Fact Sheet for Re-proposal of 5-Day Biochemical Oxygen Demand (BOD_5) and Total Suspended Solids (TSS) Percent Removal Effluent Limits

The U.S. Environmental Protection Agency (EPA)
Proposes to Modify a National Pollutant Discharge Elimination System (NPDES) Permit to Discharge Pollutants Pursuant to the Provisions of the Clean Water Act (CWA) to:

City of Harrison
Wastewater Treatment Plant

Public Comment Start Date: May 22, 2019
Public Comment Expiration Date: June 22, 2019

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The EPA Proposes to Modify the NPDES Permit
The EPA proposes to modify the NPDES permit for the facility referenced above. The draft permit places conditions on the discharge of pollutants from the wastewater treatment plant to waters of the United States. In order to ensure protection of water quality and human health, the permit places limits on the types and amounts of pollutants that can be discharged from the facility.

This Fact Sheet includes:
- information on public comment, public hearing, and appeal procedures
- a listing of proposed effluent limitations and other conditions for the facility
- a map and description of the discharge location
- technical material supporting the conditions in the permit

State Certification
The EPA requested a draft certification of the permit for this facility under Section 401 of the Clean Water Act from Idaho Department of Environmental Quality (IDEQ) on May 16, 2019. The EPA requested the draft certification, though the proposed permit is the same as the current effective permit, and IDEQ had provided final certification of that permit under Section 401 of the Clean Water Act.

IDEQ replied to the EPA that they do not believe a revised certification is necessary for this draft permit, because the permit limits have not changed, nor are there changes to the permit as a result of the remand that would change the nature of IDEQ's antidegradation analysis.

Public Comment

This fact sheet supports the EPA decision to public notice a new draft permit, which addresses the numeric effluent limits and percent removal requirements for BOD_5 and TSS. The EPA withdrew those limits from the final permit for this facility that the EPA issued on June 25, 2018 and that became effective on September 1, 2018. On August 14, 2018, following a petition to review the final permit filed with the EPA's Environmental Appeals Board, the EPA stayed the percent removal effluent limits for BOD_5 and TSS pursuant to 40 C.F.R. § 124.16(a)(2). Although the petition also raised concerns with the permit effluent limits for TSS concentration based on treatment equivalent to secondary treatment, the EPA did not stay these effluent limits because they were identical to the limits in the previous permit and were not directly contested or part of the relief sought by the petition.

The EPA is re-proposing the percent removal effluent limits for BOD_5 and TSS to provide opportunity for public comment on the technical justification supporting these limits and is re-proposing the effluent limit for TSS concentration based on treatment equivalent to secondary treatment with additional technical justification.

This fact sheet explains the rationale for allowing limits higher than required by the secondary treatment standards for TSS concentration limits and lower than required for TSS and BOD_5 percent removals limits. All other portions of the permit are unchanged from the current permit in effect. During this public comment period, the EPA is only accepting comments on these two provisions. See 40 CFR 124.19(j).

Persons wishing to comment on and/or request a Public Hearing for the draft permit must do so in writing by the expiration date of the Public Comment period. A request for a Public Hearing must state the nature of the issues to be raised as well as the requester's name, address and telephone number. All comments and requests for a Public Hearing must be in writing and should be submitted to the EPA as described in the Public Comments Section of the attached Public Notice.

After the Public Notice expires, and all comments have been considered, the EPA's Region 10 Director for the Water Division will make a final decision regarding the permit modification. Since this draft permit is the same as the currently issued permit, the effective date and expiration date of the currently issued permit will remain unchanged. The permit conditions that were stayed in the current permit will become effective no less than 30 days after the issuance date, unless an appeal is submitted to the Environmental Appeals Board within 30 days pursuant to 40 CFR 124.19.

Documents are Available for Review

The draft NPDES permit and related documents can be reviewed or obtained by visiting or contacting the EPA's Region 10 Office in Seattle between 8:30 a.m. and 4:00 p.m., Monday through Friday at the address below. The draft permit, fact sheet, and other information are

available online at Region 10 NPDES website at https://www.epa.gov/npdes-permits/about-region-10s-npdes-permit-program.

U.S. EPA Region 10
1200 Sixth Avenue, Suite 155, MS: 19-C04
Seattle, Washington 98101

(206) 553-0523 or
Toll Free 1-800-424-4372 (within Alaska, Idaho, Oregon and Washington)

The fact sheet and draft permits are also available at:

EPA Idaho Operations Office
950 West Bannock Street, Suite 900
Boise, Idaho 83702

Idaho DEQ Boise Regional Office
1445 North Orchard Street
Boise, Idaho 83706

Idaho DEQ Coeur d'Alene Regional Office
2110 Ironwood Parkway
Coeur d'Alene, Idaho 83814

List of Tables

Acronyms

AML	Average Monthly Limit
AWL	Average Weekly Limit
BAT	Best Available Technology economically achievable
BCT	Best Conventional pollutant control Technology
BOD_5	Biochemical oxygen demand, five-day
BMP	Best Management Practices
°C	Degrees Celsius
CFR	Code of Federal Regulations
CFS	Cubic Feet per Second
CV	Coefficient of Variation
CWA	Clean Water Act
DMR	Discharge Monitoring Report
DO	Dissolved oxygen
EFH	Essential Fish Habitat
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FR	Federal Register
Gpd	Gallons per day
HUC	Hydrologic Unit Code
ICIS	Integrated Compliance Information System
IDEQ	Idaho Department of Environmental Quality
I/I	Infiltration and Inflow
lbs/day	Pounds per day
LTA	Long Term Average
mg/L	Milligrams per liter
Ml	Milliliters
ML	Minimum Level
µg/L	Micrograms per liter
mgd	Million gallons per day
MDL	Maximum Daily Limit or Method Detection Limit
N	Nitrogen

NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
O&M	Operations and maintenance
POTW	Publicly owned treatment works
QAP	Quality assurance plan
RP	Reasonable Potential
RWC	Receiving Water Concentration
SIC	Standard Industrial Classification
SS	Suspended Solids
s.u.	Standard Units
TMDL	Total Maximum Daily Load
TSD	Technical Support Document for Water Quality-based Toxics Control (EPA/505/2-90-001)
TSS	Total suspended solids
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
UV	Ultraviolet
WD	Water Division
WQBEL	Water quality-based effluent limit
WQS	Water Quality Standards
WWTP	Wastewater treatment plant

I. Background Information

A. General Information

This fact sheet provides information on the draft NPDES permit for the following entity:

Table 1. General Facility Information

NPDES Permit #:	ID0021997
Applicant:	City of Harrison Wastewater Treatment Plant
Type of Ownership:	Publicly Owned Treatment Works (POTW)
Physical Address:	2144 East Park Avenue Harrison, Idaho 83833
Mailing Address:	P.O. Box 73 Harrison, Idaho 83833
Facility Contact:	Wes Rice Public Works Supervisor publicworks@cityofharrison.org
Facility Location:	Latitude 47° 27' 31" N Longitude 116° 46' 08" N
Receiving Water	Anderson Slough
Facility Outfall	Latitude 47° 27' 31" N Longitude: 116° 46' 06" W

B. Permit History

The most recent NPDES permit for the City of Harrison (Harrison) was issued on June 28, 2018, became effect on September 1, 2018 and will expire on August 31, 2023.

On July 25, 2018, the Idaho Conservation League (ICL) filed a petition for review of the permit with the EPA's Environmental Appeals Board (EAB).[1]

On October 10, 2018, the EPA provided notice to the EAB and ICL that it was withdrawing the permit's percent removal effluent limits for BOD_5 and TSS because the EPA did not provide for public comment on the final percent removal effluent limits, which were less stringent than those proposed in the draft permit.[2] Although the petition also raised concerns with the permit effluent limits for TSS concentration based on treatment equivalent to secondary treatment, the EPA did not stay these effluent limits because they were identical to the limits in the previous permit and were not directly contested or part of the relief sought

[1] Idaho Conservation League, Petition NPDES Permit No. ID0021997 City of Harrison Wastewater Treatment Plant, July 25, 2018.
[2] Environmental Appeals Board, Order Dismissing Petition for Review, Oct. 11, 2018, https://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/be414b880a9b2b0e85258090006045b4/789ecbda6f9c30be852583230065afc2!OpenDocument.

by the petition. However, the EPA determined that the previous fact sheet did not explain the basis for allowing treatment equivalent to secondary treatment for TSS. The EAB notice stated that the EPA would prepare a new draft permit addressing the withdrawn portions of the permit. The remaining uncontested portions of the permit remain in effect. See 40 CFR 124.19(j).

