PORT OF BROOKINGS HARBOR
Special Commission Meeting
Tuesday, September 6, 2022 • 10:00am
Teleconference / Meeting Room *(limited capacity)*
16350 Lower Harbor Road Suite 202, Harbor OR, 97415

Teleconference Call-In Number: 1 (253) 215-8782
Meeting ID: 771 205 4017 Passcode: 76242022 (to mute/unmute: * 6)

TENTATIVE AGENDA

1. **CALL MEETING TO ORDER** **PAGE**
   - Roll Call
   - Modifications, Additions, and Changes to the Agenda
   - Declaration of Potential Conflicts of Interest

2. **APPROVAL OF AGENDA**

3. **PUBLIC COMMENTS** – Limited to a maximum of three minutes per person. Please email your comments to danielle@portofbrookingsharbor.com prior to the meeting if you are calling in.

4. **ACTION ITEMS**
   A. Presentation by Jack Akin, EMC Engineering, Wastewater Treatment Plant Design & Location

5. **INFORMATION ITEMS**
   A. None

6. **COMMISSIONER COMMENTS**

7. **REGULAR MEETING DATE** – Wednesday, September 21, 2022 at 2:00pm

8. **ADJOURNMENT**

A request for an interpreter for the hearing impaired, for those who want to participate but do not have access to a telephone, or for other accommodations for persons with disabilities should be made at least 48 hours in advance of the meeting to Port of Brookings Harbor Office at 541-469-2218.

This Institution is an Equal Opportunity Provider

Wastewater Treatment

Recommendations

9/06/2022

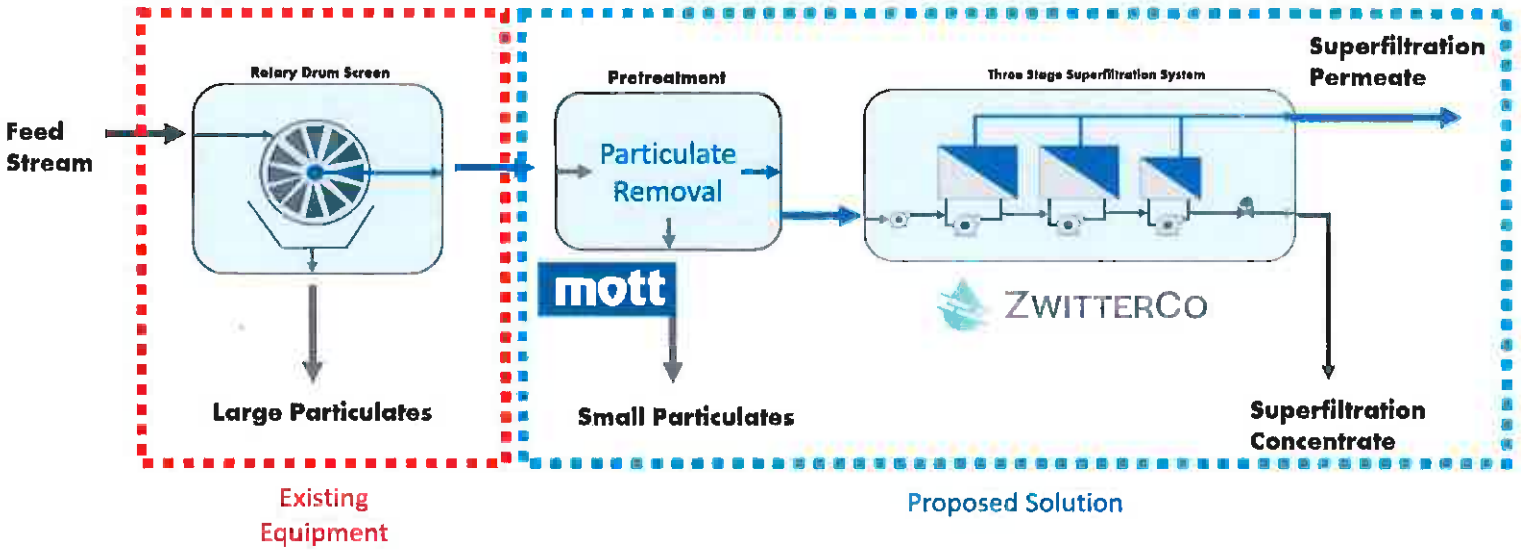
Pacific Seafood is at present out of compliance with federal and state NPDES (National Pollutant Discharge Elimination System) wastewater effluent requirements and the plant is not under a permit. The ODEQ is requiring a response. The Port is maintaining dialogue with ODEQ. Is in the process of investigating the available, applicable wastewater treatment approaches that are applied to fish processing, which have included DAF, Anaerobic, multi-staged aerobic and membrane technologies.

In our analyses we eliminated the DAF and Anaerobic options due to operational difficulties, or budget concerns. The DAF as it is operated at other facilities utilizing chemical additives that render the waste sludge difficult to reuse or recycle. Also DAF systems that we have reviewed are not well adapted to highly variable flows. Finally, DAF systems, when used as we've seen, require frequent cleaning and maintenance. However, we have nevertheless not eliminated the DAF approach entirely.

