



Fact Sheet

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

**The City of New Plymouth
4615 NE 1st Ave
New Plymouth, Idaho 83661**

Public Comment Start Date:
Public Comment Expiration Date:

Technical Contact: Daniel Alejandro Haskell
206-553-1587
800-424-4372, ext. 1587 (within Alaska, Idaho, Oregon and Washington)
haskell.daniel@epa.gov

The EPA Proposes To Re-Issue NPDES Permit

The EPA proposes to Re-Issue the NPDES permit for the facility referenced above. The draft permit places conditions on the discharge of pollutants from the wastewater treatment facility 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 is requesting that the Idaho Department of Environmental Quality (IDEQ) certify the NPDES permit for this facility, under Section 401 of the Clean Water Act. Comments regarding the certification should be directed to:

IDEQ Boise Regional Office
1445 N. Orchard Street
Boise, ID 83706
ph: (208) 373-0550
fx: (208) 373-0287

Public Comment

Persons wishing to comment on, or request a Public Hearing for the draft permit for this facility may 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 Public Hearings 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 regional Director for the Office of Water and Watersheds will make a final decision regarding permit issuance. If no substantive comments are received, the tentative conditions in the draft permit will become final, and the permit will become effective upon issuance. If substantive comments are received, the EPA will address the comments and issue the permit. The 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 Regional Office in Seattle between 8:30 a.m. and 4:00 p.m., Monday through Friday at the address below. The draft permits, fact sheet, and other information can also be found by visiting the Region 10 NPDES website at "<http://EPA.gov/r10earth/waterpermits.htm>."

United States Environmental Protection Agency
Region 10
1200 Sixth Avenue, OWW-130
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 W Bannock, Suite 900
Boise, ID 83702
(208) 378-5746

IDEQ Boise Regional Office
1445 N. Orchard Street
Boise, ID 83706
ph: (208) 373-0550

City of New Plymouth Wastewater Treatment Facility

Acronyms	5
I. Applicant.....	7
A. General Information	7
B. Permit History	7
II. Facility Information.....	7
A. Treatment Plant Description	7
B. Outfall Description	8
C. Compliance History	8
D. Environmental Justice.....	8
III. Receiving Water	9
A. Low Flow Conditions	9
B. Receiving Water Quality	9
C. Water Quality Standards.....	9
D. Water Quality Limited Waters	11
IV. Effluent Limitations.....	12
A. Basis for Effluent Limitations	12
B. Proposed Effluent Limitations.....	12
V. Monitoring Requirements.....	13
A. Basis for Effluent and Surface Water Monitoring.....	13
B. Effluent Monitoring.....	14
C. Surface Water Monitoring	16
D. Monitoring and Reporting	17
VI. Sludge (Biosolids) Requirements	17
VII. Other Permit Conditions.....	17
A. Quality Assurance Plan	17
B. Operation and Maintenance Plan.....	17
C. Sanitary Sewer Overflows and Proper Operation and Maintenance of the Collection System	18
D. Standard Permit Provisions	19
VIII. Other Legal Requirements	19
A. Endangered Species Act	19
B. Essential Fish Habitat	22
C. State Certification	23
D. Permit Expiration.....	23
IX. References.....	23
Appendix A: Facility Information.....	24
Appendix B: Water Quality Criteria Summary	30
A. General Criteria (IDAPA 58.01.02.200)	30

City of New Plymouth Wastewater Treatment Facility

B.	Numeric Criteria for Toxics (IDAPA 58.01.02.210).....	30
C.	Surface Water Criteria To Protect Aquatic Life Uses (IDAPA 58.01.02.250)	31
D.	Surface Water Quality Criteria For Recreational Use Designation (IDAPA 58.01.02.251) 31	
Appendix C: Basis for Effluent Limits.....		32
A.	Technology-Based Effluent Limits	32
B.	Water Quality-based Effluent Limits	36
C.	Anti-backsliding Provisions	39
D.	Antidegradation	40
E.	Facility Specific Limits	40
Appendix D: Reasonable Potential and Water Quality-Based Effluent Limit Calculations		42
A.	WQBEL Calculations	42
Appendix E: Clean Water Act Section 401 Certification.....		44

Acronyms

1Q10	1 day, 10 year low flow
7Q10	7 day, 10 year low flow
30B3	Biologically-based design flow intended to ensure an excursion frequency of less than once every three years, for a 30-day average flow.
30Q10	30 day, 10 year low flow
AML	Average Monthly Limit
AWL	Average Weekly Limit
BOD ₅	Biochemical Oxygen Demand, five-day
°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
The EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FR	Federal Register
HUC	Hydrologic Unit Code
I/I	Inflow/Infiltration
IDEQ	Idaho Department of Environmental Quality
IDFG	Idaho Department of Fish and Game
LA	Load Allocation
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
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
OWW	Office of Water and Watersheds
O&M	Operations and maintenance
POTW	Publicly owned treatment works
QAP	Quality assurance plan
RP	Reasonable Potential
RPM	Reasonable Potential Multiplier
SS	Suspended Solids
SSO	Sanitary Sewer Overflow
s.u.	Standard Units
TBEL	Technology-Based Effluent Limit
TKN	Total Kjeldahl Nitrogen
TMDL	Total Maximum Daily Load
TOC	Total Organic Carbon
TRC	Total Residual Chlorine
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
WLA	Wasteload allocation
WQBEL	Water quality-based effluent limit
WQS	Water Quality Standards
WWTF	Wastewater treatment facility

I. Applicant**A. General Information**

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

City of New Plymouth, Wastewater Treatment Facility
NPDES Permit # ID0020389

Mailing Address:
4615 NE 1st Ave
New Plymouth, Idaho 83661

Contact:
Beau J. Ziemer, (208) 278-5338

B. Permit History

The City of New Plymouth Wastewater Treatment Facility (New Plymouth WWTF) is located in the City of New Plymouth, Idaho. Their most recent NPDES permit was issued on November 28, 2001 and became effective on December 31, 2001 (hereinafter referred to as the 2001 Permit). The 2001 Permit expired on January 2, 2007. The EPA received a permit application for renewal on July 24, 2006, prior to the expiration date of the permit. Because a complete application for renewal was received in a timely manner, as required under 40 C.F.R. § 122.21(d), the previous permit did not expire and was administratively extended.

II. Facility Information**A. Treatment Plant Description**

The City of New Plymouth owns, operates, and maintains the New Plymouth WWTF located in New Plymouth, Idaho, which resides in the Lower Payette Subbasin, HUC 17050122. The New Plymouth WWTF discharges to an unnamed drainage ditch which, meanders through a wetland owned by the Idaho Department of Fish and Game (IDFG), and ultimately discharges to the Payette River – Black Canyon Reservoir Dam to mouth river segment (Unit SW-1). The facility serves a resident population of approximately 1600. The design flow of the facility is 0.6 million gallons per day (mgd). The collection system has no combined sewers.

The facility treats domestic wastewater in a series of four waste stabilization lagoons. Effluent is not chlorinated prior to discharge. The treatment lagoons provide long-term sludge storage. Sludge estimates are measured periodically to estimate sludge volume and are currently estimated to retain sewage sludge for an additional 8-10 years. Historically, the facility discharged from June to November each year. However, the facility upgraded its major collection system in 2009 to reduce inflow/infiltration (I/I) caused by several irrigation canals and ditches within the City. The project resulted in significant decreases in measured influent flows; including the summer irrigation season. Because of the reduced influent

City of New Plymouth Wastewater Treatment Facility

flows, the City has not discharged, with one exception in March 2010. See Appendix A for more information. The large facultative lagoons provide sufficient surface area and storage for evaporation of the annual influent flow volumes. Additionally, the City recently completed seepage testing of the lagoons in accordance with IDEQ requirements and the results showed that the lagoons are not leaking above the allowable leakage rate. The New Plymouth WWTF does not currently land-apply.

B. Outfall Description

The outfall pipe is located on the eastside of lagoon number 4. It is 8 inches across and is equipped with a flap-valve. It discharges approximately at the water surface. Flow is measured using an 8-inch Palmer-Bowlus flume and an ultrasonic level transducer. The flow meter is powered by a solar panel and the flow data are transmitted by radio signal to the City's SCADA system. At the discharge location, the outfall pipe is adjacent to the flow metering structure.

C. Compliance History

Since, the facility's collection system improvement project to address I/I in 2009, the facility discharged one time in March 2010. A review of the discharge monitoring reports (DMRs) show the discharge met the permit limits.

D. Environmental Justice

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, directs each federal agency to "make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities." EPA is striving to enhance the ability of overburdened communities to participate fully and meaningfully in the permitting process for EPA-issued permits, including NPDES permits. "Overburdened" communities can include minority, low-income, tribal, and indigenous populations or communities that potentially experience disproportionate environmental harms and risks. As part of an agency-wide effort, EPA Region 10 will consider prioritizing enhanced public involvement opportunities for EPA-issued permits that may involve activities with significant public health or environmental impacts on already overburdened communities. For more information, please visit <http://www.epa.gov/compliance/ej/plan-ej/>.

As part of the permit development process, EPA Region 10 conducted an "EJSCREEN" to determine whether a permit action could affect overburdened communities. EJSCREEN is a nationally consistent geospatial tool that contains demographic and environmental data for the United States at the census block group level. As a pre-decisional tool, EJSCREEN is used to highlight permit candidates for additional review where enhanced outreach may be warranted.

The EPA also encourages permittees to review (and to consider adopting, where appropriate) Promising Practices for Permit Applicants Seeking EPA-Issued Permits: Ways To Engage Neighboring Communities (see <https://www.federalregister.gov/articles/2013/05/09/2013-10945/epa-activities-to-promote-environmental-justice-in-the-permit-application-process#h->

City of New Plymouth Wastewater Treatment Facility

13). Examples of promising practices include: thinking ahead about community's characteristics and the effects of the permit on the community, engaging the right community leaders, providing progress or status reports, inviting members of the community for tours of the facility, providing informational materials translated into different languages, setting up a hotline for community members to voice concerns or request information, follow up, etc.

EPA's EJSCREEN tool did not identify the City of New Plymouth, ID WWTF as a potentially overburdened community. During the screening process, EPA considered specific case-by-case circumstances, and EPA concluded that there is no indication that the reissuance of this permit would trigger significant environmental justice concerns.

III. Receiving Water

A. Low Flow Conditions

The effluent from the City of New Plymouth WWTF is discharged from Outfall 001 to an unnamed drainage ditch, located at latitude 43° 59' 18.5454" and longitude -116° 48' 13.446". The unnamed drainage ditch collects irrigation water from nearby fields and groundwater. The ditch partially meanders through the Payette River Wildlife Management Area, owned and operated by IDFG, before it is discharged to the Lower Payette River approximately 1.2 miles downstream from outfall 001. The discharge location to the Lower Payette River is at approximately River Mile 11 (Unit SW-1), downstream of Blacks Bridge.

The EPA *Technical Support Document for Water Quality-Based Toxics Control* (hereafter referred to as the TSD ⁴) and the State of Idaho WQS recommend the receiving water flow conditions for use in calculating water quality-based effluent limits (WQBELs) for point source dischargers using steady-state modeling.

No flow data were available for the unnamed drainage ditch. Based on discussions with IDFG Southwest Region (Email from M. Koenig on 06/12/14) and IDEQ Boise Regional Office (Email from L. Monnot on 06/12/14), the drainage ditch flows year round.

B. Receiving Water Quality

There are no surface water quality data available for the unnamed drainage ditch.

C. Water Quality Standards

Overview

Section 301(b)(1)(C) of the Clean Water Act (CWA) requires the development of limitations in permits necessary to meet WQS. Federal regulations at 40 CFR 122.4(d) require that the conditions in NPDES permits ensure compliance with the WQS of all affected States. A State's WQS are composed of use classifications, numeric and/or narrative water quality criteria and an anti-degradation policy.