This fact sheet supports the draft permit, which addresses the percent removal limits for BOD_5 and TSS, and the TSS numeric effluent limits.

C. Tribal Consultation

The Coeur d'Alene Tribe Reservation is located approximately 1.5 miles south of the City of Harrison. The EPA communicated with the Coeur d'Alene Tribe during the development of this permit and sent a letter inviting tribal consultation to the Coeur d'Alene Tribe in May 2019. The Coeur d'Alene Tribe has water quality standards that have been approved under 303(c) of the Clean Water Act.

II. Idaho NPDES Authorization

On June 5, 2018, the EPA approved Idaho's application to administer and enforce the Idaho Pollutant Discharge Elimination System (IPDES) program. IDEQ will be taking the IPDES program in phases over a four-year period in accordance with the Memorandum of Agreement (MOA) between IDEQ and the EPA, and subject to the EPA oversight and enforcement. Authority to issue POTW permits transferred to the State of Idaho on July 1, 2018.

The EPA reissued the City of Harrison WWTP permit on June 28, 2018 just prior to the transfer of NPDES authority to Idaho on July 1, 2018. After ICL appealed the permit on July 25, 2018, the EPA requested and was granted a remand on the appeal; therefore, the EPA retained authority for this permit until resolution of the appeal and reissuance of the modified permit.

Upon transfer of the permit to IDEQ, all documentation required by the permit will be sent to IDEQ rather than to the EPA and any decision under the permit to be made by the EPA or jointly between the EPA and IDEQ will be made solely by IDEQ. Permittees will be notified by IDEQ when this transition occurs.

III. Facility Information and Receiving Water

The fact sheet dated May 11, 2018 provides information on the facility and the receiving water. Appendix A includes an aerial photo and schematic of the facility's operations.

IV. Effluent Limitations and Monitoring

This fact sheet addresses the justification for BOD_5 and TSS percent removal requirements, and TSS concentration limits based on treatment equivalent to secondary treatment. This fact sheet provides additional information about the basis and rationale for those decisions. Public notice of the revisions provides for the opportunity for the public to comment.

The EPA did not reconsider any other effluent limits or permit conditions for this facility; therefore, the basis for those permit provisions remains as described in the record supporting

the previously issued permit. See also the fact sheet dated May 11, 2018 and the *Response to Comments on the Draft NPDES Permit for the City of Harrison* dated June 25, 2018, (Permit Response to Comments) (EPA 2018).[3]

A. Treatment Equivalent to Secondary Treatment

40 CFR 133.105 provides the effluent limits associated with equivalent to secondary treatment requirements. Regulations under Part 133 and the EPA's NPDES Permit Writers' Manual provide the basis for whether effluent limits less stringent than the secondary treatment requirement limits for BOD_5 and TSS may be allowed. The regulations and manual describe three criteria that must be met for a facility to be eligible for treatment equivalent to secondary treatment limits:[4]

Criterion #1 - Consistently Exceeds Secondary Treatment Standards
The first criterion that must be satisfied to qualify for the equivalent to secondary standards is demonstrating that the BOD_5 and TSS effluent concentrations consistently achievable through proper operation and maintenance of the treatment works exceed the secondary treatment standards set forth in §133.102(a) and (b). The regulations at §133.101(f) define "effluent concentrations consistently achievable through proper operation and maintenance"

- (f)(1): For a given pollutant parameter, the 95th percentile value for the 30-day average effluent quality achieved by a treatment works in a period of at least 2 years, excluding values attributable to upsets, bypasses, operational errors, or other unusual conditions.
- (f)(2): A 7-day average value equal to 1.5 times the value derived under paragraph.

Criterion #2 - Principal Treatment Process
The second criterion that a facility must meet to be eligible for equivalent to secondary standards is that its principal treatment process must be a trickling filter or waste stabilization pond.

Criterion #3 - Provides Significant Biological Treatment
The third criterion for applying equivalent to secondary standards is that the treatment works provides significant biological treatment of municipal wastewater. The regulations at §133.101(k) define significant biological treatment as using an aerobic or anaerobic biological treatment process in a treatment works to consistently achieve a 30-day average of at least 65 percent removal of BOD_5.

The June 28, 2018 permit for Harrison WWTP carried forward the numeric limits for BOD_5 and TSS from the previous permit, which had determined that treatment equivalent to secondary treatment was appropriate for TSS, but not BOD_5. The EPA applied the criteria above to evaluate whether treatment equivalent to secondary criteria could be applied to

[3] EPA Region 10 NPDES Webpage, City of Harrison WWTP, https://www.epa.gov/npdes-permits/npdes-permit-city-harrison-wastewater-treatment-facility-idaho.
[4] EPA NPDES Permit Writers' Manual (2010), Page 5-3. https://www.epa.gov/sites/production/files/2015-09/documents/pwm_2010.pdf

BOD_5 and TSS. The Harrison WWTP meets the second criteria, since its primary treatment are two lagoons, or waste stabilization ponds. The May 11, 2018 fact sheet, Section III.A and Appendix A describes these lagoons and the complete treatment process at Harrison WWTP.

For the first and third criteria, the current permit used data from 2008 to July 2017, because the treatment plant experienced problems prior to 2008. This resulted in less treatment and higher effluent concentrations that are not representative of the operations. For the third criterion, the EPA calculated percent removals of the 30-day average BOD_5 and TSS from influent and used the 5th percentile of those values to determine if there was at least 65% removal of BOD_5 and TSS. This approach ensures that the percent removal is achieved the majority of time, since 95% of the other values are above the 5th percentile. The EPA also evaluated both BOD_5 and TSS percent removals to ensure that there was at least 65% removal for both pollutants, not just BOD_5.

Based on an evaluation of that data, TSS meets the three criteria for allowing treatment equivalent to secondary treatment. BOD_5 did not meet the first criterion, so is not eligible for treatment equivalent to secondary treatment. Table 2 below summarizes the results from the evaluation, which compares Harrison's WWTP data to the secondary treatment standards. Since more data were collected since the EPA issued the 2018 permit, the EPA also evaluated data from 2008-March 2019. This analysis yielded the same conclusions as shown in Table 3.

Table 2. Treatment Equivalent to Secondary Treatment Evaluation (2008-July 2017)*

Secondary Treatment Standard BOD5 and TSS monthly average= 30 mg/L	**Secondary Treatment Standard BOD5 and TSS weekly average= 45 mg/L**	
BOD_5; Monthly Average	**BOD_5; Weekly Average**	**BOD_5 30-day average % removal**
NO: 95th percentile = *27 mg/L* < 30 mg/L	NO: (95th percentile of monthly*1.5) = *43 mg/L* < 45 mg/L	YES: 5th percentile = *78%* > 65%
TSS; Monthly Average	**TSS; Weekly Average**	**TSS 30-day average % removal**
YES: 95th percentile = *38 mg/L* > 30 mg/L	YES: (95th percentile of monthly*1.5) = *57 mg/L* > 45 mg/L	YES: 5th percentile = *75%* > 65%
YES: Waste stabilization pond facilities are the primary treatment method.		

*Harrison WWTP data in italics and underlined

Table 3. Treatment Equivalent to Secondary Treatment Evaluation (2008-March 2019)*

Secondary Treatment Standard BOD5 and TSS monthly average= 30 mg/L	**Secondary Treatment Standard BOD5 and TSS weekly average= 45 mg/L**	
BOD_5; Monthly Average	**BOD_5; Weekly Average**	**BOD_5 30-day average % removal**
No: 95th percentile = *28 mg/L* < 30 mg/L	No: (95th percentile of monthly*1.5) = *44 mg/L* < 45 mg/L	Yes: 5th percentile = *77%* > 65%
TSS; Monthly Average	**TSS; Weekly Average**	**TSS 30-day average % removal**
Yes: 95th percentile = *35 mg/L* > 30 mg/L	Yes: (95th percentile of monthly*1.5) = *57 mg/L* > 45 mg/L	Yes: 5th percentile = *74%* > 65%
Yes: Waste stabilization pond facilities are the primary treatment method.		

*Harrison WWTP data in italics and underlined

Therefore, the permit applies the treatment equivalent to secondary treatment effluent limits for TSS and applies the technology-based effluent limits for BOD_5. Table 4 lists the basis and proposed effluent limits for BOD_5 and TSS in the permit.

