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April 29, 2016

Mr. Pat Hallinan, Water Quality Permit Coordinator
Washington State Department of Ecology
Eastern Regional Office
4601 N. Monroe Street
Spokane, WA 99205

Subject: Inland Empire Paper Company NPDES Permit No. WA 000082-5 Renewal

Dear Mr. Hallinan:

Enclosed you will find the completed application for renewal of Inland Empire Paper Company's (IEP) NPDES Permit No. 000082-5. Included are Form 1, Form 2C and all other required supporting documents. The effluent data submitted is based on performance from January through December 2014 to reflect the latest modernization projects implemented during the current permit cycle.

In addition, IEP requests that Ecology consider and incorporate the following elements into IEP's forthcoming NPDES permit to provide reasonable assurance in meeting the water quality based effluent limits (WQBELs) imposed by the Spokane River and Lake Spokane Dissolved Oxygen Total Maximum Daily Load (DO TMDL) at the end of this next permit cycle:

1. **Delta Elimination Tools** – IEP has applied for several delta elimination opportunities that are available under the DO TMDL and subsequently incorporated into IEP's NPDES permit. The opportunities that are being requested for inclusion in IEP's forthcoming permit are existing concepts that have already been applied in the settlement of the final DO TMDL, current or past NPDES permits for Spokane River dischargers, or are tools available under Ecology's existing rules. IEP has been researching and developing various nutrient reduction technologies for nearly 15 years and has a thorough understanding of what levels of nutrient reductions will be achievable with IEP's pulp and paper mill effluent. Based on this extensive experience, it is of utmost importance that these delta elimination tools are incorporated into IEP's forthcoming permit to provide our company with certainty that it can achieve the final effluent limits imposed by the DO TMDL. The DO TMDL is very clear that delta-elimination actions are to be

aggressively pursued by the dischargers prior to the date when final WQBELs must be met:

> *The dischargers agreed that delta-eliminating actions will begin as quickly as possible and will not be deferred until technology improvements are selected and installed.* {DO TMDL at page D-9}

Furthermore, IEP's NPDES permit requires that a Delta Elimination Plan be submitted by November 1, 2015 and updated annually that demonstrates reasonable assurance that the final WQBELs will be met:

> *The delta elimination plan, in combination with the pollutant reduction from technology, shall provide reasonable assurance of meeting the Permittee's final WQBELs by June 1, 2021 (unless a longer compliance schedule becomes available under RCW 90.48.605).* {Permit No. WA-000082-5 at page 16}

In addition, the DO TMDL is very clear that Ecology will expedite its review and response to elements such as the delta elimination actions:

> *Expeditious decision: Ecology will expeditiously review and decide on the proposed technology selection protocol, preliminary construction schedule and delta elimination actions.* {DO TMDL at page 63}

The DO TMDL and IEP's NPDES permit both are clear that the Delta Elimination Plan will require an Ecology and public approval process:

> *Final water quality-based effluent limits: Compliance with these limits will be determined by the effluent data combined with any approved offsets from the Delta Elimination Plan.* {DO TMDL at page 63}
>
> *Compliance with these limitations will be determined by the mass of pollutant measured in the effluent combined with any credits from the Delta Elimination Plan following Ecology approval and public review and comment.* {Permit No. WA-000082-5 at page 17}

Therefore, it is essential that Ecology include the results of IEP's Delta Elimination opportunities submitted for Ecology consideration in the forthcoming permit renewal in order to provide sufficient time for the public approval process. IEP has honored its obligations under the DO TMDL and its permit by providing Ecology with a complete and thorough analysis of its delta elimination actions with sufficient time for consideration and inclusion within this forthcoming permit cycle. IEP requests that Ecology fulfill its obligation for expeditious review and decision to allow for public review and comment during the NPDES Permit public review process. It would be in both IEP's and Ecology's best interest to use the NPDES Permit public review process for this purpose in lieu of delaying and requiring a reopening of the permit during this upcoming permit cycle.

The following delta elimination opportunities available through the DO TMDL and IEP's NPDES permit have been submitted to Ecology for approval:

a. **River/Well NCCW Offset based on River/Well Testing** – Ecology made a commitment to evaluate the continuity between the river and IEP's groundwater supply used for Non-Contact Cooling Water (NCCW), due to Ecology's failure to include this flow in IEP's DO TMDL allocation. This commitment by Ecology to resolve this oversight was affirmed in a letter from former Ecology Director Ted Sturdevant:

   I want to reaffirm that Ecology is committed to working with IEP on implementing specific requirements of the permit, including evaluating an allowance for nutrients in the facility's non-contact cooling water (NCCW). We are prepared to work with IEP to validate the relationship between NCCW and the river water quality. We will include an allowance in the next draft permit to the extent that concentrations in the groundwater supply for the NCCW are statistically equivalent to concentrations in the Spokane River upstream of the facility.[1]

   Ecology recently completed the report to this study that demonstrates continuity between the Spokane River and IEP's NCCW wells that are close-coupled to the river and in a demonstrated losing reach of the river. Based on the findings of this report and Ecology's commitment, IEP requests that the nutrient allowance for IEP's NCCW be included in the draft permit, as was acknowledged by former Director Sturdevant and further confirmed by Ecology in their response to comments to IEP's amended permit:

   After verifying the relationship between the NCCW supply well and upstream river water nutrient concentrations with a season's worth of sampling results, Ecology will include this allowance at the next permit renewal.[2]

b. **Static Pollutant Equivalency for Ammonia and $CBOD_5$** – On October 30, 2015, IEP submitted to Ecology with its Delta Elimination Plan, a complete analysis for alternate limits for the ammonia and $CBOD_5$ wasteload allocations established under the DO TMDL. This complete analysis includes CE-QUAL-W2 modeling performed by LimnoTech[3] in accordance with the guidelines established by EPA and Ecology on October 27, 2010. [4]

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[1] T. Sturdevant, Letter to Inland Empire Paper Company, September 29, 2011
[2] Appendix D2 – Response to Comments for Amendment to Proposed NPDES Permit WA-0000825 Inland Empire Paper Company, November 22, 2011
[3] LimnoTech Memorandum to Inland Empire Paper Company, Documentation of Alternate Spokane River TMDL Scenario – Alternate CBOD and Ammonia Limits for Inland Empire Paper, October 9, 2015
[4] Washington Department of Ecology and U.S. EPA, 2011. Evaluation of Alternative Effluent Limits for Consistency with the Spokane River TMDL and Compliance with Washington Water Quality Standards. http://www.spokaneriver.net/wp-ontent/uploads/2012/04/Final_EPA_Ecology_Basis_for_Equivalence_2011_v3.pdf

This tool is already approved and in use in several WA and ID NPDES permits. In addition, IEP is afforded this opportunity under its NPDES permit to modify the WQBELs for phosphorus, $CBOD_5$ and ammonia using a loading equivalency:

> *An analysis, subject to Ecology approval and public review and comment, that provides a pollutant loading equivalency relating phosphorus, CBOD and ammonia.* {Permit No. WA-000082-5, Section S5 at page 16}

Based on nearly 15 years of studying various nutrient reduction technologies, it has become evident that the $CBOD_5$ WQBELs will be IEP's greatest challenge. IEP contracted with LimnoTech to run modeling scenarios to allow for an increase in $CBOD_5$ in exchange for a more stringent ammonia limit. IEP submitted the results of this analysis for Ecology's consideration and approval with the Delta Elimination Plan.

LimnoTech employed the same modeling analysis that was used for the pollutant equivalency limits in the current permit for IEP and other permitted facilities on the Spokane River in Washington and Idaho. This is the same approach that was used as a basis for settlement of the DO TMDL appeal.

IEP requests that the results from this analysis be incorporated into IEP's forthcoming draft NPDES Permit No. WA-000082-5, Permit Condition S5, Schedule of Compliance for Total Phosphorous, $CBOD_5$ and Ammonia, and that the public review and comment of this permit cycle be used to establish approval for the use of the revised WQBELs in IEP's subsequent permit cycles (2021 and beyond).

c. **Nutrient Bubble with Kaiser Aluminum** - Section S5 of IEP's NPDES Permit allows for the use of a bubble limit towards meeting the final WQBEL's:

> *Implementation of a 'bubble limit' concept for interested Spokane River dischargers where the sum of all wasteload allocations becomes a cap or bubble. Under the bubble limit concept, a discharger is not considered in violation of their individual WQBEL, as long as the collective bubble limit is met during the same reporting period.*

IEP and Kaiser Aluminum have operated under a bubble permit for total phosphorus in prior NPDES permits that were approved by both Ecology and EPA. Ecology's reasoning for removal of the bubble permit provision during the last permit cycle was based on neither organization using this provision in the past:

During the life of the previous permit, the Permittee has met their individual permit limit during the critical season running from June through October. Likewise, Kaiser Aluminum Fabricated Products has likewise met their individual monthly average limit of 11.8 pounds per day during the same time period. The facilities have never used the aggregate bubble limit to comply with the previous water quality based effluent limits for total phosphorus.

Based on best professional judgment, the interim limit for total phosphorus is a performance based effluent limit. This performance based limit replaces the less stringent water quality based bubble limit shared between the two facilities.[5]

This best professional judgement is no longer reasonable with the more stringent WQBELs due to the DO TMDL. Since this is an allowable tool under IEP's permit and considering the stringency of the forthcoming WQBELs, IEP and Kaiser request that a bubble permit for total phosphorous, $CBOD_5$ and ammonia be incorporated into the next permit cycle (2016 to 2021) and into subsequent water quality based permits resulting from the DO TMDL (2021 and beyond).

d. **Bioavailable Phosphorus** – IEP's NPDES permit provides a delta elimination opportunity for revising the WQBELs based upon a consideration that a fraction of IEP's final effluent is not bio-available:

A demonstration that a certain stable fraction of the phosphorus discharged from the facility is not bio-available in the River environment and is not a nutrient source. This demonstration must consider findings and recommendations from the University of Washington/ WERF bioavailability lab study and the DO TMDL Implementation Advisory Committee. The demonstration may also include results from subsequent monitoring and modeling of bio-available phosphorus. Ecology will recognize the demonstration, that a certain stable fraction of the phosphorus discharged from the facility is not bioavailable in the River environment and is not a nutrient source through a modification to the Spokane River DO TMDL. Ecology will incorporate any revised WQBELs based on the modified DO TMDL by the second permit cycle, or earlier. {Permit No. WA-000082-5 at page 16}

This provision specifically defined that the demonstration "must consider findings and recommendations from the University of Washington/ WERF bioavailability lab study." This study was completed and the final report[6] was published in 2015.

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[5] Appendix D1 – Response to Comments for Amendment to Proposed NPDES Permit WA-0000825 Inland Empire Paper Company, November 22, 2011

[6] Li 2015 Fan Brett Mineralization Kinetics of Soluble P and Soluble Organic N in Advanced Nutrient Removal Effluents, 2015

This study was peer reviewed by several technical reviewers, including one from the EPA. Ecology therefore has all of the evidence of this study and all prior studies provided by IEP to make a determination on the use of this delta elimination tool.

In addition, the Spokane TMDL Dispute Resolution Panel provided the following need for additional action in regards to bioavailability:

Conceptually, not all phosphorus matters. Only that portion that impacts the dissolved oxygen (D.O.) in Lake Spokane will be counted toward each facility's waste load allocation and be put into permits. There is understandable uncertainty about how the study results will be used when they are available in approximately one year. We think the additional clarity below will help the dischargers, particularly Inland Empire Paper (IEP), understand how that information will be used to develop its permit limits. Ecology will issue permits to IEP and the city of Spokane in 2010. Those permits will specify that final limits need to be met in 2020. The following will occur in the interim:

- *The bioavailability study will be completed in December 2010.*
- *The written report describing the findings of the bioavailability study is due in early 2011.*
- *The report is then available for use in setting permit limits. The WQP should work with IEP and the city of Spokane to determine if a permit modification earlier than 2015 would help provide more certainty.*
- *According to Table 10 of the TMDL Report, final waste load allocations will be re-assessed with each permit cycle. Thus, the permits will be re-issued in 2015 and will incorporate bioavailable phosphorous limits based on the findings of the Phosphorous Bioavailability Report, and waste load allocations will be revised if necessary. As noted in the bullet above, the WQP, IEP and Spokane may choose to do this prior to the 2015 permit cycle.*[7]

The use of bioavailability was applied and approved by EPA to TMDL's in other regions such as Florida[8] and New York[9]. Specifically as it applies to pulp and paper mill effluent in the case of the TMDL in Florida, EPA acknowledges:

> *Previous studies have shown that the organic nitrogen and phosphorous in pulp and paper mills is highly refractory and not subject to bacterial conversion to inorganic nutrient forms. Specific studies of the Buckeye effluent have suggested that the refractory component of the organic nutrients is approximately 80 percent and this finding is also included in the assignment of the Buckeye organic nutrient load in the model (HydroQual, 2008).*

[7] Spokane TMDL Dispute Resolution Panel - Summary of Recommendations, May 5, 2010
[8] Total Maximum Daily Load (TMDL) For Nutrients In Fenholloway River, Econfina River Basin, January 2009
[9] Total Maximum Daily Load (TMDL) for Phosphorus in Onondaga Lake, March 2012

Additionally, the TMDL in New York places great emphasis on the reality of bioavailability and the positive impacts to water quality based on advanced treatment removing most of the bioavailable nutrients:

> *Upstate Freshwater Institute and Department of Civil and Environmental Engineering at Michigan Technological University (UFI and MTU, 2010) determined through bioavailability assays that only 1% of the particulate phosphorus in Metro effluent is bioavailable and that the total concentration of bioavailable forms of phosphorus only account for approximately 30 µg·l-1, or approximately 6,000 lb·yr-1 at current average flows.*
>
> *The treatment plant upgrades at Metro have had a profound positive effect on water quality and have substantially reduced the load of effective phosphorus to the Lake. The load to the Lake is largely mitigated by reductions in bioavailable phosphorus, plunging tributary loads and the settling of particulate phosphorus (UFI and MTU, 2010).*

The New York TMDL made specific provisions for the bioavailability of nutrients in consideration of the TMDL and subsequent permits:

> *To determine the total load for the bubble permit the fractions of bioavailable phosphorus in outfalls 001, 33% bioavailable (CRA 2011), and 002, 50% bioavailable (CRA 2011) were considered. The original WLA for 002, 7,602 lb·yr-1, was separated into non-bioavailable fraction, 3,801 lb·yr-1, and the bioavailable fraction, 3,801 lb·yr-1. The full allocation for the non-bioavailable fraction was given. The allocation for the bioavailable phosphorus was reduced to 1,901 lb·yr-1 such that bioavailable phosphorus made up only 33% of the total outfall 002 load of 5,701 lb·yr-1 (3,801 lb·yr-1 non-bioavailable plus 1,901 lb·yr-1 bioavailable phosphorus for a 5,701 lb·yr-1 total allocation for the Bypass under the bubble permit). As noted above, a similar fraction of bioavailable phosphorus has been measured in the outfall 001 effluent. The bubble permit limit is then the sum of the outfall 001 WLA (21,511 lb·yr-1) plus the reduced 002 allocation (5,701 lb·yr-1) for a total limit of 27,212 lb·yr-1. The limit of the bubble permit represents a reduction of 1,901 lb·yr-1 from the combined individual permits.*
> *Permits for outfalls 001.*

Ecology made a commitment to incorporate any revised WQBELs based on the modified DO TMDL by the second permit cycle, or earlier and the Spokane TMDL Dispute Resolution Panel suggested a similar timeline in their recommendations. IEP understands that the University of Washington/ WERF bioavailability lab study final report was only recently published in 2015 and that this delta elimination tool has not yet gone through the approval process outlined by Ecology ERO. Therefore, IEP is requesting through this permit application that Ecology work with IEP to initiate the development of this delta elimination option to reassess IEP's final waste load allocations based on the University of Washington/ WERF bioavailability lab study for inclusion in the draft permit.