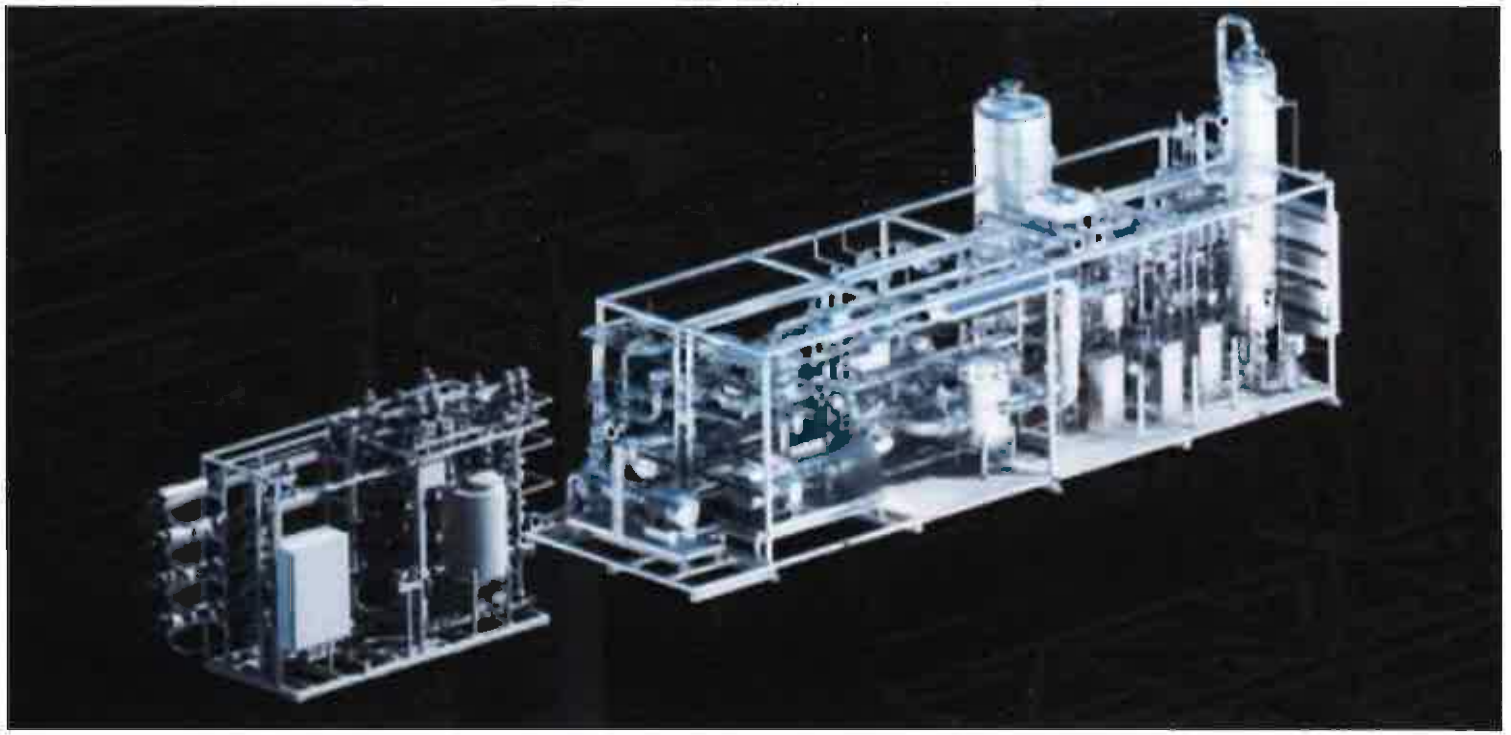
The Anaerobic systems that were applicable to our treatment needs were found to cost in excess of $6,000,000 installed, far above our grant budget.

MEMBRANE ALTERNATIVE (A Filtering Process): However, we continued to look closely at the Pacific Seafood wastewater, and noted that membrane screening could, by application of prefiltration and nano-pored design, followed by an effective sludge press, offer a relatively clean and simple alternative.

