

**Inland Empire Paper Company
NPDES Permit No. WA-000082-5
Permit Condition S4**

**Total Phosphorus, CBOD, & Ammonia
Best Management Practices Plan**

2018 Annual Status Report

November 1, 2018

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Total Phosphorous, CBOD, & Ammonia BMP Plan 2018 Annual Report

1.0 INTRODUCTION

Permit Condition S4, Total Phosphorous, CBOD, & Ammonia BMP Plan, of Inland Empire Paper Company's (IEP) National Pollutant Discharge Elimination System (NPDES) Permit No. WA-000082-5 includes a requirement to develop a BMP plan that delivers the following:

The goal of this BMP plan is to maintain or lower effluent concentrations of total phosphorus, CBOD, and ammonia at or below current discharge levels.

By November 1, 2012, the Permittee shall develop a BMP plan and submit it to the Department for review and approval. The objective of this plan is to identify pollution prevention and wastewater reduction opportunities for these three parameters. The plan shall include the following:

- 1. A list of members of a cross-functional team responsible for developing the BMP plan. The list shall include the name of a designated team leader.*
- 2. A description of current and past BMPs and their effectiveness.*
- 3. Identification of technical/economical evaluation of new BMPs. BMPs should include: substitution of materials; reformulation or redesign of products; modification of equipment, facilities, technology, processes, and procedures; and improvement in management, inventory control, materials handling or general operational phases of the facility.*
- 4. A schedule for implementation of economically feasible BMPs.*
- 5. Methods used for measuring progress towards the BMP goal and updating the BMP plan.*
- 6. Results from testing of any waste streams (not already required under Special Condition S3. of this permit) for total phosphorus, CBOD, and ammonia taken in support of the BMP plan.*

Thereafter, the Permittee shall submit an annual report to the Department by November 1st of every year. The annual report shall include: a) all BMP plan monitoring results for the year; b) a summary of effectiveness of all BMPs implemented to meet the BMP plan goal; and c) any updates to the BMP plan.

This permit may be modified, or revoked and reissued, to revise or remove the requirements of this Section based on information collected under this Section.

2.0 CROSS-FUNCTIONAL TEAM FOR BMP DEVELOPMENT

IEP's Engineering and Production staff all play significant roles in the development and implementation of this BMP plan based on their respective disciplines, responsibilities and departments. Key individuals contributing to this effort include:

Doug Krapas – Environmental Manager and Team Leader
David Newton – Technical Superintendent
David Demers – Process Technician
Kevin Davis – Production Manager
T. J. Eixenberger – Plant Engineer
Cody Murdock – Pulp Mill Superintendent
Luke Huntley – Paper Machine Superintendent

3.0 PAST BMP PLANS IMPLEMENTED

Since 2001, Inland Empire Paper Company (IEP) has embarked on a modernization program that has resulted in improvements to nearly every process within its facility using state-of-the art equipment. This significant investment into the phased modernization effort has raised IEP's status to one of the most modern newsprint facilities in the world. The following provides a summary of IEP's specific achievements that have resulted in improvements to the efficiency of its water treatment system, reduced nutrient levels in its discharge, and overall volume reduction of final effluent that IEP will ultimately need to treat using advanced technologies:

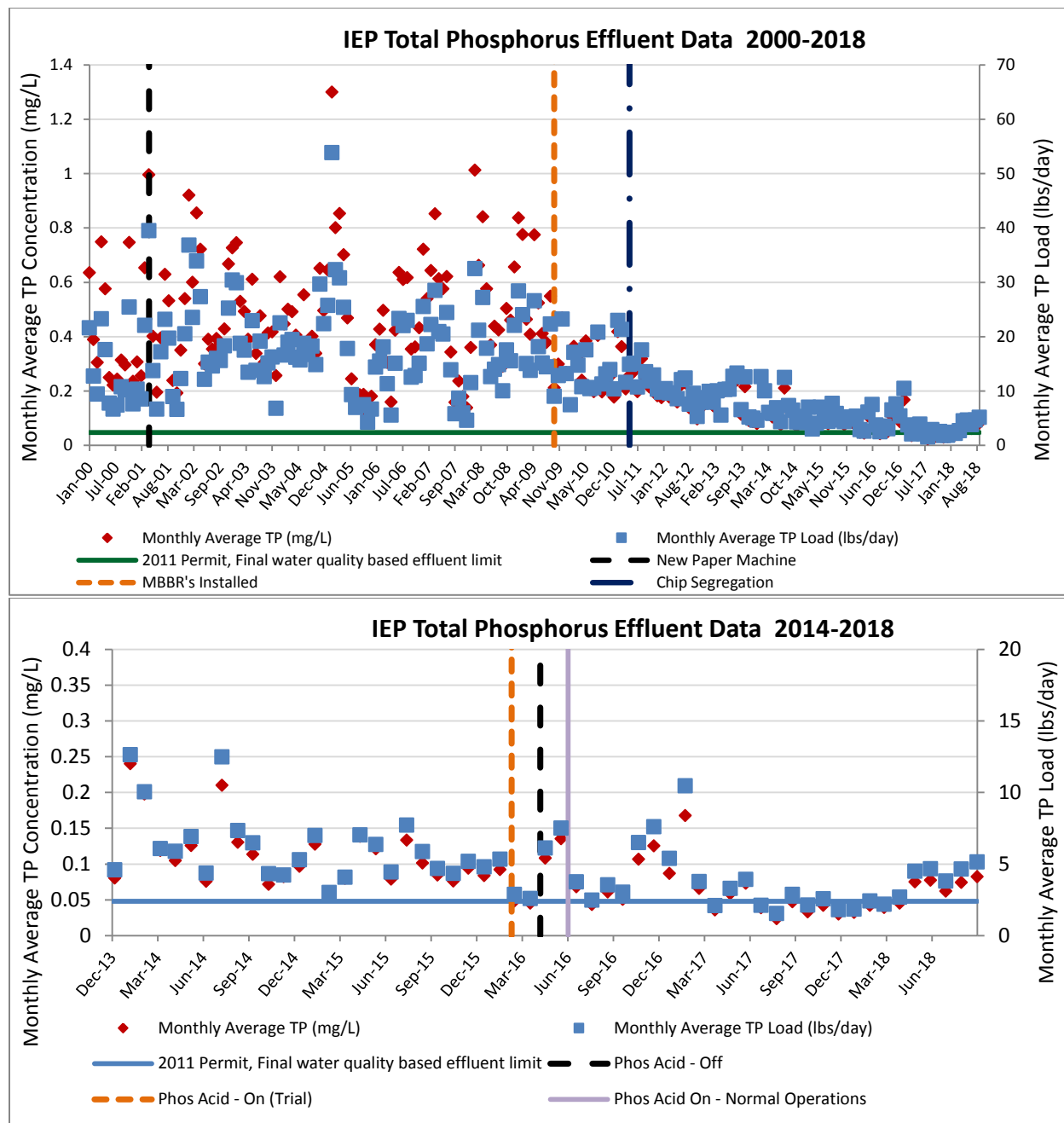
- 3.1 Paper Machine #5 (2001) - IEP installed a modern energy efficient paper machine that remains the newest of its kind in North America. The machine utilizes heat recovery and water reuse to minimize energy and water consumption.
- 3.2 Water Conservation Projects (2004 to present) - Beginning in 2004, IEP embarked on an aggressive on-going water conservation program. Numerous projects have been implemented, including: re-use of process water in various mill processes, re-use of water from the recycling of old newsprint, installation of water control devices on pump seals, and optimization of water intensive processes. Reducing the volumetric loading to the effluent treatment system increased the residence time within the system which resulted in greater treatment potential for removing CBOD, TP, and NH₃.
- 3.3 Conustrenner (2004) – The Conustrenner is a compact highly efficient self-cleaning fractionation filter. Approximately 1-1.4 MGD of primary treated water is diverted to the Conustrenner for reclamation and reuse in the pulp mill processes, greatly reducing freshwater needs and volumetric loading to the water treatment system.
- 3.4 Pump Seals (2005 to 2007) – Flow limiting devices were installed on mechanical seal water lines for numerous pumps around the mill. These devices greatly reduced freshwater consumption to the process streams resulting in a substantial decrease in the volumetric loading to the water treatment system.