2. **Permit Condition S6. PCB Source Identification Study and Best Management Practices (BMP) Plan** – IEP has expended significant capital and resources to perform the PCB Source Identification Study[10] required under Condition S6.A. of IEP's current NPDES permit. This comprehensive study of IEP's facility conclusively confirmed that the overwhelming source of PCBs entering our facility originates from the inks and pigments associated with the recycling of waste paper products. The source of these PCBs is very well documented as originating from inadvertent generation during the chemical manufacturing process of these pigments. EPA has specifically recognized this source of PCBs and provided and allowance of up to 50 ppm for their manufacture since the inception of the Toxics Substance Control Act (TSCA):

   (g) Pigments. Diarylide and Phthalocyanin pigments that contain 50 ppm or greater PCB may be processed, distributed in commerce, and used in a manner other than a totally enclosed manner until January 1, 1982, except that after July 1, 1979, processing and distribution in commerce of diarylide or phthalocyanin pigments that contain 50 ppm or greater PCB is permitted only for persons who are granted an exemption under TSCA section 6(e)(3)(B). {40 C.F.R. § 761.3 (g) up to the 1999 revision of the C.F.R., thereafter paragraph (g) is reserved}

   This allowance is nearly 300 million times higher than EPA's HHWQC of 170 pg/L for PCBs under the National Toxics Rule (NTR) and over 38 billion times higher than the Spokane Tribe of Indians HHWQC of 1.37 pg/L recently approved by EPA.

   IEP's business is built upon environmental stewardship and sustainability of resources that includes the use of waste or residual materials in the manufacture of it products. This includes the recycling of various streams of waste paper from as far as 1,500 miles from the mill's location in Spokane. IEP has absolutely no control over the source, use and magnitude of PCB laden pigments within the waste paper arriving at our facility.

   IEP has one of the most advanced wastewater treatment facilities of its kind in the pulp & paper industry that is very efficient in removing PCBs coming into our facility with the recycled paper products. Since IEP has no control over the source of PCBs coming into its facility due to the TSCA allowance, our Best Management Practices are limited to wastewater treatment system improvements, or the elimination of recycling of waste paper. There are currently no known technologies to remove PCBs to the level of any of the HHWQC standards for PCBs, so the elimination of recycling at IEP appears to be imminent as the only viable BMP option.

   There are significant environmental benefits from the recycling of waste paper that include conservation of natural resources, energy savings, reductions in greenhouse gas emissions and reductions in landfill space. The overall effect of eliminating recycling

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[10] Inland Empire Paper Company NPDES Permit No. WA-000082-5, Permit Condition S6.A, PCB Best Management Practices Plan, PCB Source Identification Study, October 30, 2015

will likely have significant consequences for IEP. This action may result in a net negative environmental impact due to the elimination of all the beneficial aspects of recycling. IEP would cease to have the capability of providing a finished paper product with recycled content and would lose this market share. IEP installed its integrated recycling facility in 1991 due to environmental demands and paradoxically it is now environmental regulations that now threaten the future of recycling at IEP.

EPA and Ecology need to resolve the significant conflict between the TSCA regulations and water quality standards for PCBs and until that time provide regulatory protections to preserve industries such as recycling that are impacted by this unreasonable regulatory discrepancy. IEP requests that the agencies provide IEP with either an exclusion or an offset in this forthcoming NPDES permit for the inadvertent PCBs entering our facility due to the TSCA allowance. This exclusion or offset may be accomplished through the variance or intake credit regulatory processes.

A partial variance or variance in the form of a credit should be available to IEP for the typical PCB congeners found in the inks and dyes in recycled paper. IEP has no control over these PCBs and EPA has stated to Ecology that it deems these authorized levels of PCBs to be safe for human health and the environment. As such a variance under WAC 173-201A-420 should be granted based on 40 CFR 131.10(g)(3) where human caused conditions or sources of pollution prevent the attainment of PCB criteria and would cause more environmental damage – the cessation of recycling – to correct than to leave in place.

3. **Extension for Tertiary Treatment Installation/Compliance Schedule** – IEP has expended in excess of $10M since 2001 into research, development, facility modifications and implementation of state-of-the-art technologies to improve performance of its mill towards the goal of meeting the future stringent WQBELs imposed by the DO TMDL. These efforts are well documented under IEP's Best Management Practices Plan[11], Technology Selection Protocol[12] and Delta Elimination Plan[13]. IEP has made significant progress in reducing and gaining control of its nutrient loads as is evident from Ecology's Implementation Report for the Spokane River. [14]

   IEP's greatest challenge and expenditure is due to the development and application of advanced treatment technologies for removal of nutrients from IEP's pulp & paper mill water. IEP has tested over ten different technologies with little to no success. IEP has completely abandoned its work with chemical precipitation followed by filtration. After nearly 15 years of extensive testing and investment it has become apparent that this

[11] Inland Empire Paper Company NPDES Permit No. WA-000082-5, Permit Condition S4, Total Phosphorous, CBOD, & Ammonia, Best Management Practices Plan, 2015 Annual Status Report, October 30, 2015
[12] Inland Empire Paper Company NPDES Permit No. WA-000082-5, Permit Condition S5, Technology Selection Protocol for Total Phosphorous, CBOD, and Ammonia, October 30, 2015
[13] Inland Empire Paper Company NPDES Permit No. WA-000082-5, Permit Condition S5, Schedule of Compliance for Total Phosphorous, CBOD, and Ammonia, 2015 Delta Elimination Plan, October 30, 2015
[14] Spokane River and Lake Spokane Dissolved Oxygen Total Maximum Daily Load, 2010-2014 Implementation Report, June 2015

combination of technologies is not feasible for consistent, economical and long term operation to confidently attain the WQBELs imposed by the DO TMDL.

IEP has now turned its full attention to the development of a new technology using algae to absorb and remove nutrients from its wastewater. However, this technology is in its infant stages with IEP's application being the first of its kind in the world treating pulp and paper mill effluent. IEP has been researching, developing and testing this technology since 2009 with various levels of success and failure. Many unanswered questions remain regarding this new technology that must be addressed before IEP will have the confidence that it can provide a consistent, economical and long term solution. IEP has recently identified several critical flaws with this technology that must be resolved before further development can proceed. Pilot testing of various possible solutions are in the early stages to resolve these issues. This is a step-wise process of solving each flaw before moving onto the next. Once a probable solution is identified for each flaw, it will then need to be scaled and integrated into the system for long term testing.

Therefore, IEP is requesting an extension to various requirements within its NPDES permit to provide sufficient time to address all of the remaining concerns and to minimize the risk with full-scale investment into this technology. IEP requests that the deadline for submission of an Engineering Report for Treatment Technology be extended to November 1, 2026, and that the deadline for installing phosphorus treatment technology be extended to November 1, 2028. These extensions are appropriate to allow IEP to continue its research to find an appropriate technology, to allow Ecology an opportunity to review and approve IEP's Engineering Report and Delta Elimination Plan, and to provide IEP with sufficient time for permitting, engineering, procurement and construction of full-scale treatment technology. Extending the compliance schedule for IEP is allowed under RCW 90.48.605, IEP's NPDES Permit, and in the 2016 Ecology proposed revisions to the state Water Quality Standards, Ch. 172-201A WAC.

4. **Fecal Coliform** - Fecal Coliform was measured in 13 final effluent samples using SM 9221E, multiple tube fermentation procedure. The tests were conducted from June 2, 2015 to March 7, 2016. The initial test was performed as part of the NPDES Form 2C data collection for IEP's permit renewal and not part of current permit requirements. Previous to this sample and positive result, there have never been any significant findings of fecal coliforms in IEP's effluent. Fecal coliform levels ranged from 49 to 9,200 MPN/100 mL with a geometric mean value of 1,261 MPN/100 mL. Two of these samples were also analyzed using SM 9222D, membrane filtration method. In each instance, membrane filtration results proved to be lower than the MPN results provided by SM 9221E. This difference suggests that there may be potential interference when using SM 9221E related to total coliform interference. In several cases, the laboratory was able to confirm the presence of, but unable to quantify a value for E. coli. To better assess our effluent quality and in alignment with EPA's recommended Water Quality Criteria, IEP worked in conjunction with the National Council for Air & Stream Improvement, Inc. (NCASI) to determine the best testing methods to determine E. coli levels within our mill effluent.

To assess E. coli results in relation to fecal coliform, IEP, NCASI and Anatek Laboratories designed a plan to simultaneously evaluate total coliform and E coli using the following: SM 9222D to evaluate fecal coliform; the Colilert® enzyme substrate method (SM 9223B) at the prescribed incubation temperature of 35°C to evaluate total coliform and E coli; and the Colilert® enzyme substrate method at 44.5°C to evaluate thermotolerant (fecal) coliform and E. coli. The testing was conducted over ten sampling episodes from March 15, 2016 to April 12, 2016.

The results of the 10 samples collected during the study are summarized in the following table:

Parameter	SM 9222D (cfu/100mL)	SM 9223B @ 35 °C (MPN/100mL)		SM 9223B @ 44.5 °C (MPN/100mL)	
		Coliform	E. coli	Coliform	E. coli
Average	5,080	21,501	32	6,968	31
Maximum	19,500	24,200	128	24,200	125
Minimum	27	1550	1	24	1
Geometric Mean	1,045	18,025	12	1,216	11

During the study period, it appeared that the coliform results produced by SM 9222D aligned with some degree of confidence to the coliform results produced by Colilert (SM 9223B) at 44.5°C. However, it was also apparent during testing that while using SM 9222D, the lab was unable to quantify levels of E. coli; E. coli was reported as either present or non-detect. SM 9223 (at 44.5°C) was able to accurately quantify values for both coliform and E. coli. As can be seen in the data, there is an unacceptably high degree of variability in the coliform tests which is made more pronounced due to the presence of indigenous bacteria in IEP's pulp and paper water system. The high degree of variability in coliform tests makes monitoring this parameter difficult and unreliable. Along these lines, the EPA has shifted away from monitoring fecal coliforms as an indicator of water health and instead recommends monitoring more specific indicator bacteria – E. coli.

The testing plan shows that directly measuring E. coli is a much more reliable method and it yields more meaningful results. Similarly, testing for E. coli rather than fecal coliforms is in alignment with reports from the *Surface Water Quality Standards Triennial Review*, which indicate that new rule-making is set to begin this year to "propose new bacteria indicators and criteria for marine and freshwater when EPA national criteria updates are finalized."

The resulting data indicates that despite the presence of total coliforms in the system, there is a very small presence of E coli, which is truly an indicator of fecal contamination. The highest recorded E. coli value of 125 MPN/100mL (@ 44.5°C) is less than the EPA's 2012 RWQC single sample statistical threshold value of 410 counts/100mL. The calculated geometric mean of 11 counts/100mL is well below the monthly geometric mean value of 126 counts/100 mL.

IEP believes that E. coli is more indicative of effluent water quality. The ratio between the coliform and the E. coli indicate that E. coli is not the predominant source of fecal coliform in the mill effluent and is consistently an order of magnitude below established limits. As such, the mill requests to be exempted from any future monitoring requirements.

Please contact me should you have any questions or require additional information.

Sincerely,

Douglas P. Krapas
Environmental Manager

2016 NPDES PERMIT APPLICATION
FORM 2C, SECTION IV.B. – IMPROVEMENTS

Inland Empire Paper Company (IEP) has embarked on an aggressive program to enhance the performance of its mill processes and wastewater treatment system through water conservation, reclamation, reuse and the incorporation of state-of-the art treatment technologies. These projects were implemented in advance of the Spokane River and Lake Spokane Dissolved Oxygen Total Maximum Daily Load (DO TMDL), IEP's desire to improve mill efficiency and to minimize environmental impact. The projects described below were completed during the previous NPDES permit cycle (2011 to 2016) with apparent short-term success. Several other projects are currently in the Engineering/Construction phase, while others are visions for future application in an attempt to meet the stringent effluent limits resulting from the DO TMDL. A brief description of these projects is provided below. A revision to the "Operation Manual for IEP's Wastewater Treatment System" is also included which incorporates descriptions of the significant projects completed to date.

1. **Water Conservation Projects (2004 to present)** - IEP has continued with its aggressive water conservation program that began in 2004. 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 BOD, TP, and NH3.

2. **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 BOD and TP loading to the water system, resulting in a lower final discharge concentrations of TP, NH3, and BOD

3. **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 BOD removal. IEP has been operating at lower nutrient targets in an effort to optimize the water treatment system operations for BOD, TP and NH3.

4. **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.

5. **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. Elimination of Starch (2010) - IEP eliminated the use of cationic starch in the paper making process that was a large contributor of BOD and phosphorous loading to the water treatment system.

6. **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 (BOD, TP) created during the reaction.

7. **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 intends to install similar systems on other rolls in the paper machine in the near future.

8. **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 CBOD5 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 may not be readily assimilated by the secondary biological culture that may have contributed to elevated levels of non-bioavailable sources of phosphorus that are difficult to remove.

9. **Speece Cone In-line Superoxygenation System (2016)** – the Speece cone system is being installed in a proactive effort to increase CBOD5 removal in the primary clarifier and to offset any septic conditions that may develop in the primary clarifier due to IEP's ongoing effort to reduce wastewater discharge flows. The Speece cone system is located just downstream of the effluent pumps and oxygenates 100% of the water that leaves the effluent pump house. This includes all flows to the primary clarifier, reclaimed effluent waster, and all water directed to surge tanks used on-site for surge control.