The use classification system designates the beneficial uses that each water body is expected to achieve, such as drinking water supply, contact recreation, and aquatic life. The numeric and narrative water quality criteria are the criteria deemed necessary by the State to support the beneficial use classification of each water body. The anti-degradation policy represents a three-tiered approach to maintain and protect various levels of water quality and uses.

Undesignated Beneficial Uses

The unnamed drainage ditch, which meanders through a wetland and ultimately leads to the Lower Payette River does not have specific use designations in the Idaho WQS (IDAPA 58.01.02.110 through 160). The Idaho WQS states that such “undesignated waterways” are to be protected for the following (IDAPA 58.01.02.101.01):

- cold water aquatic life
- primary contact recreation

In addition, WQS state that all waters of the State of Idaho are protected for industrial and agricultural water supply, wildlife habitats and aesthetics (IDAPA 58.01.02.100.03.b and c, 100.04 and 100.05).

Surface Water Quality Criteria

The relevant water quality criteria are found in the following sections of the Idaho WQS:

- The narrative criteria applicable to all surface waters of the State are found at IDAPA 58.01.02.200 (General Surface Water Quality Criteria).
- The numeric criteria for toxic substances for the protection of aquatic life and primary contact recreation are found at IDAPA 58.01.02.210 (Numeric Criteria for Toxic Substances for Waters Designated for Aquatic Life, Recreation, or Domestic Water Supply Use).
- Additional numeric criteria necessary for the protection of aquatic life can be found at IDAPA 58.01.02.250 (Surface Water Quality Criteria for Aquatic Life Use Designations).
- Numeric criteria necessary for the protection of recreation uses can be found at IDAPA 58.01.02.251 (Surface Water Quality Criteria for Recreation Use Designations).
- Water quality criteria for agricultural water supply can be found in the EPA’s *Water Quality Criteria 1972*, also referred to as the “Blue Book” (EPA R3-73-033) (See IDAPA 58.01.02.252.02)

The numeric and narrative water quality criteria applicable to the unnamed drainage ditch at the point of discharge are provided in Appendix B of this fact sheet.

Antidegradation

The EPA is required under Section 301(b)(1)(C) of the Clean Water Act (CWA) and implementing regulations 40 CFR § 122.4(d) and 122.44(d) to establish conditions in

NPDES permits that ensure compliance with State WQS, including antidegradation requirements.

The IDEQ has completed an antidegradation review which is included in the draft 401 certification for this permit. See Appendix E for the State's draft 401 water quality certification. Comments on the 401 certification including the antidegradation review can be submitted to the IDEQ as set forth above (see State Certification).

D. Water Quality Limited Waters

Any waterbody for which the water quality does not, and/or is not expected to meet, applicable WQS is defined as a "water quality limited segment."

Section 303(d) of the Clean Water Act (CWA) requires states to develop a Total Maximum Daily Load (TMDL) management plan for water bodies determined to be water quality limited segments. A TMDL is a detailed analysis of the water body to determine its assimilative capacity. The assimilative capacity is the loading of a pollutant that a water body can assimilate without causing or contributing to a violation of WQS. Once the assimilative capacity of the water body has been determined, the TMDL will allocate that capacity among point and non-point pollutant sources, taking into account natural background levels and a margin of safety. Allocations for non-point sources are known as "load allocations" (LAs). The allocations for point sources, known as "waste load allocations" (WLAs), are implemented through effluent limitations in NPDES permits. Effluent limitations for point sources must be consistent with applicable TMDL allocations.

The Lower Payette River is listed as water quality limited for bacteria and temperature. The EPA approved the State of Idaho's 2012 Integrated Report on July 11, 2014. There is a Category 4a, 303(d) listing for bacteria for the SW-1 river segment (ID17050122sw001_06), from the Black Canyon Reservoir to the confluence of the Lower Payette and Snake River. A TMDL was developed in 1999¹ establishing waste load allocations for fecal coliform, which at the time were consistent with Idaho WQS. The TMDL was approved by the EPA on May 2000 (hereafter referred to as the 2000 TMDL). Idaho revised the state WQS in 2000 to replace fecal coliform with *E. coli* bacteria for determining attainment with primary contact recreation and secondary contact recreation. This was later reflected in the Lower Payette River TMDL Implementation Plan and Addendum to the Lower Payette River Subbasin Assessment and TMDL (IDEQ, January 2003). More discussion regarding the 2000 TMDL can be found in Appendix C, part B.

For temperature, Category 5 of the State of Idaho's 2012 Integrated Report, has a 303(d) listing for the SW-1 river segment. Currently, a temperature TMDL for the Lower Payette River is not planned on account that the impairment is not due to municipal wastewater treatment plants or non-point sources.

Additionally, the Snake River which, is downstream of the Lower Payette River has a TMDL for phosphorous and mercury.

IV. Effluent Limitations**A. Basis for Effluent Limitations**

In general, the CWA with the NPDES Permit Writer's Manual ⁵ require that the effluent limits for a particular pollutant be the more stringent of either technology-based limits or water quality-based limits. Technology-based limits are set according to the level of treatment that is achievable using available technology. A water quality-based effluent limit (WQBEL) is designed to ensure that the WQS applicable to a waterbody are being met and may be more stringent than technology-based effluent limits (TBELs). The basis for the effluent limits proposed in the draft permit is provided in Appendix C.

B. Proposed Effluent Limitations

The following summarizes the proposed effluent limits that are in the draft permit.

1. The permittee must not discharge floating, suspended, or submerged matter of any kind in concentrations causing nuisance or objectionable conditions or that may impair designated beneficial uses.
2. pH: pH must be within the range of 6.5 – 9.0 standard units.
3. BOD₅, TSS, and *E. coli* must meet limits in Table 1.

Table 1. Proposed Effluent Limits

Parameter	Units	Effluent Limits		
		Average Monthly Limit	Average Weekly Limit	Maximum Daily Limit
Five-Day Biochemical Oxygen Demand (BOD ₅)	mg/L	45	65	--
	lb/day	225	325	--
BOD ₅ Removal	percent	65 (minimum)	--	--
Total Suspended Solids (TSS)	mg/L	45	65	--
	lb/day	225	325	--
TSS Removal	percent	65 (minimum)		
<i>E. coli</i> Bacteria	CFU/100 ml	126 (geometric mean)	--	406

Effluent Limit Changes from the Previous Permit:

The changes in the limits compared with the 2001 Permit are summarized in Table 2 below. See Appendix C, part E for more information.

City of New Plymouth Wastewater Treatment Facility

Table 2. Changes in Permit: Effluent Limits

Parameter	2001 Permit	Draft Permit	Basis For Change
BOD ₅	AML: 30 mg/L (150 lbs/day); AWL: 45 mg/L (225 lbs/day)	AML: 45 mg/L (225 lbs/day); AWL: 65 mg/L (325 lbs/day)	The WWTF meets all 3 criteria to qualify for application of the alternative less stringent standards set forth in 40 CFR § 133.105. See Appendix C, Part A.
TSS Percent Removal	No limit	65% Removal	In the 2001 Permit the EPA substituted a mass loading requirement for a percent removal requirement under 40 CFR § 133.103(d). The facility is no longer eligible for that exception.
TSS	AML: 70 mg/L (350 lbs/day); AWL: 105 mg/L (525 lbs/day)	AML: 45 mg/L (225 lbs/day); AWL: 65 mg/L (325 lbs/day)	AML and AWL concentration and loading based on equivalent to secondary treatment.
Bacteria Limits	AMLs and AWLs for Fecal coliform	AML and MDL for <i>E. coli</i> bacteria	According to the previous 2001 permit (Section A.I.6.), Upon EPA approval of the adoption to the Idaho Water Quality Standards removing the AWL for fecal coliform, and notification of EPA by the permittee, the AWL for fecal coliform will be deleted. Also at that time, monitoring for fecal coliform will be reduced to once per month during the months of May 1 through September 30. A letter received from the permittee to the EPA on June 26 th 2008 fulfilled this notification. Also, see Pathogenic Indicators – <i>E. coli</i> replaces Fecal Coliform (Appendix C, part C).
KEY: AML = Average monthly limit; AWL= Average Weekly Limit; MDL = maximum daily limit			

V. Monitoring Requirements

A. Basis for Effluent and Surface Water Monitoring

Section 308 of the CWA and federal regulation 40 CFR 122.44(i) require monitoring in permits to determine compliance with effluent limitations. Monitoring may also be required to gather effluent and surface water data to determine if additional effluent limitations are required and/or to monitor effluent impacts on receiving water quality.

The permit also requires the permittee to perform effluent monitoring required by part B.6 of the NPDES Form 2A application (EPA Form 3510-2A, revised 1-99), so that these data will be available when the permittee applies for a renewal of its NPDES permit.

The permittee is responsible for conducting the monitoring and for reporting results on DMRs or on the application for renewal, as appropriate, to the EPA.

City of New Plymouth Wastewater Treatment Facility

B. Effluent Monitoring

Monitoring frequencies are based on the nature and effect of the pollutant, as well as a determination of the minimum sampling necessary to adequately monitor the facility's performance. Permittees have the option of taking more frequent samples than are required under the permit. These samples must be used for averaging if they are conducted using the EPA-approved test methods (generally found in 40 CFR 136) or as specified in the permit.

Table 3 presents the proposed effluent monitoring requirements for the New Plymouth WWTF. The sampling location must be after the last treatment unit and prior to discharge to the receiving water. The samples must be representative of the volume and nature of the monitored discharge. Monitoring must occur during the same week there is a discharge. If no discharge occurs during the reporting period, "no discharge" shall be reported on the DMR.

Table 3. Effluent Monitoring Requirements

Parameter	Units	Sample Location	Sample Frequency	Sample Type
Flow	mgd	Effluent	Continuous	recording
BOD ₅	mg/L	Influent & Effluent	1/week	24-hour composite
	lbs/day	Influent & Effluent	1/week	calculation ¹
	% Removal	--	--	calculation ²
TSS	mg/L	Influent & Effluent	1/week	24-hour composite
	lbs/day	Influent & Effluent	1/week	calculation ¹
	% Removal	--	--	calculation ²
pH	standard units	Effluent	1/week	grab
<i>E. Coli</i> Bacteria	CFU/100 ml	Effluent	5/week	grab ³
Total Ammonia as N	mg/L	Effluent	1/week	24-hour composite
	lbs/day	Effluent		calculation ¹
Total Phosphorus	mg/L	Effluent	1/week	24-hour composite
	lbs/day	Effluent		calculation ¹
Temperature	°C	Effluent	Continuous	recording ⁴
Total Kjeldahl Nitrogen	mg/L	Effluent	3/permit cycle ⁵	8-hour composite
Nitrate plus Nitrite	mg/L	Effluent	3/permit cycle ⁵	8-hour composite
Total Dissolved Solids	mg/L	Effluent	3/permit cycle ⁵	8-hour composite
Oil and Grease	mg/L	Effluent	3/permit cycle ⁵	grab
Dissolved Oxygen	mg/L	Effluent	3/permit cycle ⁵	meter

City of New Plymouth Wastewater Treatment Facility

Parameter	Units	Sample Location	Sample Frequency	Sample Type
<p>Notes:</p> <ol style="list-style-type: none"> 1. Loading is calculated by multiplying the concentration in mg/L by the flow on the day sampling occurred in mgd and a conversion factor of 8.34. 2. Percent removal is calculated using the following equation: (average monthly influent – average monthly effluent) ÷ average monthly influent. 3. Measurements must be based on a minimum of five (5) samples taken every three (3) to seven (7) days over a thirty (30) period. See IDADA 58.01.02.251.01(a). 4. Temperature data must be recorded using micro-recording temperature devices known as thermistors. Set the recording device to record at one-hour intervals. Report the following temperature monitoring data on the DMR: monthly instantaneous maximum, maximum daily average, seven-day running average of the daily instantaneous maximum. 5. See Part V.A. 				