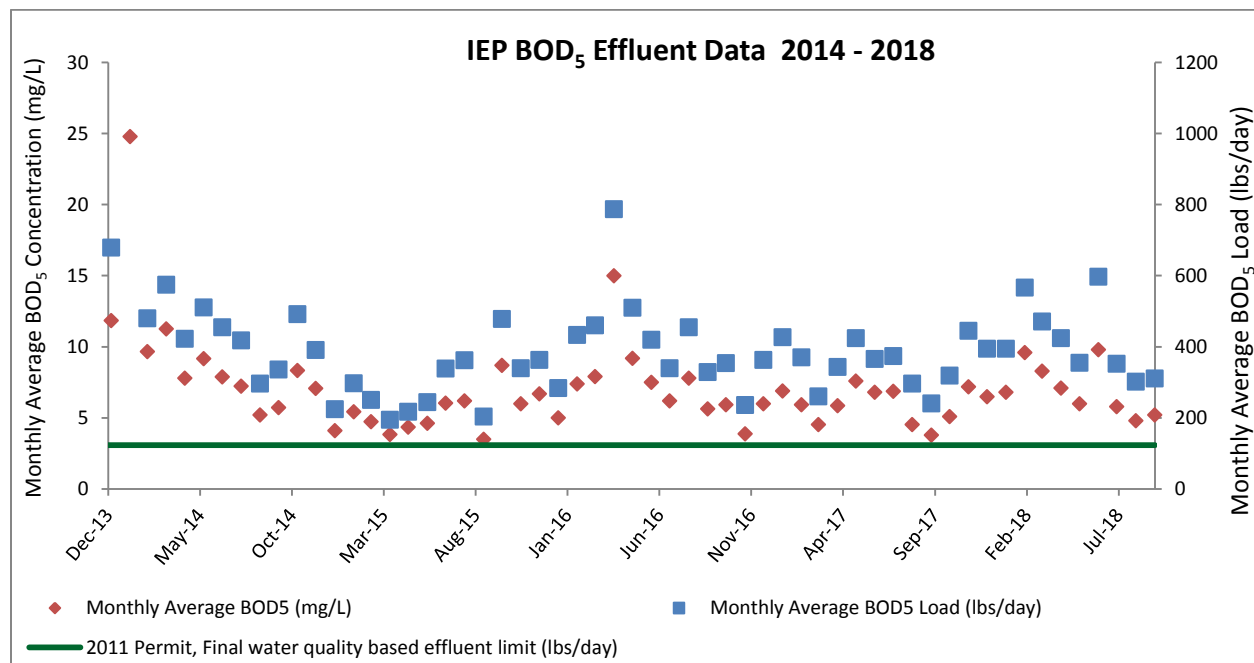
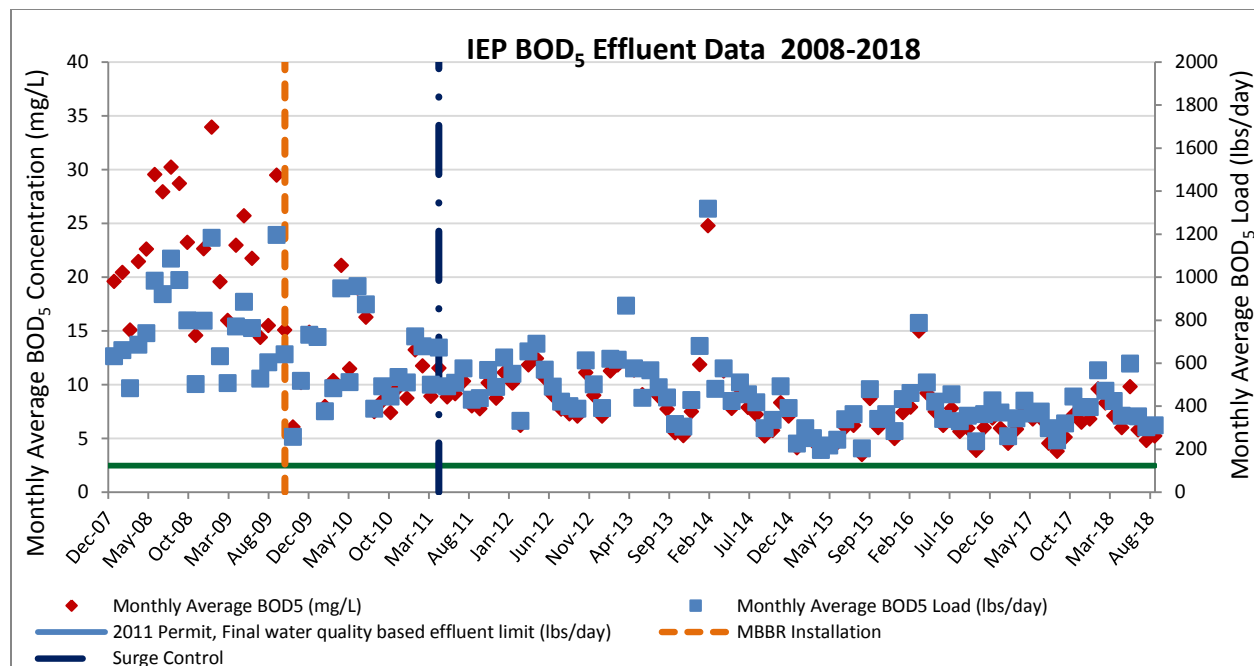
- 3.5 Retention Aid Carrier Water (2012) - IEP switched from using fresh water to reclaimed process water for its retention aid carrier water. This modification reduced treated effluent flow by approximately 100 gallons/minute.
- 3.6 Disk Filter Shower Water (2014) – IEP’s #1 Disk Filter showers were changed from fresh water to reclaimed process water. This modification reduced treated effluent flow by approximately 200 gallons/minute.
- 3.7 MBBR #1 (2006) - IEP installed a 2.0 million gallon per day Moving Bed Biofilm Reactor (MBBR) for enhanced CBOD removal. This system is currently achieving in excess of 30% CBOD removal and has improved the efficiency of the overall water treatment system.
- 3.8 MBBR’s #2 and #3 (2009) - IEP further improved the efficiency of its secondary water treatment system with the installation of two additional MBBR systems, providing IEP with the maximum amount of effective secondary treatment possible.
- 3.9 Surge control (2009) – IEP converted its existing 75 foot diameter clarifier to a surge control system to equalize hydraulic flow and CBOD loadings to its secondary treatment system. This allows more uniform loading conditions to the water treatment system thereby reducing variability in the final effluent and providing process stability.
- 3.10 #5 Thermo-Mechanical Pulping (TMP) Refiner Effluent Treatment (2010) - Plant effluent from the #5 TMP system is piped to the alum retention tank where it is mixed with a high filler waste solution and a coagulant before being sent to a Dissolved Air Flotation (DAF) system. A polymer is added to the DAF facilitating flotation and solids removal. The average TSS reduction across the DAF is over 90% and the average CBOD reduction is approximately 45%.
- 3.11 Chip segregation (2011) – IEP receives waste wood chips for local sawmills as a raw material supply for its paper making process. Chip species are separated and used only on grades where they are most effective, resulting in improved energy efficiency and bleaching. Reducing the bleaching needs of any specific paper type results in less CBOD and TP loading to the water system, resulting in lower final discharge concentrations of TP, NH₃, and CBOD.
- 3.12 Nutrient Optimization (2012 to present) – IEP’s wood-based materials are deficient in nutrients such as phosphorus and nitrogen, so IEP actually needs to add these nutrients to its water treatment system for the health of the microorganisms that are responsible for CBOD removal. IEP has been operating at lower nutrient targets in an effort to optimize the water treatment system operations for TP and NH₃.
- 3.13 Stock Blending (2013) – Pulp mill modifications were implemented to allow for pulp specific blending. Targeting specific pulps has improved the bleaching efficiency and reduced the amount of dissolved material (CBOD, TP) created during the reaction.