10. **Algae-Based Nutrient Reduction System (Current to Future)** - In 2007, IEP was introduced to a company that was developing a new technology using algae to uptake nutrients from wastewater. This intriguing technology is intuitively similar to IEP's secondary activated sludge system and provides an option to the more problematic traditional chemical precipitation technologies. IEP established a business partnership with AlgEvolve to further develop this technology and performed the first pilot scale testing at IEP's site from 2008 to 2009. Sufficient success at the pilot-scale level prompted IEP to build a 60 gpm developmental-scale system in 2011.

    IEP and Clearas (formerly AlgEvolve) conducted testing of the demonstration-scale system from 2012 to 2013 with varying levels of success. The membranes purchased for this system unfortunately failed to meet the specified production capacity and were removed from operation. IEP then began the process of evaluating other membrane technologies for integration into the demonstration scale system.

Pilot testing of various membrane technologies to separate algae from IEP's treated wastewater were conducted between May 2014 and March 2015. Four separate membrane separation technologies were evaluated for their technical and economic feasibility within the AlgEvolve treatment system. The basis of the study was to discover a separation technology that can successfully process the combination of IEP's wastewater and algae, including the important metrics of membrane resistance, ability to be cleaned and recoverability. During the testing important information regarding operational parameters including membrane flux potential, system productivity, flux maintenance options, membrane resiliency and recoverability, and the impact to the biological health of the holistic system were collected. The successful technology selected from these pilot studies will be integrated into IEP's demonstration-scale system for further long term testing to prove the capabilities of the holistic algae/membrane separation arrangement for full-scale application.

The four technologies tested include:

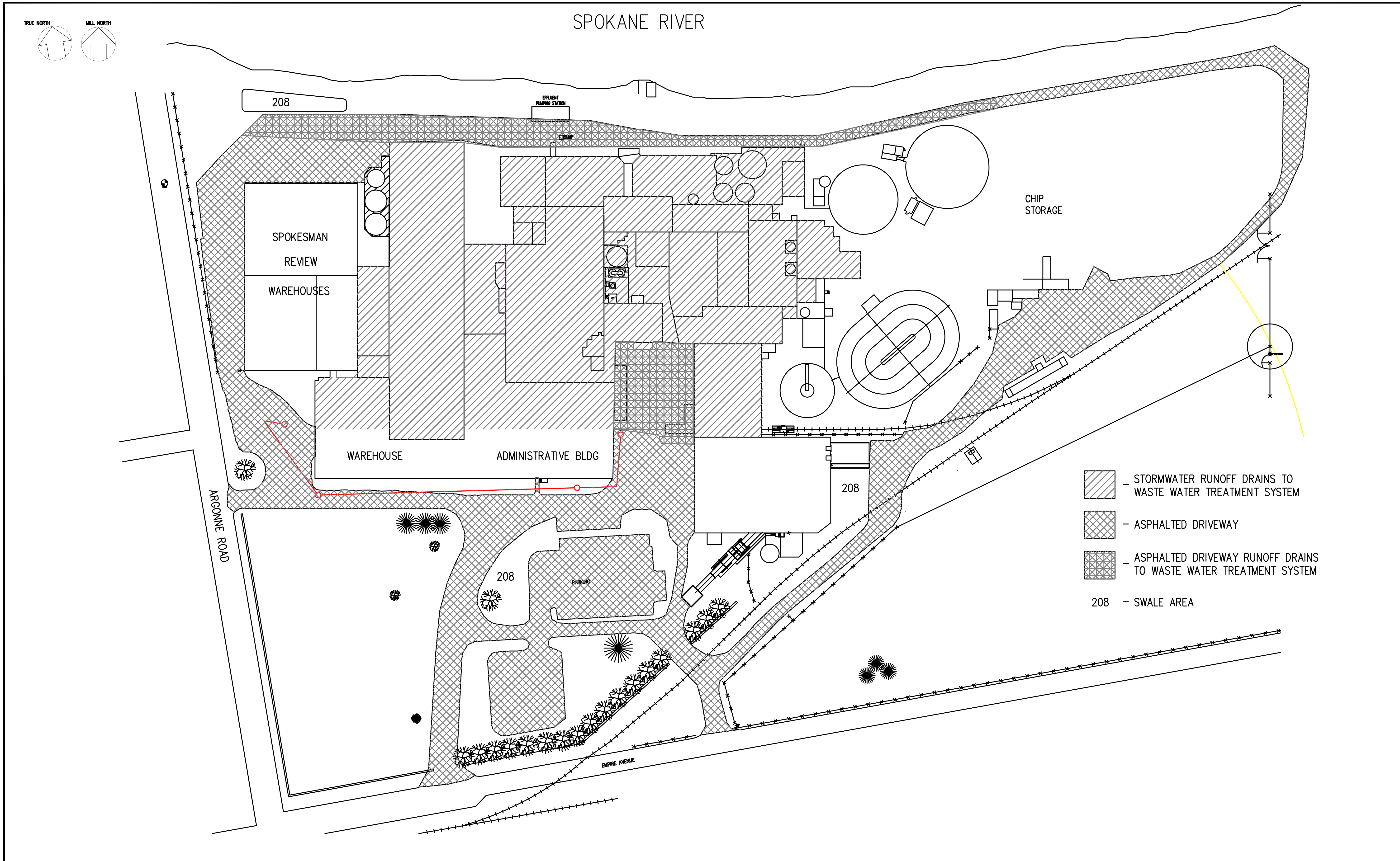
- Microdyn-Nadir/Ovivo – submerged flat sheet
- Koch Puron – submerged hollow fiber
- WesTech/Toray – pressurized outside-in hollow fiber
- Membrane Specialists – pressurized inside-out hollow fiber

Based on final evaluation of the above parameters, IEP selected the Koch Puron membrane for the next stage demonstration-scale integration. The Koch system performed exceptionally well with no significant operational problems. The demonstration-scale system was delivered to IEP in October 2015 with start-up of the integrated system scheduled for November 2015.

Upon successful integration of the new Koch Puron membrane system into the overall operation of the system, IEP will evaluate over a one year period the important metrics of the membrane system necessary for full-scale implementation. During this evaluation period IEP will also perform work plans to evaluate and optimize the following important criteria of the holistic biological and separation system: CO2 sources and utilization, optimum pH conditions, Photobioreactor (PBR) residence times for optimum nutrient uptake, natural versus artificial light benefits, glass versus plastic PBR material benefits, optimum algae growth and nutrient uptake conditions, and algae dewatering technologies.

1.0 **<u>WesTech/Toray Membrane System (Current to Future)</u>** - upon completion of the algae-based membrane pilot trials, the WesTech/Toray 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 membrane system has been processing IEP secondary final effluent without the use of coagulating chemicals since March 2015 and remains on-site for further evaluation.

Although membrane separation alone does not consistently meet the forthcoming stringent water quality based effluent limits (WQBELs) for TP and CBOD5, the technology has demonstrated that it may be possible to get near these limits. IEP intends to conduct further optimization testing with membrane only and additional testing with low solids generating coagulating chemicals to observe the extent of nutrient reduction to achieve the WQBELs.



AutoCAD FILE: 101-104 11:51 AM 19DEC2006

NO.	DESCRIPTION	BY DATE
4	ADD ASPHALTED DRIVEWAY RUNOFF TO WW TREATMENT SYS	KMR 19DEC06
3	REMOVED STORMWATER OUTFALL NO. 002	KMR 15AUG02
2	ADD PAVED AREAS	KMR 10APR02
1	ADD 100' CLARIFIER, #5 PM BLDG, PULPING FACILITY	KMR 10DEC01

REVISIONS

DWG. NO.	TITLE	DWG. NO.	TITLE
REFERENCE		REFERENCE	

INLAND EMPIRE PAPER COMPANY
MILLWOOD WASHINGTON

SCALE: NONE		DAY	MONTH	YEAR
DRAWN BY:	KMR	11	JUL	96
CHECKED BY:				
APPROVED:				

PAPER MILL
STORMWATER
RUNOFF PLAN

P.O.NUMBER
DRAWING NUMBER D101-104
REV. 4

Please print or type in the unshaded areas only
(fill-in areas are spaced for elite type, i.e., 12 characters/inch).

For Approved. OMB No. 2040-0086. Approval expires 5-31-92

FORM 1 GENERAL

U.S. ENVIRONMENTAL PROTECTION AGENCY

EPA

GENERAL INFORMATION

Consolidated Permits Program

(Read the "General Instructions" before starting.)

I. EPA I.D. NUMBER

S / F		T/A	C
F	*WAD009069279*		D
1	2 ... 13	14	15

LABEL ITEMS	
I. EPA I.D. NUMBER	
III. FACILITY NAME	
V. FACILITY MAILING LIST	**PLEASE PLACE LABEL IN THIS SPACE**
VI. FACILITY LOCATION	

GENERAL INSTRUCTIONS

If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent *(the area to the left of the label space lists the information that should appear)*, please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete Items I, III, V, and VI*(except VI-B which must be completed regardless)*. Complete all items if no label has been proved. Refer to the instructions for detailed item descriptions and for the legal authorization under which this data is collected.

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental from listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of **bold-faced terms.**

SPECIFIC QUESTIONS	MARK "X" YES	NO	FORM ATTACHED	SPECIFIC QUESTIONS	MARK "X" YES	NO	FORM ATTACHED
A. Is this facility a **publicly owned treatment works** which results in a **discharge** to **waters of the U.S.?** (FORM 2A)	☐ 16	☒ 17	☐ 18	B. Does or will this facility *(either existing or proposed)* include a **concentrated animal feeding operation** or **aquatic animal production facility** which results in a **discharge** to **waters of the U.S.?** (FORM 2B)	☐ 19	☒ 20	☐ 21
C. Is this facility which currently results in **discharges** to **waters of the U.S.** other than those described in A or B above? (FORM 2C)	☒ 22	☐ 23	☒ 24	D. Is this proposal facility *(other than those described in A or B above)* which will result in a **discharge** to **waters of the U.S.?** (FORM 2D)	☐ 25	☒ 26	☐ 27
E. Does or will this facility treat, store, or dispose of **hazardous wastes?** (FORM 3)	☐ 28	☒ 29	☐ 30	F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)	☐ 31	☒ 32	☐ 33
G. Do you or will you inject at this facility any produced water other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)	☐ 34	☒ 35	☐ 36	H. Do you or will you inject at this facility fluids for special processes such as mining of sulfer by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)	☐ 37	☒ 38	☐ 39
I. Is this facility a proposed **stationary source** which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an **attainment area?** (FORM 5)	☐ 40	☒ 41	☐ 42	J. Is this facility a proposed **stationary source** which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an **attainment are?** (FORM 5)	☐ 43	☒ 44	☐ 45

III. NAME OF FACILITY

C		
1	SKIP	*Inland Empire Paper Company*
15	16-29	30 ... 69

IV. FACILITY CONTACT

C	A. NAME & TITLE *(last, first, & title)*	B. PHONE *(area code & no.)*		
2	*Krapas, Douglas, Environmental Compliance Engineer*	*509*	*924*	*1911*
15	16 ... 45	46 48	49 51	52 55

V. FACILITY MAILING ADDRESS

C	A. STREET OR P.O. BOX
3	*3320 N. Argonne*
15	16 ... 45

C	B. CITY OR TOWN	C. STATE	D. ZIP CODE
4	*Spokane*	*WA*	*99212*
15	16 ... 40	41 42	47 51

VI. FACILITY LOCATION

C	A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER
5	*3320 N. Argonne*
15	16 ... 45

B. COUNTY NAME
Spokane
46 ... 70

C	C. CITY OR TOWN	D. STATE	E. ZIP CODE	F. COUNTY CODE
6	*Spokane*	*WA*	*99212*	*063*
15	16 ... 40	41 42	47 51	52 54

CONTINUED ON REVERSE

CONTINUED FROM THE FRONT

VII. SIC CODES (4-digit, in order of priority)

A. FIRST		B. SECOND	
C 7 — 2611	(specify) **Paper Mill producing Newsprint**	7	(specify)
C. THIRD		**D. FOURTH**	
C 7	(specify)	7	(specify)

VIII. OPERATOR INFORMATION

A. NAME

C 8 — *Inland Empire Paper Company*

B. Is the name listed in Item VIII-A also the owner? ☒ YES ☐ NO

C. STATUS OF OPERATOR (Enter the appropriate letter into the answer box; if "Other," specify.)

F = FEDERAL
S = STATE
P = PRIVATE
M = PUBLIC (other than federal or state)
O = OTHER (specify)

Answer: **P** (specify)

D. PHONE (area code & no.): C A — 509 924 1911

E. STREET OR PO BOX: *3320 N. Argonne*

F. CITY OR TOWN	G. STATE	H. ZIP CODE
C B — Spokane	WA	99212

IX. INDIAN LAND

Is the facility located on Indian lands? ☐ YES ☒ NO

X. EXISTING ENVIRONMENTAL PERMITS

Permit	Number
A. NPDES (Discharges to Surface Water) — C T I: 9 N	WA-000085
B. UIC (Underground Injection of Fluids — C T I: 9 U	N/A
C. RCRA (Hazardous Wastes) — C T I: 9 R	WAD009069279
D. PSD (Air Emissions from Proposed Sources) — C T I: 9 P	
E. OTHER (specify) — C T I: 9	AOP-1 {Renewal #3} — (Specify) SRCAA Air Operating Permit
E. OTHER (specify) — C T I: 9	(Specify)

XI. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers and other surface water bodies in the map area. See instructions for precise requirements.

XII. NATURE OF BUSINESS (provide a brief description)

Inland Empire Paper Company manufactures newsprint and specialty paper products manufactured from the Groundwood-Thermo-Mechanical Pulp (TMP) process and the De-ink process utilizing recycled newspapers, magazine and office paper. IEP has also maintained its groundwood- Refiner Mechanical Pulp (RMP) process as a back-up and for potential expanded production. The typical furnish split for the production of IEP's paper products is approximately 70% TMP and 30% De-ink pulp. The current production capacity of IEP's paper machine is approximately 525 tons per day.

XIII. CERTIFICATION (see instructions)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE (type or print)	B. SIGNATURE	C. DATE SIGNED
Kevin D. Rasler *President & General Manager*	K. D. Rasler	*April 29, 2016*

COMMENTS FOR OFFICIAL USE ONLY

C C

OPERATION MANUAL FOR INLAND EMPIRE PAPER COMPANY'S WASTEWATER TREATMENT SYSTEM

Inland Empire Paper Company (IEP) produces pulp and newsprint from the thermo-mechanical pulp (TMP), and the recycling of old newsprint (ONP) processes. Wastewater from these manufacturing processes are treated in a facility designed to comply with limits on Biological Oxygen Demand (BOD), Total Suspended Solids (TSS), Total Zinc, Total Lead, Total Cadmium, Total Phosphorus and pH range as specified in the NPDES permit.

Mill Personnel Contact Information:

The table below provides a list of individuals responsible for the proper operation of IEP's wastewater treatment system.