Table 4. Proposed Effluent Limits for BOD_5 and TSS

	Monthly Average	**Weekly Average**	**Basis**
BOD_5	30 mg/L	45 mg/L	Technology-based effluent limits for secondary treatment (133.102(a)-(b))
TSS	45 mg/L	65 mg/L	Meets criteria for treatment equivalent to secondary treatment (133.105(b))

B. Percent Removal Requirements

As described in the *Response to Comments on the Draft NPDES Permit for the City of Harrison* dated June 25, 2018, 40 CFR 133.103(d) provides the basis for evaluating whether percent removals lower than 85 percent for BOD_5 and TSS may be allowed in a permit. 40 CFR 133.103(d)(1)-(3) describe three criteria the permittee must satisfactorily demonstrate:

1. The treatment works is consistently meeting, or will consistently meet, its permit effluent concentration limits but its percent removal requirements cannot be met due to less concentrated influent wastewater;
2. To meet the percent removal requirements, the treatment works would have to achieve significantly more stringent limitations than would otherwise be required by the concentration-based standards; and
3. The less concentrated influent wastewater is not the result of excessive I/I.

The EPA applied the criteria to evaluate whether Harrison WWTP is eligible for BOD_5 and TSS percent removals lower than 85 percent. In the current permit, the EPA reviewed Harrison WWTP's DMR data from 2008 to July 2017 to evaluate 40 CFR 133.103(d)(1). Since more data have been collected since the 2018 permit issuance, the EPA also evaluated data from August 2017 to March 2019.

Table 5 shows the BOD_5 and TSS violations between 2008 and March 2019. Harrison WWTP complied with their monthly and weekly average effluent limits for BOD_5 consistently with some exceptions. For BOD_5, three out of 97 data points violated the BOD_5 monthly average limits, representing 3% of the BOD_5 monthly average effluent concentrations from 2008 to March 2019. One out of 97 data points violated the BOD_5 weekly average limit, representing 1% of the BOD_5 weekly average effluent concentrations from 2008 to March 2019.

For TSS, two out of 97 data points violated the monthly average TSS limit. These violations were also relatively small (46 mg/L, 48 mg/L) compared to the permit limit (45 mg/L). Violations of the TSS monthly average limit represent 2% of the TSS effluent concentrations from 2008 to March 2019. There were no violations of the TSS weekly average permit limit. Because exceedances for BOD_5 and TSS were rare and relatively low, the EPA determined that Harrison WWTP is consistently meeting its permit effluent concentration limits.

Table 5. BOD_5 and TSS Numeric Effluent Limit Violations (2008-March 2019; violations in red)

BOD_5 - (Total number of monthly average samples = 97 samples)			
Date	**Monthly Average (mg/L) permit limit = 30 mg/L**	**Weekly Average (mg/L) permit limit = 45 mg/L**	**30-day Average % Removal**
7/31/2013	**31.4**	31.4	92%
8/31/2013	**39.35**	**52.9**	98%
4/30/2018	**31**	31	79%
TSS			
Date	**Monthly Average permit limit = 45 mg/L**	**Weekly Average permit limit = 65 mg/L**	**30-day Average % Removal**
6/30/2008	**46**	46	91%
7/31/2009	**48**	48	93%

The EPA then evaluated the second portion of the first criteria, whether the facility could consistently meet the 85% percent removal requirements, and if not, whether that was due to low influent wastewater. The previous permit had no percent removal requirements, so the EPA calculated the percent removal achieved by the Harrison WWTP by calculating the percent of BOD_5 and TSS removed from influent. Of 100 data points between 2008 and March 2019, there were 15 occurrences where Harrison WWTP did not attain at least 85% removal of BOD_5 from influent. These exceedances occurred regularly from 2010 to 2019 in different seasons and represent violations 15% of the time as shown in Table 6. The violations over several years and in different seasons shows that the Harrison WWTP cannot consistently meet percent removal requirements for BOD_5.

The EPA then evaluated whether this was due to low influent wastewater. Table 6 shows the influent concentrations when less than 85% removal of BOD_5 was achieved. The EPA compared these influent concentrations with all BOD_5 influent concentrations from 2008 to March 2019. All influent data ranged widely from 5.4 mg/L to 978 mg/L with an average of 252 mg/L. As shown in Table 6, 14 of 15 of the BOD_5 influent concentrations associated with less than 85% removal of BOD_5, were lower than the average BOD_5 of 252 mg/L, with values 16% to 97% lower than the overall average BOD_5 influent concentration. This shows that the lower percent removals for BOD_5 are linked to low BOD_5 influent concentrations.

Table 6. BOD_5 Exceedances of 85% Removal and Influent Concentrations (2008 - March 2019)

BOD_5			
Date	**Monthly Average Influent Concentrations (mg/L)**	**Influent comparison to average BOD_5 influent of 252 mg/L**	**% Removal**
2/8/2010	118	-53%	80%
4/30/2010	84	-67%	75%
11/30/2011	125	-50%	84%
6/30/2012	68	-73%	78%
12/31/2012	51	-80%	78%
3/31/2014	40	-84%	79%
7/31/2014	5.4	-98%	-15%
10/31/2015	132	-48%	83%
6/30/2016	123	-51%	78%
2/28/2017	114	-55%	83%
4/30/2018	145	-42%	79%
11/30/2018	340	+35%	83%
1/31/2019	120	-52%	75%
2/28/2019	127	-50%	66%
3/31/2019	211	-16%	75%

Similarly, the EPA evaluated whether Harrison WWTP could consistently remove at least 85% of TSS and whether that was due to low influent. Of 101 data points between 2008 and March 2019, there were 13 occurrences where Harrison WWTP did not attain at least 85% removal of TSS from influent. These exceedances occurred regularly from 2008 to 2019 in different seasons and represent violations 13% of the time, which shows that Harrison WWTP has difficulty in consistently meeting percent removal requirements for TSS.

The EPA then evaluated whether this was due to low influent concentrations. Table 7 shows the influent concentrations when less than 85% removal of TSS was achieved. The EPA compared these influent concentrations with all TSS influent concentrations from 2008 to March 2019. All TSS influent concentrations ranged widely from 24 mg/L to 2250 mg/L with an average of 343 mg/L. As shown in Table 7, all monthly average influent concentrations where treatment removed less than 85% of TSS were lower than the average TSS concentration, with values 47% to 93% lower than the overall average TSS influent

concentration. This shows that the lower percent removals for TSS are linked to low TSS influent concentrations.

Table 7. TSS Exceedances of 85% Removal (2008-March 2019)

TSS			
Date	**Monthly Average Influent**	**Influent comparison (% compared average TSS influent of 343 mg/L)**	**% Removal**
1/31/2008	29	-92%	82%
5/31/2008	123	-64%	72%
4/30/2010	55	-84%	47%
1/30/2011	52	-85%	81%
12/31/2012	51	-85%	71%
4/30/2013	68	-80%	44%
3/31/2015	53	-85%	75%
10/31/2015	62	-82%	82%
8/31/2016	180	-47%	79%
11/30/2018	124	-64%	83%
1/31/2019	124	-64%	75%
2/28/2019	24	-93%	66%
3/31/2019	28	-92%	75%

Based on this evaluation, the EPA determined that Harrison WWTP met the first criterion for having less than 85% removal requirements for BOD_5 and TSS.

The second criterion requires an evaluation of whether the facility would have to achieve significantly more stringent requirements than would be required by concentration-based limits. As seen in Tables 6 and 7 and as described earlier, TSS and BOD_5 removal less than 85% has occurred consistently in the last ten years and relate to low influent concentrations. The May 11, 2018 fact sheet explains that the influent comes from septic tanks, which have already received pre-treatment making additional removal of BOD_5 and TSS difficult. Harrison WWTP already aerates their lagoons to maximize biochemical breakdown of BOD_5 and TSS. To achieve additional removal beyond the current treatment system could require additional technologies or chemicals that would result in additional expenses.[5] Therefore, the EPA determined that Harrison WWTP meets this criterion.

The third criterion at 40 CFR 133.103(d)(3) states that a lower percent removal requirement is acceptable when the above conditions are met and "the less concentrated influent wastewater is not the result of excessive I/I." This is defined at 40 CFR 35.2005(b)(16) as

[5] EPA's NPDES Permit Writers' Manual (2010) states, "Congress recognized that unless alternate limitations were set for facilities with trickling filters or waste stabilization ponds, which often are in small communities, such facilities could be required to construct costly new treatment systems to meet the secondary treatment standards even though their existing treatment technologies could achieve significant biological treatment. To prevent requiring upgrades where facilities were achieving their original design performance levels, Congress included provisions in the 1981 amendments to the Clean Water Act Construction Grants program (Public Law 97-117, Section 23) that required EPA to make allowances for alternative biological treatment technologies, such as a trickling filters or waste stabilization ponds."

"the quantities of infiltration/inflow which can be economically eliminated from a sewer system as determined in a cost-effectiveness analysis that compared the costs for correcting the infiltration/inflow conditions to the total costs for transportation and treatment of the infiltration/inflow." The City of Harrison provided information on their septic tank effluent program (STEP), a pressurized system for delivering treated wastewater to their treatment plant.