- 3.14 PM5 Vacuum Roll Seal (2015) – IEP installed a new style of lubrication seal strip on the paper machine vacuum roll that reduced fresh water consumption and discharge by 10 million gallons/year. IEP will consider installing similar systems on other rolls in the paper machine after longer term evaluation of the PM5 vacuum roll seal.
- 3.15 Phosphoric Acid (2016) – IEP's secondary treatment system is deficient in nutrients, including phosphorus, and therefore must add nutrients for the health of the secondary biological system for efficient and effective removal of CBOD that is another regulated parameter under the DO TMDL. In 2016, IEP changed its form of phosphorus feed from agricultural grade Ammonium Ortho-polyphosphate to phosphoric acid (P acid). P acid provides complete and readily available phosphorus as a nutrient to the secondary treatment system for more efficient use and enhanced control of residual phosphorus. Ammonium Ortho-polyphosphate contains phosphorus forms that are not bioavailable which contribute to elevated levels of total phosphorus in the effluent that are difficult to remove.
- 3.16 Speece Cone In-line Superoxygenation System (2016) – A Speece cone system was installed immediately downstream of IEP's effluent pumps to oxygenate 100% of the water that leaves the effluent pump house, including all flows to the primary clarifier, reclaimed effluent wastewater, and all water directed to surge tanks used on-site for surge control. The cone super oxygenates the water that passes through by creating an intense bubble swarm at the inlet of the cone. The geometry of the cone and the buoyant force of the bubbles do not allow any the bubbles to exit, thereby ensuring complete dissolution. An onsite oxygen generator that utilizes molecular sieve technology provides a nearly pure oxygen source from ambient air. Water conservation efforts described herein have resulted in lower effluent flows to the primary clarifier, so increased oxygenation of the wastewater offsets septic conditions and enhances CBOD removal in the primary clarifier.
- 3.17 Urea Ammonium Nitrate (2016) – IEP's secondary treatment system is deficient in nitrogen, as the mill's raw material sources are naturally bereft of this nutrient. Nitrogen must be added for the health of the microbiological system and for the effective assimilation of CBOD, which is a regulated parameter under IEP's NPDES permit. Previously, IEP administered Aqua Ammonia as a nitrogen source. While providing the nitrogen essential to the biological activity, Aqua Ammonia also had the potential to impact any forthcoming permit limitations for ammonia (as N). Trials evaluating the use of Urea Ammonium Nitrate solution (UAN-32) to replace Aqua Ammonia began in 2016. UAN-32 contains 3.5 pounds of nitrogen per gallon of solution compared to Aqua Ammonia, which only contains 1.5 pounds of nitrogen per gallon. UAN-32 contains a mixture of nitrogen sources that are slow, medium and fast-release, which may allow for a better nutrient balance throughout the entire WWTS. The ammonia contained in UAN-32 equates to approximately 8% of the solution compared to 21% of the aqua ammonia solution, so the new nitrogen source should have less of an impact on the final permit discharge limits for ammonia (as N). The evaluation trials of UAN-32 were favorably concluded in early 2017, and UAN-32 replaced Aqua Ammonia as the nitrogen source for IEP's WWTS in the spring.