Name	Title	Home/Cell Phone
Chris Averyt	Technical Superintendent	C: 509-499-2304
Doug Krapas	Environmental Manager	H: 208-772-3447 C: 208-661-5526
Kevin Davis	Production Manager	H: 509-448-8824
Luke Huntley	Pulp Mill Superintendent	H: 509-927-1973 C: 509-998-1334
Ryan Ekre	Environmental Engineer	C: 602-315-4281
TJ Eixenberger	Project Engineer	C: 208-755-4415
John Nelson	Maintenance Superintendent	H: 509-936-5898
Dave Newton	Technical Supervisor	C: 509-999-4213
Kevin Rasler	President/General Manager	H: 509-922-5677 C: 509-710-9236

The IEP wastewater treatment plant is a state-of-the-art facility consisting of a group of unit operations and processes performing Primary Solids Settling, Microbiological Treatment, Secondary Solids Settling, Chemical Precipitation and Filtration, and sludge dewatering. These unit operations and processes are composed of the following major equipment and systems:

1) **A Mechanically-Cleaned Bar Rack** – This course screen removes large chips and debris from the influent wastewater prior to entering the effluent pumps.

2) **Wastewater Pumping** – The wastewater pumping system includes three 885-rpm positive suction pumps, each capable of providing flow capacity up to 4500 gpm. One pump is powered by the mill's 63-kV power supply; another by the mill's 110-kV power supply; and the third is diesel powered for standby in the event of a total power failure. The separate electrical feeds are supplied to the two electrical pumps to lessen the impact of power outages.

   All the mill sewer trenches are channeled to the effluent pump house sump. The effluent pumps transfer the collected sewer flows to the 100' Primary Clarifier. The sump has no overflow. The pumping system is operated so that one pump is the lead pump and the other two are standby backups. The lead pump is controlled by the lowest pit level probe. The second pump is controlled by a higher lever probe and the third pump (diesel) is controlled by the highest level probe. Therefore, if the first pump does not keep up with the flow from the mill, the second pump will start pumping and if the two pumps do not keep up, the third will start pumping. In case of a power failure, the diesel pump will start up when the high-level sump probe is triggered. All three pumps have a combined capacity of 13,500 gpm. The highest recorded flow from the mill was 6,000 gpm.

3) **Speece Cone In-line Superoxygenation system** – The Speece cone system consists of a hollow stainless steel cone with no internal mixers, baffles or moving parts. The influent and effluent piping is 12" in diameter and capable of passing dirty wastewater without clogging. 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 a molecular sieve technology, provides a nearly pure oxygen source from ambient air. The combination of a pure oxygen stream and a slight pressure increase in the cone make it possible to increase the dissolved oxygen concentration to above 60mg/L in the wastewater (up to 2100lb of O_2 per day).

   The Speece cone system is located just downstream of the effluent pumps and oxygenates 100% of the water that leaves the effluent pump house. This includes all flows to the primary clarifier, reclaimed effluent waster, and all water directed to surge tanks used on-site for surge control.

   The system is being installed in a proactive effort to increase $CBOD_5$ removal in the primary clarifier and to offset any septic conditions that may develop in the primary clarifier due to IEP's ongoing effort to reduce wastewater discharge flows.

4) **100' Primary Clarifier** – The entire mill sewer flow is handled by the 100' diameter x 12' side water depth clarifier. The primary clarifier removes suspended solids from the

wastewater as sludge. The clarifier includes a rake arm mechanism traveling at .04 rpm that plows sludge to a center draw-off pipe. Sludge is removed from the clarifier by two pumps - one operating as the primary pump and the other as a standby pump. Sludge withdrawal is dependent on the solids inventory in the clarifier. A sludge depth of 4 to 6 feet is desirable for good sludge compaction in the clarifier.

The clarifier rake arm is equipped with torque switches that provide alarms due to high sludge loads or problems with the rake arm drive. The torque switches are set to alarm at 70% of load and fail at 80% maximum rake arm drive load. Motor loading of the rake arm is also monitored on the DCS system and programmed to alarm at 65% of maximum load.

Influent and effluent solids are monitored five days per week through lab analysis, and on-line pH and TSS meters are also located at the outfall of the primary clarifier. Upper control limits are established for these solids to trigger corrective action. At high solids loading of the influent, a mill search is initiated to find the solids losses (i.e.: leaking packing on pumps, agitators, or process equipment). High primary clarifier effluent solids are indicative of excess sludge inventory in the clarifier requiring that the sludge withdrawal rate be increased. A flocculant polymer is periodically added to the influent of the primary clarifiers to improve solids settling and maintain the primary effluent TSS below the 60 ppm upper limit target. The effluent from the 100 ft primary clarifier is discharged to the activated sludge treatment system. The effluent from the 100' primary clarifier flows into a clearwell tank where it is then pumped to the Moving Bed Biofilm Reactors (MBBRs). There are two effluent pumps on this clearwell – a standard electrically powered pump and a diesel powered backup pump in case of power failures.

5) **Conustrenner Reclaim Water System** – approximately 1.0 to 1.4 MGD of wastewater from the discharge of the primary clarifier is diverted to the Conustrenner system for reclaim into IEP's pulp mill processes. The Conustrenner is a compact, highly efficient, self-cleaning fractionating type filter device. The influent is sprayed into the Conustrenner through a series of nozzles where the coarse and fine fractions are separated by a rotating stainless steel wire basket. Approximately 75% of clean filtrate is produced by the Conustrenner system to replace fresh water previously used in various pulp mill processes. Rejects from the Conustrenner system are discharged back into IEP's mill sewer.

6) **Moving Bed Biofilm Reactors (MBBRs)** – effluent from the 100' primary clarifier is directed to one of three MBBR systems for enhanced BOD removal and minimization of filamentous bacteria formation. Each MBBR tank is fed with a proportional share of nutrients as required for optimum BOD removal, and each tank includes a de-foamer system to minimize foam generation during operation.

IEP converted an existing 116,000 gallon, stock storage chest into an MBBR system (designated MBBR #1) to study the performance of this technology. The 25' diameter x 38.5' high tank was modified into an MBBR system with the installation of a coarse bubble aeration grid located on the bottom of the tank. The conversion included a 70% fill fraction of specially designed plastic media used for biomass growth. A single blower supplies approximately 2,000 scfm of air to maintain the effluent discharge at a dissolved oxygen level of 2.0 mg/L. Effluent from the MBBR is discharged into the line that feeds MBBR's #2 and #3.

Two additional MBBR tanks (designated MBBR's #2 and #3), 40' diameter x 32' tall each, are installed to treat increased BOD from IEP's new #5 TMP system and to meet more stringent NPDES permit limitations. Each tank includes approximately a 44% fill fraction of specially designed plastic media used for biomass growth. Four blowers provide over 10,000 scfm to the MBBR tanks to maintain an outlet dissolved oxygen level of approximately 3.0 mg/L. Effluent from each of the MBBR tanks is discharged to the Orbal aeration basin for further BOD reduction.

7) **Orbal Aeration Basin and Aerators** – The 2.1-MG aeration basin is divided into three stages in the configuration of three concentric oval oxidation ditches ("Orbal" configuration). Each channel is 20 feet wide with a 14.2 feet normal water depth. The outside channel has 0.98-MG volume; the middle channel, 0.70 MG; and the inner channel, 0.42 MG. Aeration of the ditches is provided by a series of disc aerators all rotating at a speed of 56 rpm. The outside channel has six shafts with a total of 198 aeration discs, the middle channel has six shafts with a total of 194 aeration discs, and the inner channel has four shafts with a total of 96 aeration discs.

The aeration basin operates with returned activated sludge (RAS) and effluent from MBBR's #2 and #3 fed to the outside channel. Flow progresses through ports successively to the middle and inner channel. The inner channel discharges the effluent over a weir with manual height adjustment. The aerators are sensitive to depth of water and consequently, power draw and oxygen transfer can be manipulated by adjusting the overflow weir.

The aeration basin is constructed to allow removal of either the outside channel or the inner two channels from service for maintenance, inspection, and/or cleaning. During times of extreme production turndowns, one of these bypasses could be implemented to prevent the over-oxidizing of the mixed liquor sludge solids (MLSS). During normal operations, all channels are in service.

8) **Secondary Clarifier** – This 120' diameter x 16' side water depth clarifier removes suspended activated sludge from the treated wastewater. A rake mechanism, powered by either 63 kV or 115 kV power systems, plows sludge to a center draw-off and a surface skimmer removes the floatable material. A variable speed sludge pump withdraws the activated sludge from the clarifier. The sludge flow is split into return activated sludge (RAS) and waste activated sludge (WAS). The amount of RAS is controlled by a flow meter and the volume is set to maintain a mixed liquor suspended solids (MLSS) concentration range of 3,000 to 6000 mg/L. The WAS flow is also controlled by a flow meter and is dependent on the RAS concentration and the sludge inventory in the secondary clarifier. Typical RAS concentrations range between 8,000 to 12,000 mg/L. A sludge level in the secondary clarifier of six feet results in optimum sludge concentration, while allowing sufficient room for flow surges. Low sludge inventory in the clarifier will result in low MLSS concentration and poor wastewater treatment performance.

9) **Dissolved Air Flotation (DAF) Clarifier** – This 40' x 18' x 5.2' Permutit DAF clarifier removes suspended solids and ink from the De-ink Plant and #5 TMP Plant wastewater. The combined wastewater is pretreated with poly-aluminum chloride (PAX) in a retention tank to coagulate the ink. From the retention tank, the wastewater is pumped into the DAF aeration tank to become saturated with dissolved air. Between four to five SCFM of plant air at 60 psig is metered into the pressurized aeration tank. From the aeration tank, the air saturated liquid flows through the distribution header of the clarifier. An anionic polymer is added at the clarifier inlet to flocculate the suspended particles in the liquid. When the aerated liquid is released through the distribution header to atmospheric pressure, micro-bubbles form. These bubbles attach themselves to the flocculated particles in the liquid and then float to the surface. The float is moved along the surface, delivered up a ramp, and discharged into the solids compartment by a continuously operating flight of scrapers. Recovered solids are removed from the solids compartment by a pump and sent to the Andritz gravity table for further thickening before being fed into the Andritz screw press for final dewatering.

Clarified effluent from the DAF is uniformly withdrawn at the far end of the flotation compartment. The clarified effluent is sent to the heat exchangers for temperature reduction prior to being sent to the mill's wastewater treatment system.

10) **Heat Exchangers** – two (2) plate-type heat exchangers are used to cool effluent from the #5 TMP system and Float Cell rejects prior to discharge to IEP's wastewater treatment system. Effluent from the #5 TMP system and Float Cell rejects are treated in the DAF, then sent to the two heat exchangers for temperature reduction. Approximately 600 to 800 gpm of 149 to 153°F effluent from the DAF is processed through the heat exchangers for reduction to approximately 85 to 90°F prior to discharge to the primary clarifier. Approximately 1,000 to 1,700 gpm of 55°F non-contact cooling water (NCCW) is used on the cold side of the heat exchangers. NCCW from the heat exchangers is discharged to IEP's secondary clarifier launder ring.

Cooling of the DAF effluent is necessary for the health and optimum operation of IEP's activated sludge treatment process.

11) **Tertiary Treatment** – A Siemens Model ½-HS-1400A Trident HS tertiary treatment system was installed in response to the dissolved oxygen TMDL for Lake Spokane. The Trident HS system was selected for commercial-scale testing based on the results of pilot-scale studies of numerous competing tertiary treatment technologies. The ultimate fate and use of the Trident HS system will be dependent upon the success of the commercial-scale tests for treating IEP's wastewater.

The Trident HS system is a multi-media filtration technology that incorporates a pre-stage tube settler stage for enhanced solids removal. The first stage, Tube Section, combines the functions of mixing, sludge blanket flocculation, and solids removal utilizing 60^0 inclined settling tubes. The solids level is maintained by continuously wasting settled sludge. A constant inventory high solids sludge blanket provides a "buffer" to potentially variable source water solids loading and helps maintain a consistent effluent. The second stage Adsorption Clarifier, utilizing packed bed buoyant media, combines the functions of additional mixing, contact flocculation, and solids removal. The Adsorption Clarifier "polishes" and conditions any remaining solids prior to the stream entering the final filter. This multi-barrier clarification system provides well-conditioned clarified water to the third stage Mixed Media filter, consisting of 18 inches of Anthracite, 9 inches of silica sand and 3 inches of high density sand. The flow is upward through the Tube Section, upward through the Adsorption Clarifier and downward through the Mixed Media filter.

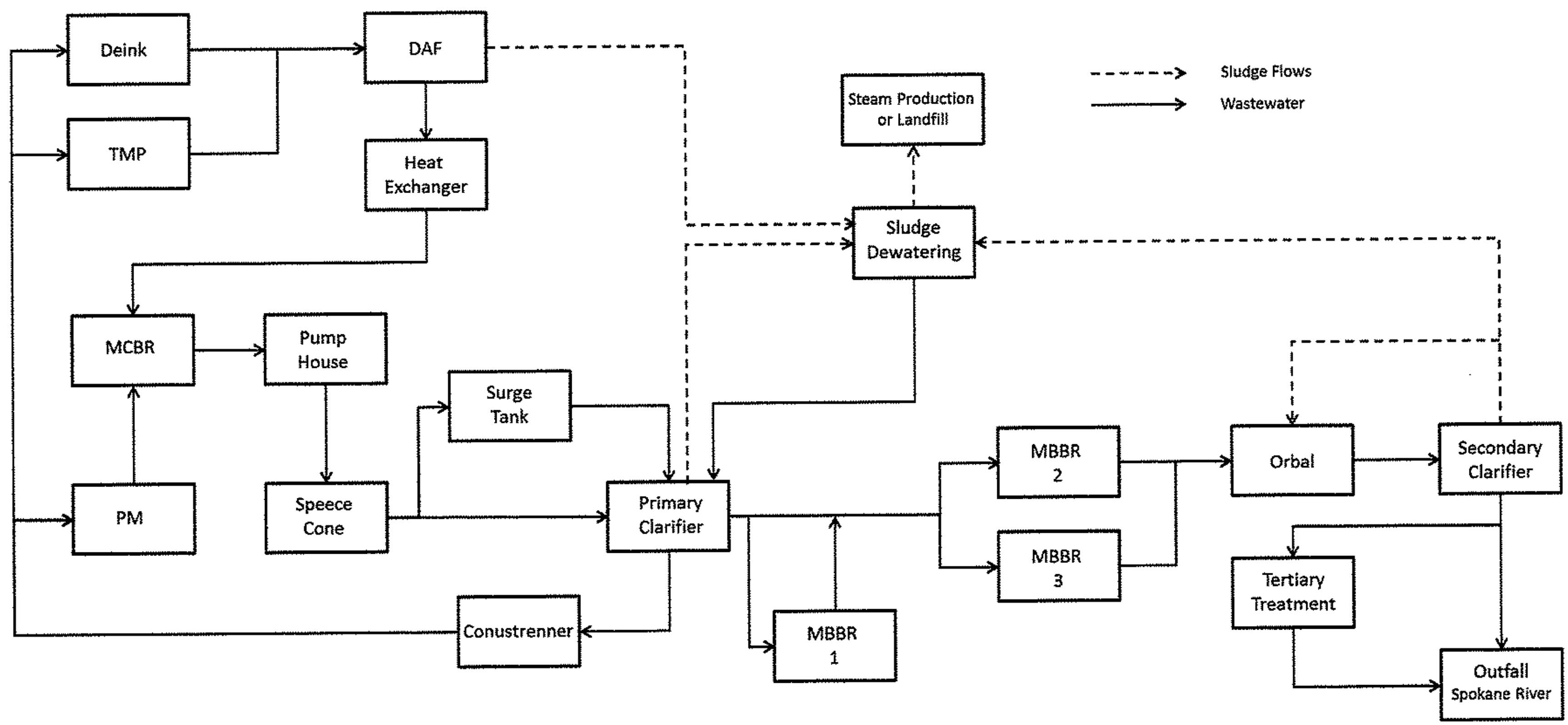
The Trident HS system can process up to 800,000 gallons/day of effluent from IEP's secondary clarifier. If successful, clean filtrate from the Trident HS system may be beneficially re-used back into IEP's processes, or returned to the outfall for discharge to the river. Currently, rejects from the Trident HS are discharged to the mill's sewer system for removal in the mill's wastewater treatment system.

