service' denotes motors on emergency power.

UNIT OF MEASUREMENT:

METRIC, UNLESS NOTED OTHERWISE

ELEVATIONS:

METRIC (METERS)

PROCESS LINES AND EQUIPMENT:

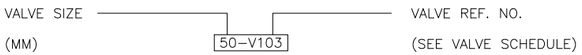
PROCESS FLUID

INTERNAL FLOW (WATER, SKIMMER, OVERFLOW)

SLUDGE

AIR

VALVE IDENTIFICATION:



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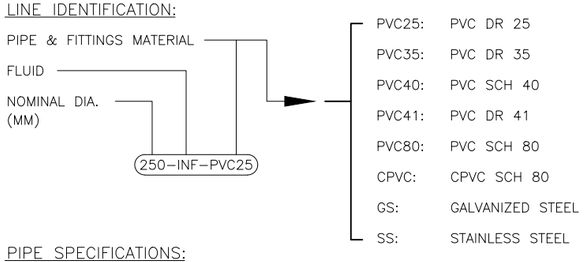


PIPE SPECIFICATIONS:

AIR: ▫ PVC & CPVC, SCH80, SOLVENT WELD JOINTS
▫ GALVANIZED STEEL
▫ 304SS, SCH10, VANSTONE FLANGE

PROCESS: ▫ PVC SCH40, SOLVENT WELD JOINTS

FLANGES: ▫ PVC & CPVC: 150# VANSTONE
▫ GALVANIZED STEEL, 150# S.O.

INSULATION: ▫ 1" F/G w/ V.B., FINISH: ALUM. JACKET

HEAT TRACING: ▫ ELECTRIC FREEZE PROTECTION

BOLTS, NUTS & WASHERS: ▫ ALL 316 STAINLESS STEEL

FLUIDS:

AIR	COMPRESSED AIR	SCN	SEPTAGE SCREENINGS
ASP	AERATED SEPTAGE	SE	SECONDARY EFFLUENT
BW	BACKWASH WATER	SET	SECONDARY EFFLUENT TANK
CAB	CLASS A BIOSOLIDS	SKM	SKIMMER
CEN	CENTRATE	SL	SLUDGE
DR	TERTIARY FILTRATION DRAIN	SP	SEPTAGE SUPERNATANT
EFF	EFFLUENT	SUP	SUPERNATANT
EQ	EQUALIZATION TANK	SRS	SCREENED RAW SEWAGE
FE	FINAL EFFLUENT	SSP	SEPTAGE SLUDGE
FSE	FILTERED SECONDARY EFFLUENT	TEF	TERTIARY EFFLUENT
GR	GRIT & SAND	RS	RAW SEWAGE
INF	INFLUENT	RSP	RAW SEPTAGE
SCR	DEWATERED SCREENINGS	RW	RECLAIMED WATER
		WAS	WASTE ACTIVATED SLUDGE

PIPING SYMBOLS:

BLIND FLANGE
PIPE CAP
UNION CONNECTION
FLANGED CONNECTION
SLIDE GATE VALVE
BALL VALVE (NORMALLY OPEN)
BALL VALVE (NORMALLY CLOSED)
KNIFE GATE VALVE
PLUG VALVE
CHECK VALVE
DIAPHRAGM VALVE
BUTTERFLY VALVE
SOLENOID VALVE
ON/OFF VALVE
PRESSURE REGULATING VALVE
3 WAY VALVE
MODULATING VALVE
PRESSURE RELIEF VALVE
LINE MATERIAL CHANGE
SAMPLE POINT
TIE POINT NUMBER x
HOSE
SIPHON BREAKER
LOW POINT DRAIN
AIR RELIEF VALVE
EXPANSION JOINT
GRAVITY FLOW
INSULATED & HEAT TRACED PIPE
REDUCER
SLOPE
FLOOR DRAIN
CAMLOCK FITTING
FLEXIBLE COUPLING

EQUIPMENT SYMBOLS:

EFFLUENT TROUGH
SKIMMER
SUBMERSIBLE PUMP
COARSE BUBBLE AIR DIFFUSERS
FINE BUBBLE AIR DIFFUSERS
AIR BLOWER
PADDLE MIXER
ROTAMETER
AIR LIFT PUMP
VFD — VARIABLE FREQUENCY DRIVE
STATIC MIXER
METERING PUMP
CENTRIFUGAL PUMP
BIN
SPRAY
BAR SCREEN
DECANTER
PUMP
VENT
AE — AERATION COMPARTMENT
AN — ANOXIC COMPARTMENT
SBF — SLUDGE BLANKET FILTER

INSTRUMENTATION & CONTROLS:

DO — DISSOLVED OXYGEN MONITOR
FIT — FLOW METER
FV — FLOW VALVE
FCV — FLOW CONTROL VALVE
LS — LEVEL SWITCH
LIT — LEVEL MONITOR
LT — LEVEL TRANSMITTER
pH — pH MONITOR
PI — PRESSURE INDICATOR
PS — PRESSURE SWITCH
TI — TEMPERATURE INDICATOR/MONITOR
TIT — TEMPERATURE TRANSMITTER
AIT — TURBIDITY METER
T — TIMER
CONTROLS INTERLOCK
INTERLOCK & ALARM
ALARM
FLOAT SWITCH
M — MOTOR
WATER LEVEL

PIPE SIZES	
DIAMETER NOMINAL DN(mm)	NOMINAL PIPE SIZE NPS(in)
15	1/2
20	3/4
25	1
32	1 1/4
40	1 1/2
50	2
65	2 1/2
75	3
100	4
150	6
200	8
250	10
300	12
350	14
400	16

GENERAL LEGEND

ABA	AIR BLOWER AUXILIARY
ABM	AIR BLOWER MAIN
ADS	ALUM DOSING STATION
AMS	AUGER MONSTER SCREEN
ANM	ANOXIC MIXER
ASB	AERATED SLUDGE BASIN
ASF	ALKALINITY SOLUTION FEED
BSDP	BIOSOLIDS DRAIN TANK PUMP
BSDT	BIOSOLIDS DRAIN TANK
BR	BIOREACTOR
BWPT	BIOSOLIDS WATER PRESSURE TANK
BWRP	BIOSOLIDS WATER REUSE PUMP
BWRT	BIOSOLIDS WATER REUSE TANK
BWSP	BIOSOLIDS WATER SUPPLY PUMP
CAUSTIC	SODIUM HYDROXIDE FEED SYSTEM
CENT	CENTRIFUGE
CIPS	CLEAN–IN–PLACE SYSTEM
CITRIC	CITRIC FEED SYSTEM
CMP	CHLORINE MAKE–UP PUMP
CSC	CAKE SCREW CONVEYOR
DRSP	DUSTY ROAD SUPPLY PUMP
DRWP	DUSTY ROAD WATER PUMP
DRWPT	DUSTY ROAD WATER PRESSURE TANK
DRWT	DUSTY ROADS WATER TANK
DT	DRAINS TANK
DTP	DRAINS TANK PUMP
EQP	EQUALIZATION PUMP
EQT	EQUALIZATION TANK
HOC	HEADWORKS ODOUR CONTROL
HPF	HYPOCHLORITE PUCK FEEDER
HYPO	SODIUM HYPOCHLORITE FEED SYSTEM
IHS	INTEGRATED HEADWORKS
LSB	LIFT STATION BLOWERS
LSG	LIFT STATION EMERG. POWER GENERATOR
LSOC	LIFT STATION ODOUR CONTROL
LSP	LIFT STATION PUMP

GENERAL LEGEND

LST	LIFT STATION TANK
MASB	MEMBRANE AIR SCRUBBING BLOWER
MBP	MEMBRANE BACKWASH PUMP
MFP	MEMBRANE FEED PUMP
MMG	MONSTER MUFFIN GRINDER
NT	NEUTRALIZATION TANK
NTP	NEUTRALIZATION TANK PUMP
PDS	POLYMER DOSING SYSTEM
PWPT	PLANT WATER PRESSURE TANK
PWRP	PLANT WATER REUSE PUMP
PWRT	PLANT WATER REUSE PUMP
RMB	RAS FLOW MEASURING BOX
SAB	SEPTAGE AIR BLOWER
SBF	SLUDGE BLANKET FILTER
SBT	SLUDGE BLENDING TANK
SET	SECONDARY EFFLUENT TANK
SETP	SEPTAGE TRANSFER PUMP
SFP	SLUDGE FEED PUMP
SHTB	SLUDGE HOLDING TANK BIOLOGY
SHTBP	SLUDGE HOLDING TANK BIOLOGY PUMP
SHTS	SLUDGE HOLDING TANK SEPTAGE
SHTSP	SLUDGE HOLDING TANK SEPTAGE PUMP
SKP	SKIMMER PUMP
SKT	SKIMMER TANK
SPP	SLUDGE PRE–THICKENER PUMP
SPT	SLUDGE PRETHICKENER
SSL	SLUDGE STORAGE LAGOON
SSP	SEPTAGE SLUDGE PUMP
SSR	SEPTAGE SLUDGE RECEIVER
SUP	SUPERNATENT PUMP
SUT	SUPERNATENT TANK
SWHT	RECLAIMED WATER HOLDING TANK
TEP	TERTIARY EFFLUENT PUMP
TET	TERTIARY EFFLUENT TANK
UFM	UF MEMBRANE FILTRATION MODULE
UV	ULTRAVIOLET DISINFECTION