Effluent Monitoring Changes from the Previous 2001 Permit:

- BOD₅ monitoring is more frequent. Increased from 1/month. The requirement will better characterize facility's effluent during periods of discharge.
- TSS monitoring is more frequent. Increased from 1/month. The requirement will better characterize facility's effluent during periods of discharge.
- pH monitoring was adjusted from 5/week to 1/week to be consistent with ammonia monitoring.
- Bacteria monitoring. Monitoring for fecal coliform is removed. *E. coli* monitoring is revised from 1/week to five samples per month taken every 3 to 7 days based on the IDEQ water quality criterion for *E. coli*. See Idaho WQS (IDADA 58.01.02.251.01).
- Total Ammonia and Total Phosphorus monitoring are more frequent. The requirement will better characterize facility's effluent during periods of discharge.
- Three samples per the permit cycle for the following parameters listed in Part B.6 of the application form for POTWs (EPA Form 3510-2A, revised 1-99, see also Appendix J of 40 CFR Part 122): Total Kjeldahl nitrogen, nitrate/nitrite, total dissolved solids, oil and grease, and dissolved oxygen. This is a reduced monitoring frequency for nitrate/nitrite and Kjeldahl nitrogen from the previous permit. The DMR data showed concentrations for these parameters are not of concern, but are required for NPDES permit reissuance.
- Orthophosphorus parameter was removed from the permit. The total phosphorus test measures all the forms of phosphorus in the sample (orthophosphate, condensed phosphate, and organic phosphate).
- Temperature is a new monitoring parameter in the permit. Continuous monitoring will be required due to the fact that the Lower Payette River is listed as water quality limited for temperature.

City of New Plymouth Wastewater Treatment Facility

- The mercury parameter was removed from the permit. Outside of special circumstances, the EPA does not require minor facilities to monitor for Mercury.

C. Surface Water Monitoring

Table 4 presents the proposed surface water monitoring requirements for the draft permit. The facility must monitor receiving water upstream of outfall 001 in the unnamed drainage ditch above the influence of the facility's effluent discharge. Surface water monitoring results must be submitted with the NetDMR and begin within 6 months of the effective date of this permit. If the facility is discharging intermittently, monitoring should occur during the same week in which the facility is discharging to the unnamed drainage ditch.

Table 4. Surface Water Monitoring Requirements

Parameter	Sample Frequency	Sample Type
Flow, mgd	1/week	Measured
<i>E. coli</i> bacteria, CFU/100mL	1/week	Grab
pH, standard units	1/week	Grab
Temperature, C°	Continuous	Meter
Total Ammonia as N, mg/L	1/week	Grab
Total Phosphorus, mg/L	1/week	Grab

Surface Water Monitoring Changes from the Previous 2001 Permit:

- The receiving water body monitoring location is in a different water body. The previous monitoring location was located on the Payette River. This change is necessary because outfall 001 discharges to an unnamed drainage ditch which meanders through a wetland before it ultimately discharges to the Lower Payette River.
- Flow sampling is more frequent. The requirement will better characterize the surface water during periods of effluent discharge.
- Temperature sampling is more frequent. Continuous monitoring will be required due to the fact that the unnamed drainage ditch, after meandering through a wetland, discharges to the Lower Payette River which, is water quality limited for temperature.
- *E. coli* Bacteria, pH, and total ammonia monitoring are more frequent. Previous monitoring requirements were quarterly from June through November, until a total of 12 samples were collected and analyzed. The requirement will better characterize the surface water during periods of effluent discharge.
- BOD₅, TSS, Dissolved Oxygen, Ortho phosphorus, Total Kjeldahl Nitrogen, Nitrate-Nitrite, and Mercury monitoring were removed from the permit. The parameters are not required for IDAPA 58.01.02 WQS.

D. Monitoring and Reporting

The draft permit requires the permittee to continue to submit DMR data electronically using NetDMR. NetDMR is a national web-based tool that allows DMR data to be submitted electronically via a secure Internet application. NetDMR allows participants to discontinue mailing in paper forms under 40 CFR § 122.41 and § 403.12.

Under NetDMR, all reports required under the permit are submitted to the EPA as an electronic attachment to the DMR. Once a permittee begins submitting reports using NetDMR, it is no longer required to submit paper copies of DMRs or other reports to the EPA and IDEQ.

Further information about NetDMR, including upcoming trainings and contacts, is provided on the following website: <http://www.EPA.gov/netdmr>.

VI. Sludge (Biosolids) Requirements

The EPA Region 10 separates wastewater and sludge permitting. The EPA has authority under the CWA to issue separate sludge-only permits for the purposes of regulating biosolids. The EPA may issue a sludge-only permit to each facility at a later date, as appropriate.

Until future issuance of a sludge-only permit, sludge management and disposal activities at each facility continue to be subject to the national sewage sludge standards at 40 CFR Part 503 and any requirements of the State's biosolids program. The Part 503 regulations are self-implementing, which means that facilities must comply with them whether or not a permit has been issued.

VII. Other Permit Conditions**A. Quality Assurance Plan**

In order to ensure compliance with the federal regulation at 40 CFR 122.41(e) for proper operation and maintenance, the draft permit requires the permittee to develop procedures to ensure that the monitoring data submitted is accurate and to explain data anomalies if they occur. The City is required to update the Quality Assurance Plan for the WWTF within 90 days of the effective date of the final permit. The Quality Assurance Plan must include standard operating procedures the permittee will follow for collecting, handling, storing and shipping samples, laboratory analysis, and data reporting. The plan must be retained on site and be made available to the EPA and the IDEQ upon request.

B. Operation and Maintenance Plan

The permit requires the City to properly operate and maintain all facilities and systems of treatment and control. Proper operation and maintenance is essential to meeting discharge limits, monitoring requirements, and all other permit requirements at all times. The permittee is required to develop and implement an operation and maintenance plan for their facility within 90 days of the effective date of the final permit. The plan must be retained on site and made available to the EPA and the IDEQ upon request.

C. Sanitary Sewer Overflows and Proper Operation and Maintenance of the Collection System

Untreated or partially treated discharges from separate sanitary sewer systems are referred to as sanitary sewer overflows (SSOs). SSOs may present serious risks of human exposure when released to certain areas, such as streets, private property, basements, and receiving waters used for drinking water, fishing and shellfishing, or contact recreation. Untreated sewage contains pathogens and other pollutants, which are toxic. SSOs are not authorized under this permit. Pursuant to the NPDES regulations, discharges from separate sanitary sewer systems authorized by NPDES permits must meet effluent limitations that are based upon secondary treatment. Further, discharges must meet any more stringent effluent limitations that are established to meet the EPA-approved state WQS.

The permit contains language to address SSO reporting and public notice and operation and maintenance of the collection system. The permit requires that the permittee identify SSO occurrences and their causes. In addition, the permit establishes reporting, record keeping and third party notification of SSOs. Finally, the permit requires proper operation and maintenance of the collection system. The following specific permit conditions apply:

Immediate Reporting – The permittee is required to notify the EPA of an SSO within 24 hours of the time the permittee becomes aware of the overflow. (See 40 CFR 122.41(l)(6))

Written Reports – The permittee is required to provide the EPA a written report within five days of the time it became aware of any overflow that is subject to the immediate reporting provision. (See 40 CFR 122.41(l)(6)(i)).

Third Party Notice – The permit requires that the permittee establish a process to notify specified third parties of SSOs that may endanger health due to a likelihood of human exposure; or unanticipated bypass and upset that exceeds any effluent limitation in the permit or that may endanger health due to a likelihood of human exposure. The permittee is required to develop, in consultation with appropriate authorities at the local, county, tribal and/or state level, a plan that describes how, under various overflow (and unanticipated bypass and upset) scenarios, the public, as well as other entities, would be notified of overflows that may endanger health. The plan should identify all overflows that would be reported and to whom, and the specific information that would be reported. The plan should include a description of lines of communication and the identities of responsible officials. (See 40 CFR 122.41(l)(6)).

Record Keeping – The permittee is required to keep records of SSOs. The permittee must retain the reports submitted to the EPA and other appropriate reports that could include work orders associated with investigation of system problems related to a SSO that describes the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the SSO. (See 40 CFR 122.41(j)).

Proper Operation and Maintenance – The permit requires proper operation and maintenance of the collection system. (See 40 CFR 122.41(d) and (e)). SSOs may be indicative of improper operation and maintenance of the collection system. The permittee may consider the development and implementation of a capacity, management, operation and maintenance (CMOM) program.

The permittee may refer to the Guide for Evaluating Capacity, Management, Operation, and Maintenance (CMOM) Programs at Sanitary Sewer Collection Systems (EPA 305-B-05-002). This guide identifies some of the criteria used by the EPA inspectors to evaluate a collection systems management, operation and maintenance program activities.

Owners/operators can review their own systems against the checklist (Chapter 3) to reduce the occurrence of sewer overflows and improve or maintain compliance.

D. Standard Permit Provisions

Sections III, IV and V of the draft permit contain standard regulatory language that must be included in all NPDES permits. The standard regulatory language covers requirements such as monitoring, recording, and reporting requirements, compliance responsibilities, and other general requirements. The regulations cannot be challenged in the context of an NPDES permit action.

VIII. Other Legal Requirements

A. Endangered Species Act

In general, any EPA action approving new or revised WQS is considered a federal action that may require consultation with the U.S. Fish and Wildlife Service (USFWS) and/or the National Oceanic and Atmospheric Administration- National Marine Fisheries Service (NOAA-NMFS) under section 7(a)(2) of the ESA, where the action may affect federally-listed endangered or threatened species or the designated critical habitat of such species. Section 7(a)(2) of the ESA requires federal agencies, in consultation with the Services, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of federally listed endangered or threatened species or result in the destruction or adverse modification of designated critical habitat of such species [16 U.S.C. 1536 (a)(2)]. Under relevant ESA implementing regulations, consultation is required for actions that “may affect” listed species or designated critical habitat [50 CFR 402.14]. The effects of the action are defined by regulation to include both the direct and indirect effects on species or critical habitat [50 CFR 402.02]. However, consultation under section 7(a)(2) is not required where the action has no effect on listed species or designated critical habitat.

A review of the threatened and endangered species located in Idaho finds that bull trout are listed as threatened, meaning that they are known or believed to occur in Payette County; however, bull trout are listed for the entire coterminous lower 48 states. The Snake River physa snail is listed as endangered, meaning that the physa snail is known or believed to occur in Payette County; however, the USFWS website ²,

<http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=G01L>, states that

“the Snake River physa snail (*Haitia (Physa) natricina*) is a freshwater mollusk found in the middle Snake River of southern Idaho...It is believed to be confined to the Snake River, inhabiting areas of swift current on sand to boulder-sized substrate. In 1995, the Service reported the known modern range of the species to be from Grandview, Idaho (RM 487) to the Hagerman Reach of the Snake River (RM 573). More recent

City of New Plymouth Wastewater Treatment Facility

investigations have shown this species to occur outside of this historic range to as far downstream as Ontario, Oregon (RM 368), with another population known to occur downstream of Minidoka Dam (RM 675). While the species' current range is estimated to be over 300 river miles, the snail has been recorded in only 5% of over 1,000 samples collected within this area, and it has never been found in high densities. The recovery area for the species extends from Snake River mile 553 to Snake River mile 675."

Table 5 below lists the threatened and endangered species in Payette County Idaho, as described by USFWS. The list of threatened and endangered species in Idaho is available on the USFWS website at <http://ecos.fws.gov/ecos/home.action>. Information in the following table was accessed on April 9, 2014.