12) **Effluent Metering and Clear Well** – A Parshall flume measures effluent from the final clarifier to a clear well. An automatic sampler composites effluent for testing to determine compliance with effluent requirements. The clear well serves as a stilling chamber for the outfall to the Spokane River.

13) **Outfall** – A 24" outfall extends from the clear well to the Spokane River. At the river, the outfall decreases in diameter to 18". The 18" outfall line extends approximately halfway across the Spokane River and has multiple outlet ports for dispersion of the treated effluent from IEP into the Spokane River.

14) **Sludge Dewatering** – Primary sludge from the primary clarifier and waste activated sludge from the secondary clarifier are combined in a sludge mix tank. The sludge is then thickened and dewatered with either the Andritz gravity table and screw press or the FKC rotary drum thickener and screw press. A maximum of 50 dtpd (limitation specified by the Air Operating Permit) of dewatered sludge is conveyed to a fluidized bed combustor (FBC) for energy recovery in the form of steam. Any dewatered sludge generated above 50 dtpd is sent to landfill. Ash generated from the FBC is utilized as a cement admixture, as a mineral enhancement to compost, or hauled wetted to landfill.

15) **75' Clarifier** – The 75' diameter x 14' side water depth clarifier is utilized for flow surge control of the mill's wastewater treatment system. Excess wastewater flow from the mill due to process changes or off-normal conditions is sent to the 75 ft clarifier. After the flow surge has diminished, the volume in the 75 ft clarifier is slowly returned to the wastewater treatment system via the mill's sewer system.


Deink
TMP
DAF
Heat Exchanger
Steam Production or Landfill
Sludge Flows
Wastewater
Sludge Dewatering
MCBR
Pump House
Surge Tank
PM
Speece Cone
Primary Clarifier
MBBR 2
MBBR 3
Orbal
Secondary Clarifier
Conustrenner
MBBR 1
Tertiary Treatment
Outfall Spokane River

Operating Parameters:

The operation of the wastewater treatment system is controlled and adjusted with the assistance of laboratory tests and general observations. Lab tests performed routinely to optimize plant operation include:

1) Settable solids test for the aeration basin (SVI). – *30 minute settlometer test*

2) Dissolved oxygen concentration measurements in the Primary Clarifier, at each MBBR discharge, in each Orbal aeration channel, and the secondary clarifier effluent. – *Standard Methods For Examination of Water and Wastewater 21st Edition procedure 4500-O G-01.*

3) MLSS concentration measurements in the Orbal Aeration Basin – *Standard Methods For Examination of Water and Wastewater 21st Edition procedure 2540 D-97.*

4) Oxygen uptake rates in the Orbal Aeration Basin. – *Standard Methods For Examination of Water and Wastewater 21st Edition procedure 4500-O G-01.*

5) pH measurements of the primary, secondary, and DAF clarifiers, the Orbal Aeration Basin, and MBBR's influent and effluent. – *Standard Methods For Examination of Water and Wastewater 21st Edition procedure 4500-H+ B-00*

6) TSS measurements of the influent to the MBBR's and effluent from the DAF, primary and secondary clarifiers, and MBBR's. – *Standard Methods For Examination of Water and Wastewater 21st Edition procedure 2540 D-97.*

7) BOD measurements of influent to the MBBR's and effluent from the DAF, primary and secondary clarifiers, and MBBR's. – *Standard Methods For Examination of Water and Wastewater 21st Edition procedure 5120 B-01.*

8) Sludge concentrations from the DAF, primary and secondary clarifiers.

9) Phosphorus measurements at the inner Orbal, influent to the MBBR's and effluent from the primary clarifier, secondary clarifier and MBBR's. – *Standard Methods For Examination of Water and Wastewater 21st Edition procedure 4500-P E-99.*

10) Ammonia measurements of the influent to and effluent from the MBBR's. – *USGS method I-3520-85 and Standard Methods For Examination of Water and Wastewater 21st Edition procedure4500-NH3 F-97*

11) Temperature of the effluent from the MBBR's and the DAF Heat Exchanger. – *Orion 2 Star pH Benchtop meter by Thermo Scientific.*

12) Conductivity and Hardness of the final effluent from the secondary clarifier. – *Standard Methods For Examination of Water and Wastewater 21st Edition procedure 2340 C-97.*

General observations of the wastewater treatment plant help to determine if it is operating correctly. Every weekday morning the wastewater treatment system is inspected by the technical superintendent or the pulp mill superintendent. Each shift supervisor also performs a walkthrough inspection at least once per shift. The chip handler also inspects the clarifier twice per shift and the ONP handler inspects the sludge press operation twice per shift. These observations include:

1) Color and foam of the MLSS in the aeration basin,

2) Color and foam of the sludge blanket on the DAF clarifier,

3) Odor on the plant site, and

4) Clarity of the secondary clarifier surface.

5) Measurement of clear water depth in the secondary clarifier.

6) Sludge quality on the gravity table and out of the screw presses.

The wastewater treatment system performance is also dependent on the availability of nutrients. Nutrient feed rates are adjusted to achieve a ratio of BOD:N:P of 100:5:1. Aqueous ammonia (20.5% N) and ammonium phosphate (10% N, 9% P) are metered into the MBBR's and the outer Orbal channel to satisfy this ratio.

During extended downtime of the mill, i.e., more than two days, starch is added to the outer Orbal channel. An addition rate of 50 pounds of starch every four hours is sufficient to maintain biological growth.

Maintenance, Equipment List, and Primary Vendor Contacts:

An oiler/inspector is responsible for the preventative maintenance of the wastewater treatment system. All effluent pumps and sludge pumps are checked daily. Aerators are lubricated weekly and checked for tightness monthly. Rake arms are inspected, greased, and oiled weekly. The oiler collects all the waste oil and grease from the preventative maintenance program at the wastewater plant for disposal in the designated waste oil and grease containers.

All major maintenance work required on the effluent treatment plant is coordinated with a scheduled mill shutdown, which normally occurs every four weeks. During these scheduled shutdowns, the wastewater flow is at a minimum, which allows for repair work on the plant without sacrificing wastewater treatment quality.

The table below is a complete list of equipment, order by assigned equipment number, in the WWTS.

Equipment Number	Equipment Description	Equipment Number	Equipment Description
301-002	Screen – Duperon Flex Rake Screen	301-191	Pump - FKC Pressate to Orbal
301-003	Pump - Shower Water, Flex Rake Screen	301-195	Conveyor - No.1 Sludge Discharge, FKC Press
301-005	Conveyor - Flex Rake Screen	301-200	Conveyor - No.2 Sludge to Ground, FKC Press
301-010	Pump - No.3 Diesel, Pump House Effluent	301-205	Conveyor - No.3 Sludge to Barn, FKC Press
301-011	Pump - No.4 110 kV, Pump House Effluent	301-220	Clarifier - Tertiary Treatment, Trident HS
301-012	Pump - No.5 63 kV, Pump House Effluent	301-221	Pump - Feed Pump, Trident HS
301-025	Clarifier - Surge Control, 75' Diameter	301-222	Pump - Presettling Tank, Trident HS
301-030	Drive - Rake Arm, 75' Clarifier	301-225	Pump - Recirculation, Trident HS
301-040	Pump - Sludge, 75' Clarifier	301-226	Pump - Transfer, Trident HS
301-045	Tank - Ammonium Phosphate	301-227	Drive - Sludge Collector, Trident HS
301-050	Pump - Ammonium Phosphate	301-228	Screen - Barrier Screen Centrisorter, Trident HS
301-055	Tank - Aqua Ammonia	301-231	No.1 Blower, Trident HS
301-060	Pump - Aqua Ammonia	301-232	No.2 Blower, Trident HS
301-065	Basin - Orbal	301-235	Pump - Filtered Effluent, Trident HS
301-070	Aerator No.1 - Orbal	301-236	Pump - Backwash Supply, Trident HS
301-075	Aerator No.2 - Orbal	301-237	Chest - Backwash Waste Tank, Trident HS
301-080	Aerator No.3 - Orbal	301-238	Chest - Backwash Supply Tank, Trident HS
301-085	Aerator No.4 - Orbal	301-240	Flow Controls - Alum Coagulant, Trident HS
301-090	Weir Adjustable Level - Orbal	301-250	Tank - No.1 MBBR
301-095	Weir Manual Level - Orbal	301-251	Screen - Barrier Screen Centrisorter, No.1 MBBR
301-100	Aerator No.5 - Orbal	301-252	Blower - Aerator, No.1 MBBR
301-105	Aerator No.6 - Orbal	301-253	Pump - No.1 MBBR, Primary Effluent
301-110	Aerator No.7 - Orbal	301-254	Pump - Foam Abatement System, No.1 MBBR
301-115	Aerator No.8 - Orbal	301-302	Tank - No.2 MBBR
301-120	Aerator No.9 - Orbal	301-303	Tank - No.3 MBBR
301-125	Aerator No.10 - Orbal	301-306	Screen - Barrier Screen, No.2/3 MBBR
301-130	Clarifier - Primary 100' Diameter	301-307	Pump - Foam Abatement System, No.2/3 MBBR
301-135	Drive - No.1 Rake Arm, 100' Clarifier	301-311	Blower No.1, No.2/3 MBBR
301-136	Drive - No.2 Rake Arm, 100' Clarifier	301-312	Blower No.2, No.2/3 MBBR
301-141	Pump - No.1 Sludge, 100' Clarifier	301-313	Blower No.3, No.2/3 MBBR
301-142	Pump - No.1 Diesel, Primary Effluent	291-240	Tank - Alum Retention Tank
301-143	Pump - No.2 Electric, Primary Effluent	291-245	Pump - Alum Retention Tank to DAF
301-144	Pump - No.2 Sludge, 100' Clarifier	291-250	Tank - Air Mix Tank, DAF
301-146	Pump - Primary Effluent Reclaim	291-255	Clarifier - Dissolved Air Flotation Clarifier
301-147	Screen - Barrier Screen Centrisorter, Reclaimed Effluent	291-256	Pump - DAF Sludge (East)
301-148	Filter - Conustrenner, Recalimed Effluent	291-257	Pump - DAF Sludge (West)
301-152	Agitator - Reclaimed Effluent Chest	291-260	Pump - DAF Clearwater to Wash Water Tank
301-153	Pump - Mill Return, Reclaimed Effluent	291-264	Makedown Skid - DAF Dry Polymer
301-155	Tank - Clearwell, Primary Effluent	291-266	Agitator - Polymer Mix Tank, Makedown Skid
301-156	Clarifier - Secondary 120' Diameter	291-267	Pump - Polymer to DAF (East)
301-157	Pump - Return Activated Sludge, 120' Clarifier	291-268	Pump - Polymer to FKC Press (West)
301-158	Flume - Parshall, 120' Clarifier	291-269	Mixer - Venturi Mixer, Gravity Table
301-159	Tank - Clarified Secondary Effluent Tank	291-270	Filter Press - Gravity Table
301-160	Tank - Sludge Mix Tank	291-273	Makedown Skid - Sludge Press Dry Polymer
301-165	Agitator - Sludge Mix Tank	291-274	Pump - Polymer to Andritz Sludge Press
301-170	Pump - East, Sludge Mix Tank	291-275	Press - Andritz Press
301-172	Pump - Polymer to Day Tank Makedown	291-276	Tank - Andritz Pressate Collection Tank
301-173	Pump - West, Sludge Mix Tank	291-277	Pump - Andritz Pressate to Orbal
301-174	Pump - Polymer to FKC Press	291-280	Conveyor - Andritz Press Sludge Discharge
301-175	Tank - Conditioning Tank, FKC Press	291-285	Conveyor - Andritz Press Sludge Screw Lift
301-180	Mixer - Conditioning Tank	291-287	Conveyor - Andritz Press Sludge Reverse Screw
301-185	Thinkener - Rotary Sludge Thickener, FKC Press	291-306	Tank - Poly Aluminum Chloride (PAX)
301-190	Press - FKC Press	291-307	Pump - No.1 PAX Pump
		291-308	Pump - No.2 PAX Pump

On-site availability of spare equipment is handled on a case by case basis. The majority of pumps have existing spares, and spare motors, located on-site. Fortunately, the small range of pump models utilized in the WWTS are also used in other applications within the mill. Therefore increasing the availability of on-site replacements offering a wide-range of flexibility for scheduled and emergency equipment replacement.

There are however several unique units. Spares for these units are kept on-site at all times. Other high frequency maintenance items include blowers and aerators. Two rebuilt spares for the MBBR blowers are kept on-site. Replacement parts kept on-site for the Orbal Aeration Basin include aerator disks, drive shafts, and motors. The list below provides vendor names and contact information which supply and service a broad spectrum of equipment in the WWTS.

Part	Vendor Name	Phone
Goulds Pumps	Pumptech, Inc.	509-766-6330
ITT Pumps & MBBR Blowers	Beckwith & Kuffel	800-767-6700
Motors & Orbal Aerators	Dykman Electrical	509-536-8787
	Kaman Industrial	509-535-1611
Variable Frequency Drives	Dykman Electrical	509-536-8787

Emergency Operating Procedure and Safety:

Overall treatment plant bypass cannot occur. There is no wet well overflow to the river. Two effluent pumps are supplied by separate power feed to minimize the impact of electrical outages. In case of a total power outage, the diesel pump would continue controlling the effluent sump level. A total power outage would also cause the water supply and the process facilities, including all pumps, to fail, which would shut off the wastewater flow. Should there be a pump house failure during normal operations, the mill would be shut down to prevent any flooding from the mill sewer trenches or the pump house wet well.