REV	DATE	DRAWN	CHK'D	APP'D	DESCRIPTION

PRELIMINARY

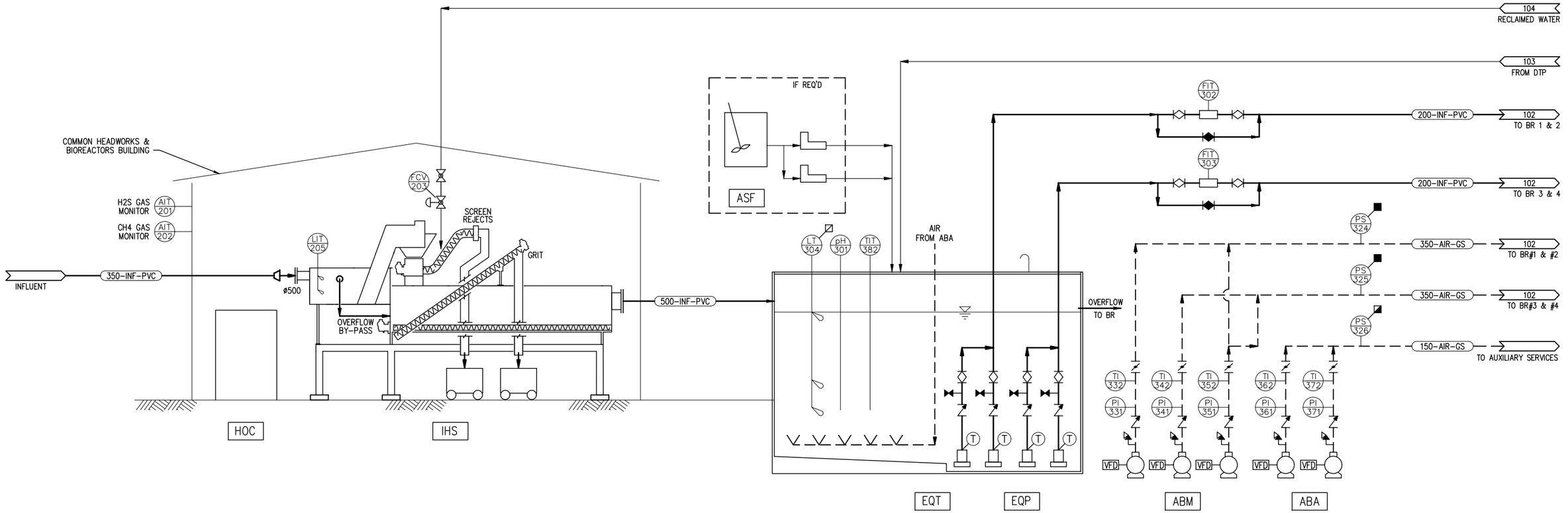
ECOfluid Systems Inc.
Suite 1800-200 Granville St.
Vancouver, B.C. V6C 1S4

1 MGD WASTEWATER TREATMENT FACILITY

PROCESS FLOWSHEET GENERAL LEGEND

DWG. NO. 1MGD-100 REV: -

DESIGNED: - DRAWN: - CHECKED: -



TAG	IHS	HOC	EQT	EQP (1–4)	ABM (1–3)	ABA (1, 2)	ASF
EQUIPMENT	INTEGRATED HEADWORKS	HEADWORKS ODOUR CONTROL	EQUALIZATION TANK	EQUALIZATION PUMP	AIR BLOWER MAIN	AIR BLOWER AUXILIARY	ALKALINITY SOLUTION FEED
NUMBER	1	1	1	4	3	2	1
MAKE & MODEL	FONTANA IHP150 OR EQUAL	ECS OR EQUAL	–	ABS OR EQUAL	AERZEN DELTA GM50L	AERZEN DELTA GM10S	–
DESIGN CAPACITY							
SIZE							
MATERIAL	316 STAINLESS STEEL/ PLASTIC LAMELLAS	FRP	CONCRETE	CAST IRON	CAST IRON	CAST IRON	–
DRIVE	SEE NOTE 1	75 kW, 575/3/60	–	7.5 kW, 575/3/60	75 kW, 575/3/60	15 kW, 575/3/60	FRACTIONAL
REMARKS	–	–	–	–	C/W VFD	C/W VFD	SEE NOTE 2

NOTE 1:
–IHP DRIVES:
–SELF CLEANING SCREEN: 0.25 + 0.18 kW, 115/1/60
–SCREENING SCREW: 1.5 kW, 575/3/60
–GRIT SCREW: 1.5 kW, 575/3/60
–SAND SCREW: 1.5 kW, 575/3/60
–AERATION BLOWER: 0.55kW, 115/1/60
–FAT & GREASE PUMP: 0.75kW, 115/1/60