Proposed Process Flow Diagram for Pacific Seafoods



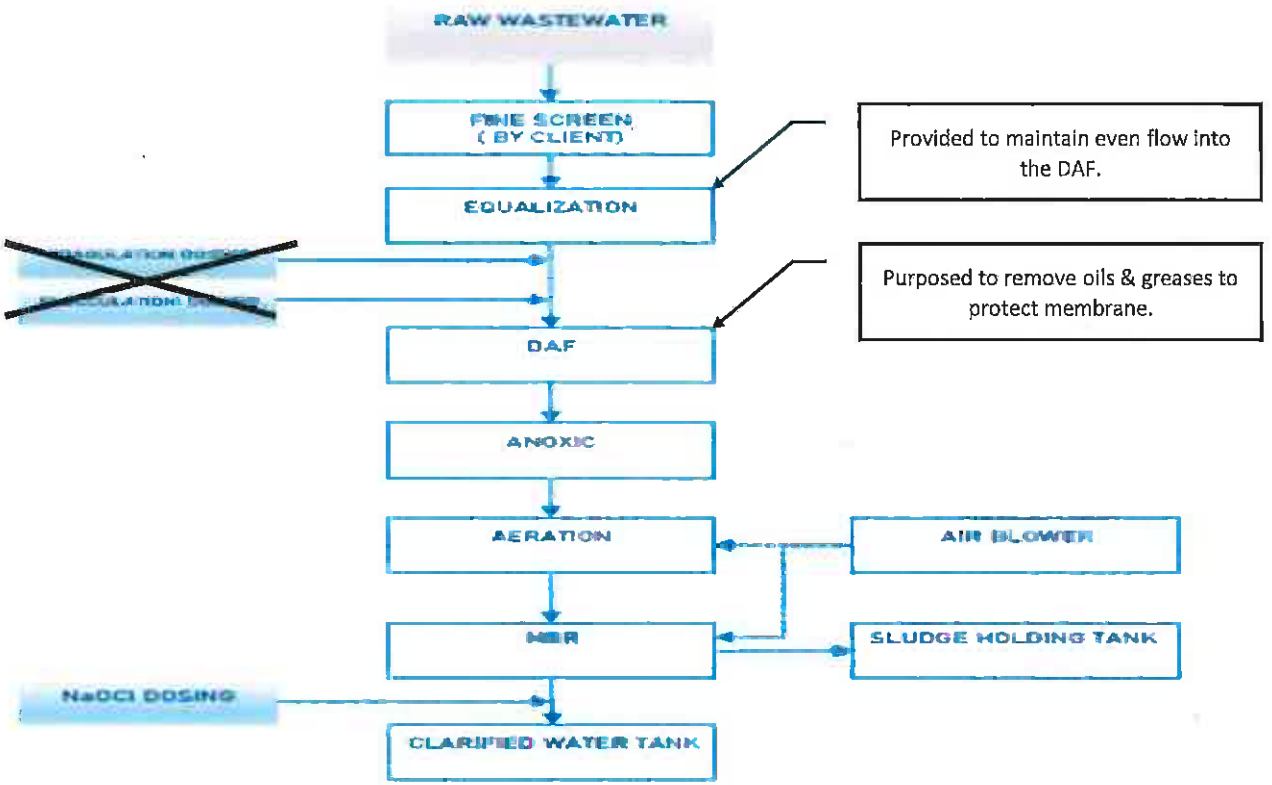
In this process, the first stage is a single,self-cleaning filter with internal scraper device. The second stage is a single, self-cleaning RVM filter with internal vacuum cleaning system, followed by superfiltration membrane elements, which are comprised of three membrane stages.



This system certainly is a cleaner system, much easier to maintain that DAF systems as we have seen them used in fish processing, far less expensive ($2.5 – 3 million) than the anaerobic systems, and much smaller in footprint than multi-staged aerobic treatment systems.

However, the draft proposal, provided by ZWITTER/MOTT, leaves little budget available for site development, especially if considering location along the old PAC-Choice commercial dock, presently in disrepair. It should be noted that bench testing has just been completed at ZWITTER and MOTT facilities, and so will soon see whether the wastewater analyses conducted will result in an adjustment of the proposed size and price of this membrane system.

Meanwhile, a less expensive system has been designed, which utilizes DAF differently, and incorporates membrane and MBR technologies. For this design, we have obtained a proposal from PACT. The proposed draft budget is less than $1.5 million, including shipping costs. In our initial assessment, with the required civil engineering required for installation and repair of the adjacent dock, the total cost would be well below that provided by the funding offered.



We see here several layers of adjustable approaches to achieve permit compliance. Adjustments to the role of each of these units in sequence can be made to 1) assure compliance, 2) reduce energy use, 3) reduce sludge volumes and/or 4) decrease maintenance of the overall system

DAF (A filtering process)

DAF (Dissolved Air Flotation) is a clarification process ideal for treating raw water with light particles, such as algae or color-causing organics, and at low temperatures when sedimentation is not as effective. Before the *flocculated* water enters the clarification chamber, millions of tiny air bubbles are released from the diffuser nozzles to the water, which attach and float the floc particles to the water surface. The air bubbles are generated in a pumped recycle stream by an air compressor and are dissolved in water through a packed-tower-type of saturator. The floated sludge is removed periodically to a desludging trough, and the clarified water flows to the bottom of the clarifying chamber and then to an effluent control weir for collection. The air saturator is used to dissolve air in the water and then generate bubbles to float the floc particles. Chemicals include coagulants, demulsifiers and flocculants. DAF system components include equalization tanks, oil-water separators, mixers, pH control, chemical feed & control, sludge thickening and de-watering.