40 CFR 133.103(d) also requires Harrison WWTP to meet a threshold that inflow is nonexcessive if the total flow to a POTW is less than 275 gallons per capita per day. The EPA used a design flow of 0.03 million gallons per day (MGD) for a population of 284 people from the Harrison permit application. Based on this evaluation,

0.03 million gallons per day/284 people = 30,000 gallons per day/284 people =
106 gallons per capita per day

Therefore, Harrison is under the threshold for excessive inflow, and the EPA determined that Harrison WWTP meets the third criteria. **Based on this evaluation, the EPA has concluded that a lower percent removal is allowable.**

In the current permit, to evaluate the new percent removal limits, the EPA calculated the 5th percentile of BOD_5 and TSS percent removal rates between 2008-2017. The EPA used this process to develop a percent removal rate low enough to accommodate variability within control of the facility, but to still require significant reductions in the percent BOD_5 and TSS, even when influent concentrations are low. The 5th percentile Harrison WWTP achieved between 2008 and 2017 was 78 percent removal for BOD_5 and 75 percent removal for TSS.

Since additional data have been collected since 2017, the EPA did additional analysis on data from 2008 to March 2019 to verify that percent removal requirements in the current permit were reasonable. The EPA calculated the 5th percentile of BOD_5 and TSS percent removal rates based on this data and determined the percent removal was 79 percent removal for BOD_5 and 74 percent removal for TSS. Since these values are close to the percent removal requirements in the current permit, and since the appeal was based on the lack of public comment on the current permit's percent removal requirements, the proposed permit modification retains the original percent removal requirements of 78 percent removal for BOD5 and 75 percent removal for TSS. In addition, there were no percent removal requirements for BOD_5 and TSS in the permit prior to that, so there is no anti-backsliding concern.

In the next permit cycle, BOD_5 and TSS percent removals will be evaluated against 40 CFR 133.103(d) to determine whether percent removals lower than 85 percent can be allowed.

C. Re-proposal of BOD_5 and TSS Numeric and Percent Removal Limits

The EPA is re-proposing BOD_5 and TSS numeric limits and percent removal limits, which are identical to the limits in the current permit that were stayed. The final effluent limits are based on the evaluation and calculations above. These limits are listed in Table 8, below.

Table 8. Re-proposed BOD_5 and TSS Effluent Limits

		Effluent Limitations		
Parameter	**Units**	**Average Monthly**	**Average Weekly**	**Maximum Daily**
Biochemical Oxygen Demand (BOD_5)	mg/L	30	45	--
	lbs/day	8	11	--
BOD_5 Percent Removal	%	78 (minimum)	--	--
Total Suspended Solids (TSS)	mg/L	45	65	--
	lbs/day	11	16	--
TSS Percent Removal	%	75 (minimum)	--	--

V. Other Legal Requirements

A. Endangered Species Act

The Endangered Species Act requires federal agencies to consult with National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries) and the U.S. Fish and Wildlife Service (USFWS) if their actions could beneficially or adversely affect any threatened or endangered species. A review of the threatened and endangered species found bull trout as a threatened species in the vicinity of Harrison's WWTP discharge. The EPA previously determined the permit renewal will have no effect on listed species or critical habitat, because the Harrison WWTP discharge is insignificant and because it discharges into a small slough that is not likely to have bull trout populations. See May 11, 2019 fact sheet, Appendix F.

B. Essential Fish Habitat

Essential fish habitat (EFH) is the waters and substrate (sediments, etc.) necessary for fish to spawn, breed, feed, or grow to maturity. The Magnuson-Stevens Fishery Conservation and Management Act (January 21, 1999) requires the EPA to consult with NOAA Fisheries when a proposed discharge has the potential to adversely affect EFH (i.e., reduce quality and/or quantity of EFH).

The EFH regulations define an adverse effect as any impact which reduces quality and/or quantity of EFH and may include direct (e.g. contamination or physical disruption), indirect (e.g. loss of prey, reduction in species' fecundity), site specific, or habitat-wide impacts,

including individual, cumulative, or synergistic consequences of actions. The EPA has prepared an EFH assessment which appears in the May 11, 2018 fact sheet, Appendix G.

The EPA has made a no effect determination, because there are no EFH in the vicinity of the discharge. The EPA has provided NOAA Fisheries with copies of the draft permit and fact sheet during the public notice period. Any comments received from NOAA Fisheries regarding EFH will be considered prior to reissuance of this permit.

C. State Certification

Section 401 of the CWA requires the EPA to seek State certification before issuing a final permit. As a result of the certification, the State may require more stringent permit conditions or additional monitoring requirements to ensure that the permit complies with water quality standards, or treatment standards established pursuant to any State law or regulation. IDEQ determined a revised state certification was not necessary for this permit, since the permit limits are unchanged from the current permit in effect. A copy of the final 401 certification for the 2018 permit is provided in Appendix C.

D. Antidegradation

IDEQ determined that since there were no changes to the current permit as a result of the remand, nothing would change the nature of the antidegradation analysis and discussion in the analysis and discussion of IDEQ's antidegradation review. The antidegradation analysis of the 2018 permit is provided in the final 401 certification provided in Appendix C.

E. Permit Expiration

The permit will expire on August 31, 2023.

VI. References

Coeur d'Alene Tribe and IDEQ. 2009. Coeur d'Alene Lake Management Plan. March 2009.

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EPA. 2017. *Water Quality Standards for Approved Surface Waters of the Coeur d'Alene Tribe Effective June 12, 2014*. February 2017.

EPA. 2018. *Fact Sheet for City of Harrison, ID0021997*. May 11, 2018.

EPA. 2018. *NPDES Permit for City of Harrison, ID0021997*. September 1, 2018.

IDEQ. *Idaho Administrative Code IDAPA 58.01.02, Water Quality Standards*.

Appendix A. Facility Information

Figure 1. Harrison WWTP and Anderson Slough, Harrison, Idaho (Google Earth Pro, 6/20/17)