PRELIMINARY

REV	DATE	DRAWN	CHK'D	APP'D	DESCRIPTION

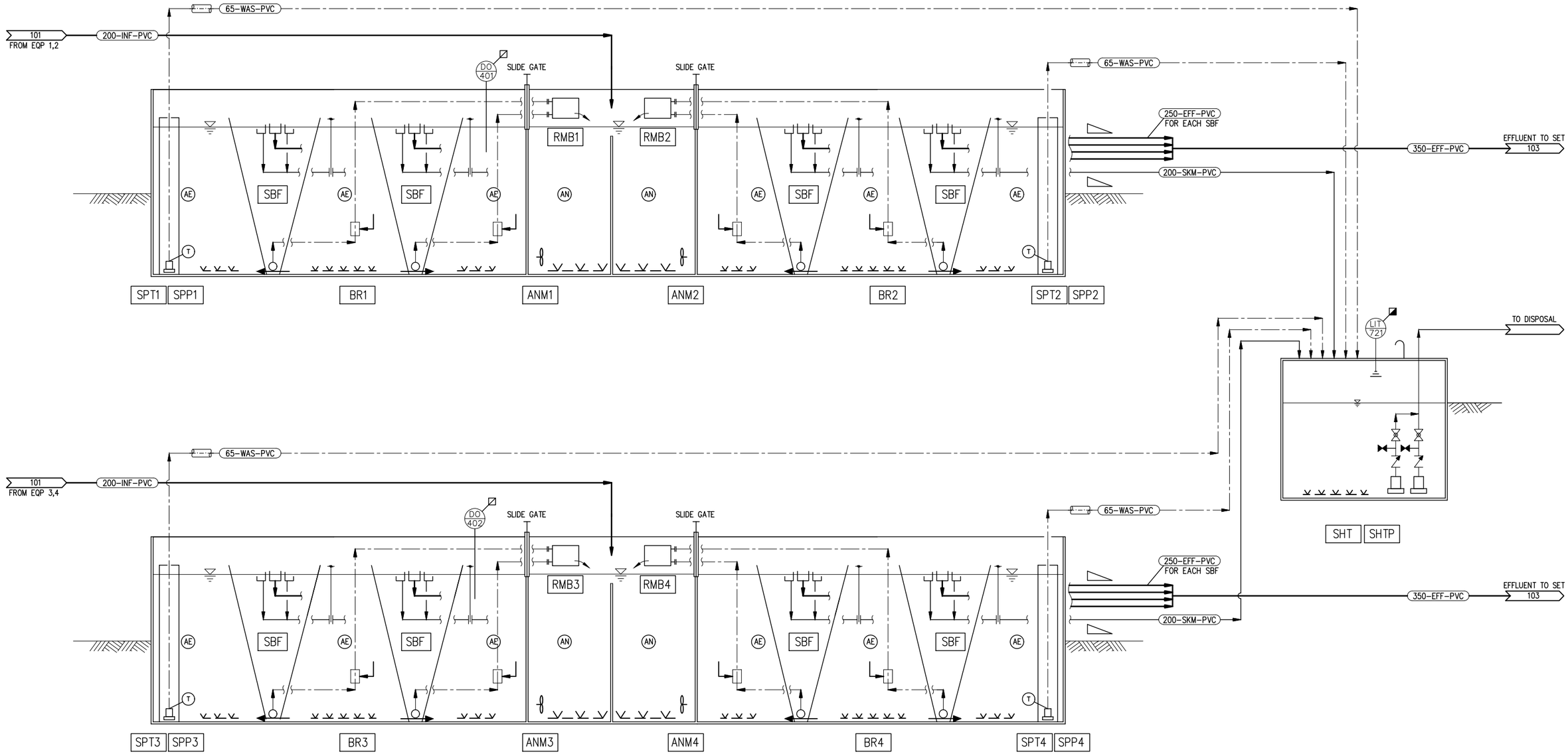
ECOfluid Systems Inc.
Suite 1800-200 Granville St.
Vancouver, B.C. V6C 1S4

1 MGD WASTEWATER TREATMENT FACILITY

PROCESS FLOWSHEET - SHT 1 OF 4 HEADWORKS

DWG. NO. 1MGD-101 REV: -

DESIGNED: - DRAWN: - CHECKED: -



TAG	SPT (1–4)	SPP (1–4)	BR (1–4)	SBF (1–8)	ANM (1–4)	RMB (1–4)	SHT	SHTP
EQUIPMENT	SLUDGE PRE–THICKENER	SLUDGE PRE–THICKENER PUMP	BIOREACTOR	SLUDGE BLANKET FILTER	ANOXIC MIXER	RAS MEASURING BOX	SLUDGE HOLDING TANK	SLUDGE HOLDING TANK PUMP
NUMBER	4	4	4	8	4	4	1	2
MAKE & MODEL	ECOfluid	ABS OR EQUAL	ECOfluid USBF	ECOfluid USBF	ABS, KSB ITT FLYGT OR EQUAL	ECOfluid	–	ABS OR EQUAL
DESIGN CAPACITY								
SIZE								
MATERIAL	CONCRETE	CAST IRON	CONCRETE	STAINLESS STEEL	CAST IRON/STAINLESS STEEL	STAINLESS STEEL	CONCRETE	–
DRIVE	–	2.2 kW, 575/3/60	–	–	1.7 kW, 575/3/60	–	–	1.5kW, 575/3/60
REMARKS	–	–	–	–	–	–	–	–