Membrane Bioreactor (a filtering and biological process)

A membrane bioreactor (MBR) is a combination of suspended growth activated sludge biological treatment and membrane filtration equipment performing the critical solids/liquid separation function that is traditionally accomplished by a secondary clarifier.

Two types of membrane systems that can be used in MBR's: pressure driven, in- pipe cartridge systems that are located external to the bioreactor; and vacuum driven immersed systems that are designed for installation within the bioreactor.

Immersed membrane technologies using hollow fiber or flat sheet membranes are the most popular for MBR applications because they operate at lower operating pressures, can more readily accommodate the variations in the types of solids found in activated sludge bioreactors and typically provide a lower lifecycle cost, particularly for municipal scale facilities.

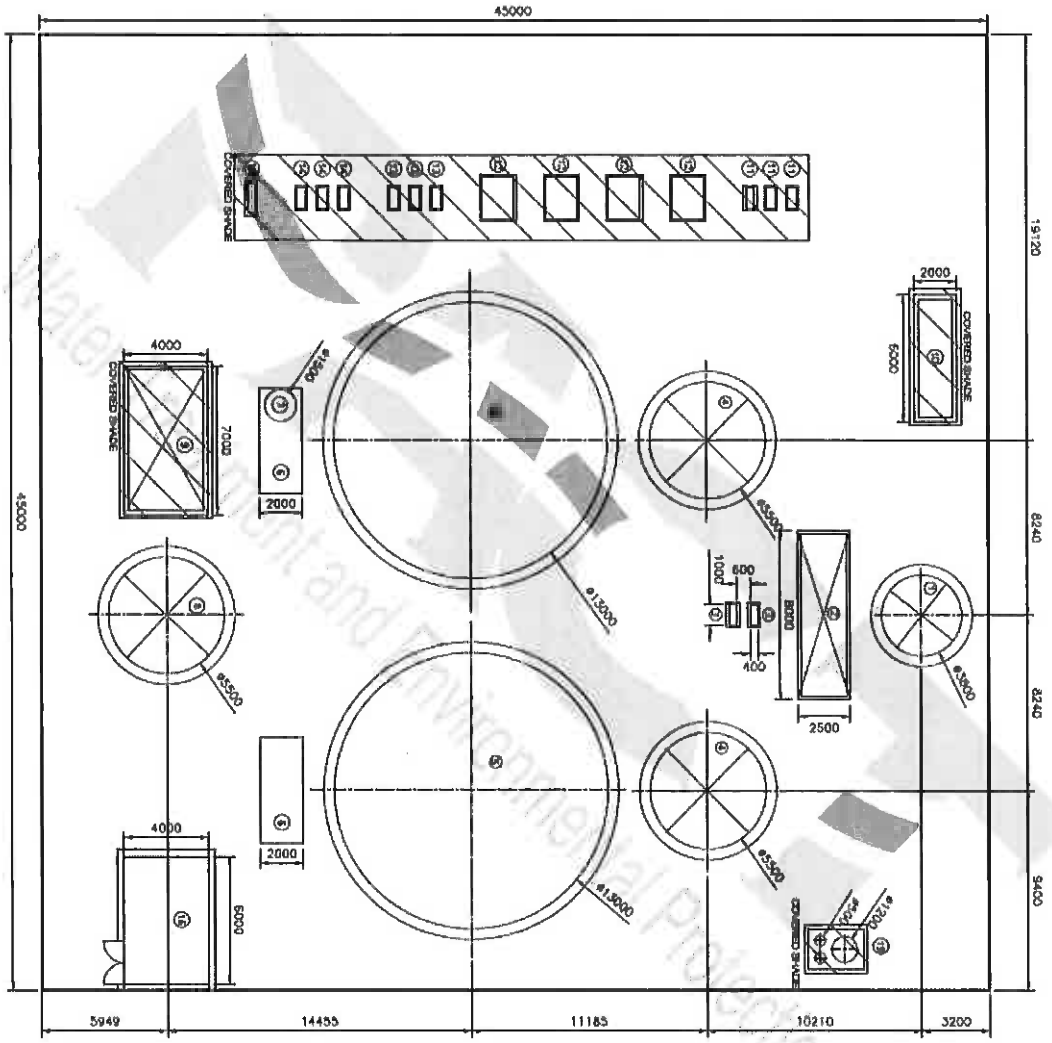
Key Features of MBR

Exceptional excellent quality: The biomass is completely retained resulting in consistently high quality final effluent, and effluent solids concentrations are less than 5 mg/L.

Small footprint: Secondary clarifiers and filters can be eliminated, thereby reducing plant footprint.

Modular system: membrane systems are modular in nature allowing for ease of expansion and flexible in configuration.