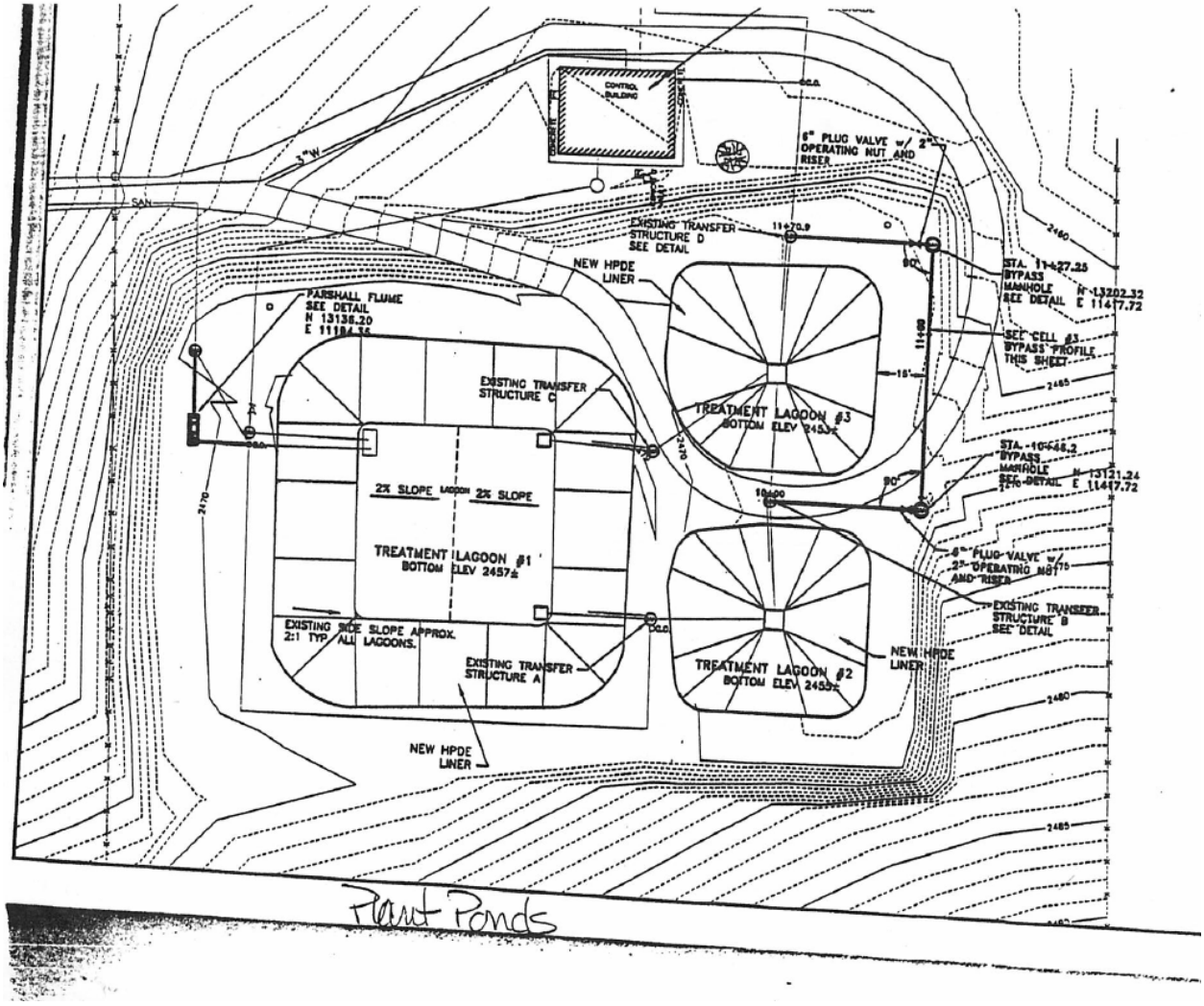

Figure 2. Schematic of Harrison WWTP

Appendix B. Water Quality Data

	Effluent				Influent			
	BOD, 5-day	BOD, 5-day	TSS	TSS	BOD, 5-day	TSS	BOD5 calculated % removal	TSS calculated % removal
	Monthly Average	Weekly Average	Monthly Average	Weekly Average	Monthly Average	Monthly Average	Monthly Average	Monthly Average
Monitoring Period End Date	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	Percent	Percent
9/30/2005	25.9	31.6	25.4	30.5	193.66		86.63	
10/31/2005	32.175	43.6	33.3	18.7	124.5		74.16	
11/30/2005	24	30.2	8.37	9.2	90.53		73.49	
12/31/2005	18.3	46	5.8	6	78		76.54	
1/31/2006	20.85	26.5	5	5	94.9		78.03	
2/28/2006	6.8	10.2	5	5	130	43	94.77	88.37
3/31/2006	25.3	25.3	7	7	166	28	84.76	75.00
4/30/2006	30.533	42.9	26.33	34	100.533	31.3	69.63	15.88
5/31/2006	30.1	44.2	20	23	147.5	29.5	79.59	32.20
6/30/2006	39	59.8	17.67	21	143.3	32.67	72.78	45.91
7/31/2006	69.5	69.5	22	22	167	81	58.38	72.84
8/31/2006	43.2	43.2	9	9	122	51	64.59	82.35
9/30/2006	28.7	28.7	40	40	108	37	73.43	-8.11
10/31/2006	11.7	12.4	12	13	90.7	36	87.10	66.67
11/30/2006	26.4	26.4	5	5	88.8	62	70.27	91.94
12/31/2006								
1/31/2007	13.3	13.3	5	5	81.4	21	83.66	76.19
2/28/2007	4.6	4.6	5	5	63	13	92.70	61.54
3/31/2007	14.8	14.8	8	8	120	62	87.67	87.10
4/30/2007	14.9	14.9	23	23	117	35	87.26	34.29
5/31/2007	44	44	85	85	116	43	62.07	-97.67
6/30/2007	61.1	61.1	71.6	71.6	106	62.8	42.36	-14.01

	Effluent				Influent			
	BOD, 5-day	BOD, 5-day	TSS	TSS	BOD, 5-day	TSS	BOD5 calculated % removal	TSS calculated % removal
	Monthly Average	Weekly Average	Monthly Average	Weekly Average	Monthly Average	Monthly Average	Monthly Average	Monthly Average
Monitoring Period End Date	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	Percent	Percent
11/30/2007	72.6	72.6	45	45	142	176	48.87	74.43
12/31/2007	10	10	13	13	77	16	87.01	18.75
1/31/2008	15.9	15.9	5	5	126	29.2	87.38	82.88
2/29/2008	11	11	7.4	7.4	95.6	50.4	88.49	85.32
3/31/2008	7.8	7.8	6.6	6.6	101	69.6	92.28	90.52
4/30/2008	12	12	6.4	6.4	174	202	93.10	96.83
5/31/2008	15	15	34.4	34.4	236	123	93.64	72.03
6/30/2008	23.3	23.3	45.8	45.8	406	535	94.26	91.44
7/31/2008	21.8	21.8	42	42	399	636	94.54	93.40
8/31/2008	25.8	25.8	32	32	362	676	92.87	95.27
9/30/2008	14.2	14.2	20.4	20.4	202	153	92.97	86.67
10/31/2008	9.4	9.4	9	9	132	229	92.88	96.07
11/30/2008	14.8	14.8	6.2	6.2	112	48.2	86.79	87.14
12/31/2008								
1/31/2009	6.4	6.4	6.2	6.2	120	88.2	94.67	92.97
2/28/2009								
3/31/2009	12.5	12.5	8.2	8.2	152	94.8	91.78	91.35
4/30/2009	14.6	14.6	21.2	21.2	240	232	93.92	90.86
5/31/2009								
6/30/2009	11	11	19.8	19.8	167	208	93.41	90.48
7/31/2009	28.5	28.5	48.4	48.4	372	717	92.34	93.25
8/31/2009	26.8	26.8	8	8	834	2250	96.79	99.64
9/30/2009	16.8	16.8	5	5	448	620	96.25	99.19
10/31/2009								
11/30/2009	10	10	8	8.8	174	270	94.25	97.04
12/31/2009								
1/31/2010	13.3	13.3	5	5	95.6	72	86.09	93.06

	Effluent				Influent			
	BOD, 5-day	BOD, 5-day	TSS	TSS	BOD, 5-day	TSS	BOD5 calculated % removal	TSS calculated % removal
	Monthly Average	Weekly Average	Monthly Average	Weekly Average	Monthly Average	Monthly Average	Monthly Average	Monthly Average
Monitoring Period End Date	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	Percent	Percent
6/30/2010	8.3	8.3	5	5	112	447	92.59	98.88
7/31/2010	18.1	18.1	10	10	957	1610	98.11	99.38
8/31/2010	24.2	24.2	5	5	888	916	97.27	99.45
9/30/2010	16	23.6	9.5	10	978	1750	98.36	99.46
10/31/2010								
11/30/2010	2	2	5	5	72	76	97.22	93.42
12/31/2010								
1/31/2011	6.3	6.3	10	10	96	52	93.44	80.77
2/28/2011								
3/31/2011	5.3	5.3	5	5	80.4	104.5	93.41	95.22
4/30/2011	16.9	16.9	7	7	267	440	93.67	98.41
5/31/2011	17.5	17.5	17	17	125	192	86.00	91.15
6/30/2011	25	25	8	8	391	1690	93.61	99.53
7/31/2011	14	14	5	5	261	140	94.64	96.43
8/31/2011	18.8	18.8	5	5	401	620	95.31	99.19
9/30/2011	13.7	13.7	10	10	506	852	97.29	98.83
10/31/2011								
11/30/2011	20	20.6	12.5	20	125	115	84.00	89.13
12/31/2011								
1/31/2012	20.3	20.3	8	8	177	194	88.53	95.88
2/29/2012								
3/31/2012	7.1	7.1	5	5	185	310	96.16	98.39
4/30/2012								
5/31/2012	18.6	18.6	20	20	158	170	88.23	88.24
6/30/2012	17.5	17.5	7	7	79.5	126	77.99	94.44
7/31/2012	16.2	16.2	5	5	236	416	93.14	98.80
8/31/2012	12.5	12.5	5	5	288	230	95.66	97.83

	Effluent				Influent			
	BOD, 5-day	BOD, 5-day	TSS	TSS	BOD, 5-day	TSS	BOD5 calculated % removal	TSS calculated % removal
	Monthly Average	Weekly Average	Monthly Average	Weekly Average	Monthly Average	Monthly Average	Monthly Average	Monthly Average
Monitoring Period End Date	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	Percent	Percent
1/31/2013								
2/28/2013	16.7	16.7	5	5	121	41	86.20	87.80
3/31/2013								
4/30/2013	18.5	18.5	38	38	142	68	86.97	44.12
5/31/2013								
6/30/2013	26	26	9	9	376	654	93.09	98.62
7/31/2013	31.4	31.4	19	19	397	1110	92.09	98.29
8/31/2013	39.35	52.9	21	28	389.5	452	89.90	95.35
9/30/2013	11.8	11.8	9	9	153	148	92.29	93.92
10/31/2013								
11/30/2013								
12/31/2013								
1/31/2014	8.6	8.6	5	5	159	41	94.59	87.80
2/28/2014								
3/31/2014	8.5	8.5	5	5	40	124	78.75	95.97
4/30/2014								
5/31/2014	6.8	6.8	5	5	239	316	97.15	98.42
6/30/2014	3.7	3.7	6	6	176	229	97.90	97.38
7/31/2014	6.2	6.2	5	5	5.4	760	-14.81	99.34
8/31/2014	13	13	15	15	201	129	93.53	88.37
9/30/2014	5.8	5.8	5	5	121	87	95.21	94.25
10/31/2014								
11/30/2014	18.2	18.2	5	5	292	234	93.77	97.86
12/31/2014								
1/31/2015	4.5	4.5	5	5	143	61	96.85	91.80
2/28/2015								
3/31/2015	24.7	24.7	13	13	176	52.7	85.97	75.33
	Effluent				Influent			