PRELIMINARY

REV	DATE	DRAWN	CHK'D	APP'D	DESCRIPTION

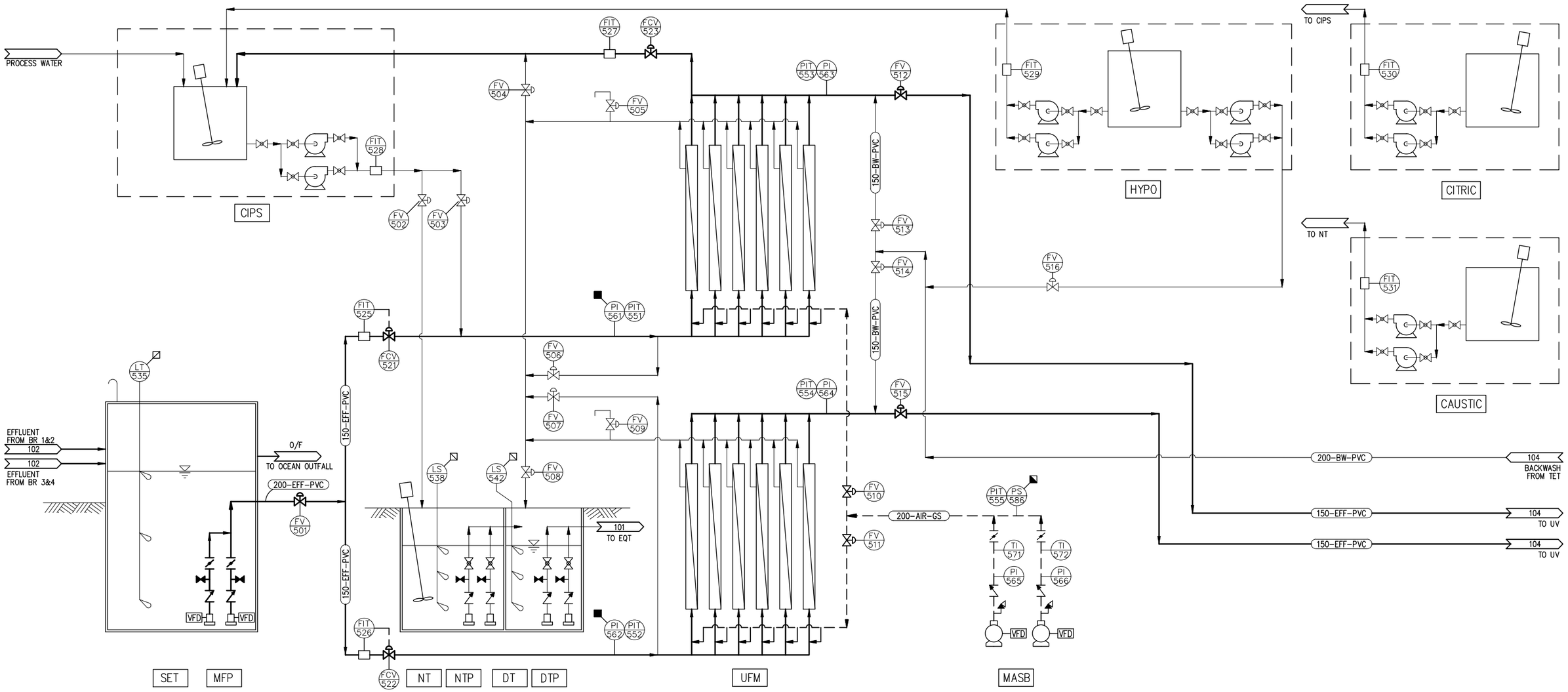
ECOfluid Systems Inc.
Suite 1800-200 Granville St.
Vancouver, B.C. V6C 1S4
ECOfluid