The EPA did not find that any ESA-listed species or critical habitat resides within the vicinity of the City of New Plymouth WWTF discharge, and determined that the discharge of treated municipal wastewater to the unnamed drainage ditch will have no effect in the vicinity of the discharge.

Table 5. USFWS List of Threatened and Endangered Species for Payette County, Idaho

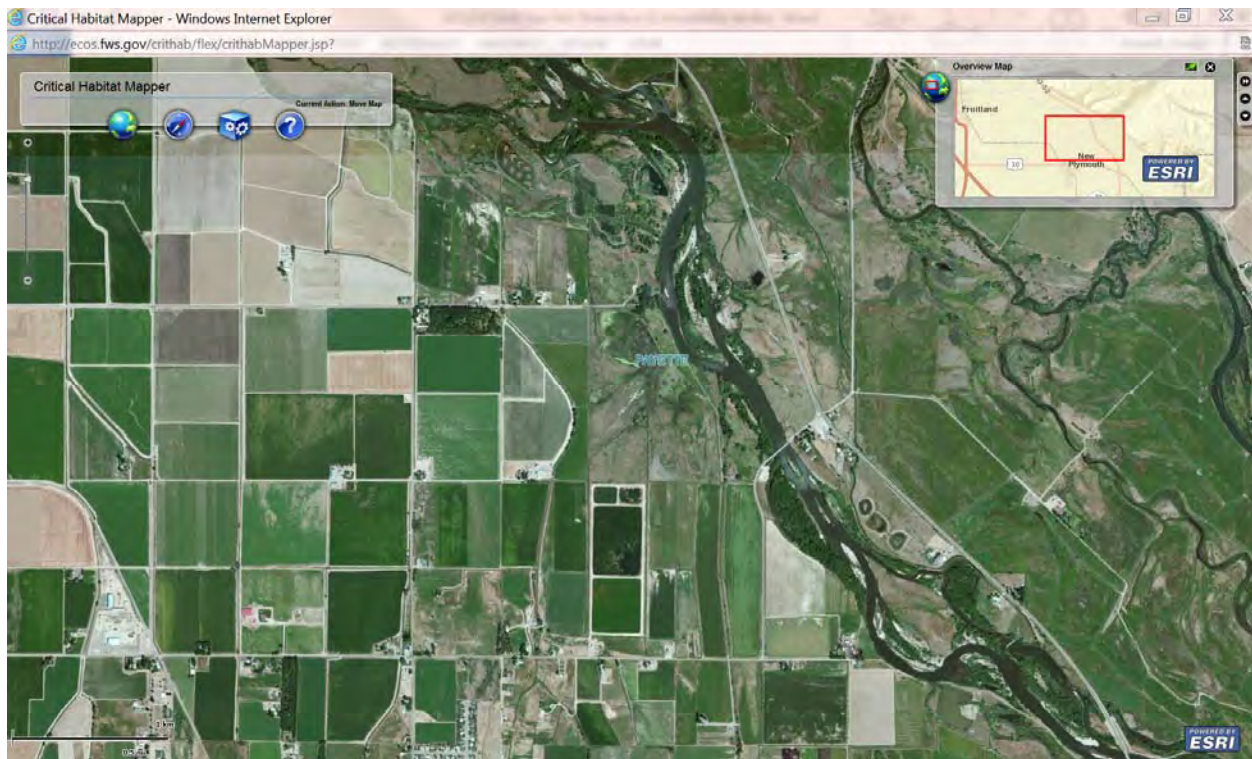
Group	Name	Population	Status	Lead Office	Recovery Plan Name	Recovery Plan Action Status	Recovery Plan Stage
Fishes	Bull Trout (Salvelinus confluentus)	U.S.A., conterminous, lower 48 states	Threatened	Idaho Fish and Wildlife Office Boise Idaho (208) 378-5243		-	Draft
Mammals	Gray wolf (Canis lupus)	Northern Rocky Mountain DPS (delisted, except WY)	Recovery	Office of The Regional Director Denver, Colorado (303) 236-7920	-	-	-
Mammals		-	Candidate	Idaho Fish and Wildlife Office Boise Idaho (208) 378-5243	-	-	-
Snails		Entire	Endangered	Idaho Fish and Wildlife Office Boise, Idaho (208) 378-5243	Snake River Aquatic Species Recovery Plan	-	Final

Critical Habitat

Critical habitat is designated for areas that contain the physical and biological features essential for the conservation of a threatened or endangered species and that may require special management considerations. Under ESA, all federal agencies must ensure any action they authorize, fund or carry out does not destroy or adversely modify designated critical habitat. The designation of critical habitat does not affect land ownership or establish a refuge, wilderness, reserve, preserve or other conservation area.

In addition to there being no threatened or endangered species in the vicinity of the discharge, USFWS shows no designated critical habitat information for Payette County in the vicinity of the discharge ³. <http://criticalhabitat.fws.gov/crithab> Critical habitat would be shown on the critical habitat mapper in red in Figure 1 below.

Figure 1. USFWS Habitat Mapper Showing No Critical Habitat (in red) in the Vicinity of the Discharge



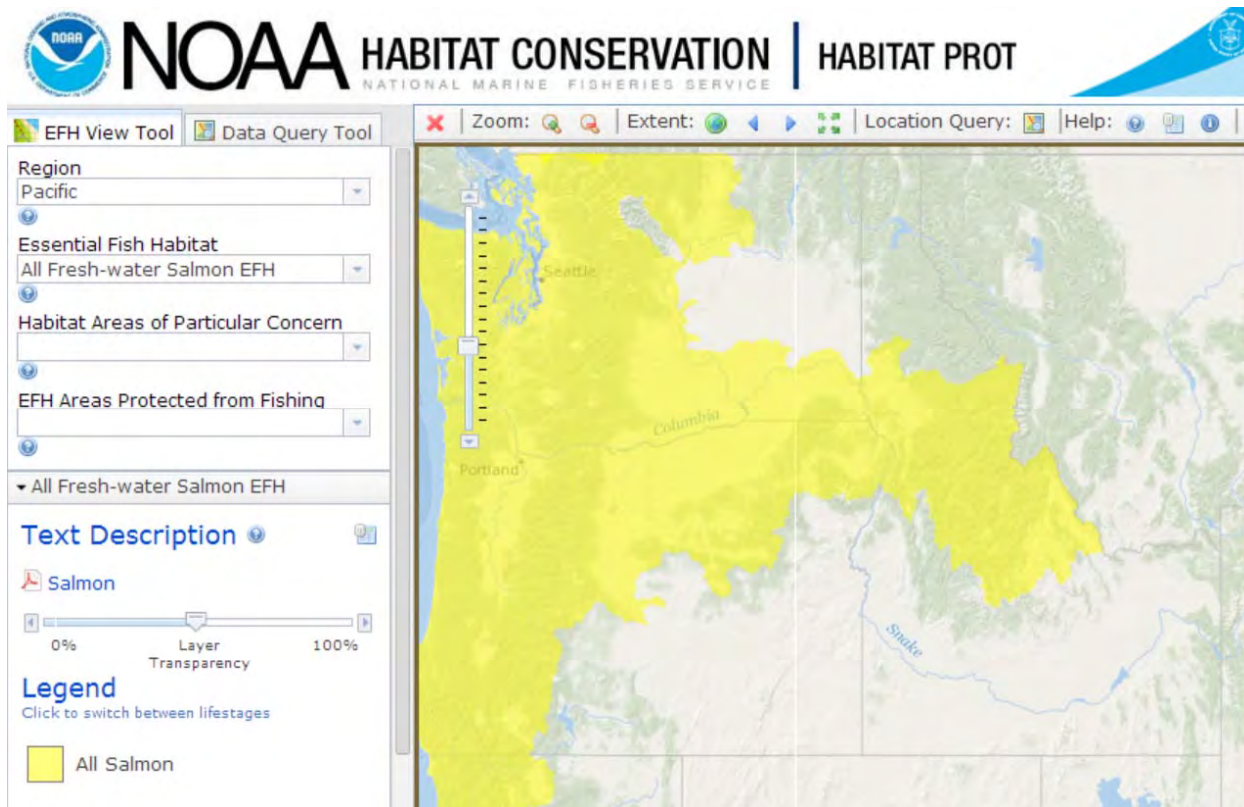
B. Essential Fish Habitat

Essential fish habitat (EFH) includes 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 (16 U.S.C. 1801, *et seq.*) and implementing regulations require the EPA to consult with NOAA Fisheries when a proposed discharge has the potential to adversely affect (reduce quality and/or quantity of) EFH. The EFH regulations define an adverse effect as any impact which reduces quality 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.

An investigation using NOAA's Essential Fish Habitat online mapper shows that there is no EFH for freshwater salmon in the vicinity of the New Plymouth WWTF discharge. (<http://www.habitat.noaa.gov/protection/efh/efhmapper/index.html>). EFHs are shown on the EFH online mapper in yellow in Figure 2 below.

The EPA has determined that issuance of this permit is not likely to adversely affect 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.

Figure 2. NOAA EFH Mapper showing no EFH (in yellow) in the vicinity of the discharge.



Therefore, upon review of the information available, the EPA determined that the draft Permit will have no effect on threatened or endangered species, critical habitat or EFH because there are no threatened or endangered species, listed critical habitat or EFH in the vicinity of the discharge of the New Plymouth WWTF. Therefore, ESA consultation with the Services is not required.

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 WQS, or treatment standards established pursuant to any State law or regulation.

D. Permit Expiration

The permit will expire five years from the effective date.

IX. References

¹ IDEQ Lower Payette River Subbasin Assessment and Total Maximum Daily Load (IDEQ, December 1999)

² U.S. Fish and Wildlife Service (USFWS) - Idaho Fish and Wildlife Office Endangered, Threatened, Proposed, and Candidate Species in Payette County, Idaho. Accessed April 9, 2014.
http://ecos.fws.gov/tess_public/countySearch!speciesByCountyReport.action?fips=16075

³ USFWS Critical Habitat Portal. Accessed April 9, 2014. <http://ecos.fws.gov/crithab/>

⁴ EPA. 1991. *Technical Support Document for Water Quality-based Toxics Control*. US Environmental Protection Agency, Office of Water, EPA/505/2-90-001.

⁵ EPA. 2010. *NPDES Permit Writers' Manual*. Environmental Protection Agency, Office of Wastewater Management, EPA-833-K-10-001.

Appendix A: Facility Information

General Information

NPDES ID Number: ID0020389

Physical & Mailing Address: City of New Plymouth Wastewater Treatment Facility (WWTF)
P.O. Box 158
New Plymouth, Idaho 83655

Facility Background: This is the fourth NPDES permit issued to this facility.

Facility Information

Type of Facility: Publicly Owned Treatment Works (POTW)

Treatment Train: The facility treats domestic wastewater in a series of four waste stabilization lagoons. Effluent is not chlorinated prior to discharge. The treatment lagoons provide long-term sludge storage. Sludge estimates are measured periodically to estimate sludge volume and are currently estimated to retain sewage sludge for an additional 8-10 years.

Facility Upgrade: The collection system improvement project was completed in 2009 to reduce inflow/infiltration (I/I) caused by several irrigation canals and ditches within the City. The project cost was approximately \$1,125,000 and was funded through City funds and a USDA-Rural Development loan. This included the replacement and rehabilitation of existing collection system piping, as well as construction of new collection system segments. The project also included the construction of a new influent screening facility and influent flow meter at the wastewater treatment lagoons. The improvements replaced deteriorating piping and reduced significant irrigation which, caused seasonal infiltration and inflow into the sewer collection system. Construction methods included both traditional dig-and-replace as well as trenchless cure-in-place piping (CIPP), where applicable, in order to maximize cost-effectiveness and the total benefit to the system. Repair and replacement work significantly reduced infiltration to the wastewater treatment facility and eliminated problem maintenance intensive sections. The project increased the reliability and hydraulic flow characteristics of the collection system. Construction included installation of approximately 10,230 linear feet of 8-, 12-, and 15-inch PVC SDR 35 gravity sewer pipe, approximately 5,750 linear feet of 6-, 8-, and 12-inch CIPP liner, 52 new or rehabilitated manholes, and a screen facility at the wastewater lagoons.