Robust and reliable operation: the system can operate within a wide range of SRT's resulting in increased flexibility and more options for system optimization.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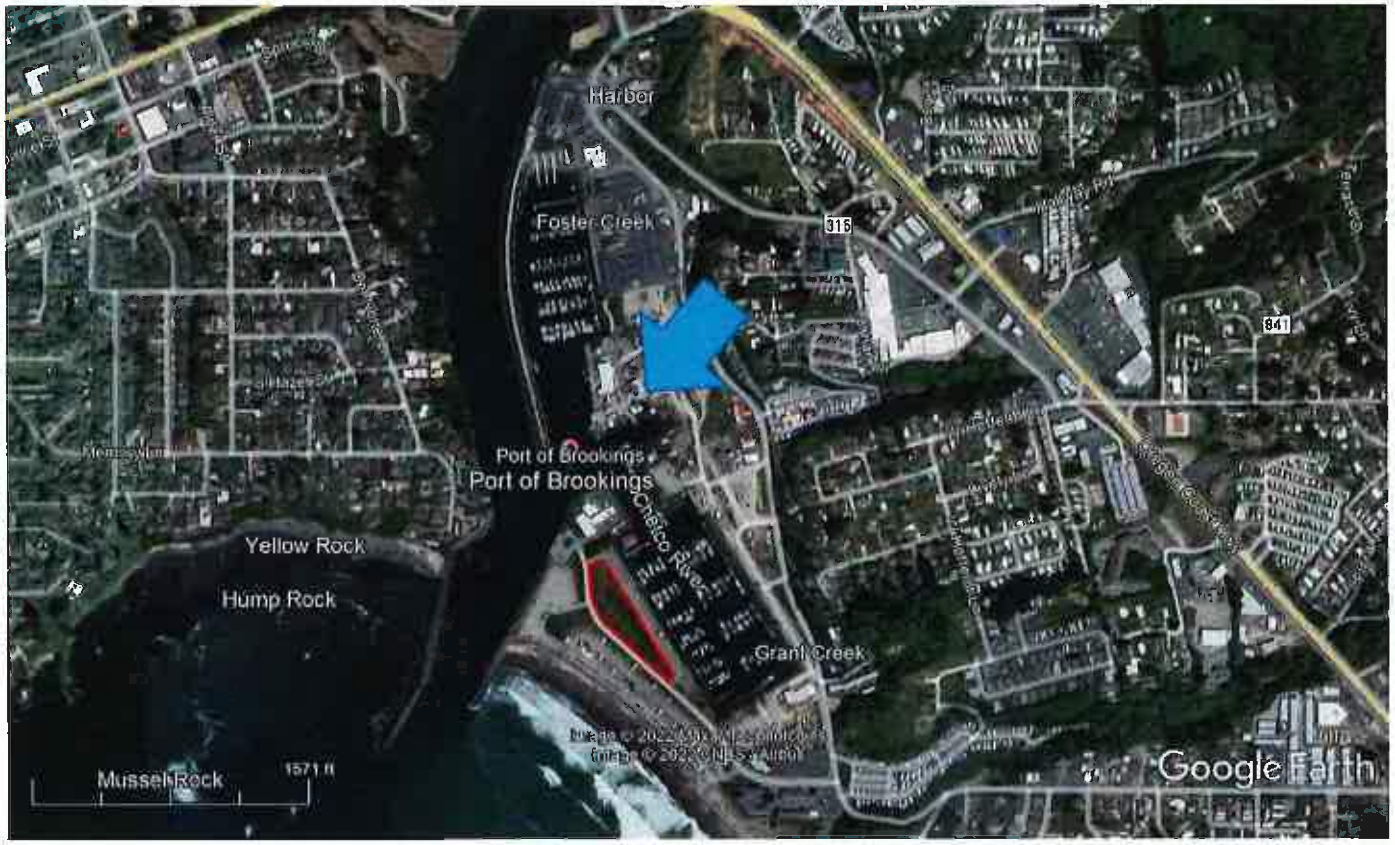
ITEM	PACT	CLIENT
Design & detailed Engineering (Process & Electromechanical).	✓	X
Basic Engineering as outline for Civil works, includes building & foundation.	✓	X
Civil outline drawings, if any.	✓	X
Control philosophy, for supplied equipment only, if any.	✓	X
Fabrication & supply pre-assembled units, if needed.	✓	X
FAT & Inspection wherever applicable.	✓	X
Delivery Ex-Works, SAIF Zone, Sharjah, UAE.	✓	X
Drawings / Documents submittal during detail engineering, if any.	✓	X
Training client engineers, at PACT Factory, for max 1 week Excluded accommodation, food, transportation, etc.	✓	X
Earthing connection within the skids, if any.	✓	X
Instrumentation, Cables (instrument & power), Piping, cable conduit, etc. within PACT scope boundary, defined by the GA and P&ID.	✓	X
Custom Clearance & Custom duties at destination if any.	X	✓
Safety and Storage PACT supplied equipment at site, if any.	X	✓
Offloading and positioning the equipment on the foundation as the Drawings.	X	✓
All Civil structural work, design, supply and build, such as shades, buildings, trenches, pipe racks, pipe supports, cable trays, etc.	X	✓
All anchoring materials and workmanship to fix the supplied equipment to the concrete base.	X	✓
The main utility supply to the system tie point, identified on the PACT GA and or PACT P&ID, such as the main Power supply, main feed line, the permeate and reject line in addition drain lines, etc.	X	✓
Storage of equipment at Site and site security.	X	✓
Chemicals, consumables, and spare parts.	X	✓
Site, supervision to install and position the process equipment.	O	✓
Supervision to pre-commissioning, commissioning, and starting up the system, including the SAT.	O	X