1 MGD WASTEWATER TREATMENT FACILITY

PROCESS FLOWSHEET - SHT 2 OF 4
USBF SECONDARY TREATMENT

DWG. NO. 1MGD-102 | REV: -

DESIGNED: - | DRAWN: - | CHECKED: -



TAG	SET	MFP (1,2)	NT	NTP	DT	DTP (1,2)	UFM (1–50)	MASB (1,2)	CIPS	HYPO	CAUSTIC	CITRIC
EQUIPMENT	SECONDARY EFFLUENT TANK	MEMBRANE FEED PUMP	NEUTRALIZATION TANK	NEUTRALIZATION TANK PUMP	DRAINS TANK	DRAIN TANK PUMP	UF MODULE	MEMBRANE AIR SCRUBBING BLOWER	CLEAN–IN–PLACE SYSTEM	SODIUM HYPOCHLORITE FEED SYSTEM	SODIUM HYDROXIDE FEED SYSTEM	CITRIC FEED SYSTEM
NUMBER	1	2	1	2	1	2	50	2 (1 DUTY & 1 STANDBY)	1	1	1	1
MAKE & MODEL	–	ABS OR EQUAL	–	ABS OR EQUAL	–	ABS OR EQUAL	TORAY	AERZEN DELTA GM10S DN80	–	–	–	–
DESIGN CAPACITY												
SIZE												
MATERIAL	CONCRETE	CAST IRON	CONCRETE	CAST IRON	CONCRETE	CAST IRON	PVDF	–	–	–	–	–
DRIVE	–	25 kW, 575/3/60	FRACTIONAL	1 kW, 575/3/60	–	1.5 kW 575/3/60	–	7.5 kW, 575/3/60	FRACTIONAL	FRACTIONAL	FRACTIONAL	FRACTIONAL
REMARKS	–	C/W VFD	C/W MIXER	–	–	–	–	OPERATING 30–60 SECONDS AT A TIME, C/W VFD	C/W MIXER	C/W MIXER	C/W MIXER	C/W MIXER

PRELIMINARY

REV	DATE	DRAWN	CHK'D	APP'D	DESCRIPTION

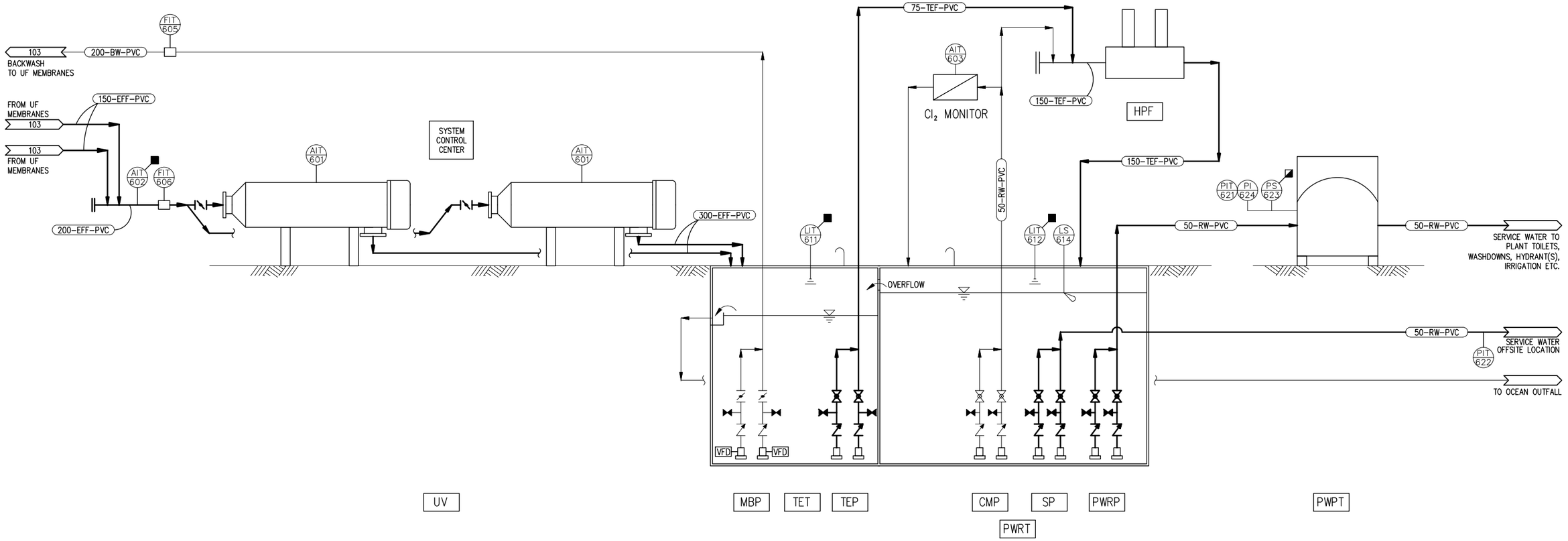
ECOfluid Systems Inc.
Suite 1800-200 Granville St.
Vancouver, B.C. V6C 1S4