- 3.18 ZAPS Nutrient Monitor (2016) - In the 4th quarter of 2016, IEP purchased a ZAPS Technologies analyzer to provide real-time wastewater analysis of parameters such as CBOD₅, TSS, TKN, NO₂/NO₃, and NH₃. The analyzer was installed in IEP's flume to monitor final effluent and is used to better control the operations of the WWTS for optimum dosing of nutrients and provide for the most efficient abatement of CBOD (see Section 5.2 for more detailed information).
- 3.19 Urea (2017) - IEP is examining the use of urea to replace the UAN-32 described in 3.17 above due to concerns over nitrate carryover and economics. Trials with urea were favorably concluded in 2018. IEP anticipates shifting to urea in the fourth quarter of 2018.
- 3.20 Surge Control (2017) - IEP installed enhanced valves and controls on the 75 foot clarifier that is used for hydraulic flow and BOD surge control in April, 2017. These improvements dampened significant flow variations to IEP's secondary treatment system, resulting in improved nutrient feed effectiveness and enhanced wastewater treatment system performance.
- 3.21 Effluent Temperature Reduction (2017) - Effluent flow reductions due to many of the above projects have resulted in ever increasing temperatures to the secondary treatment system. Higher effluent temperatures can adversely affect WWTS performance by lowering biological activity in the secondary treatment system. In August 2017, the valves in the Dissolved Air Flotation (DAF) heat exchanger were increased from 4" to 6" to allow for more non-contact cooling water flow, resulting in greater cooling capacity of the effluent to the wastewater treatment system (WWTS).
- 3.22 Equalization Tanks (2017) - Due to the many diverse grades of paper produced by IEP and the myriad of processes within the mill that can impact the WWTS, IEP initiated plans for the installation of flow and BOD equalization. Preliminary design and permitting was completed in 2017 and the systems came on-line in late September, 2018. Further discussion of the equalization tanks is imparted under Current BMP Progress in 4.7.

The above improvements to IEP's facility have resulted in a significant decrease to treated process water flows, enhanced control of nutrient usage and discharge, and optimized reduction of BOD. The following graphs illustrate the benefits these improvements have made to the discharge of Total Phosphorus and BOD in IEP's final discharge:





4.0 CURRENT BMP PROGRESS

4.1 TRIDENT HS – CHEMICAL PRECIPITATION and FILTRATION OF NUTRIENTS

After extensive research and testing, IEP was unable to achieve consistent operations due to solids overload of the filter, inconsistent solids settling, plugging of the new filter section nozzle design, and an inability to adapt to variable effluent conditions. Many of the above problems have plagued the Trident system since its installation in 2007, however the filter section nozzle plugging problem introduced a new and significant challenge. The filter section nozzles were part of a major modification to the system, intended to replace the previously failed underdrain design. The nozzle plugging problem exacerbates proper operation of the system by not allowing sufficient flow during backwash cycles necessary to clean the filter section. This causes a continued deterioration of operation, resulting in extended downtime and a laborious task to remove the filter media and clean the 288 nozzles. This would not be acceptable for full-scale application. IEP believes that polymer selection is the root cause for nozzle deposition and contamination and has trialed different polymers to reduce the potential for this fouling, but has been unsuccessful in finding a solution to this problem.