2.0	**SECONDARY TREATMENT SYSTEM**		
2.1	Wastewater transfer pump Capacity: 48 m^3/hr. @ 1.0 bar Type: Submersible MOC: Cast Iron Body/Cast Iron Impeller	2.0	(1 Duty / 1 Standby)
2.2	Anoxic Tank *MOC: RCC, By Client*	2.0	(2 Duty)
2.3	Anoxic Tank Mixer Type: Submersible	2.0	(2 Duty) Number of mixers to be confirmed by vendor
2.4	Internal Recirculation pump Capacity: 72 m^3/hr. @ 1.0 bar Type: Open Impeller MOC: Cast Iron Body/Cast Iron Impeller	3.0	(2 Duty / 1 Standby)
2.5	Aeration Tank *MOC: RCC, By Client*	2.0	(2 Duty)
2.6	Membrane Tank MOC: Carbon Steel Epoxy Painted (CSEP)	2.0	(2 Duty)
2.7	MBR Modules Type: Hollow Fiber Membranes MOC: PVDF	2.0	(2 Duty)
2.8	Air Blower for Aeration Tank & MBR Tank Type: Positive Displacement MOC: Cast Iron	3.0	(2 Duty / 1 Standby)
2.9	Air Diffusers and lateral works for Aeration Tank & MBR Tank Diffuser Type: Fine Bubble Non Submerged Piping & valves: CS/GI Submerged Piping & valves: uPVC	Lot	
2.10	RAS/WAS pumps Capacity: 96 m^3/hr. @ 1.0 bar Type: Open Impeller MOC: Cast Iron Body/Cast Iron Impeller	3.0	(2 Duty / 1 Standby)
3.0	**CIP SYSTEM & PERMEATE PUMPS**		
3.1	CIP Tank Capacity: 1000 liters MOC: PE	1.0	(1 Duty)
3.2	MBR Permeate pumps Capacity: 27 m^3/hr. @ 1.0 bar Type: Horizontal Centrifugal MOC: CI Body/CI Impeller	3.0	(2 Duty / 1 Standby)


Harbor
Foster Creek
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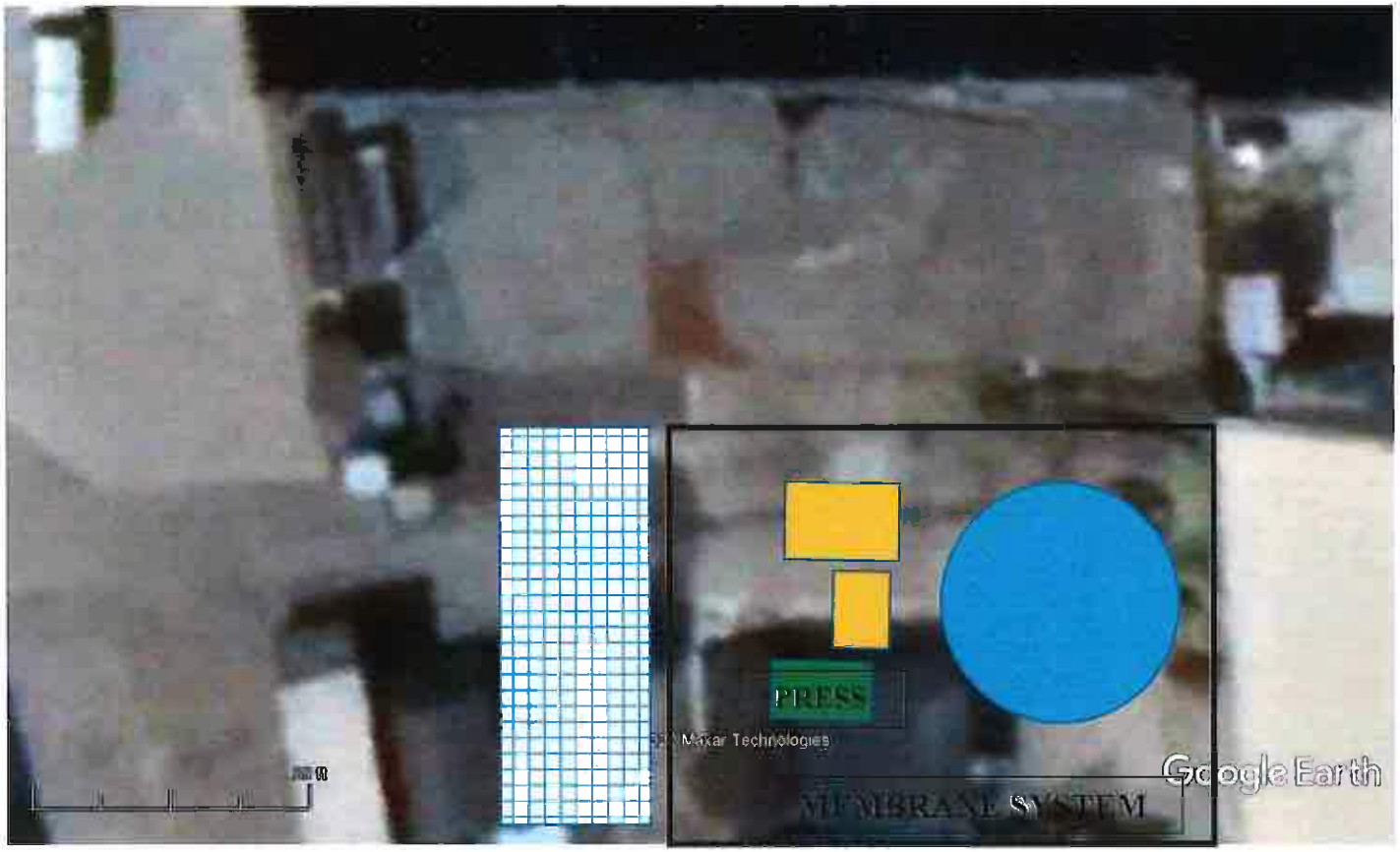
341
Port of Brookings
Port of Brookings
Chetco River
Yellow Rock
Hump Rock
Grant Creek
Mussel Rock
1571 ft
Google Earth