Figures: Figures A-1 and A-2 below illustrates the measured annual and monthly average influent flow rates before, during, and after the I/I upgrade project in 2009. Figures A-3, A-4, A-5, and A-6 illustrate the lagoon layout, hydraulic lagoon profile, topographic map of New Plymouth impact area, and outfall location, respectively.

Flow: Design flow is 0.6 mgd.

Outfall Location: Latitude: 43° 59' 18.5454", Longitude: -116° 48' 13.446"

City of New Plymouth Wastewater Treatment Facility

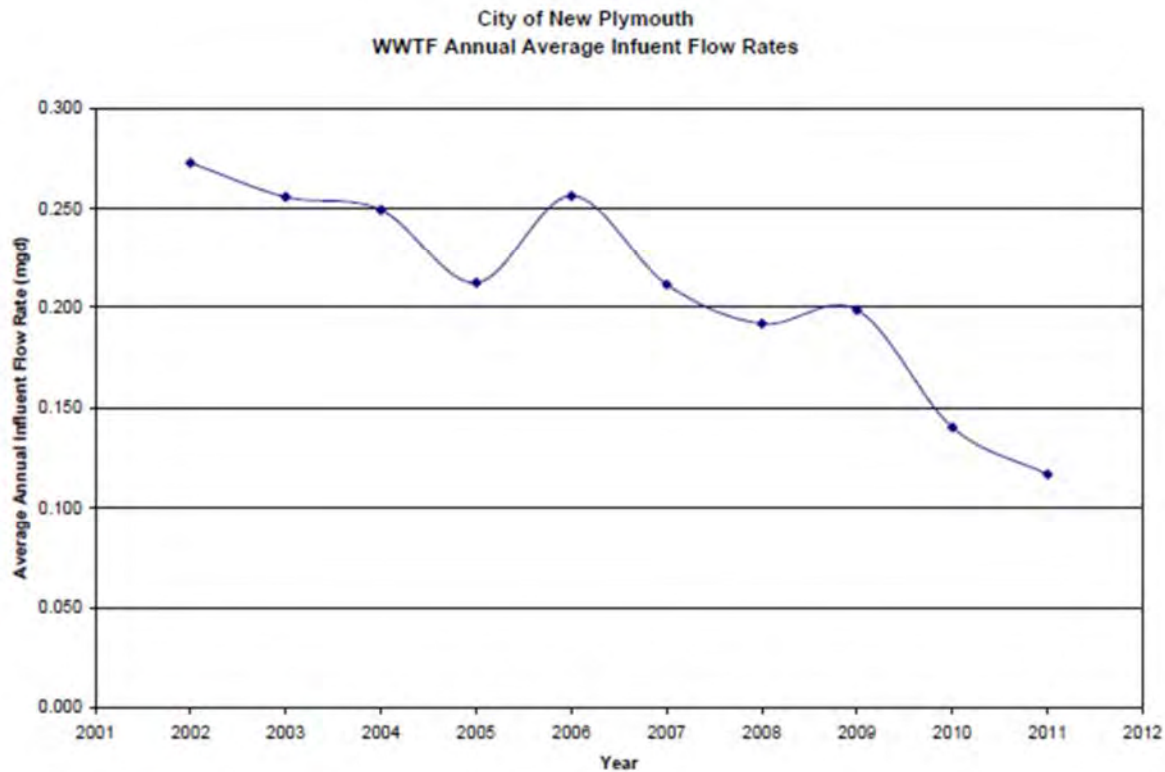
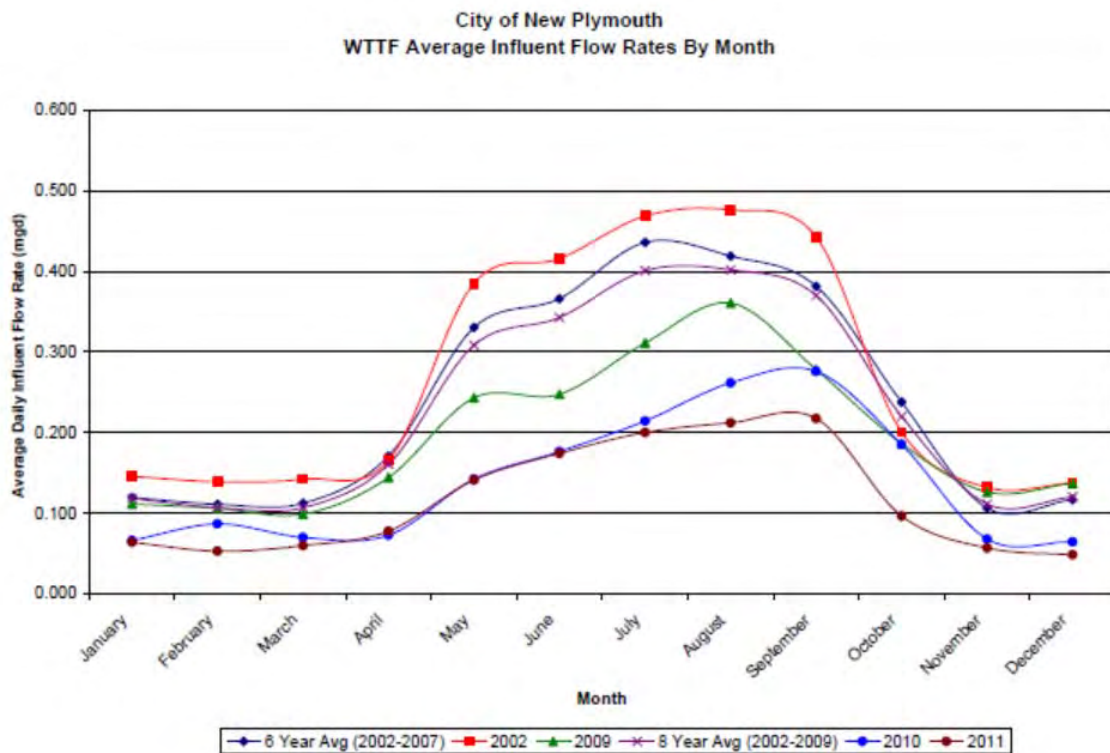
Figure A-1: Measured Average Annual Influent Flow Rate by Year**Figure A-2: Measured Average Daily Influent Flow Rate by Year and Month**