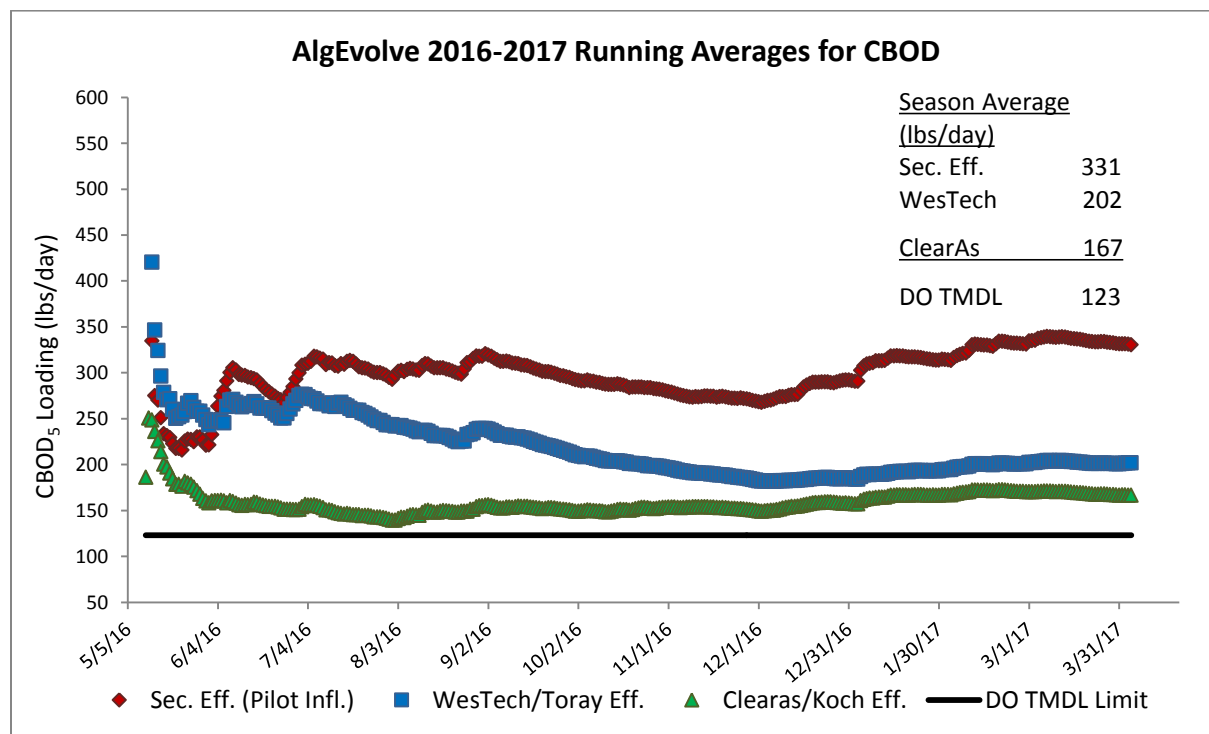
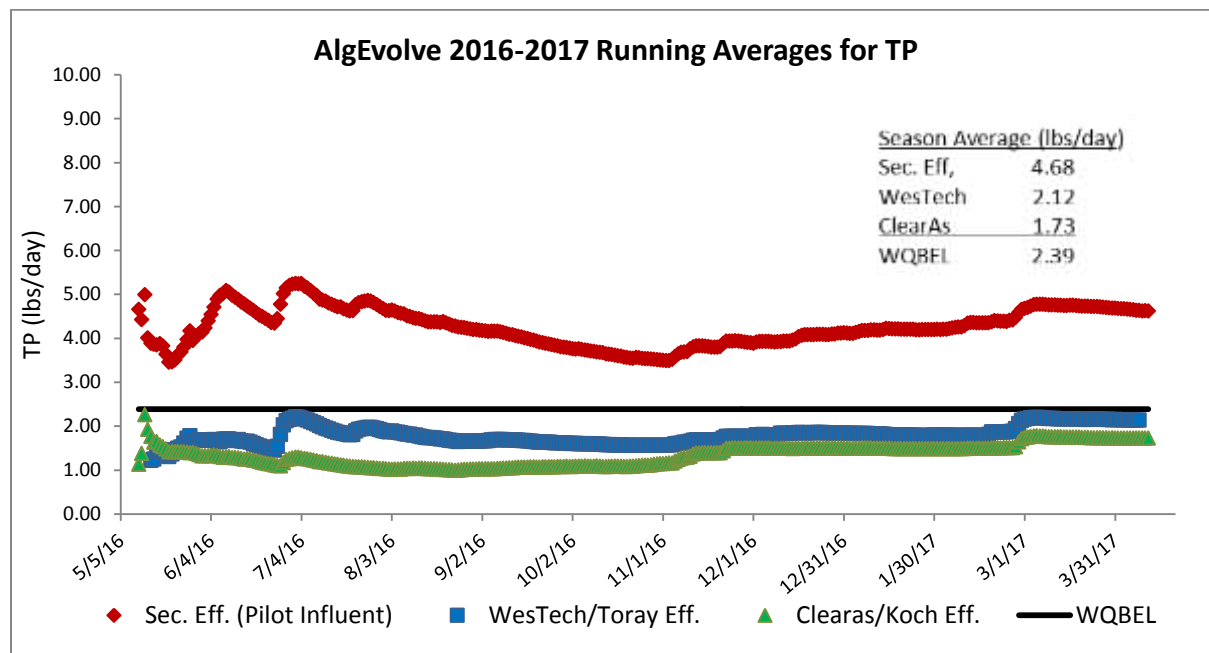
After eight years of unsuccessful operations, IEP has abandoned any future work on this system and is focusing more heavily into the other technologies described in sections 4.2 and 4.3 below.

4.2 ALGEVOLVE/CLEARAS –ALGAE-BASED NUTRIENT REMOVAL SYSTEM

Pilot testing of various membrane technologies to separate algae from IEP's treated wastewater were conducted between May 2014 and March 2015. The Koch Puron submerged, hollow-fiber membrane system was selected and integrated into the system in November 2015. Washout of the algae-culture in the photobioreactor due to incoming solids loading further exposed the need for aggressive pre-filtration. The WesTech/Toray ultra-filtration pilot system was incorporated into the process in May 2016. This provided IEP with the opportunity to evaluate two advanced treatment systems in series to observe the capabilities of each to achieve the more stringent water quality based effluent limits (WQBELs).

Data collection and evaluation was concluded in April of 2017. The combined process was found to succeed in meeting phosphorus and nitrogen WQBELs, though the gains in nutrient reduction are largely the result of the WesTech/Toray pre-filtration unit. Further gains by the remainder of the AlgEvolve/Koch process are marginal. CBOD reduction is insufficient without utilizing the static pollutant equivalency trade of ammonia for additional CBOD as stated in Section 2.4 of the 2017 Annual Status Report for Permit Condition S5. The following graphs display the overall process performance with TP and CBOD reduction. Coupled with technological challenges and large footprint considerations in designing a full-scale

system, this process is delegated as a secondary consideration. Primary focus shifted on to the development of other potential technologies in April 2017.



4.3 WESTECH/TORAY – MEMBRANE ONLY TRIALS

Upon completion of the algae-based membrane pilot trials, the WesTech/Toray ultra-filtration membrane pilot system was converted to processing IEP secondary treated final effluent to observe the effect on nutrient reduction with membrane separation only. The WesTech/Toray system was adapted for use as a pre-filtration unit for the AlgEvolve/ClearAs process where its contribution to nutrient and CBOD reduction in treating final effluent was evaluated alongside the process as a whole (see the above graphs). Although membrane separation does not solitarily meet forthcoming WQBELs, the technology has demonstrated substantial reductions. At the conclusion of the AlgEvolve/ClearAs trials in April 2017, the WesTech/Toray system was incorporated into a tertiary MBBR process. This process is described in Section 4.6.

Trials involving the ultra-filtration system has largely utilized the Toray pressurized PVDF hollow fiber membrane modules. Early in the evaluation of the tertiary MBBR process, ceramic membrane modules by NanoStone replaced the Toray modules in hopes of achieving higher sustainable flux rates. This was unrealized as the ceramic design was found to be incompatible with the charge characteristics of the final effluent/MBBR biological matter combination. Excessive membrane fouling prevented sustainable operations even at low flux rates. The ceramics were discontinued and the tertiary trials were resumed with the Toray modules. Sustainable operations have been demonstrated for this system with the Toray modules.

Further discussion surrounding the WesTech/Toray ultrafiltration system is included in Section 4.6.

4.4 ANAEROBIC TREATMENT

Investigations into anaerobic treatment processes for CBOD removal were conducted. IEP evaluated the possibility of sending several high CBOD process streams through anaerobic treatment to reduce CBOD loading to the WWTS. Bench scale studies determined that anaerobic treatment of IEP's various process streams were ineffective for enhanced CBOD removal due to an inability to maintain an appropriate and effective bacterial culture under these conditions.