	BOD, 5-day	BOD, 5-day	TSS	TSS	BOD, 5-day	TSS	BOD5 calculated % removal	TSS calculated % removal
	Monthly Average	Weekly Average	Monthly Average	Weekly Average	Monthly Average	Monthly Average	Monthly Average	Monthly Average
Monitoring Period End Date	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	Percent	Percent
8/31/2015	10.4	10.4	5	5	346	440	96.99	98.86
9/30/2015								
10/31/2015	23	23	11	11	132	62	82.58	82.26
11/30/2015								
12/31/2015	11.6	11.6	5	5	163	47	92.88	89.36
1/31/2016								
2/29/2016	6.5	6.5	5	5	363	510	98.21	99.02
3/31/2016	8.8	8.8	5	5	325	172	97.29	97.09
4/30/2016								
5/31/2016	10.8	10.8	9	9	194	115	94.43	92.17
6/30/2016	27.3	27.3	5	5	123	152	77.80	96.71
7/31/2016	25.9	25.9	21	21	321	323	91.93	93.50
8/31/2016	25.7	25.7	38	38	191	180	86.54	78.89
9/30/2016								
10/31/2016	16.1	16.1	0.2	0.2	110	86	85.36	99.77
11/30/2016	6.4	6.4	5	5	263	176	97.57	97.16
12/31/2016	33.6	33.6	21	21	395	1250	91.49	98.32
1/31/2017								
2/28/2017	19.05	32.8	5.5	6	114	63	83.29	91.27
3/31/2017	2.6	2.6	5	5	127	92	97.95	94.57
4/30/2017	7.5	7.5	5	5	184	172	95.92	97.09
5/31/2017								
6/30/2017	6.4	6.4	5	5	263	176	97.57	97.16
7/31/2017								

NEW DATA NOT USED FOR 2018 PERMIT DEVELOPMENT								
	Effluent				Influent			
	BOD, 5-day	BOD, 5-day	TSS	TSS	BOD, 5-day	TSS	BOD5 calculated % removal	TSS calculated % removal
	Monthly Average	Weekly Average	Monthly Average	Weekly Average	Monthly Average	Monthly Average	Monthly Average	Monthly Average
Monitoring Period End Date	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	Percent	Percent
12/31/2017								
1/31/2018	18	18	5	5	212	217	91.51	97.70
2/28/2018	16.2	16.2	5	5	271	235	94.02	97.87
3/31/2018	24.3	24.3	5	5	187	118	87.01	95.76
4/30/2018	31	31	8	8	145	216	78.62	96.30
5/31/2018								
6/30/2018	8.6	8.6	5	5	348	565	97.53	99.12
7/31/2018	6.3	6.3	5	5	626	1350	98.99	99.63
8/31/2018	5.7	5.7	5	5	505	560	98.87	99.11
9/30/2018	9.8	9.8	5	5	642	880	99	99
10/31/2018								
11/30/2018	19	19	21	21	340	124	94	83
12/31/2018	5.1	5.1	5	5	196	132	97	96
1/31/2019	19.5	26.8	30.7	40.2	119.5	124	84	75
2/28/2019	7.9	7.9	8	8	127	24	93	66
3/31/2019	15	15	7	7	211	28	92	75

Includes data from 2008-7/31/2017								
	BOD5, monthly average, mg/L	BOD, weekly average, mg/L	TSS, monthly average, mg/L	TSS weekly average, mg/L	Influent, BOD5 monthly average	Influent, TSS monthly average	30-day average % BOD removal	30-day average % TSS removal
average	15.08	15.53	11.34	11.64	244.21	346.44	90.50	92.31
min	2.00	2.00	0.20	0.20	5.40	29.20	-14.81	44.12
max	39.35	52.90	48.40	48.40	978.00	2250.00	98.36	99.77
count	81.00	81.00	81.00	81.00	81.00	81.00	81.00	81.00
stdev	7.72	8.65	10.44	10.78	190.41	428.69	13.07	9.76
cv	0.51	0.56	0.92	0.93	0.78	1.24	0.14	0.11
95th %	27.30	28.50	38.00	38.00	506.00	1250.00	97.90	99.45
5th%	5.30	5.30	5.00	5.00	79.50	48.20	78.22	75.33
2005 and 2018 Permit Limits	30	45	45	65				
proposed limits			42.75			57		

Meeting Equivalent to 2nd Treatment Standards:	BOD5; Monthly Average	BOD5; Weekly Average	BOD5 % removal	TSS; Monthly Average	TSS; Weekly Average	TSS Percent Removal
	No: 95th percentile = 27 mg/L < 30 mg/L	No: (95th percentile of monthly*1.5) = 42.75 mg/L < 45 mg/L	Yes: 5th percentile = 78% > 65%	Yes: 95th percentile = 38 mg/L > 30 mg/L	Yes: (95th percentile of monthly*1.5) 57 mg/L > 45 mg/L	Yes: 5th percentile 75%>65%
Criterion 2:	Harrison has a waste stabilization pond (lagoon)					

Includes data from 2008-2019								
	BOD5, monthly average, mg/L	**BOD, weekly average, mg/L**	**TSS, monthly average, mg/L**	**TSS weekly average, mg/L**	**Influent, BOD5 monthly average**	**Influent, TSS monthly average**	**30-day average % BOD removal**	**30-day average % TSS removal**
average	14.81	15.25	10.81	11.16	252.14	342.62	90.96	92.25
min	2.00	2.00	0.20	0.20	5.40	24.00	-14.81	44.12
max	39.35	52.90	48.40	48.40	978.00	2250.00	99.00	99.77
count	97.00	97.00	97.00	97.00	97.00	97.00	97.00	97.00
stdev	7.67	8.54	10.02	10.57	187.20	415.96	12.19	9.88
cv	0.52	0.56	0.93	0.95	0.74	1.21	0.13	0.11
95th %	27.54	29.00	35.12	38.00	629.20	1270.00	98.13	99.45
5th%	5.26	5.26	5.00	5.00	80.22	45.80	78.54	74.41
2005 and 2018 Permit Limits	30	45	45	65				
proposed limits								

		43.5			57	
	BOD; Monthly Average	BOD; Weekly Average	BOD Percent Removal	TSS; Monthly Average	TSS; Weekly Average	TSS Percent Removal
Meeting Equivalent to 2nd Treatment Standards:	No: 95th percentile = 28 mg/L < 30 mg/L	No: (95th percentile of monthly*1.5) = 44mg/L < 45 mg/L	Yes: 5th percentile = 77% > 65%	Yes: 95th percentile= 35 mg/L > 30 mg/L	Yes: (95th percentile of monthly*1.5) = 57 mg/L > 45 mg/L	Yes: 5th percentile: 74% > 65%
Criterion 2:	Harrison has a waste stabilization pond (lagoon)					

Appendix C. CWA 401 State Certification

The EPA requested preliminary CWA 401 certification from IDEQ on May 16, 2019. IDEQ responded that a revised state certification was not necessary for this permit, since the permit limits are unchanged from the current permit in effect. With this draft modification of the permit, the EPA is including IDEQ's final CWA 401 certification for the permit currently in effect.

STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

2110 Ironwood Parkway • Coeur d'Alene, Idaho 83814 • (208) 769-1422
www.deq.idaho.gov

C.L. "Butch" Otter, Governor
John H. Tippets, Director

June 22, 2018

Ms. Susan Poulsom
US Environmental Protection Agency, Region 10
1200 6th Avenue, OW-130
Seattle, WA 98101

RE: Final §401 Water Quality Certification for the Final NPDES Permit No. ID-0021997 for the City of Harrison Wastewater Treatment Plant

Dear Ms. Poulsom:

The State of Idaho Department of Environmental Quality (DEQ) received a request for final certification on June 20, 2018 for the Harrison Wastewater Treatment Plant to discharge from their existing facility. After review of the proposed final permit, DEQ submits the enclosed final §401 water quality certification.