Figure A-3: City of New Plymouth, Idaho. WWTF Lagoon Layout

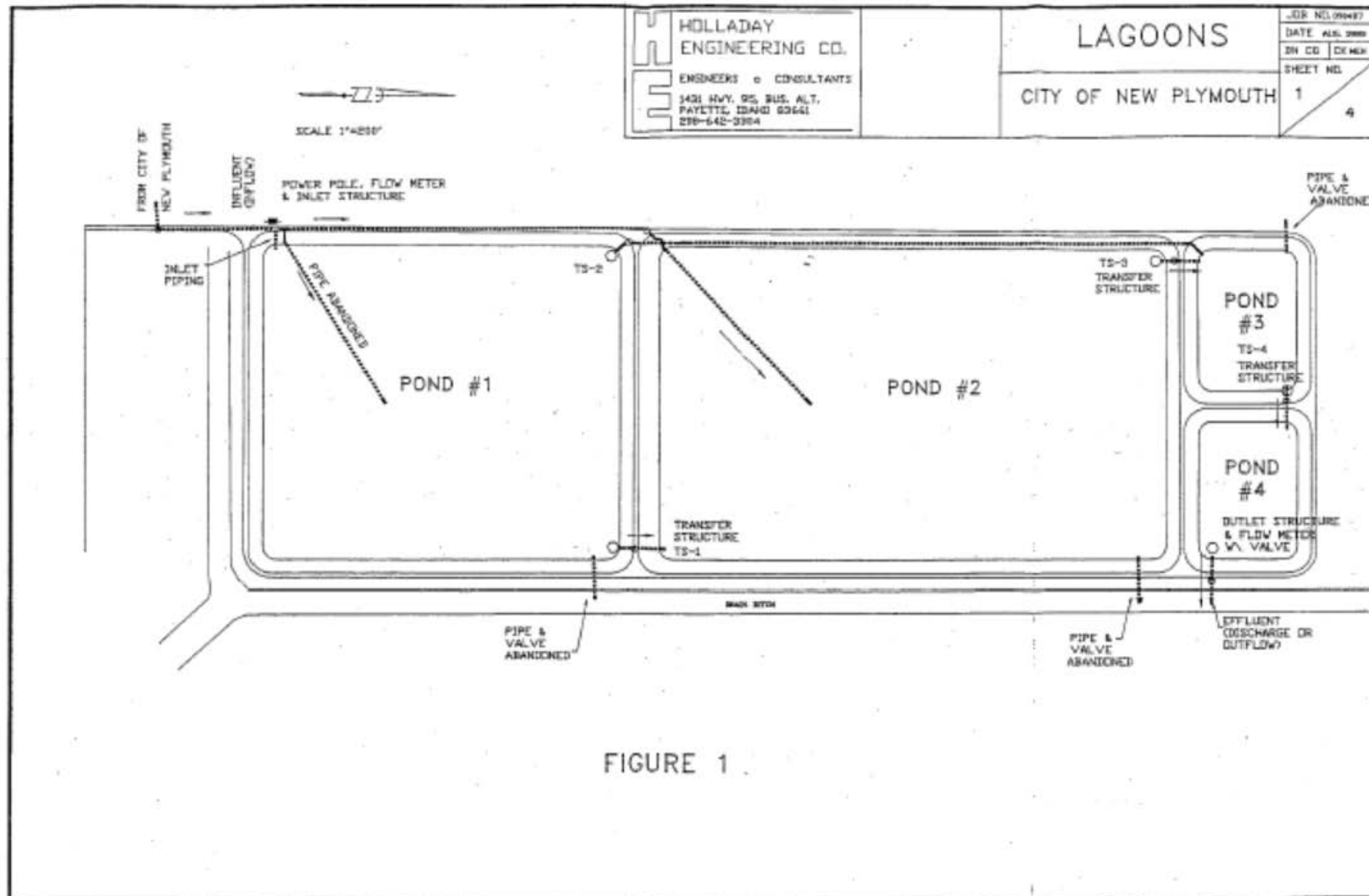


Figure A-4: City of New Plymouth, Idaho
Hydraulic Profile of Lagoons

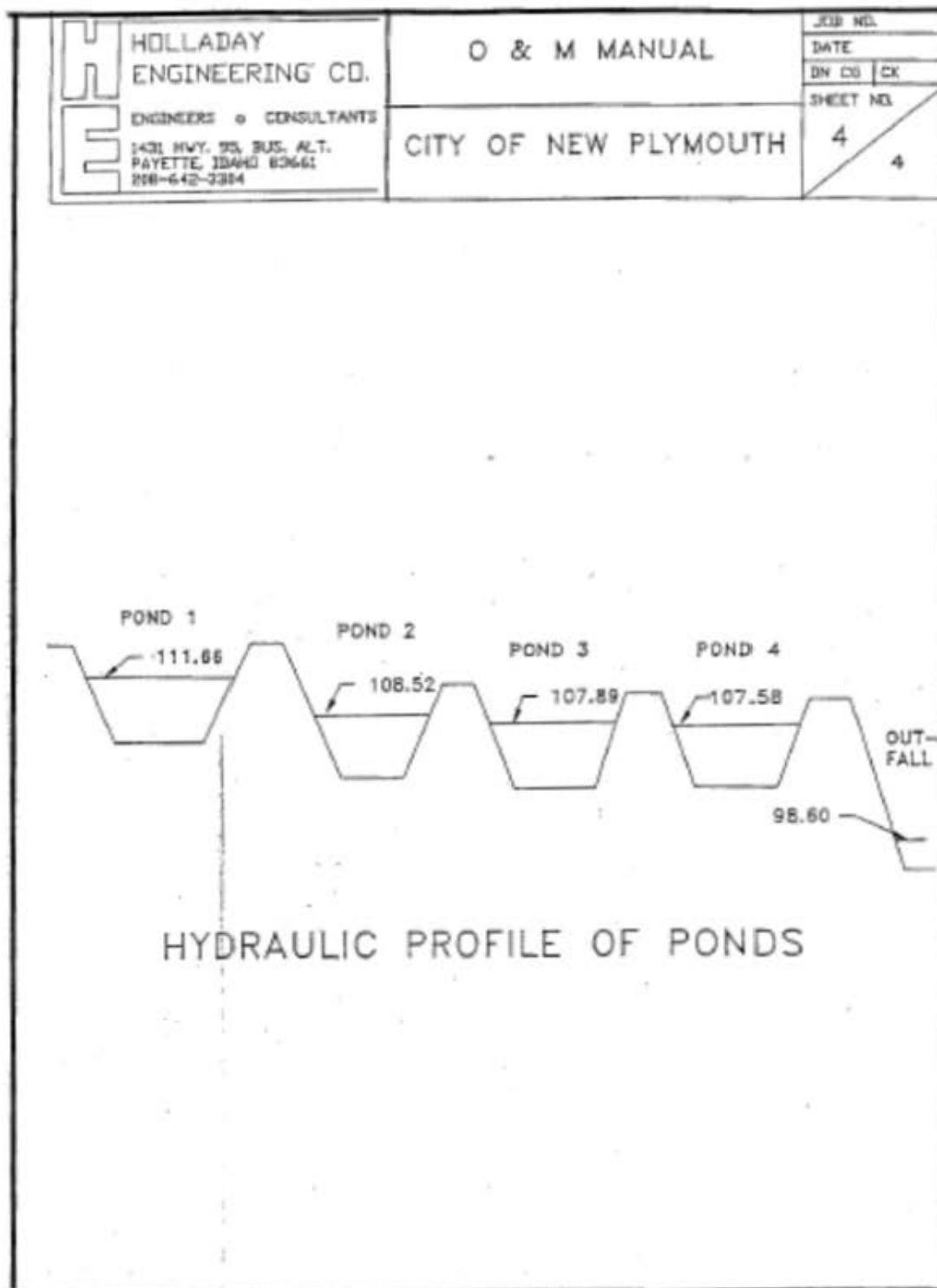


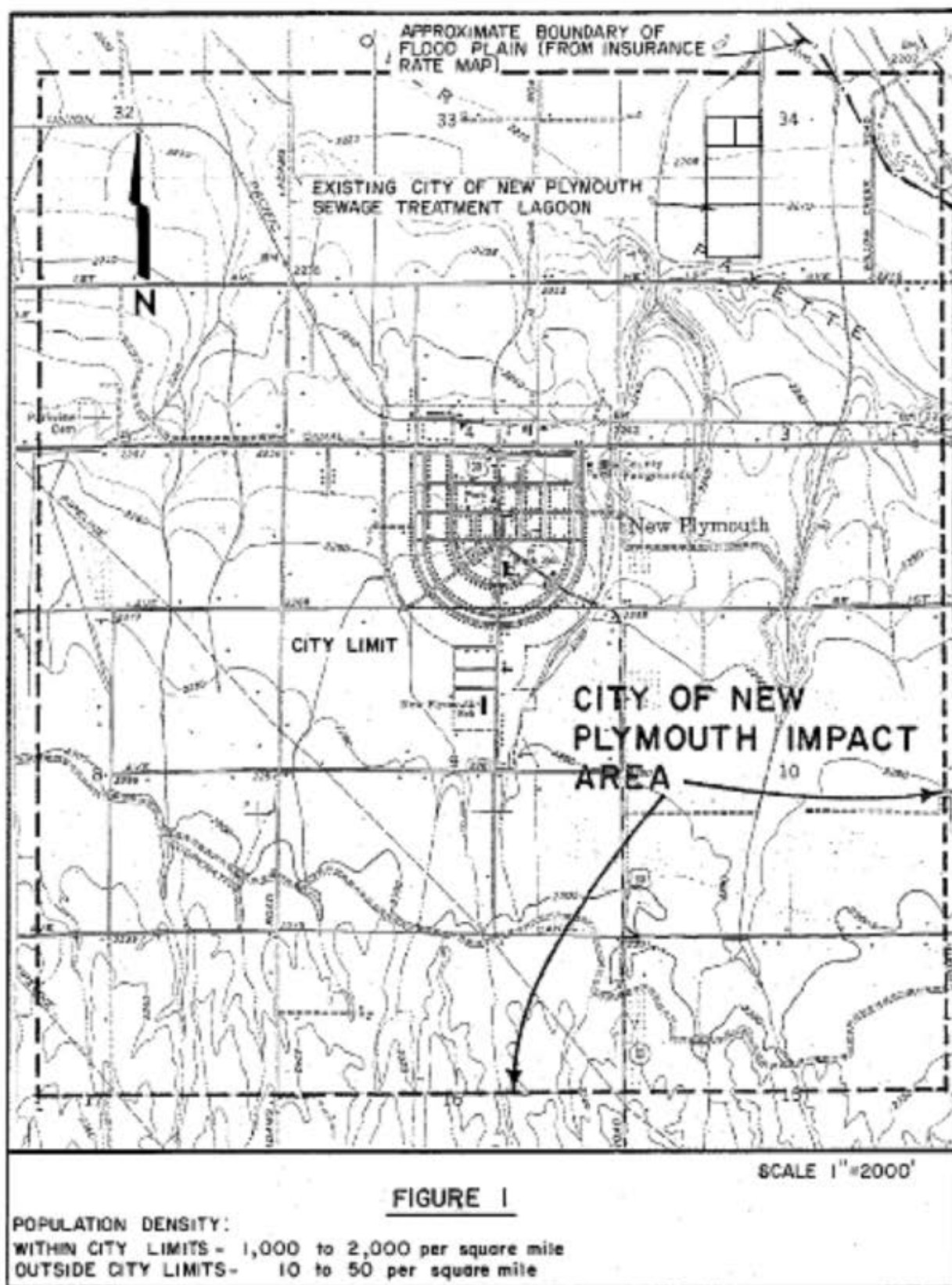
Figure A-5: City of New Plymouth, Idaho. Topographic Map

Figure A-6: Outfall Location of the New Plymouth WWTF



Appendix B: Water Quality Criteria Summary

This appendix provides a summary of water quality criteria applicable to the Unnamed Drainage Ditch.

Idaho WQS include criteria necessary to protect designated beneficial uses. As discussed on Part III of the Fact Sheet, as an “undesignated waterway” the Unnamed Drainage Ditch is protected for the following uses: cold water aquatic life, primary contact recreation, industrial and agricultural water supply, wildlife habitats and aesthetics.

The standards are divided into three sections: General Water Quality Criteria, Surface Water Quality Criteria for Use Classifications, and Site-Specific Surface Water Quality Criteria. The EPA has determined that the criteria listed below are applicable to the Unnamed Drainage Ditch. This determination was based on (1) the applicable beneficial uses of the river for undesignated surface waters (i.e. recreational use in and on the water, the protection and propagation of fish, shellfish, and wildlife, wherever attainable), (2) the type of facility, (3) a review of the application materials submitted by the permittee, and (4) the lack of water quality data in the Unnamed Drainage Ditch which, meanders through a wetland before discharging to the SW-1 river segment (Black Canyon Reservoir Dam to mouth) of the Lower Payette River.

A. General Criteria (IDAPA 58.01.02.200)

Surface waters of the state shall be free from:

- hazardous materials,
- toxic substances in concentrations that impair designated beneficial uses,
- deleterious materials,
- radioactive materials,
- floating, suspended, or submerged matter of any kind in concentrations causing nuisance or objectionable conditions or that may impair designated beneficial uses,
- excess nutrients that can cause visible slime growths or other nuisance aquatic growths impairing designated beneficial uses,
- oxygen demanding materials in concentrations that would result in an anaerobic water condition

Surface water level shall not exceed allowable level for:

- radioactive materials, or
- sediments

B. Numeric Criteria for Toxics (IDAPA 58.01.02.210)

This section of the Idaho WQS provides the numeric criteria for toxic substances for waters designated for aquatic life, recreation, or domestic water supply use. Monitoring of the effluent has shown that there are currently no toxic pollutants present at detectable levels in the effluent.

C. Surface Water Criteria To Protect Aquatic Life Uses (IDAPA 58.01.02.250)

1. pH: Within the range of 6.5 to 9.0
2. Total Dissolved Gas: <110% saturation at atm. pressure.
3. Dissolved Oxygen: Exceed 6 mg/L at all times.
4. Temperature: Water temperatures of 22°C or less with a maximum daily average of no greater than 19°C.
5. Ammonia:

Ammonia criteria are based on a formula which relies on the pH and temperature of the receiving water, because the fraction of ammonia present as the toxic, un-ionized form increases with increasing pH and temperature. Therefore, the criteria become more stringent as pH and temperature increase. Table B-1 below details the equations used to determine water quality criteria for ammonia.

Surface water quality data for the unnamed drainage ditch which, meanders through a wetland before discharging to the Lower Payette River were not available. See Appendix A for background information. Consequently, Idaho state water quality criteria for ammonia could not be developed on account that pH and temperature values were not available for the unnamed drainage ditch surface water.

Table B-1: Water Quality Criteria for Ammonia		
	Acute Criterion	Chronic Criterion
Equations:	$\frac{0.275}{1 + 10^{7.204 - \text{pH}}} + \frac{39}{1 + 10^{\text{pH} - 7.204}}$	$\left(\frac{0.0577}{1 + 10^{7.688 - \text{pH}}} + \frac{2.487}{1 + 10^{\text{pH} - 7.688}} \right) \times \text{MIN}(2.85, 1.45 \times 10^{0.028 \times (25 - T)})$

6. Turbidity: Turbidity below any applicable mixing zone set by the Department shall not exceed background turbidity by more than 50 NTU instantaneously or more than 25 NTU for more than ten (10) consecutive days.

D. Surface Water Quality Criteria For Recreational Use Designation (IDAPA 58.01.02.251)

- a. Geometric Mean Criterion. Waters designated for primary or secondary contact recreation are not to contain *E. coli* in concentrations exceeding a geometric mean of 126 *E. coli* organisms per 100 ml based on a minimum of 5 samples taken every 3 to 7 days over a 30 day period.
- b. Use of Single Sample Values: A water sample exceeding the *E. coli* single sample maximums below indicates likely exceedance of the geometric mean criterion but is not alone a violation of WQS.
 - i. For waters designated as primary contact recreation, a single sample maximum of 406 *E. coli* organisms per 100 ml (IDAPA 58.01.02.251.01.b.ii.) for primary and contact recreation.

Appendix C: Basis for Effluent Limits

The following discussion explains in more detail the statutory and regulatory basis for the technology and WQBELs in the draft permit. Part A discusses TBELs, Part B discusses WQBELs in general, and Part C discusses Anti-backsliding Provisions.

A. Technology-Based Effluent Limits

The CWA requires POTWs to meet requirements based on available wastewater treatment technology. Section 301 of the CWA established a required performance level, referred to as “secondary treatment,” which all POTWs were required to meet by July 1, 1977. The EPA developed and promulgated the performance level as “secondary treatment” effluent limitations which, can be found at 40 CFR §133.102. These TBELs apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by application of secondary treatment in terms of the 5-day Biological Oxygen Demand test (BOD₅), Total Suspended Solids (TSS) and pH. The federally promulgated secondary treatment effluent limits are listed in Table C-1.