Membrane w Bioreactor

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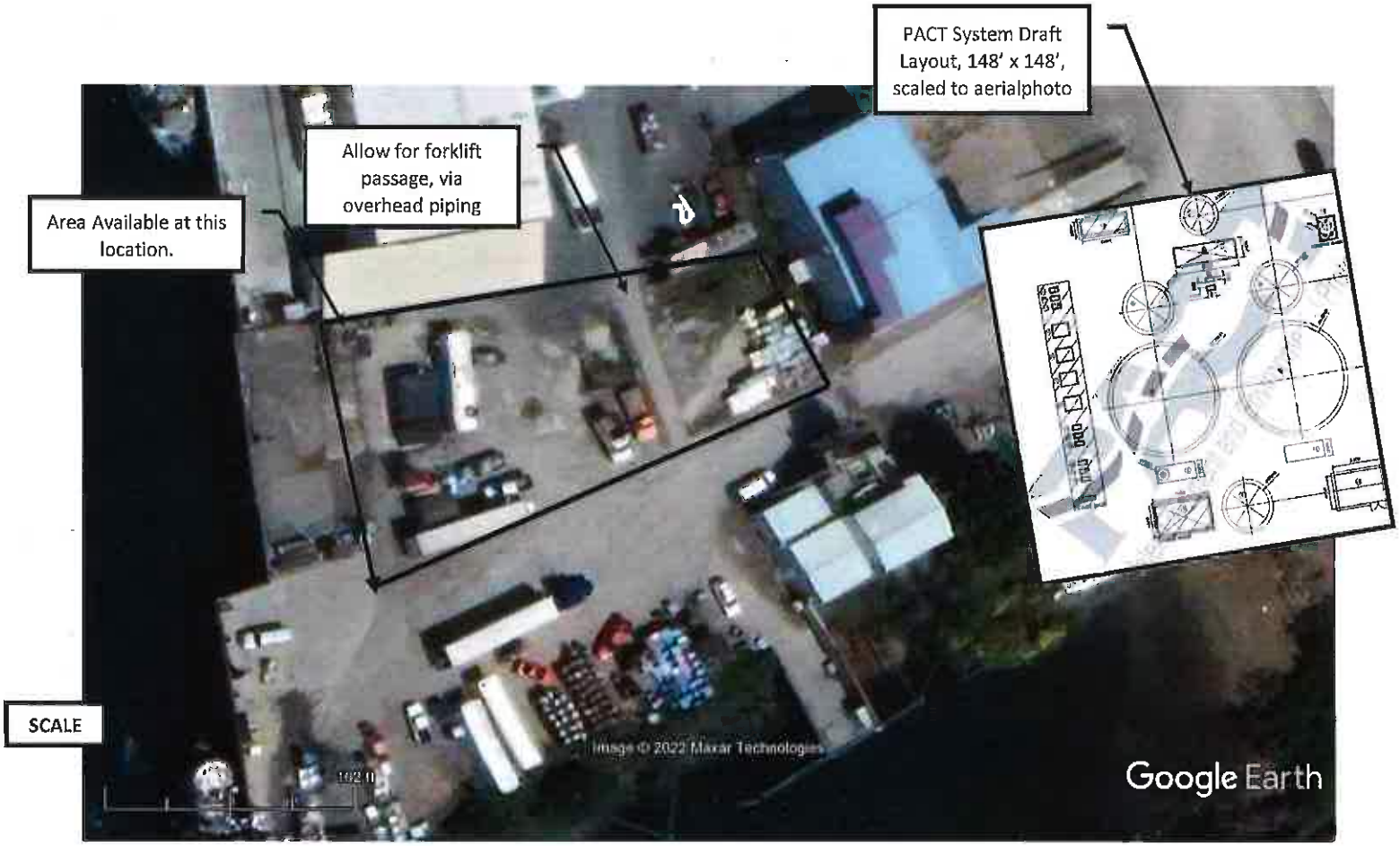
PACT System Draft Layout, 148' x 148', scaled to aerialphoto
Allow for forklift passage, via overhead piping
Area Available at this location.
SCALE
Image © 2022 Maxar Technologies
Google Earth