Please direct any questions to June Bergquist at 208.666.4605 or june.bergquist@deq.idaho.gov .

Sincerely,

Daniel Redline
Regional Administrator
Coeur d'Alene Regional Office

Enclosure

C: Loren Moore, DEQ Boise
Jenny Wu, EPA Region 10, Seattle
Mayor Kayleen Walker, City of Harrison P.O. Box 73 Harrison, ID 83833

Idaho Department of Environmental Quality

Final §401 Water Quality Certification

June 22, 2018

NPDES Permit Number(s): Harrison Wastewater Treatment Plant ID0021997

Receiving Water Body: Anderson Slough

Pursuant to the provisions of Section 401(a)(1) of the Federal Water Pollution Control Act (Clean Water Act), as amended; 33 U.S.C. Section 1341(a)(1); and Idaho Code §§ 39-101 et seq. and 39-3601 et seq., the Idaho Department of Environmental Quality (DEQ) has authority to review National Pollutant Discharge Elimination System (NPDES) permits and issue water quality certification decisions.

Based upon our review of the above-referenced permit and associated fact sheet, DEQ certifies that if the permittee complies with the terms and conditions imposed by the permit along with the conditions set forth in this water quality certification, then there is reasonable assurance the discharge will comply with the applicable requirements of Sections 301, 302, 303, 306, and 307 of the Clean Water Act, the Idaho Water Quality Standards (WQS) (IDAPA 58.01.02), and other appropriate water quality requirements of state law.

This certification does not constitute authorization of the permitted activities by any other state or federal agency or private person or entity. This certification does not excuse the permit holder from the obligation to obtain any other necessary approvals, authorizations, or permits.

Antidegradation Review

The WQS contain an antidegradation policy providing three levels of protection to water bodies in Idaho (IDAPA 58.01.02.051).

- Tier I Protection. The first level of protection applies to all water bodies subject to Clean Water Act jurisdiction and ensures that existing uses of a water body and the level of water quality necessary to protect those existing uses will be maintained and protected (IDAPA 58.01.02.051.01; 58.01.02.052.01). Additionally, a Tier I review is performed for all new or reissued permits or licenses (IDAPA 58.01.02.052.07).
- Tier II Protection. The second level of protection applies to those water bodies considered high quality and ensures that no lowering of water quality will be allowed unless deemed necessary to accommodate important economic or social development (IDAPA 58.01.02.051.02; 58.01.02.052.08).
- Tier III Protection. The third level of protection applies to water bodies that have been designated outstanding resource waters and requires that activities not cause a lowering of water quality (IDAPA 58.01.02.051.03; 58.01.02.052.09).

DEQ is employing a water body by water body approach to implementing Idaho's antidegradation policy. This approach means that any water body fully supporting its beneficial uses will be considered high quality (IDAPA 58.01.02.052.05.a). Any water body not fully supporting its beneficial uses will be provided Tier I protection for that use, unless specific circumstances warranting Tier II protection are met (IDAPA 58.01.02.052.05.c). The most recent federally approved Integrated Report and supporting data are used to determine support status and the tier of protection (IDAPA 58.01.02.052.05).

Pollutants of Concern

Harrison WWTP discharges the following pollutants of concern: ammonia, phosphorus, chlorine, BOD_5, TSS, pH, and *E. coli* bacteria. Effluent limits have been developed for BOD_5, TSS, *E. coli*, chlorine, ammonia, and pH. No effluent limits are proposed for phosphorus.

Receiving Water Body Level of Protection

The Harrison WWTP discharges to Anderson Slough, an unassessed waterbody with no assessment unit. Anderson Slough is undesignated. DEQ presumes undesignated waters in the state will support cold water aquatic life and primary and secondary contact recreation beneficial uses; therefore, undesignated waters are protected for these uses (IDAPA 58.01.02.101.01.a). In addition to these uses, all waters of the state are protected for agricultural and industrial water supply, wildlife habitat, and aesthetics (IDAPA 58.01.02.100).

This waterbody is not included in Category 3 (Unassessed Waters) of the 2014 Integrated Report. However for unassessed waters, DEQ must provide an appropriate level of protection on a case-by-case basis using information available at this time (IDAPA 58.01.02.052.05.b).

The contact recreation and cold water aquatic life beneficial uses are unassessed, however *E. coli* data collected by DEQ for this certification indicate that recreational uses are fully supporting. Because the collection of data necessary to determine the support status of cold water aquatic life would need to occur in summer months, the applicant has agreed to consider Anderson Slough high quality waters for cold water aquatic life for the purposes of this, and only this, antidegradation review. Therefore, DEQ will provide Tier I in addition to Tier II protection for these uses (IDAPA 58.01.02.051.01 and 58.01.02.051.02).

Protection and Maintenance of Existing Uses (Tier I Protection)

A Tier I review is performed for all new or reissued permits or licenses, applies to all waters subject to the jurisdiction of the Clean Water Act, and requires demonstration that existing and designated uses and the level of water quality necessary to protect existing and designated uses shall be maintained and protected. In order to protect and maintain existing and designated beneficial uses, a permitted discharge must comply with narrative and numeric criteria of the Idaho WQS, as well as other provisions of the WQS such as Section 055, which addresses water quality limited waters. The numeric and narrative criteria in the WQS are set at levels that ensure protection of existing and designated beneficial uses. The effluent limitations and associated requirements contained in the Harrison WWTP permit are set at levels that ensure compliance with the narrative and numeric criteria in the WQS.

Although, Anderson Slough has no outlet or visible culverts in banks that surround the slough, water levels in the slough rises and falls with water level changes in the river and lake. There are two culverts under the Trail of the Coeur d'Alenes near the City of Harrison that connect it to the lake during periods of high flows. Due to the lack of hydrologic information and flow, no mixing was allowed for the effluent. WQS must be met at end of pipe. The design flow for Harrison remains at 0.03 mgd.

In summary, the effluent limitations and associated requirements contained in the Harrison WWTP permit are set at levels that ensure compliance with the narrative and numeric criteria in the WQS. Therefore, DEQ has determined the permit will protect and maintain existing and designated beneficial uses in the Anderson Slough in compliance with the Tier I provisions of Idaho's WQS (IDAPA 58.01.02.051.01 and 58.01.02.052.07).

High-Quality Waters (Tier II Protection)

Anderson Slough is considered high quality for cold water aquatic life and recreation uses. As such, the water quality relevant to cold water aquatic life and recreation uses of the Anderson Slough must be maintained and protected, unless a lowering of water quality is deemed necessary to accommodate important social or economic development.

To determine whether degradation will occur, DEQ must evaluate how the permit issuance will affect water quality for each pollutant that is relevant to cold water aquatic life and recreation uses of the Anderson Slough (IDAPA 58.01.02.052.05). These include the following: *E. coli* bacteria, phosphorus, chlorine, and ammonia. Effluent limits are set in the proposed and existing permit for *E. coli*, chlorine and ammonia.

For a reissued permit or license, the effect on water quality is determined by looking at the difference in water quality that would result from the activity or discharge as authorized in the current permit and the water quality that would result from the activity or discharge as proposed in the reissued permit or license (IDAPA 58.01.02.052.06.a). For a new permit or license, the effect on water quality is determined by reviewing the difference between the existing receiving water quality and the water quality that would result from the activity or discharge as proposed in the new permit or license (IDAPA 58.01.02.052.06.a).

Pollutants with Limits in the Current and Proposed Permit: *E. coli*, Chlorine

For pollutants that are currently limited and will have limits under the reissued permit, the current discharge quality is based on the limits in the current permit or license (IDAPA 58.01.02.052.06.a.i), and the future discharge quality is based on the proposed permit limits (IDAPA 58.01.02.052.06.a.ii). For the Harrison WWTP permit, this means determining the permit's effect on water quality based upon the limits for *E. coli* and chlorine in the current and proposed permits. Table 1 provides a summary of the current permit limits and the proposed or reissued permit limits and shows that there will be no change in load or concentration for either of these pollutants (other than slight changes up and down for ammonia and chlorine due to mathematical and statistical corrections from the previous permit).

Table 1. Comparison of current and proposed permit limits for pollutants of concern relevant to uses receiving Tier II protection.