Table C-1: Secondary Treatment Effluent Limits (40 CFR § 133.102)		
Parameter	30-day average	7-day average
BOD ₅	30 mg/L	45 mg/L
TSS	30 mg/L	45 mg/L
Removal for BOD ₅ and TSS (concentration)	85% (minimum)	---
pH	within the limits of 6.0 - 9.0 s.u.	

The EPA also developed and promulgated regulations that include alternative less stringent standards that apply to facilities using “treatment equivalent to secondary” (TES) such as waste stabilization ponds and trickling filters. See 40 CFR § 133.105(a) - (c). Congress initially recognized that unless alternative limitations were set for these facilities, 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. These standards specify the maximum allowable discharge concentration of BOD₅, TSS, and a minimum percent removal requirement for qualified facilities as listed below in Table C-2.

Table C-2: Equivalent to Secondary Treatment Standards (40 CFR § 133.105)		
Parameter	30-day average	7-day average
BOD ₅	not to exceed 45 mg/L	not to exceed 65 mg/L
TSS	not to exceed 45 mg/L	not to exceed 65 mg/L
Removal for BOD ₅ and TSS (concentration)	Not less than 65%	---
pH	6.0 - 9.0 s.u.	

City of New Plymouth Wastewater Treatment Facility

Additionally, the regulations at 40 CFR § 133.105(f) require the EPA to include more stringent limitations when it determines through analysis that more stringent concentrations are achievable through proper operation and maintenance of the treatment works based on an analysis of past performance. The regulations at 40 CFR § 133.101(f), define effluent concentrations consistently achievable as the 95% value for the 30-day average. The 7-day average value is calculated by multiplying the 30-day average by 1.5.

A facility must meet all of the following criteria in order to qualify for application of the alternative less stringent standards set forth in 40 CFR § 133.105 (see Table C-2, above):

- Criterion #1 - “The BOD₅ and TSS effluent concentrations consistently achievable through proper operation and maintenance of the treatment works exceed the minimum level of the effluent quality for secondary treatment.” 40 CFR § 133.101(g)(1). The regulations at 40 CFR § 133.101(f) define “effluent concentrations consistently achievable through proper operation and maintenance” as “(f)(1): For a given pollutant, 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, and (f)(2): a 7-day average value equal to 1.5 times the value derived under paragraph (f)(1) of this section.”
- Criterion # 2 - “A trickling filter or waste stabilization pond is used as the principal treatment process.” 40 CFR § 133.101(g)(2).
- Criterion # 3 - “The treatment works provide significant biological treatment of municipal wastewater.” 40 CFR § 133.101(g)(3). “Significant biological treatment” is defined in 40 CFR § 133.101(k) as “The use of an aerobic or anaerobic biological treatment process in a treatment works to consistently achieve a 30-day average of a [sic] least 65 percent removal of BOD₅.”

In evaluating the eligibility of the WWTF for treatment equivalent to secondary (TES) as specified in Table C-2, the EPA evaluated eligibility of the facility for TES based on performance capabilities of the plant at its design loading and flow conditions. The City completed upgrades in 2009 to the collection system to remove excessive inflow and infiltration (I/I), which drastically reduced influent flows to the WWTF. As a result, the WWTF is currently underloaded in terms of its design conditions and has discharged only once (in March 2010) since the collection system upgrades were completed. The lagoons are functioning primarily as storage facilities. Discharge from the treatment plant has been through evaporation, and not through leakage as confirmed through IDEQ seepage tests. Because the lagoons are underloaded, EPA determined that it is appropriate to evaluate eligibility of the facility for TES based on performance capabilities of the plant at its design loading and flow conditions, as directed by EPA’s Technical Support Document which states: *If a plant is currently underloaded in terms of its design conditions, it is appropriate for the permit effluent limitation to reflect performance capabilities of the plant at design loading and flow conditions.*¹

¹ Technical Support Document for Proposed Regulations Under Section 304(D)(4) of the Clean Water Act, As Amended, EPA, August 1984

Criterion # 1

In evaluating the WWTF performance with Criterion #1, the EPA reviewed BOD₅ and TSS effluent monitoring data since 2003. The BOD₅ and TSS concentrations in March 2010 discharge which were quite low (4 mg/L and 3 mg/L respectively), were disregarded since those data represent unusual conditions. The effluent quality from March 2010 is not representative of the facility at its design conditions and instead reflects an excessively high residence time in the lagoons.

The 95th percentile value for the average monthly BOD₅ concentration is calculated to be 40 mg/L, and therefore is consistently over the minimal level for the 30-day average for the secondary treatment standard of 30 mg/L. The 7-day average BOD₅ value is calculated as 1.5 x the BOD₅ average monthly concentration as 60 mg/L which exceeds the 45 mg/L secondary treatment standard for BOD₅ 7-day average. All 95th percentile values are shown in Table C-3 below. Because BOD₅ effluent concentrations are consistently higher than the minimum level of effluent quality for secondary treatment standards, the facility meets criterion # 1 for BOD₅.

The 95th percentile value for the average monthly TSS concentration is calculated to be 82 mg/L, and therefore is consistently over the minimal level for the 30-day average for the secondary treatment standard of 30 mg/L. The 7-day average TSS value is calculated as 1.5 x the TSS average monthly concentration as 123 mg/L which exceeds the 45 mg/L secondary treatment standard for TSS 7-day average. All 95th percentile values are shown in Table C-3. Because TSS effluent concentrations are consistently higher than the minimum level of effluent quality for secondary treatment standards, the facility also meets criterion #1 for TSS.

Criterion # 2

For the New Plymouth WWTF, criterion #2 is met for alternative less stringent standards on account that the principal treatment process consists of non-aerated biological treatment through two facultative ponds.

Criterion # 3

Percent Removal data for BOD₅ and TSS from 2003 to 2008 are shown in Table C-3 for background information. The historic poor performance of the lagoons prior to 2009 is attributed to excessive I/I. Because of the collection system improvements, the excessive I/I has been removed. Therefore, the New Plymouth WWTF should be capable of providing significant biological treatment of at least 65%. The facility only had one discharge occurrence in March 2010 since the collection system improvements, which was greater than a 98% BOD₅ removal according to the DMR data. Because the facility is underloaded, the March 2010 discharge occurrence it is not representative of design conditions, but it is expected the facility can consistently achieve a 30-day average of at least 65 percent removal of BOD₅ as described in 40 CFR § 133.101(g)(3). The expected performance of the New Plymouth WWTF was confirmed by IDEQ wastewater engineers (Email dated 07/30/2014 from Lauri Monnot, IDEQ Boise Regional Office). Therefore, the New Plymouth WWTF will meet criteria #3 for significant biological treatment.

Determination

The New Plymouth WWTF meets the three criteria and is eligible for equivalent for secondary treatment standards.

Table C-3: Maximum Effluent Averages Representative of DMRs from 2003 to 2008				
Parameter	Units	Monthly Average 95th Percentile ^A	Weekly Average (1.5 x monthly average) ^A	% Removal 5th Percentile ^A
BOD ₅	mg/L	40	60	--
	% Removal	--	--	18.3
TSS	mg/L	82	123	--
	% Removal	--	--	-10.15
^A The New Plymouth WWTF ceased to discharge following the 2009 I/I upgrade with the exception of one discharge occasion in March 2010.				

Determination of Mass-Based Limits

The federal regulations at 40 CFR § 122.45(b) and (f) require that POTW limitations to be expressed as mass-based limits using the design flow of the facility. Loading is calculated by multiplying the concentration (in mg/L) by the flow (in million gallons per day [mgd]) and a conversion factor of (8.34 lbs x L)/(mg x 10⁶ gallons) which, reflects the following conversions:

- 8.34 lbs = 1 gallon of H₂O
- 1 m³ = 1000L
- 1000mg = 1g

The mass-based limits, expressed in lbs/day, are calculated as follows based on the design flow:

$$\text{Mass-based limit (lbs/day)} = \text{concentration limit (mg/L)} \times \text{design flow (mgd)} \times 8.34$$

The mass limits for BOD₅ are calculated as follows:

$$\text{Average Monthly Limit (AML)} = 45 \text{ mg/L} \times 0.6 \text{ mgd} \times 8.34 = 225 \text{ lbs/day}$$

$$\text{Average Weekly Limit (AWL)} = 65 \text{ mg/L} \times 0.6 \text{ mgd} \times 8.34 = 325 \text{ lbs/day}$$

The mass limits for TSS are calculated as follows:

$$\text{Average Monthly Limit (AML)} = 45 \text{ mg/L} \times 0.6 \text{ mgd} \times 8.34 = 225 \text{ lbs/day}$$

$$\text{Average Weekly Limit (AWL)} = 65 \text{ mg/L} \times 0.6 \text{ mgd} \times 8.34 = 325 \text{ lbs/day}$$

City of New Plymouth Wastewater Treatment Facility

The calculated mass-based technology limits herein are either more stringent than the previous 2001 permit mass-based technology limits or, are not subject to anti-backsliding provisions as specified in Part C of this Appendix. Therefore all calculated mass-based effluent limits were incorporated into the permit.

B. Water Quality-based Effluent Limits***Statutory and Regulatory Basis***

Section 301(b)(1)(C) of the CWA requires the development of limitations in permits necessary to meet WQS. Discharges to State or Tribal waters must also comply with limitations imposed by the State or Tribe as part of its certification of NPDES permits under section 401 of the CWA. Federal regulations at 40 CFR 122.4(d) prohibit the issuance of an NPDES permit that does not ensure compliance with the WQS of all affected States.

The NPDES regulation (40 CFR 122.44(d)(1)) implementing Section 301(b)(1)(C) of the CWA requires that permits include limits for all pollutants or parameters which are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State or Tribal water quality standard, including narrative criteria for water quality, and that the level of water quality to be achieved by limits on point sources is derived from and complies with all applicable WQS.

The regulations require the permitting authority to make this evaluation using procedures which account for existing controls on point and nonpoint sources of pollution, the variability of the pollutant in the effluent, species sensitivity (for toxicity), and where appropriate, dilution in the receiving water. The limits must be stringent enough to ensure that WQS are met, and must be consistent with any available wasteload allocation.

Reasonable Potential Analysis

When evaluating the effluent to determine if the pollutant parameters in the effluent are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State/Tribal water quality criterion, the EPA projects the receiving water concentration (downstream of where the effluent enters the receiving water) for each pollutant of concern. The EPA uses the concentration of the pollutant in the effluent and receiving water and, if appropriate, the dilution available from the receiving water, to project the receiving water concentration. If the projected concentration of the pollutant in the receiving water exceeds the numeric criterion for that specific pollutant, then the discharge has the reasonable potential to cause or contribute to an excursion above the applicable water quality standard, and a water quality-based effluent limit is required.

Effluent and surface water quality data for the unnamed drainage ditch which, meanders through a wetland before discharging to the Lower Payette River, was not available. See Appendix A for background information. Therefore, the reasonable potential analysis for ammonia could not be determined.

Procedure for Deriving Water Quality-based Effluent Limits

The first step in developing a water quality-based effluent limit is to determine whether there are any applicable wasteload allocations (WLAs) for the pollutant. A wasteload allocation is the amount of a pollutant that the permittee may discharge without causing or contributing to an exceedance of the WQS for that pollutant in the receiving water. Wasteload allocations are determined in one of the following ways:

1. TMDL-Based Wasteload Allocation

Where the receiving water quality does not meet WQS, the wasteload allocation is generally established by a TMDL. A TMDL is a determination of the amount of a pollutant from all contributing sources that may be discharged to a water body without causing the water body to exceed the WQS for that pollutant.