IEP is currently evaluating other streams within the mill that may be conducive to anaerobic treatment.

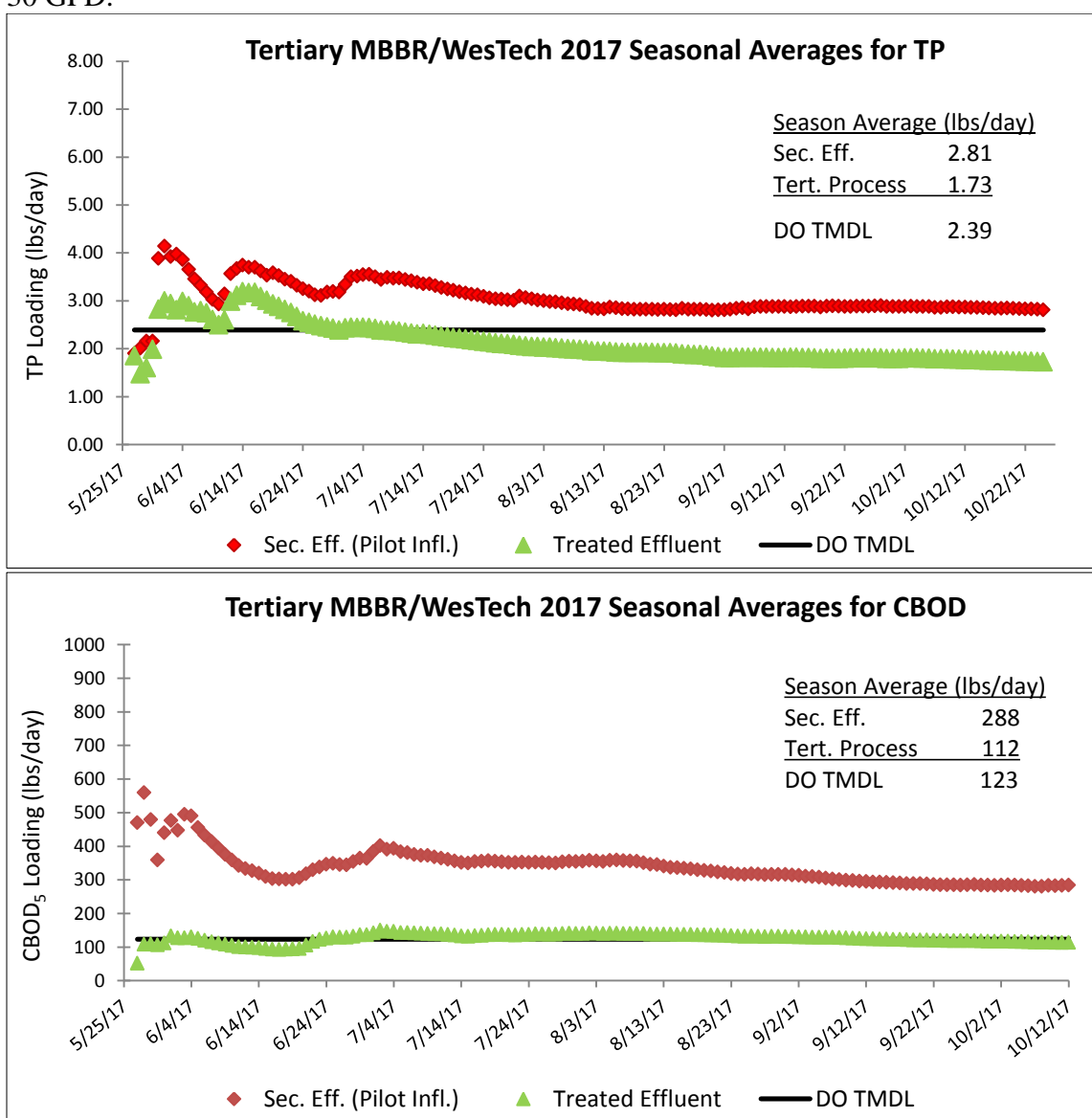
4.5 WATER CONSERVATION, RECLAMATION AND REUSE

IEP continues to investigate opportunities to reduce the total treated flow through the WWTS. This will allow for additional retention time in the WWTS which should have a positive impact on the reduction of CBOD concentrations leaving the secondary treatment system. Internal investigations into water conservation, reclamation and have been ongoing since 2004 as detailed in section 2.0 above. There are several motivations driving this effort, including lower capital and O & M costs associated with the installation of advanced tertiary

treatment systems, and the ability to attain the mass load allocations at higher concentrations. However, IEP has encountered numerous unintended consequences with reduced water treatment including increased odor concerns, build-up of contaminants and foulants in reclaim water, interferences to chemical effectiveness, and increased costs for bleaching and other chemical processes.

4.6 TERTIARY MBBR

In October, 2016 IEP completed the installation of a pilot trial MBBR to treat secondary effluent for enhanced CBOD abatement. The data collected around this system encouraged the development of a larger pilot consisting of two MBBR tanks in series followed by the WesTech/Toray ultra-filtration unit in April 2017. This MBBR/UF tertiary process trial was run from April to October of 2017 proving sustainable operations over a flux range of 15 to 30 GFD.



Summary of 2017 Pilot Study Performance

| Percent Removal of Pollutants from Secondary Effluent | | | | | | |
|---|-------|-------|--------|-----------|---------|---------|
| Parameter | June | July | August | September | October | Average |
| Total P | 22.7% | 29.1% | 32.9% | 46.3% | 41.3% | 34.5% |
| 5-day CBOD | 59.4% | 55.5% | 54.7% | 64.3% | 72.4% | 61.3% |
| Ammonia-N | 38.0% | 32.6% | 47.2% | 57.6% | 44.4% | 44.0% |

The following table is borrowed from IEP's Revised Engineering Report for Treatment Technology by Esvelt Environmental Engineering:

Table 3.5: Predicted Tertiary Treatment System Performance from 2017 Pilot Study

| Parameter | Predicted Performance ¹ (lbs./day) | Modified WQBELs (2nd permit cycle) (lbs./day) |
|-------------------------------|--|---|
| Total P (February to October) | 1.72 | 2.39 |
| 5-day CBOD (March to October) | 112.7 | 172.5 |
| Ammonia-N (March to October) | 5.84 | 2.43 |

¹ Predicated performance is based on the seasonal average of loadings from measured concentrations and daily reported effluent total flow during the pilot study.