1 MGD WASTEWATER TREATMENT FACILITY

PROCESS FLOWSHEET - SHT 3 OF 4 POST-FILTRATION

DWG. NO. 1MGD-103 REV: -

DESIGNED: - DRAWN: - CHECKED: -



TAG	UV (1,2)	MBP (1, 2)	TET	TEP (1, 2)	PWRT	CMP (1, 2)	SP	PWRP (1, 2)	HPF	PWPT
EQUIPMENT	UV DISINFECTION	MEMBRANE BACKWASH PUMP	TERTIARY EFFLUENT TANK	TERTIARY EFFLUENT PUMP	PLANT WATER REUSE TANK	CHLORINE MAKE-UP PUMP	SUPPLY PUMP	PLANT WATER REUSE PUMP	HYPOCHLORITE PUCK FEEDER	PLANT WATER PRESSURE TANK
NUMBER	2 (NOTE 1)	2	1	2	1	2	2	2	1	1
MAKE & MODEL	TROJAN UV-FIT-32AL50	–	–	ABS OR EQUAL	–	ABS OR EQUAL	ABS OR EQUAL	ABS OR EQUAL	NORWECO OR EQUAL	–
DESIGN CAPACITY										
SIZE										
MATERIAL	316 SS	CAST IRON	CONCRETE	CAST IRON	CONCRETE	STAINLESS STEEL	CAST IRON	CAST IRON	–	–
DRIVE	5.2 kW AVERAGE POWER DRAW	28 kW, 575/3/60	–	1.5 kW, 115/1/60	–	0.37 kW, 115/1/60	12 kW, 575/3/60	7.5 kW, 575/3/60	–	–
REMARKS	(NOTE 2)	OPERATING 30-60 SECONDS AT A TIME, C/W VFD	–	–	–	–	–	–	–	–

NOTE:
1. ONE DUTY & ONE STANDBY
2. C/W SYSTEM CONTROL CENTER

PRELIMINARY

REV	DATE	DRAWN	CHK'D	APP'D	DESCRIPTION

ECOfluid Systems Inc.
Suite 1800-200 Granville St.
Vancouver, B.C. V6C 1S4

1 MGD WASTEWATER TREATMENT FACILITY

PROCESS FLOWSHEET - SHT 4 OF 4
DISINFECTION & RECLAIMED WATER REUSE

DWG. NO. 1MGD-104 REV: -

DESIGNED: - DRAWN: - CHECKED: -

PLAN "B"

The question is what is Plan B?

The answers were all in the Public Works Cost Review Workshop. Peer Review Panel: June 7, 2017

From the report here are some of the recommendations.

1. The proposed combined water/sewer rate of $250/month……..is approximately double the EPA's affordable index.
2. The biggest contributor to the cost at the SBB site is the site itself. The most effective way to reduce construction cost is to go back to near on the existing WWTP site.
3. If the City wants to achieve water independence cost effectively, and in a timely manner, the most effective approach is to build a new compact plant at or near the current WWTP location. To do this, the City will need to work closely with the Coastal Commission and RWQCB, and gain buy-in from key community groups.

The answers are clear but the implementation is difficult because the project has not and cannot be clearly defined.
The reasons for lack of definition are the leaks into the main sewer lines causes the volume into the plant to vary enormously. When the City experiences 1"of rain it increases the volume in the plant by over 0.5MGD.
Further the future volume of the plant cannot be determined accurately until the partner in the existing plant, Cayucos, is gone. That volume is as high as 0.74MGD.
It is very important to know within a reasonable range what the average daily volume will be. A plant that is designed too large will not work correctly because the each process is a function of the volume.
For example the new Los Osos plant was designed for one million gallons per day(1MGD). However because higher water rates caused the customers to conserve and use much less water than predicted the present volume through the plant is half of the design volume. Therefore in order to run the plant properly the effluent is run through the twice. This is an expensive waste of time and electricity.You have to know the accurate volume to

design the plant correctly.

The" Plan B" proposal is to do the following.

1.Repair the pipes using the money approved in the 2015 rate increase.

2. Make all necessary repairs to the existing plant and improve the Secondary Treatment portion.

3. When the Cayucos volume is gone then measure what the real volume will be for the new plant. The preliminary estimates are between 0.5 to 0.6MGD.

4. Build a pipeline about one mile inland and purchase a 10 to 20 acre property. On the property build a small pond and a small filter system to" finish" treating the water to Title 22 Tertiary level and then put the water into the pond. The water from the pond will filter into the aquifer and recharge the wells.

5. When the true volume is established then constructs a new small plant on the old Hanson Concrete Plant site. This is over 2 acres and according to the revised FEMA floods maps it is above the 100 year flood levels.

There was enough money to complete "Plan B" in the rate in the rate increases approved in 2015

.

AGENDA NO: iii

MEETING DATE: June 13, 2018

THE FOLLOWING PUBLIC CORRESPONDENCE WAS RECEIVED BY THE CITY COUNCIL FOLLOWING POSTING OF THE AGENDA

From: Jeffery Heller
Sent: Monday, June 11, 2018 8:54 AM
To: Council
Cc: Dana Swanson; Lori Kudzma
Subject: Agenda Correspondence - MBCC Mtg 6/13/18 Item iii - 218 Vote Guidelines

I am not an attorney, but the guidelines the City is proposing in this resolution greatly exceed the legal requirements for written protests for Prop 218. They also are not in keeping with the requirements used in the 2015 public notices for water and sewer rate increases as well as trash rate increases. Them seem onerous, obstructive, and burdensome. The process is already difficult for many residents to understand. If the City approves this resolution---it will confuse the residents even more than they are now. Is this the City's intent?