In the event of a major breakdown of the 100' primary clarifier, valves are in place that can divert raw mill effluent to the 75' clarifier. Approximately 2,000 gpm of effluent from the 75' clarifier can be diverted to the 116,000 gallon MBBR for treatment and discharge to the Orbal Aeration Basin. Any effluent flow not going to the MBBR from the 75' clarifier would be discharged directly to the Orbal Aeration Basin for treatment. Mill operations would be modified as necessary to assure compliance with all operating permits while the 100' primary clarifier is out of service.

During extended downtime of the mill, i.e., more than two days, starch is added to the outer Orbal channel. An addition rate of 50 pounds of starch every four hours is sufficient to maintain biological growth.

There is no known immediate hazard for short-term contact with IEP's WWTS process water. To minimize the risk of drowning, flotation devices are readily available for emergency rescue at the Orbal and all three clarifiers.

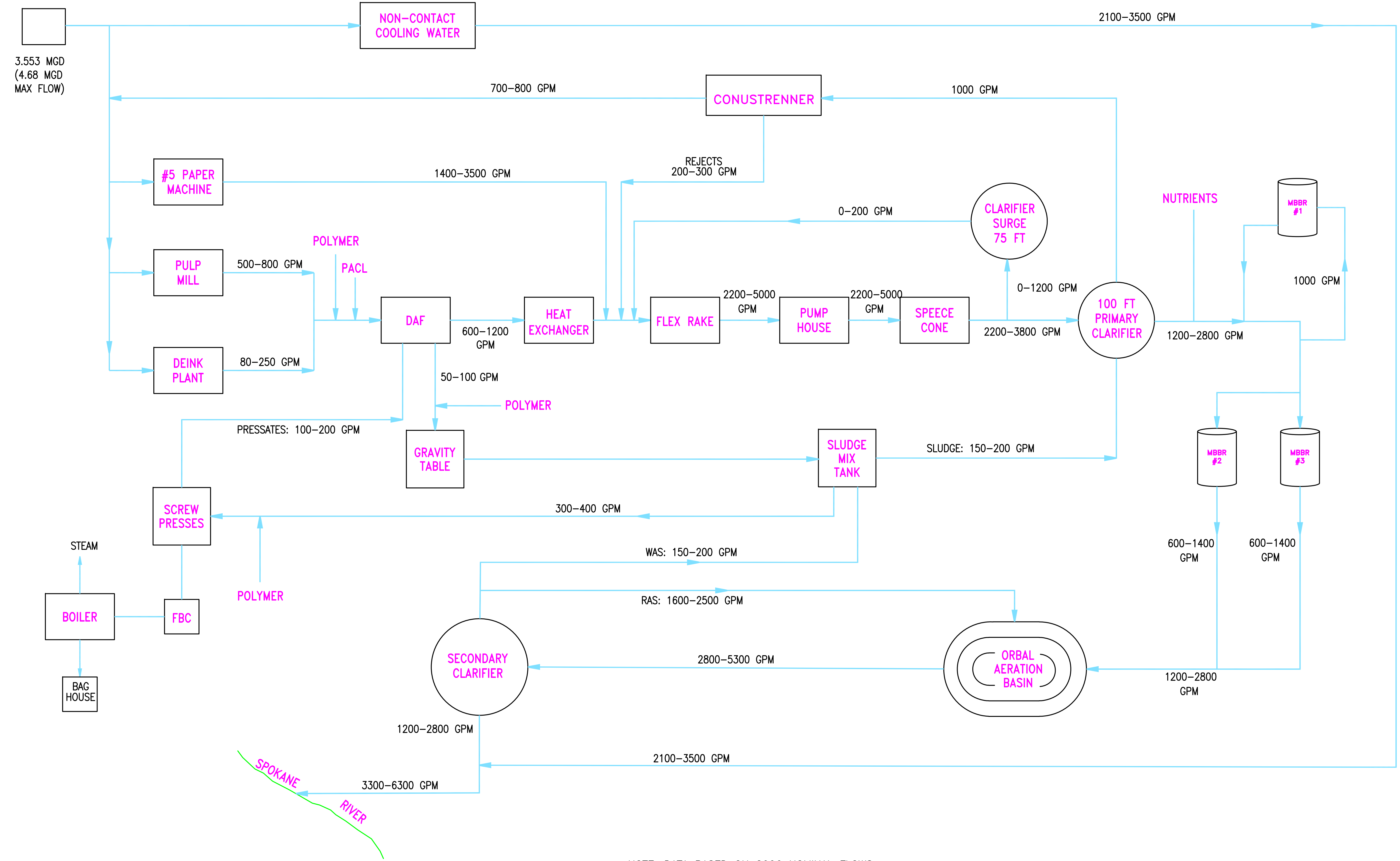
Recordkeeping Procedures:

All laboratory results are recorded first by hand and then transferred to Excel spreadsheets for formal reporting and electronic archiving. IEP's network currently has ten years of historical laboratory data readily available for review. Hand copies are filed away and eventually archived for later use. Additionally, print outs of the effluent system HMI screens are revised on a continual basis in the unlikely event that setpoints are lost.

Sample forms can be made available upon request.

MILL LINE DIAGRAM & WATER BALANCE

FACILITY: INLAND EMPIRE PAPER COMPANY, SPOKANE, WA



NOTE: DATA BASED ON 2006 NOMINAL FLOWS

AutoCAD FILE: IEP WATER BALANCE 2:03 PM 21DEC2006

Please type or print in the unshaded areas only	EPA ID Number *(Copy from Item 1 of Form 1)* **WAD 009069279**	*Form Approved* *OMB No. 2040-0086* *Approval expires 8-31-98*

Form **2C** NPDES

U.S. ENVIRONMENTAL PROTECTION AGENCY
APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER
EXISTING MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURAL OPERATIONS
Consolidated Permits Program

I. Outfall Location

For this outfall, list the latitude and longitude, (degrees, min.xxxx) and name of the receiving water(s)

Outfall Number *(list)*	Latitude Deg	Latitude Min	Longitude Deg	Longitude Min	Receiving Water *(name)*
001	***N47***	***41***	***W117***	***16***	***Spokane River***

II. Flows, Sources of Pollution, and Treatment Technologies

A. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed description in Item B. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined (*e.g., for certain mining activities*), provide a pictoral description of the nature and amount of any sources of water and any collection or treatment measures.

B. For each outfall, provide a description of (1) All operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, and storm water runoff; (2) The average flow contributed by each operation; and (3) The treatment received by the wastewater. Continue on additional sheets if necessary.

1. Outfall No. (list)	2. Operations Contributing Flow: a. OPERATION *(list)*	b. AVERAGE FLOW *(include units)*	3. Treatment: a. DESCRIPTION	b. LIST CODES FROM TABLE 2C-1	
001	***Treated wastewater and non-contact cooling water (NCCW) from newsprint manufacturing and intermittent storm water run-off***	***6.68 MGD***	***Screening***	***1-T***	
			Coagulation	***2-D***	
			Flocculation	***1-H***	
			Sedimentation	***1-U***	
			Reuse/Recycle of Treated Effluent	***4-C***	
			Flocculation/Flotation	***1-G***	***1-H***
			Gravity Thickening	***5-L***	
			Rotary Thickening	***5-_***	
			Incinerator	***5-O***	
			Activated Sludge	***3-A***	
			Sedimentation	***1-U***	
			Discharge to Surface Water	***4-A***	

CONTINUED FROM THE FRONT

C. Except for storm runoff, leaks, or spills, are any of the discharges described in Items II-A or B intermittent or seasonal?

☐ **YES** *(complete the following table)* ☒ **NO** *(go to Section III)*

1. OUTFALL NUMBER (list)	2. OPERATION(s) CONTRIBUTING FLOW (list)	3. FREQUENCY a. DAYS PER WEEK (specify average)	3. FREQUENCY b. MONTHS PER YEAR (specify average)	4. FLOW a. FLOW RATE (in mgd) 1. LONG TERM AVERAGE	4. FLOW a. FLOW RATE (in mgd) 2. MAXIMUM DAILY	4. FLOW b. TOTAL VOLUME (specify with units) 1. LONG TERM AVERAGE	4. FLOW b. TOTAL VOLUME (specify with units) 2. MAXIMUM DAILY	c. DURATION (in days)
N/A								

III. PRODUCTION

A. Does an effluent guideline limitation promulgated by EPA under Section 304 of the Clean Water Act apply to your facility?

☒ **YES** *(complete Item III-B)* ☐ **NO** *(go to Section IV)*

B. Are the limitations in the applicable effluent guideline expressed in terms of production *(or other measure of operation)*?

☒ **YES** *(complete Item III-C)* ☐ **NO** *(go to Section IV)*

C. If you answered "yes" to Item III-B, list the quantity which represents an actual measurement of your level of production, expressed in the terms and units used in the applicable effluent guideline, and indicate the affected outfalls.

1. AVERAGE DAILY PRODUCTION a. QUANTITY PER DAY	b. UNITS OF MEASURE	c. OPERATION, PRODUCT, MATERIAL, ETC. *(specify)*	2. AFFECTED OUTFALLS *(list outfall numbers)*
383	***BDTPD***	***Groundwood, Thermo-Mechanical Pulp (TMP), Subpart G***	***001***
162	***BDTPD***	***Deink Pulp - Old Newsprint (ONP), Subpart I***	***001***

IV. IMPROVEMENTS

A. Are you now required by any Federal, State, or local authority to meet any implementation schedule for the construction, upgrading, or operation of wastewater treatment equipment or practices or any other environmental programs which may affect the discharges described in this application? This includes, but is not limited to, permit conditions, administrative or enforcement orders, enforcement compliance schedule letters, stipulations, court orders, and grant or loan conditions.

☒ **YES** *(complete the following table)* ☐ **NO** *(go to Item IV-B)*

1. IDENTIFICATION OF CONDITION, AGREEMENT, ETC.	2. AFFECTED OUTFALLS a. No	2. AFFECTED OUTFALLS b. SOURCE OF DISCHARGE	3. BRIEF DESCRIPTION OF PROJECT	4. FINAL COMPLIANCE DATE a. REQUIRED	4. FINAL COMPLIANCE DATE b. PROJECTED
Dissolved Oxygen TMDL	***001***	***Process wastewater***	***DO TMDL has imposed significant reductions in total phosphorous, $CBOD_5$ and ammonia. IEP plans to achieve this reduction through a combination of internal nutrient management, water conservation, water reuse, installation of advance treatment technologies and delta elimination tools available through the DO TMDL.***	***11/01/21***	***11/01/21***

B. OPTIONAL: You may attach additional sheets describing any additional water pollution control programs *(or other environmental projects which may affect your discharges)* you now have underway or which you plan. Indicate whether each program is now underway or planned, and indicate your actual or planned schedules for construction.

☒ **MARK "X" IF DESCRIPTION OF ADDITIONAL CONTROL PROGRAM IS ATTACHED**

 CONTINUED ON PAGE 3

EPA ID Number *(Copy from Item 1 of Form 1)*
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V. INTAKE AND EFFLUENT CHARACTERISTICS

A, B, & C: See instructions before proceeding - Complete one set of tables or each outfall - Annotate the outfall number in the space provided.
NOTE: Tables V-A, V-B, and V-C are included on separate sheets number V-1 through V-9.

D: Use the space below t list any of the pollutants listed in Tables 2c-3 of the instructions, which you know or have reason to believe is discharged or may be discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it to be present and report any analytical data in your possession.

1. POLLUTANT	2. SOURCE	1. POLLUTANT	2. SOURCE
N/A			

VI. POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS

Is any pollutant listed in Item V-C a substance or a component of a substance which you currently use or manufacture as an intermediate or final product or byproduct?

☐ **YES** *(list all such pollutants below)* ☒ **NO** *(go to Item VI-B)*

CONTINUED FROM THE FRONT

VII. BIOLOGICAL TOXICITY TESTING DATA

Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last 3 years?

☒ **YES** *(identify the test(s) and describe their purpose below)* ☐ **NO** *(go to Section VIII)*

IEP's existing NPDES permit, WA-000082-5, requires the facility to perform acute and chronic effluent toxicity testing twice during the current permit cycle (S13.E and S14.E). The samples are to be taken once during the last summer and during the last winter preceding the submission of the permit renewal application. Each toxicity test to date performed on IEP's final effluent demonstrated no acute or chronic toxicity. The most summer and winter testing events were in 2015 with 100% survivability in 100% effluent for the acute condition. There was 90% survivability in 100% effluent for the chronic condition.

VIII. CONTRACT ANALYSIS INFORMATION

Were any of the analyses reported in Item V performed by a contract laboratory or consulting firm?

☒ **YES** *(list the name, address, and telephone number of, and pollutants analyzed by, each such laboratory or firm below)* ☐ **NO** *(go to Section IX)*

A. NAME	B. ADDRESS	C. TELEPHONE *(area code & no.)*	D. POLLUTANTS ANALYZED *(list)*
Anatek Labs, Inc	***504 E Sprague Ave Spokane, WA 99202***	***(509) 838-3999***	***All required tests with the exception of BOD, TSS, Total P, pH and Temperature***
		( )	
		( )	
		( )	
		( )	
		( )	
		( )	
		( )	
		( )	
		( )	
		( )	
		( )	

IX. CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A. NAME & OFFICIAL TITLE *(type or print)*	B. PHONE NO. *(area code & no.)*
Douglas P. Krapas, Environmental Manager	***(509) 924-1911***
C. SIGNATURE	D. DATE SIGNED ***April 29, 2016***

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets *(use the same format)* instead of completing these pages. SEE INSTRUCTIONS.