The predicted tertiary treatment system performance at full scale is provided in Table 3.5. The table assumes application of a Static Pollutant Equivalency trade, previously approved by Ecology, which exchanges a 90% reduction in the allowable ammonia limitation for an increase in the CBOD WQBEL. IEP continues to evaluate the most sensible degree of ammonia reduction necessary for WQBEL compliance.

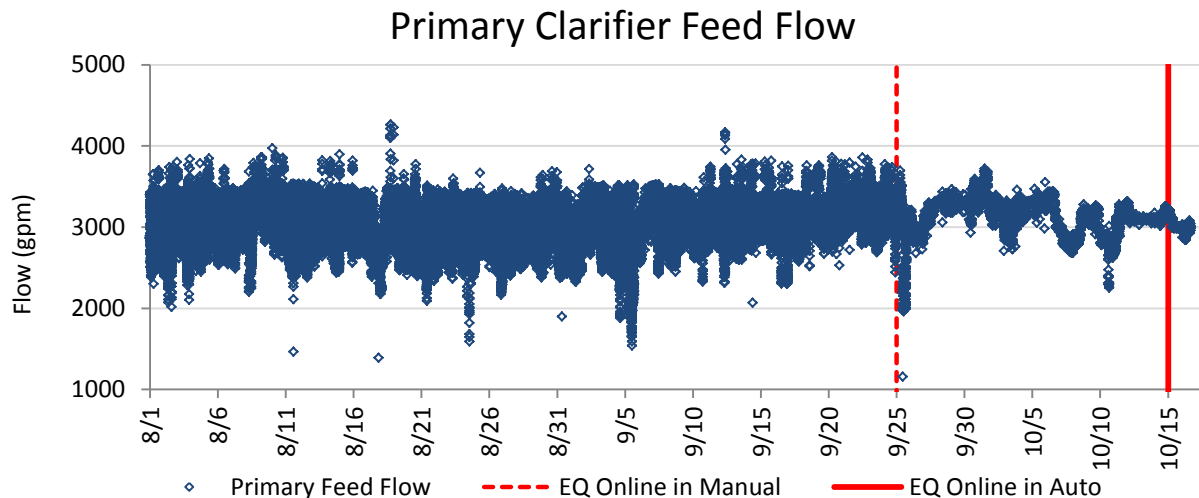
The technology selection of two MBBRs in series followed by WesTech/Toray's ultra-filtration membranes has provided the best performance of all tertiary treatment systems modeled at IEP to date. This selection of tertiary treatment technology combined with IEP's Delta Elimination Plan has the best opportunity to provide reasonable assurance to comply with the final WQBELs.

4.7 EQUALIZATION TANKS

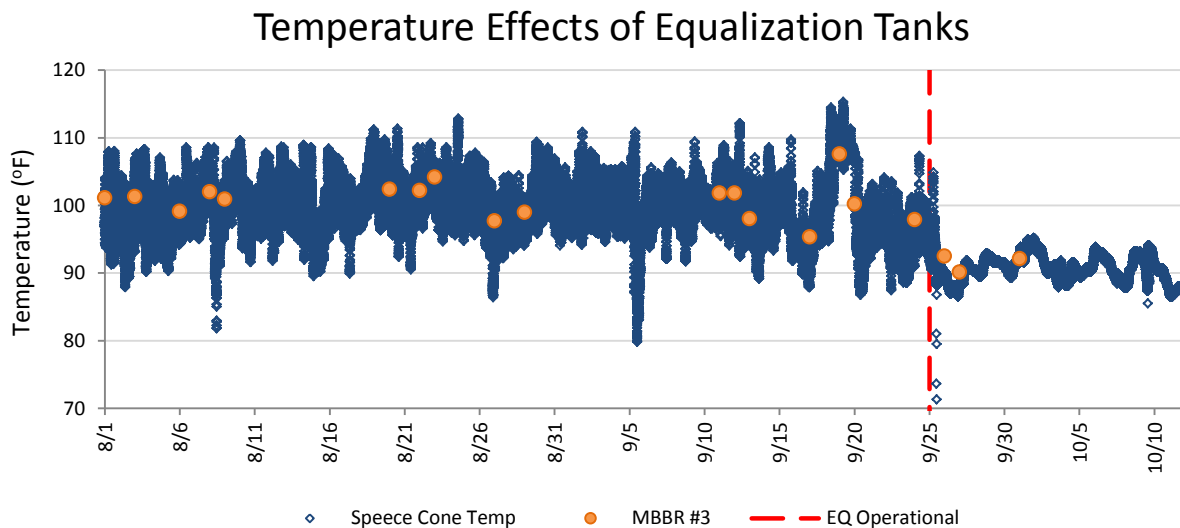
Flow surges related to changes in pulp and paper production or extended paper machine down times continually challenge IEP's WWTS. The resulting fluctuations in flow and BOD loading along with imprecision in TP and ammonia nutrient feed, both dosed based on wastewater flow rate, can adversely affect the performance of the biological systems to effectively treat the wastewater stream.