Regards

Jeff Heller

HOWARD JARVIS, Founder (1903-1986)
JON COUPAL, President
TREVOR GRIMM, General Counsel
TIMOTHY BITTLE, Director of Legal Affairs

HOWARD JARVIS
TAXPAYERS ASSOCIATION

SACRAMENTO OFFICE:
921 11th Street, Suite 1201
Sacramento, CA 95814
(916) 444-9950, Fax:(916) 444-9823
www.hjta.org

June 12, 2018

Dana Swanson, Clerk of the Board
City of Morro Bay
595 Harbor Street
Morro Bay, CA 93442
dswanson@morrobayca.gov

Via Email and Overnight Delivery

RE: Agenda Item III, June 13, 2018 Meeting Date

Dear Clerk of the Board:

Please copy all City Council Members on the attached letter and incorporate the attached letter into the Minutes as public comment on Agenda Item III for tomorrow's meeting of June 13, 2018.

Thank you.

Kind regards,

Laura E. Murray

Laura E. Murray
Senior Staff Attorney

HOWARD JARVIS, Founder (1903-1986)
JON COUPAL, President
TREVOR GRIMM, General Counsel
TIMOTHY BITTLE, Director of Legal Affairs

HOWARD JARVIS
TAXPAYERS ASSOCIATION

SACRAMENTO OFFICE:
921 11th Street, Suite 1201
Sacramento, CA 95814
(916) 444-9950, Fax:(916) 444-9823
www.hjta.org

June 12, 2018

Honorable Mayor of the City of Morro Bay & City Council
595 Harbor Street
Morro Bay, CA 93442
council@morrobayca.gov

Joseph W. Pannone, City Attorney
City of Morro Bay
595 Harbor Street
Morro Bay, CA 93442
jpannone@awattorneys.com

Via Email and Overnight Delivery

RE: Resolution 44-18 Proposition 218 Proposed Protest Process

Dear Honorable Mayor, City Council, and Mr. Pannone:

It has come to our attention that tomorrow, June 13, 2018, the City Council will be considering Resolution 44-18, a proposal for a detailed policy governing the majority protest process of California Constitution Article XIII D § 6(a)(2) and Government Code § 53755(b). Given some of the restrictive elements of the proposed policy which do not appear to be supported by these laws, HJTA is concerned that the City of Morro Bay could be exposing itself to the risk of litigation.

The City of Morro Bay is a general law city. Therefore, it has only the powers delegated to it by the Legislature in State statute. Following the Constitutional Article and Government Code section cited above, we submit the following questions about the policy proposed in Resolution 44-18:

1. On what authority may it be required that protests be delivered individually and exclusively by each person who signed his or her protest, whether in person to the clerk's office, in person at the public hearing, or by mail as a single item in the envelope?

2. On what authority may it be prohibited that protestors deliver their protests through an agent of their choice?

3. On what authority may it be required that each protest be placed in a separate and sealed envelope? Would the Clerk reject an otherwise valid protest if not handed to him or her in a sealed envelope?

4. On what authority may it be required that protests be signed in the format of a declaration using penalty of perjury language? Are you modeling this language on any particular statute?

5. On what authority may it be required that signatures are compared against the county's voter registration records? What standards would be used to qualify or disqualify a signature on this basis?

6. On what authority may the City Clerk choose not to open all of the envelopes if it appears on a visual glance that there would not be enough protest votes to achieve a majority? How will the number of protest votes be tabulated in that situation? Will these unopened envelopes be kept for two years?

7. How will your sample protest form be made available to ratepayers?

The newly proposed requirements, separately and cumulatively, appear cumbersome, particularly the requirement of individual delivery of each protest. This could easily prove discouraging for ratepayers and for the Clerk at the public hearing. Ratepayers who cannot make it to the hearing, for example, may feel obligated to pay the great expense of overnight delivery to ensure that their protests do not arrive too late in the mail. They might go to that effort of securing and paying for overnight delivery, or take time off of work or parenting schedules to hand-deliver their protests waiting in a long line, or forego the opportunity to protest altogether. The Clerk might have to receive protests through a long, time-consuming line at the hearing. Even with a small population of 10,500 persons, a majority protest could require the Clerk to accept forms by hand from 5,251 or more individual persons. Even a protest of about 20% would create a line of 2,000 persons. This, and the other proposed requirements, could be considered deterrents to public participation.

Thank you for considering our questions concerning the proposed resolution.

Kind regards,

Laura E. Murray

Laura E. Murray
Senior Staff Attorney