EPA I.D. NUMBER *(copy from Item 1 of Form 1)*
WAD 009069279

V. INTAKE AND EFFLUENT CHARACTERISTICS *(continued from page 3 of Form 2-C)*

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT							3. UNITS *(specify if blank)*		4. INTAKE *(optional)*		
	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG. VALUE *(if available)*		d. NO. OF ANALYSIS	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
a. Biochemical Oxygen Demand *(BOD)*	***49***	***2519***	***25***	***1318***	***10***	***526***	***364***	***ppm***	***lbs***			
b. Chemical Oxygen Demand *(COD)*	***91.1***	***4687***					***1***	***mg/L***	***lbs***			
c. Total Organic Carbon *(TOC)*	***48.9***	***2516***					***1***	***mg/L***	***lbs***			
d. Total Suspended Solids *(TSS)*	***104***	***5384***	***21***	***1084***	***10***	***541***	***365***	***ppm***	***lbs***			
e. Ammonia *(as N)*	***0.02***	***1.03***					***1***	***mg/L***	***lbs***			
f. Flow	Value ***7.60***		Value ***7.14***		Value ***6.68***		***365***		***MGD***	Value		
g. Temperature *(winter)*	Value ***28.9***		Value ***26.1***		Value ***23.6***		***89***	°C		Value		
h. Temperature *(summer)*	Value ***31.7***		Value ***28.5***		Value ***26.2***		***94***	°C		Value		
i. pH	Minimum ***6.8***	Maximum ***8.3***	Minimum ***7.1***	Maximum ***8.2***			***365***	STANDARD UNITS				

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitation guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK 'X'		3. EFFLUENT							4. UNITS *(specify if blank)*		5. INTAKE *(optional)*		
	a. BELIEVED PRESENT	B. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG. VALUE *(if available)*		d. NO. OF ANALYSIS	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
a. Bromide (24959-67-9)	☐	☒	***N/A***	***N/A***					***0***					
b. Chlorine, Total Residual	☒	☐	***0.05***	***2.57***					***1***	***mg/L***	***lbs***			
c. Color	☒	☐	***100***	***N/A***					***1***	***CU***				
d. Fecal Coliform	☒	☐	***19500***	***N/A***			***4277***		***12***	***cfu/ 100mL***				
e. Fluoride (16984-48-8)	☒	☐	***ND***	***0***					***1***	***mg/L***	***lbs***			
f. Nitrate-Nitrite *(as N)*	☒	☐	***0.1***	***5.14***					***1***	***mg/L***	***lbs***			

CONTINUE ON REVERSE

ITEM V-B CONTINUED FROM FRONT

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK 'X'		3. EFFLUENT							4. UNITS *(specify if blank)*		5. INTAKE *(optional)*		
	a. BELIEVED PRESENT	b. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG. VALUE *(if available)*		d. NO. OF ANALYSIS	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
g. Nitrogen, Total Organic *(as N)*	☒	☐	*1.78*	*91.57*					*1*	*mg/L*	*lbs*			
h. Oil and Grease	☐	☒	*ND*	*0*					*1*	*mg/L*	*lbs*			
i. Phosphorus *(as P)*, Total (7723-14-0)	☒	☐	*0.91*	*54.90*	*0.26*	*13.27*	*0.17*	*9.26*	*104*	*ppm*	*lbs*			
j. Radioactivity														
(1) Alpha, Total	☒	☐	*ND*	*0*					*1*	*pCi/L*				
(2) Bets, Total	☒	☐	*4.99*						*1*	*pCi/L*				
(3) Radium, Total	☒	☐	*0.331*						*1*	*pCi/L*				
(4) Radium 226, Total	☒	☐	*0.519*						*1*	*pCi/L*				
k. Sulfate *(as SO_4) (14808-79-8)*	☒	☐	*71.8*	*3693*					*1*	*mg/L*	*lbs*			
l. Sulfide (as S)	☒	☐	*ND*	*0*					*1*	*mg/L*	*lbs*			
m. Sulfite *(as SO_3)(14265-45-3)*	☒	☐	*ND*	*0*					*1*	*mg/L*	*lbs*			
n. Surfactants	☐	☒	*N/A*	*N/A*					*0*					
o. Aluminum, Total (7429-90-5)	☒	☐	*0.405*	*20.84*					*1*	*mg/L*	*lbs*			
p. Barium, Total (7440-39-3)	☒	☐	*0.051*	*2.62*					*1*	*mg/L*	*lbs*			
q. Boron, Total (7440-42-8)	☐	☒	*0.036*	*1.85*					*1*	*mg/L*	*lbs*			
r. Cobalt, Total (7440-48-4)	☐	☒	*0.001*	*0.05*					*1*	*mg/L*	*lbs*			
s. Iron, Total (7439-89-4)	☒	☐	*0.170*	*8.74*					*1*	*mg/L*	*lbs*			
t. Magnesium, Total (7439-95-4)	☒	☐	*6.45*	*331.82*					*1*	*mg/L*	*lbs*			
u. Molybdenum, Total (7439-98-7)	☒	☐	*0.002*	*0.10*					*1*	*mg/L*	*lbs*			
v. Manganese, Total (7439-96-5)	☒	☐	*0.644*	*33.13*					*1*	*mg/L*	*lbs*			
w. Tin, Total (7440-31-5)	☐	☒	*ND*	*0*					*1*	*mg/L*	*lbs*			
x. Titanium, Total (7440-32-6)	☒	☐	*0.003*	*0.15*					*1*	*mg/L*	*lbs*			

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EPA I.D. NUMBER *(copy from Item 1 of Form 1)* **WAD 009069279** | OUTFALL NUMBER **001**

PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a *(secondary industries, nonprocess wastewater outfalls, and non-required GC/MS fractions)*, mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for that pollutant. If you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2,4 dinitrophenol, or 2-methyl-4, 6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table *(all 7 pages)* for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK 'X'			3. EFFLUENT							4. UNITS *(specify if blank)*		5. INTAKE *(optional)*		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG. VALUE *(if available)*		d. NO. OF ANALYSIS			a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS		a. CONCENTRATION	b. MASS	(1) CONCENTRATION	(2) MASS	
METALS, CYANIDE, AND TOTAL PHENOLS															
1m. Antimony, Total (7440-36-0)	☒	☐	☐	***ND***	***0***					***1***	***mg/L***	***lbs***			
2M. Arsenic, Total (7440-38-2)	☒	☐	☐	***0.003***	***0.15***					***1***	***mg/L***	***lbs***			
3M. Beryllium, Total (7440-41-7)	☒	☐	☐	***ND***	***0***					***1***	***mg/L***	***lbs***			
4M. Cadmium, Total (7440-43-9)	☒	☐	☐	***ND***	***0***					***1***	***mg/L***	***lbs***			
5M Chromium, Total (7440-47-3)	☒	☐	☐	***0.001***	***0.05***					***1***	***mg/L***	***lbs***			
6M Copper, Total (7440-50-8)	☒	☐	☐	***0.018***	***0.93***					***1***	***mg/L***	***lbs***			
7M lead, Total (7439-92-1)	☒	☐	☐	***0.002***	***0.11***					***1***	***mg/L***	***lbs***			
8M Mercury, Total (7439-97-6)	☒	☐	☐	***0.001***	***0.00005***					***1***	***ug/L***	***lbs***			
9M Nickel, Total (7440-02-0)	☒	☐	☐	***0.002***	***0.11***					***1***	***mg/L***	***lbs***			
10M Selenium, Total (7782-49-2)	☒	☐	☐	***ND***	***0***					***1***	***mg/L***	***lbs***			
11M Silver, Total (7440-22-4)	☒	☐	☐	***ND***	***0***					***1***	***mg/L***	***lbs***			
12M Thallium, Total (7440-28-0)	☒	☐	☐	***ND***	***0***					***1***	***mg/L***	***lbs***			
13M Zinc, Total (7440-66-6)	☒	☐	☐	***0.080***	***4.12***					***1***	***mg/L***	***lbs***			
14M Cyanide, Total (57-12-5)	☒	☐	☐	***0.01***	***0.51***					***1***	***mg/L***	***lbs***			
15M Phenols, Total	☒	☐	☐	***ND***	***0***					***1***	***mg/L***	***lbs***			
DIOXIN															
2,3,7,8-Tetra-chlorodibenzo-P-Dioxin (1764--01-6)	☒	☐	☐	DESCRIBE RESULTS ***ND***											

 CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK 'X'			3. EFFLUENT							4. UNITS *(specify if blank)*		5. INTAKE *(optional)*		
	a. TESTING REQUIRED	b. BELIEVED PRE-SENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE *(if available)*		c. LONG TERM AVRG. VALUE *(if available)*		d. NO. OF ANALYSIS			a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS		a. CONCENTRATION	b. MASS	(1) CONCENTRATION	(2) MASS	
GC/MS - VOLATILE COMPOUNDS															
1V. Acrolein (107-02-8)	☒	☐	☐	ND	0					1	ug/L	lbs			
2V. Acrylonitrile (107-13-1)	☒	☐	☐	ND	0					1	ug/L	lbs			
3V. Benzene (71-43-2)	☒	☐	☐	ND	0					1	ug/L	lbs			
4V. Bis (Chloromethyl) Ether (542-88-1)	☒	☐	☐	N/A	N/A					0	ug/L	lbs			
5V. Bromoform (75-25-2)	☒	☐	☐	ND	0					1	ug/L	lbs			
6V. Carbon Tetrachloride (56-23-5)	☒	☐	☐	ND	0					1	ug/L	lbs			
7V. Chlorobenzene (108-90-7)	☒	☐	☐	ND	0					1	ug/L	lbs			
8V. Chlorodibromomethane (124-48-1)	☒	☐	☐	ND	0					1	ug/L	lbs			
9V. Chloroethane (75-00-3)	☒	☐	☐	ND	0					1	ug/L	lbs			
10V. 2-Chloroethylvinyl Ether (110-75-8)	☒	☐	☐	ND	0					1	ug/L	lbs			
11V. Chloroform (67-66-3)	☒	☐	☐	ND	0					1	ug/L	lbs			
12V. Dichlorobromoethane (75-27-4)	☒	☐	☐	ND	0					1	ug/L	lbs			
13V. Dichlorodifluoromethane (75-71-8)	☒	☐	☐	ND	0					1	ug/L	lbs			
14V. 1,1-Dichloroethane (75-27-3)	☒	☐	☐	ND	0					1	ug/L	lbs			
15V. 1,2-Dichloroethane (107-06-2)	☒	☐	☐	ND	0					1	ug/L	lbs			
16V. 1,1-Dichloroethylene (7535-4)	☒	☐	☐	ND	0					1	ug/L	lbs			
17V. 1,2-Dichloropropane (78-87-5)	☒	☐	☐	ND	0					1	ug/L	lbs			
18V. 1,3-Dichloropropylene (542-75-6)	☒	☐	☐	ND	0					1	ug/L	lbs			
19V. Ethylbenzene (100-41-4)	☒	☐	☐	ND	0					1	ug/L	lbs			
20V. Methyl Bromide (74-83-9)	☒	☐	☐	ND	0					1	ug/L	lbs			
21V. Methyl Chloride (74-87-3)	☒	☐	☐	ND	0					1	ug/L	lbs			

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EPA I.D. NUMBER *(copy from Item 1 of Form 1)*: *WAD 009069279*

OUTFALL NUMBER: *001*

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK 'X' a. TESTING REQUIRED	2. MARK 'X' b. BELIEVED PRESENT	2. MARK 'X' c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	3. EFFLUENT a. MAXIMUM DAILY VALUE (2) MASS	3. EFFLUENT b. MAXIMUM 30 DAY VALUE *(if available)* (1) CONCENTRATION	3. EFFLUENT b. MAXIMUM 30 DAY VALUE *(if available)* (2) MASS	3. EFFLUENT c. LONG TERM AVRG. VALUE *(if available)* (1) CONCENTRATION	3. EFFLUENT c. LONG TERM AVRG. VALUE *(if available)* (2) MASS	3. EFFLUENT d. NO. OF ANALYSIS	4. UNITS *(specify if blank)* a. CONCENTRATION	4. UNITS *(specify if blank)* b. MASS	5. INTAKE *(optional)* a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	5. INTAKE *(optional)* a. LONG TERM AVERAGE VALUE (2) MASS	5. INTAKE *(optional)* b. NO. OF ANALYSES
GC/MS - VOLATILE COMPOUNDS *(continued)*															
22 V. Methylene Chloride (75-09-2)	☒	☐	☐	ND	0					1	ug/L	lbs			
23V. 1,1,2,2-Tetra-Chloroethane (79-34-5)	☒	☐	☐	ND	0					1	ug/L	lbs			
24V. Tetrachloro-ethylene (127-18-4)	☒	☐	☐	ND	0					1	ug/L	lbs			
25V. Toluene (108-88-3)	☒	☐	☐	ND	0					1	ug/L	lbs			
26V. 1,2-Trans-Dichloroethylene (156-60-5)	☒	☐	☐	ND	0					1	ug/L	lbs			
27V. 1,1,1-Tri-chloroethane (71-55-6)	☒	☐	☐	ND	0					1	ug/L	lbs			
28V. 1,1,2-Tri-chloroethane (79-00-5)	☒	☐	☐	ND	0					1	ug/L	lbs			
29V. Trichloro-ethylene (79-01-6)	☒	☐	☐	ND	0					1	ug/L	lbs			
30V. Trichloro-fluoromethane (75-69-4)	☒	☐	☐	ND	0					1	ug/L	lbs			
31V. Vinyl Chloride (75-01-4)	☒	☐	☐	ND	0					1	ug/L	lbs			
GC/MS FRACTION - ACID COMPOUNDS															
1A. 2-Chlorophenol (95-57-8)	☒	☐	☐	ND	0					1	ug/L	lbs			
2A. 2,4-Dichloro-phenol (120-83-2)	☒	☐	☐	ND	0					1	ug/L	lbs			
3A. 2,4-Dimethyl-phenol (105-67-9)	☒	☐	☐	ND	0					1	ug/L	lbs			
4A. 4,6-Dinitro-O-cresol (534-52-1)	☒	☐	☐	ND	0					1	ug/L	lbs			
5A. 2,4-Dinitro-phenol (51-28-5)	☒	☐	☐	ND	0					1	ug/L	lbs			
6A. 2-Nitro-phenol (88-75-5)	☒	☐	☐	ND	0					1	ug/L	lbs			
7A. 4-Ntro-phenol (100-02-7)	☒	☐	☐	ND	0					1	ug/L	lbs			
8A. P-Chloro-M-Cresol (59-50-7)	☒	☐	☐	ND	0					1	ug/L	lbs			
9A. Penta-chlorophenol (87-86-5)	☒	☐	☐	ND	0					1	ug/L	lbs			
10A. Phenol (108-95-2)	☒	☐	☐	ND	0					1	ug/L	lbs			
11A. 2,4,6-Tri-chlorophenol (88-06-2)	☒	☐	☐	ND	0					1	ug/L	lbs			

CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NO. (*if available*)	2. MARK 'X'			3. EFFLUENT							4. UNITS (*specify if blank*)		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSIS	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS															
1B. Acenphthene (83-32-9)	☒	☐	☐	ND	0					1	ug/L	lbs			
2B. Acenaphtylene (208-96-8)	☒	☐	☐	ND	0					1	ug/L	lbs			
3B. Anthracene (120-12-7)	☒	☐	☐	ND	0					1	ug/L	lbs			
4B. Benzidine (92-87-5)	☒	☐	☐	ND	0					1	ug/L	lbs			
5B. Benzo (a) Anthracene (56-55-3)	☒	☐	☐	ND	0					1	ug/L	lbs			
6B. Benzo (a) Pyrene (50-32-8)	☒	☐	☐	ND	0					1	ug/L	lbs			
7B. 3,4-Benzo-fluoranthene (205-99-2)	☒	☐	☐	ND	0					1	ug/L	lbs			
8B. Benzo (ghi) Perylene (191-24-2)	☒	☐	☐	ND	0					1	ug/L	lbs			
9B. Benzo (k) Fluoranthene (207-08-9)	☒	☐	☐	ND	0					1	ug/L	lbs			
10B. Bis (2-Chloroethoxy) Methane (111-91-1)	☒	☐	☐	ND	0					1	ug/L	lbs			
11B. Bis (2-Chloro-ethyl) Ether (111-44-4)	☒	☐	☐	ND	0					1	ug/L	lbs			
12B. Bis (2-Chloroisopropyl) Ether (108-60-1	☒	☐	☐	ND	0					1	ug/L	lbs			
13B. Bis(2-Ethyl-hexyl) Phthalate (117-81-7)	☒	☐	☐	ND	0					1	ug/L	lbs			
14 B. 4-Bromo-phenyl Phenyl Ether (101-55-3)	☒	☐	☐	ND	0					1	ug/L	lbs			
15B Butyl Benzyl Phthalate (85-68-7)	☒	☐	☐	ND	0					1	ug/L	lbs			
16B. 2-Chloro-naphthalene (91-58-7)	☒	☐	☐	ND	0					1	ug/L	lbs			
17B. 4-Chloro-phenyl Phenyl Ether (7005-72-3)	☒	☐	☐	ND	0					1	ug/L	lbs			
18B. Chrysene (218-01-9)	☒	☐	☐	ND	0					1	ug/L	lbs			
19B. Dibenzo (a,h) Anthracene (53-70-3)	☒	☐	☐	ND	0					1	ug/L	lbs			
20B. 1,2-Dichloro-benzene (95-50-1)	☒	☐	☐	ND	0					1	ug/L	lbs			
21B. 1,3-Dichloro-benzene (541-73-1)	☒	☐	☐	ND	0					1	ug/L	lbs			

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EPA I.D. NUMBER *(copy from Item 1 of Form 1)* **WAD 009069279**

OUTFALL NUMBER **001**

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK 'X' a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE *(if available)* (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE *(if available)* (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSIS	4 *if blank)* a. CONCENTRATION	b. MASS	5. INTAKE *(optional)* a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
GC/MS - BASE/NEUTRAL COMPOUNDS *(continued)*															
22B. 1,4-Dichlorobenzene (106-46-7)	☒	☐	☐	ND	0					1	ug/L	lbs			
23B. 3,3'-Dichlorobenzidine (91-94-1)	☒	☐	☐	ND	0					1	ug/L	lbs			
24B. Diethyl Phthalate (84-66-2)	☒	☐	☐	ND	0					1	ug/L	lbs			
25B. Dimethyl Phthalate (131-11-3)	☒	☐	☐	ND	0					1	ug/L	lbs			
26B. Di-N-Butyl Phthalate (84-74-2)	☒	☐	☐	ND	0					1	ug/L	lbs			
27B. 2,4-Dinitrotoluene (121-14-2)	☒	☐	☐	ND	0					1	ug/L	lbs			
28B. 2,6-Dinitrotoluene (606-20-2)	☒	☐	☐	ND	0					1	ug/L	lbs			
29B. Di-N-Octyl Phthalate (117-84-0)	☒	☐	☐	ND	0					1	ug/L	lbs			
30B. 1,2-Diphenylhydrazine (as Azobenzene) (122-66-7)	☒	☐	☐	ND	0					1	ug/L	lbs			
31B. Fluoranthene (206-44-0)	☒	☐	☐	ND	0					1	ug/L	lbs			
32B. Fluorene (86-73-7)	☒	☐	☐	ND	0					1	ug/L	lbs			
33B. Hexachlorobenzene (118-74-1)	☒	☐	☐	ND	0					1	ug/L	lbs			
34B. Hexachlorobutadiene (87-68-3)	☒	☐	☐	ND	0					1	ug/L	lbs			
35B. Hexachlorocyclopentadiene (77-47-4)	☒	☐	☐	ND	0					1	ug/L	lbs			
36B. Hexachloroethane (67-72-1)	☒	☐	☐	ND	0					1	ug/L	lbs			
37B. Indeno (1,2,3-cd) Pyrene (193-39-5)	☒	☐	☐	ND	0					1	ug/L	lbs			
38B. Isophorone (78-59-1)	☒	☐	☐	ND	0					1	ug/L	lbs			
39B. Napthalene (91-20-3)	☒	☐	☐	ND	0					1	ug/L	lbs			
40B. Nitrobenzene (98-95-3)	☒	☐	☐	ND	0					1	ug/L	lbs			
41B. N-Nitrosodimethylamine (62-75-9)	☒	☐	☐	ND	0					1	ug/L	lbs			
42B. N-Nitrosdi-N-Propylamine (621-64-7)	☒	☐	☐	ND	0					1	ug/L	lbs			

CONTINUE ON REVERSE

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK 'X' a. TESTING REQUIRED	2. MARK 'X' b. BELIEVED PRESENT	2. MARK 'X' c. BELIEVED ABSENT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	2. EFFLUENT a. MAXIMUM DAILY VALUE (2) MASS	2. EFFLUENT b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	2. EFFLUENT b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	2. EFFLUENT c. LONG TERM AVRG. VALUE *(if available)* (1) CONCENTRATION	2. EFFLUENT c. LONG TERM AVRG. VALUE *(if available)* (2) MASS	2. EFFLUENT d. NO. OF ANALYSIS	3. UNITS *(specify if blank)* a. CONCENTRATION	3. UNITS *(specify if blank)* b. MASS	4. INTAKE *(optional)* a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	4. INTAKE *(optional)* a. LONG TERM AVERAGE VALUE (2) MASS	4. INTAKE *(optional)* b. NO. OF ANALYSES
GC/MS FRACTION - BASE/NEUTRAL COMPOUNDS *(continued)*															
43B. N-Nitrosodiphenylamine (86-30-6)	☒	☐	☐	ND	0					1	ug/L	lbs			
44B. Phenanthrene (85-01-/	☒	☐	☐	ND	0					1	ug/L	lbs			
45B. Pyrene (129-00-0)	☒	☐	☐	ND	0					1	ug/L	lbs			
46B. 1,2,4-Trichlorobenzene (120-82-1)	☒	☐	☐	ND	0					1	ug/L	lbs			
GC/MS FRACTION - PESTICIDES															
1P. Aldrin (309-00-2)	☒	☐	☐	ND	0					1	ug/L	lbs			
2P. α-BHC (319-84-6	☒	☐	☐	ND	0					1	ug/L	lbs			
3P. β-Bhc (319-85-7)	☒	☐	☐	ND	0					1	ug/L	lbs			
4P. γ-BHC (58-89-9)	☒	☐	☐	ND	0					1	ug/L	lbs			
5P. δ-BHC (319-86-8)	☒	☐	☐	ND	0					1	ug/L	lbs			
6P. Chlordane (57-74-9)	☒	☐	☐	ND	0					1	ug/L	lbs			
7P. 4,4'-DDT (50-29-3)	☒	☐	☐	ND	0					1	ug/L	lbs			
8P. 4,4'-DDE (72-55-9)	☒	☐	☐	ND	0					1	ug/L	lbs			
9P. 4,4'-DDD (72-54-8)	☒	☐	☐	ND	0					1	ug/L	lbs			
10P. Dieldrin (60-57-1)	☒	☐	☐	ND	0					1	ug/L	lbs			
11P. α-Endo-sulfan (115-29-7)	☒	☐	☐	ND	0					1	ug/L	lbs			
12P. β-Endo-sulfan (115-29-7	☒	☐	☐	ND	0					1	ug/L	lbs			
13P. Endosulfan Sulfate (1031-07-8)	☒	☐	☐	ND	0					1	ug/L	lbs			
14P. Endrin (72-20-8)	☒	☐	☐	ND	0					1	ug/L	lbs			
15P. Endrin Aldehyde (7421-93-4)	☒	☐	☐	ND	0					1	ug/L	lbs			
16P. Heptachlor (76-44-8)	☒	☐	☐	ND	0					1	ug/L	lbs			

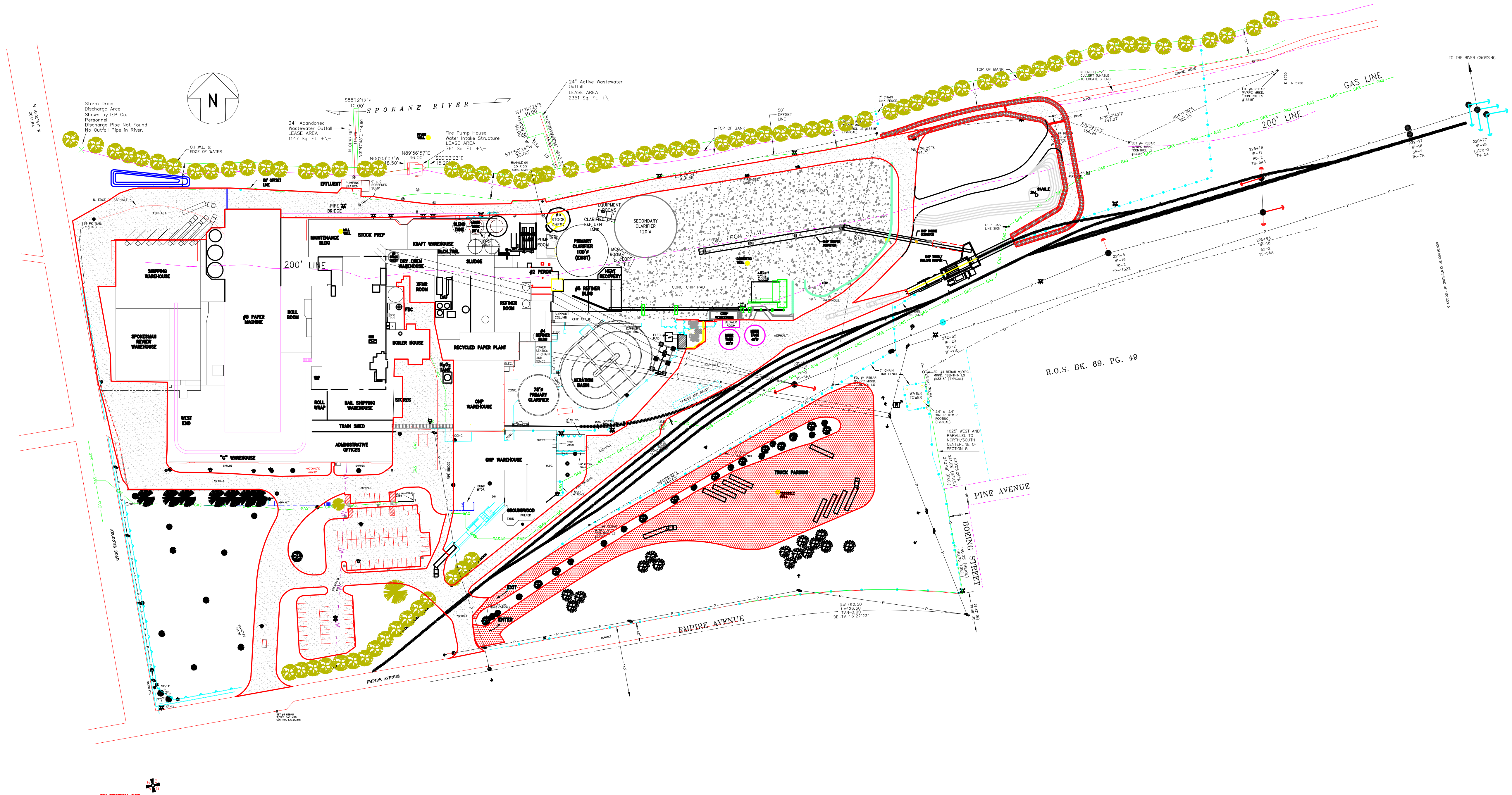
CONTINUE ON PAGE V-9

CONTINUED FROM PAGE V-6

EPA I.D. NUMBER *(copy from Item 1 of Form 1)* **WAD 009069279**

OUTFALL NUMBER **001**

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK 'X' a. TESTING REQUIRED	2. MARK 'X' b. BELIEVED PRESENT	2. MARK 'X' c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	3. EFFLUENT a. MAXIMUM DAILY VALUE (2) MASS	3. EFFLUENT b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	3. EFFLUENT b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	3. EFFLUENT c. LONG TERM AVRG. VALUE *(if available)* (1) CONCENTRATION	3. EFFLUENT c. LONG TERM AVRG. VALUE *(if available)* (2) MASS	3. EFFLUENT d. NO. OF ANALYSIS	4. UNITS *(specify if blank)* a. CONCENTRATION	4. UNITS *(specify if blank)* b. MASS	5. INTAKE *(optional)* a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	5. INTAKE *(optional)* a. LONG TERM AVERAGE VALUE (2) MASS	5. INTAKE *(optional)* b. NO. OF ANALYSES
GC/MS - PESTICIDES *(continued)*															
17P. Heptachlor Expxide (1024-57-3)	☒	☐	☐	ND	0					1	ug/L	lbs			
18P. PCB-1242 (53469-21-9)	☒	☐	☐	ND	0					1	ug/L	lbs			
19P. PCB-1254 (11097-69-1)	☒	☐	☐	ND	0					1	ug/L	lbs			
20P. PCB-1221 (11104-28-2)	☒	☐	☐	ND	0					1	ug/L	lbs			
21P. PCB-1232 (11141-16-5)	☒	☐	☐	ND	0					1	ug/L	lbs			
22P. PCB-1248 (12672-29-6)	☒	☐	☐	ND	0					1	ug/L	lbs			
23P. PCB-1260 (11096-82-5)	☒	☐	☐	ND	0					1	ug/L	lbs			
24P. PCB-1016 (12674-11-2)	☒	☐	☐	ND	0					1	ug/L	lbs			
25P. Toxa-phene (8001-35-2)	☒	☐	☐	ND	0					1	ug/L	lbs			



AutoCAD FILE: 101-003 4:30 PM 05APR2004

DWG. NO.	TITLE	DWG. NO.	TITLE	NO.	DESCRIPTION	BY DATE	NO.	DESCRIPTION	BY DATE
REFERENCE		REFERENCE			REVISIONS			REVISIONS	

INLAND EMPIRE PAPER COMPANY

MILLWOOD WASHINGTON

SCALE: 1"=100'-0"		DAY	MONTH	YEAR
DRAWN BY:	KMR	16	OCT	2003
CHECKED BY:				
APPROVED:				

MILL SITE PLAN

PROJECT NO.	DRAWING NUMBER	REV.
	D101-003	0