Pollutant	Units	Current Permit			Proposed Permit			Change[a]
		Average Monthly Limit	Average Weekly Limit	Max Daily Limit	Average Monthly Limit	Average Weekly Limit	Max Daily Limit	
Pollutants with limits in both the current and proposed permit								
Five-Day BOD	mg/L	30	45	—	30	45	—	NC
	lb/day	8	12	—	8	11	—	
	% removal	none	—	—	78%	—	—	
TSS	mg/L	45	65	—	45	65	—	NC
	lb/day	12	18	—	11	16	—	
	% removal	none	—	—	75%	—	—	
pH	standard units	6.5–9.0 all times			6.5–9.0 all times			NC
E. coli	no./100 mL	126	—	406	126	—	406	NC
Total Residual Chlorine (final)	mg/L	0.007	—	0.018	0.009	—	0.017	NC
	lb/day	0.002	—	0.005	0.002	—	0.0045	
Pollutants with new limits in the proposed permit								
Total Ammonia	mg/L	—	—	—	3	—	9	D
	lb/day	—	—	—	0.8	—	2	
Pollutants with no limits in both the current and proposed permit								
Total Phosphorus	mg/L	—	—	Report	—	—	Report	NC

[a] NC = no change, I = increase, D = decrease.

The proposed permit limits for other pollutants of concern that have limits in Table 1, are the same as, or more stringent than, those in the current permit ("NC" or "D" in change column). Therefore, no adverse change in water quality and no degradation will result from the discharge of these pollutants.

New Permit Limits for Pollutants Currently Discharged

When new limits are proposed in a reissued permit for pollutants in the existing discharge, the effect on water quality is based upon the current discharge quality and the proposed discharge quality resulting from the new limits. Current discharge quality for pollutants that are not currently limited is based upon available discharge quality data (IDAPA 58.01.02.052.06.a.i). Future discharge quality is based upon proposed permit limits (IDAPA 58.01.02.052.06.a.ii).

The proposed permit for Harrison WWTP includes new limits for ammonia (Table 1). The ammonia limits in the proposed permit reflect an improvement in water quality from current conditions. Therefore, no adverse change in water quality and no degradation will occur with respect to this pollutant.

Pollutants with No Limits: phosphorus

There is one pollutant of concern, phosphorus, relevant to Tier II protection of recreation that currently is not limited and for which the proposed permit also contains no limit (Table 1). For such pollutants, a change in water quality is determined by reviewing whether changes in production, treatment, or operation that will increase the discharge of these pollutants are likely (IDAPA 58.01.02.052.06.a.ii). With respect to phosphorus, there is no reason to believe this pollutant will be discharged in quantities greater than those discharged under the current permit. This conclusion is based upon the fact that there have been no changes in the permitted design flow, influent quality, or treatment processes that would likely result in an increased discharge of this pollutant. Because the proposed permit does not allow for any increased water quality

impact from this pollutant, DEQ has concluded that the proposed permit should not cause a lowering of water quality for the pollutant with no limit. As such, the proposed permit should maintain the existing water quality in Anderson Slough. Phosphorus monitoring of effluent is proposed for the new permit.

In sum, DEQ concludes that this discharge permit complies with the Tier II provisions of Idaho's WQS (IDAPA 58.01.02.051.02 and IDAPA 58.01.02.052.06).

Conditions Necessary to Ensure Compliance with Water Quality Standards or Other Appropriate Water Quality Requirements of State Law

Compliance Schedule

Pursuant to IDAPA 58.01.02.400.03, DEQ may authorize compliance schedules for water quality–based effluent limits issued in a permit for the first time. Harrison WWTP cannot immediately achieve compliance with the effluent limits for ammonia; therefore, DEQ authorizes a compliance schedule and interim requirements, including interim limits in Table 2, as set forth below. This compliance schedule provides the permittee a reasonable amount of time to achieve the final effluent limits as specified in the permit. At the same time, the schedule ensures that compliance with the final effluent limits is accomplished as soon as possible.

Harrison WWTP relies on a lagoon treatment system which is approaching full design capacity. There is also substantial demand for additional treatment capacity. Reduction of ammonia in a lagoon system is dependent in part on hold time and dissolved oxygen levels in the water. As flows increase, the facility may be less able to hold water for the length of time needed to achieve satisfactory ammonia reduction. Higher summertime temperatures lower the amount of dissolved oxygen in the water (a physical property of water) which reduces the ability of a lagoon system to convert ammonia to less harmful substances (nitrification process). Lagoon aeration can be used to increase oxygen but this method may not be sufficient in a heavily loaded system to achieve ammonia limits. Due to these limitations of the current facility, DEQ has allowed the permittee enough time to construct a new type of treatment system. Ultimately, it will be up to the City of Harrison through their facility planning effort to determine how to meet their new limits if efforts in the Compliance Schedule Part A fail to do so.

The ammonia effluent limit was based on data collected in 2006. At this time, the facility was experiencing compliance issues. Upgrades to the facility were implemented in 2008 which greatly improved compliance. This upgrade and operational changes may have improved ammonia treatment so that new effluent limits might be met without any changes or can be achieved through optimization of the current process. To ensure that compliance with final limits is achieved as soon as possible, DEQ authorizes a two part compliance schedule. Part A focuses on a monitoring and optimization schedule to meet final limits. If these efforts fail, Part B begins a longer more comprehensive facility planning, design, and construction effort to meet ammonia limits.

Interim Requirements for Compliance Schedule Part A

1. Immediately following the effective date of the final permit, the permittee must begin monitoring ammonia concentrations as directed by the final permit and if final ammonia limits are not being met, initiate optimization of treatment to meet final effluent limits.

2. By one (1) year from the date of the final permit, the permittee must provide EPA and DEQ with a written progress report including results of ammonia monitoring and progress made towards meeting final ammonia limits. The report shall also summarize results and indicate that (1) further monitoring and optimization are worthwhile in efforts to meet final effluent limits or (2) further monitoring and optimization are unlikely to result in meeting final limits. If the conclusion is (2) then begin Part B of this compliance schedule.

3. By two (2) years from the date of the final permit, the permittee must provide EPA and DEQ final results of monitoring and optimization and must reliably meet final ammonia limits. If ammonia limits still cannot be met, begin Part B of this compliance schedule.

Interim Requirements for Compliance Schedule Part B

1. By three (3) years after the effective date of the final permit, a draft facility plan shall be submitted to DEQ for review and approval. The facility plan shall include outlining estimated costs and schedules for construction of a new or upgraded wastewater treatment plant and implementation of technologies to achieve final effluent limitations. This schedule must include a timeline for pilot testing. If the new or upgraded plant includes an increase in design capacity, be aware that new additions of phosphorus in Coeur d'Alene Lake may be limited in future permits (*Coeur d'Alene Lake Management Plan*, 2009).

2. By four (4) years after the effective date of the final permit, a final facility plan shall be submitted to DEQ for review and approval.

3. By five (5) years after the effective date of the final permit, the permittee must provide EPA and DEQ with a progress report on funding for the new or upgraded facility. Copy of notice of bond approval or notice of judicial confirmation is acceptable.

4. By six (6) years after the effective date of the final permit, the permittee must provide EPA and DEQ with written notice that design has been completed and approved by DEQ and that bids for construction have been awarded to achieve final effluent limitations.

5. By seven (7) and eight (8) years after the effective date of the final permit, the permittee must provide EPA and DEQ with brief progress reports of construction as they relate to meeting the compliance schedule timeline and final effluent limits.

6. By nine (9) years after the effective date of the final permit, the permittee must provide EPA and DEQ with written notice that construction on the portions of the facility required to achieve final effluent limits has reached substantial completion.

7. By ten (10) years after the effective date of the final permit, the permittee must provide EPA and DEQ with a written report providing details of a completed start up and optimization

phase of the new or upgraded treatment system and must achieve compliance with the final effluent limitations of Part I.B.

Table 2. Interim Limits			
Parameter	Units	Average Monthly Limit	Maximum Daily Limit
Ammonia	mg/L	15	30

The permittee must comply with all other effluent limitations beginning on the effective date of the final permit.

Other Conditions

This certification is conditioned upon the requirement that any material modification of the permit or the permitted activities—including without limitation, any modifications of the permit to reflect new or modified TMDLs, wasteload allocations, site-specific criteria, variances, or other new information—shall first be provided to DEQ for review to determine compliance with Idaho WQS and to provide additional certification pursuant to Section 401.

Right to Appeal Final Certification

The final Section 401 Water Quality Certification may be appealed by submitting a petition to initiate a contested case, pursuant to Idaho Code § 39-107(5) and the "Rules of Administrative Procedure before the Board of Environmental Quality" (IDAPA 58.01.23), within 35 days of the date of the final certification.

Questions or comments regarding the actions taken in this certification should be directed to June Bergquist, Coeur d'Alene Regional Office at 208-666-4605 or via email at june.bergquist@deq.idaho.gov .

Daniel Redline
Regional Administrator
Coeur d'Alene Regional Office