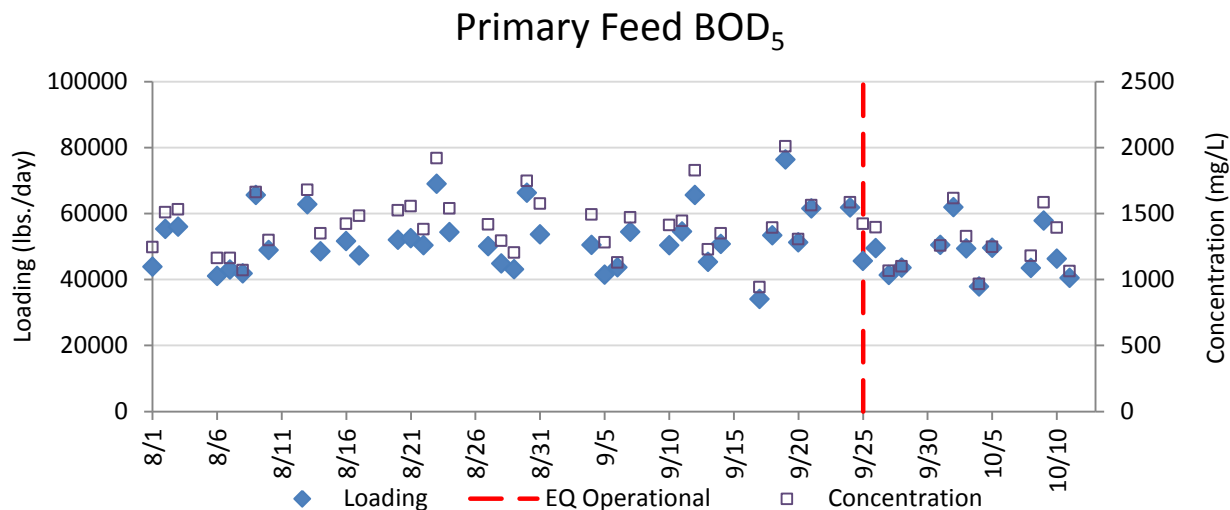
Planning and permitting of the two side-by-side EQ tanks with a working volume of 2.8 million gallons was completed in 2017. Construction ensued in 2018 with operations

commencing on the 25th of September. Since the beginning of operations, the WWTS is displaying improved flow stabilization which is anticipated to improve settling in primary treatment due to the reduction of flow swings as well as reduce stress due to loading swings on secondary treatment operations.



The inclusion of equalization tanks has also enhanced heat transfer along the treatment process yielding temperatures in line with mesophilic bacterial ranges that should improve secondary treatment performance over IEP's prior conditions. This effect complements other previous temperature reduction measures (see 3.21).





Preliminary BOD loading results into the primary clarifier indicate more stable operation with a lower range of fluctuation. All preliminary results suggest that the equalization tanks are performing as anticipated.

4.8 MBBR OPTIMIZATION

A pilot MBBR process trial began in December 2017 to evaluate the correlation between the ratio of media fill to tank volume and BOD reduction. Data collection is anticipated to be complete in November 2018 and will assist in the cost analysis and optimization of media levels in MBBRs #2 and #3.

5.0 FUTURE BMP PLAN PROJECTS

5.1 ORTHO-PHOSPHORUS TO TOTAL PHOSPHORUS RATIO TESTING

IEP is afforded the opportunity under its NPDES permit to evaluate and potentially modify the ortho-phosphorus (ortho-P) to total phosphorus (total-P) ratio that was used in the DO TMDL to determine IEP's waste load allocations. Section S5, Page 17 of the NPDES Permit states:

The Department may adjust the final water quality based effluent limitations on the basis of new information on the ratio of ortho phosphorus to total phosphorus in the effluent. An adjustment to the effluent limitations based on a new ratio of ortho phosphorus to total phosphorus will be consistent with the assumptions and wasteload allocations in the Spokane River DO TMDL and, as such, does not require a modification to the DO TMDL.

Ecology has provided IEP with a testing plan to perform this analysis.

Plans had been to undergo this testing upon completion of proving the AlgEvolve/Koch process as a solution to meet the forthcoming WQBELs. During the evaluation of this process, it was discovered that incoming solids loading required a pre-filtration measure that was met with the WesTech/Toray ultrafiltration (UF) unit. Side by side evaluation of the UF unit alone in comparison to the holistic process revealed that further gains of the holistic process in phosphorus and CBOD reduction was marginal after that accomplished by the UF unit. In April 2017, IEP shifted its focus onto a tertiary MBBR process using the UF unit at the end of the process. In the following months since, this process has proven itself to be more capable of meeting forthcoming WQBELs. Trials around this process are ongoing through the month of October. Once completed, the testing plan set forth by Ecology for the ratio analysis can be revisited to determine a suitable time to run it on this process.

At this time, there is no intent to further develop either the AlgEvolve/ClearAs process or the Trident HS system. No ortho-phosphorus to total phosphorus ratio analysis testing will be scheduled for either of these.

5.2 NUTRIENT MONITORING

In October, 2016 IEP installed a trial real-time water analyzer manufactured by ZAPS Technologies to analyze secondary effluent. This system has the capability to provide real-time wastewater analysis of parameters such as CBOD₅, TSS, TKN, NO₂/NO₃, and NH₃. Based on the results of this study, IEP purchased a ZAPS analyzer in Q4 of 2016. The analyzer was installed in IEP's flume to monitor final effluent and is used to better control the operations of the WWTS for optimum dosing of nutrients and provide for the most efficient abatement of CBOD.

5.3 RAS RELOCATION

Return Activated Sludge (RAS) feed to IEP's activate sludge system is currently located at the outer ring of the Orbal oxidation ditch. IEP intends to perform a study to relocate the RAS feed to the inlet of the Moving Bed Biofilm Reactors (MBBRs) to increase the effectiveness of the biological activity and subsequently improve abatement of CBOD.

5.4 MBBR OPTIMIZATION

IEP will evaluate improving the performance of #2 and #3 Moving Bed Biofilm Reactors (MBBRs) with the addition of more media and enhanced oxygenation. A pilot MBBR process trial began in December of 2017 and is anticipated to be complete in November 2018. Modernizing the blowers to the MBBRs is also under evaluation to improve efficiency and performance.

5.5 PRIMARY EFFLUENT FILTRATION

IEP is currently evaluating available technologies and the effectiveness of reducing total suspended solids (TSS) and associated CBOD from the primary clarifier effluent prior to feed to the secondary treatment system. If deemed feasible, IEP will perform pilot studies to evaluate various technologies.

5.6 CHEMICALLY ENHANCED PRIMARY TREATMENT (CEPT)

Chemical trialing began in the summer of 2018 to determine a suitable program for improved solids and associated BOD₅ removal in IEP's primary clarifier. Continued trialing is anticipated in the first quarter of 2019 with the recent addition of EQ tanks for chemistry selection and optimization.

5.7 WATER RECLAMATION TRIAL

To evaluate the potential reuse of treated effluent off of the tertiary MBBR/UF process, a trial is anticipated in the winter of 2018 to replace dilution white water used in the bleaching process with treated effluent off of the secondary clarifier to improve bleaching potential, reduce chemical demand, and potentially reduce BOD discharged to IEP's WWTS.