The Permitting Process

There has been some confusion as to the type of permit that would be selected by the ODEQ for this project. On 8/4/22 we received a final deliberation from the Department, stating "I have copied federal definitions for a POTW (Publicly Owned Treatment Works) below for your information. Typically, POTWs are sewage treatment plants but the federal regulations allow for a POTW to treat "industrial wastes of a liquid nature" (green highlight below)."

40 CFR 403.3 defines a POTW as the following: *The term Publicly Owned Treatment Works or POTW means a treatment works as defined by section 212 of the Act, which is owned by a State or municipality (as defined by section 502(4) of the Act). This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant. The term also means the municipality as defined in section 502(4) of the Act, which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works.*

Therefore, with the type of permit defined, the following is required to obtain a permit:

1. EPA Form 1
2. EPA Form 2A for a POTW or EPA Form 2D for a privately-owned treatment works.
3. Permit application fees – This will be dependent on projected wastewater flows and type of discharge (e.g., only seafood processing waste or other waste streams).
4. DEQ Land Use Compatibility Statement – This form needs to be signed by Curry County indicating that the proposed construction and operation of a wastewater treatment plant is consistent with the local acknowledged comprehensive plan.
5. Mixing zone study – Details are dependent on the proposal as DEQ has shared its concerns with you and the Port about the current discharge outfall in use by Pac Seafood.
6. Ambient data – This is to be determined by DEQ when more is known about the proposal and discharge location. This data is needed to determine water quality-based effluent limits.
7. DEQ may also require supplemental application information once the initial application information has been reviewed.

To the Port of Brookings – Harbor

Congress identified the Port of Brookings Harbor for the Wastewater Treatment Plant project and an associated funding level in the Consolidated Appropriations Act of 2022 (P.L. 117-103). EPA is providing the attached Planning Instructions for Regions and Recipients so that you can become familiar with the grant awards process and some of the requirements that will apply to your project. With this document, recipients can plan and prepare now so that the forthcoming application and award process can be carried out effectively and efficiently. EPA intends to provide final implementation guidance and application instructions for community grantees in the coming months. Before your community grant application can be submitted and an award made, EPA must complete a number of administrative steps to support the development and submittal of complete grant packages to the agency.

The Planning Instructions for Regions and Recipients (1) describes how EPA plans to award and administer the community grants and (2) provides an overview of associated requirements for recipients to receive grant awards. Potential grant recipients may begin several preparatory steps:

1. Review EPA Grants Management Training for Applicants and Recipients. EPA's online training courses are free and are designed to introduce potential EPA grant recipients to key aspects of the entire grant lifecycle, from preparation of an application through grant closeout.

2.Obtain a Unique Entity Identifier (UEI). Recipients must have an active SAM.gov registration and a Unique Entity Identifier before registering with Grants.gov. Registering at SAM.gov is free and new registrations can take an average of 7 – 10 business days to process.

3.Register at Grants.Gov. Potential grant recipients can register on the federal grant portal (grants.gov) as the grants process will be conducted online.

4.Identify Cost Share Funding. Recipients should begin to think about how they will provide the 20 percent non-federal cost share requirement based on the total project cost. Eligible sources of funding to meet the cost share requirement are identified in the preliminary Implementation Memorandum. EPA supports waiving the non-federal cost share for projects located in, or that primarily serve, disadvantaged communities. General information about cost share waivers is provided in the Planning Instructions for Regions and Recipients.

5.Environmental Information. Each community grant project will need to comply with the National Environmental Policy Act (NEPA), which requires EPA to review and assess environmental information relating to the project prior to awarding any grants. Recipients may begin to identify project information that will support the environmental review process including:

- Preparing a project summary, including a description of the needs the project addresses, the scope, and project implementation plans.
- Describing any potential environmental impacts of the proposed project (such as addressing water quality and quantity problems, public health concerns, inadequate systems, more stringent effluent limits, etc.).
- Describing the project details (such as planning area description; planning period; description of construction phases; owner and operator of the facilities; location of facilities, including a map)
- Describing project costs, including funding from EPA and all other sources.

To assist recipients in fulfilling the NEPA requirement prior to grant award, the Agency will provide comprehensive resources and guidance on the environmental review process in the coming months.