To ensure that these waters will come into compliance with WQS, Section 303(d) of the CWA requires TMDLs to be developed for those water bodies that will not meet WQS even after the imposition of technology-based effluent limitations. The first step in establishing a TMDL is to determine the assimilative capacity (the loading of pollutant that a water body can assimilate without exceeding WQS). The next step is to divide the assimilative capacity into allocations for non-point sources and natural background (load allocations), point sources (wasteload allocations), and a margin of safety to account for any uncertainties. Permit limitations are then developed for point sources that are consistent with the assumptions and requirements of the wasteload allocation for the point source.

2. Mixing zone based WLA

When the State authorizes a mixing zone for the discharge, the WLA is calculated by using a simple mass balance equation. The equation takes into account the available dilution provided by the mixing zone and the background concentrations of the pollutant.

3. Criterion as the Wasteload Allocation

In some cases a mixing zone cannot be authorized, either because the receiving water is already at, or exceeds, the criterion, the receiving water flow is too low to provide dilution, or the facility can achieve the effluent limit without a mixing zone. In such cases, the criterion becomes the wasteload allocation. Establishing the criterion as the wasteload allocation ensures that the effluent discharge will not contribute to an exceedance of the criteria.

Once the wasteload allocation has been developed, the EPA applies the statistical permit limit derivation approach described in Chapter 5 of the *Technical Support Document for Water Quality-Based Toxics Control* (EPA/505/2-90-001, March 1991, hereafter referred to as the TSD) to obtain monthly average, and weekly average or daily maximum permit limits. This approach takes into account effluent variability, sampling frequency, and WQS.

Summary - WQBELs

The water quality based effluent limits in the draft permit are summarized below.

pH

The Idaho WQS at IDAPA 58.01.02.250.01.a, require pH values of the river to be within the range of 6.5 to 9.0. Mixing zones are generally not granted for pH, therefore the most stringent water quality criterion must be met before the effluent is discharged to the receiving water. Effluent data were not available, with the exception of one data point in March 2010.

E. coli Bacteria

As discussed in Section III, part D of this Fact Sheet, the 2000 TMDL included a WLA for the City of New Plymouth WWTF for bacteria based on bacteria loading analysis and load reduction as specified in section 4.0 of the IDEQ Lower Payette River Subbasin Assessment and TMDL (IDEQ, December 1999). The SW-1 segment is impaired for the bacteria *Escherichia coli* and has an assigned fecal coliform WLA mass-loading of 8900 CFU/sec. The WLA also does not include the estimated die-off rates of 17.4% to the Snake River. However, the overall contribution of bacteria by municipal plants for the Lower Payette River is minimal, with an overall contribution of 0.004% of the total load to the river as specified in section 4.3.2 of the IDEQ Lower Payette River Subbasin Assessment and TMDL (IDEQ, December 1999).

In addition, the previous 2001 permit (Part I.A.6) states that, Upon EPA approval of the adoption to the Idaho Water Quality Standards removing the AWL for fecal coliform, and notification of EPA by the permittee, the AWL for fecal coliform will be deleted. Also at that time, monitoring for fecal coliform will be reduced to once per month during the months of May 1 through September 30. A letter received from the permittee to the EPA on June 26th 2008 fulfilled this notification. Also, see Pathogenic Indicators – *E. coli* replaces Fecal Coliform in part C of this Appendix.

Therefore, since the new bacteria effluent limits are consistent with water quality criteria specified in Idaho's WQS (IDAPA 58.01.02.251) and 122.44(d)(vii) described below, the effluent limits for bacteria may be revised to remove the effluent limits for fecal coliform and replace the effluent limits with *E. Coli*. Consequently, the assigned fecal coliform WLA mass-loading of 8900 CFU/sec for the New Plymouth WWTF shall not be incorporated as a proposed effluent limit.

The federal regulations at 40 CFR § 122.44(d)(vii) states:

“When developing water quality based effluent limits under this paragraph the permitting authority shall ensure that: (A) The level of water quality to be achieved by limits on point sources established under this paragraph is derived from and complies with all applicable WQS; and (B) Effluent limits developed to protect a...numeric water quality criterion...are consistent with the assumptions and requirements of any available wasteload allocation for the discharge prepared by the State and approved by EPA pursuant to 40 CFR § 130.7.”

The Idaho WQS state that waters of the State of Idaho, that are designated for recreation, are not to contain *E. coli* bacteria in concentrations exceeding 126 organisms per 100 ml based on a minimum of five samples taken every three to seven days over a thirty day period. Therefore, the draft permit contains a monthly geometric mean effluent limit for *E. coli* of 126 organisms per 100 ml (IDAPA 58.01.02.251.01.a.).

The Idaho WQS also state that a water sample that exceeds certain “single sample maximum” values indicates a likely exceedance of the geometric mean criterion, although it is not, in and

City of New Plymouth Wastewater Treatment Facility

of itself, a violation of WQS. For waters designated for primary contact recreation, the “single sample maximum” value is 406 organisms per 100 ml (IDAPA 58.01.02.251.01.b.ii.).

The goal of a water quality-based effluent limit is to ensure a low probability that WQS will be exceeded in the receiving water as a result of a discharge, while considering the variability of the pollutant in the effluent. Because a single sample value exceeding 406 organisms per 100 ml indicates a likely exceedance of the geometric mean criterion, the EPA has imposed an instantaneous (single grab sample) maximum effluent limit for *E. coli* of 406 organisms per 100 ml, in addition to a monthly geometric mean limit of 126 organisms per 100 ml, which directly implements the water quality criterion for *E. coli*. This will ensure that the discharge will have a low probability of exceeding WQS for *E. coli*.

Regulations at 40 CFR § 122.45(d)(2) require that effluent limitations for continuous discharges from POTWs be expressed as average monthly and average weekly limits, unless impracticable. Additionally, the terms “average monthly limit” and “average weekly limit” are defined in 40 CFR § 122.2 as being arithmetic (as opposed to geometric) averages. It is impracticable to properly implement a 30-day geometric mean criterion in a permit using monthly and weekly arithmetic average limits. The geometric mean of a given data set is equal to the arithmetic mean of that data set if and only if all of the values in that data set are equal. Otherwise, the geometric mean is always less than the arithmetic mean. In order to ensure that the effluent limits are “derived from and comply with” the geometric mean water quality criterion, as required by 40 CFR § 122.44(d)(1)(vii)(A), it is necessary to express the effluent limits as a monthly geometric mean and an instantaneous maximum limit.

Residues

The Idaho WQS require that surface waters of the State be free from floating, suspended or submerged matter of any kind in concentrations impairing designated beneficial uses. The draft permit requires the permittee to meet those WQS because it contains a narrative limitation prohibiting the discharge of such materials.

C. Anti-backsliding Provisions

Clean Water Act Section 402(o)(3) Requirements

Section 402(o) of the Clean Water Act and federal regulations at 40 CFR §122.44 (l) generally prohibit the renewal, reissuance or modification of an existing NPDES permit that contains effluent limits, permit conditions or standards that are less stringent than those established in the previous permit (i.e., anti-backsliding) but provides limited exceptions. Section 402(o)(1) of the CWA states that a permit may not be reissued with less-stringent limits established based on Sections 301(b)(1)(C), 303(d) or 303(e) (i.e., water quality-based effluent limits (WQBELs) or limits established in accordance with State treatment standards) except in compliance with Section 303(d)(4). Section 402(o)(1) also prohibits backsliding on TBELs established using best professional judgment (i.e., based on Section 402(a)(1)(B)).

Section 303(d)(4) of the CWA states that, for water bodies where the water quality meets or exceeds the level necessary to support the water body's designated uses, WQBELs may be revised as long as the revision is consistent with the State's antidegradation policy. Additionally, Section 402(o)(2) contains exceptions to the general prohibition on backsliding in 402(o)(1). According to the EPA NPDES Permit Writers' Manual (EPA-833-K-10-001) the 402(o)(2) exceptions are applicable to WQBELs (except for 402(o)(2)(B)(ii) and 402(o)(2)(D)) and are

City of New Plymouth Wastewater Treatment Facility

independent of the requirements of 303(d)(4). Therefore, WQBELs may be relaxed as long as either the 402(o)(2) exceptions or the requirements of 303(d)(4) are satisfied.

Even if the requirements of Sections 303(d)(4) or 402(o)(2) are satisfied, however, Section 402(o)(3) prohibits backsliding which would result in violations of WQS or effluent limit guidelines.

BOD₅ Effluent Limit – Equivalent to Secondary Treatment Standards

The draft permit includes BOD₅ effluent limit based on treatment equivalent to secondary (TES) standards (see Part A of Appendix C). The previous permit based the BOD₅ limits on more stringent secondary treatment standards. The regulations at 40 CFR §122.44 (l)(2)(i)(A) allow for less stringent effluent limitations if material and substantial alternations to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation. In this case, the permittee performed major collection system upgrades to remove excessive (I/I). Further, the revision complies with secondary treatment regulations. Therefore, revision of the BOD₅ effluent limit is allowed.

Pathogenic Indicators – E. coli replaces Fecal Coliform

The draft permit proposes to remove the water quality-based fecal coliform limits as imposed by the permit and replace the bacteria limit with an *E. coli* bacteria limit, consistent with the current Idaho WQS criterion for protection of recreational uses. The new effluent limits are consistent with water quality criteria and the indicator organism currently specified in Idaho's WQS (IDAPA 58.01.02.251) and described above under *E. Coli* in the Section Summary - WQBELs. Therefore, the effluent limits for bacteria may be revised to remove the effluent limits for fecal coliform and replace the effluent limits with *E. Coli*.

Further, the draft permit, like the previous permit, includes “criteria end-of-pipe” concentration effluent limits for bacteria, in order to protect contact recreation beneficial uses in the receiving water. The previous permit protected for primary contact recreation year round. The effluent limits in this draft permit use the indicator organism currently specified in the Idaho WQS (*E. coli*) and provide protection for the beneficial use of primary contact recreation year round.

D. Antidegradation

The proposed issuance of an NPDES permit triggers the need to ensure that the conditions in the permit ensure that Tier I, II, and III of the State's antidegradation policy are met. An anti-degradation analysis was conducted by the IDEQ as part of the CWA 401 Certification. See Appendix E.

E. Facility Specific Limits

Table C-4 summarizes the numeric effluent limits that are in the proposed permit. These final limits are the more stringent of technology based treatment requirement, water quality based limits or limits retained as the result of anti-backsliding analysis or to meet the State's anti-degradation policy.

Table C-4: Basis for Proposed Facility Specific Effluent Limits

Parameter	Units	Effluent Limits			Basis for Permits Limit
		Average Monthly Limit	Average Weekly Limit	Maximum Daily Limit	
Five-Day Biochemical Oxygen Demand (BOD ₅)	mg/L	45	65	--	Concentration, mass-based limits, and % removal were based on Equivalent to 2° treatment standards. See Appendix C, Part A.
	lb/day	225	325	--	
BOD ₅ Removal	Percent	65 (minimum)	--	--	
Total Suspended Solids (TSS)	mg/L	45	65	--	Concentration, mass-based limits, and % removal were based on Equivalent to 2° treatment standards. See Appendix C, Part A.
	lb/day	225	325	--	
TSS Removal	Percent	65 (minimum)			
<i>E. coli</i> Bacteria	#/100 ml	126 (geometric mean)	--	406	<i>E. coli</i> replaces the fecal coliform for bacteria. Refer to discussion under Anti-backsliding, Appendix C part C and IDAPA 58.01.02.251.01(a) and (b)(ii).
pH	s.u	6.5 – 9.0			WQBEL with no mixing zone based on Idaho WQS (IDAPA 58.01.02.250)

Appendix D: Reasonable Potential and Water Quality-Based Effluent Limit Calculations

This appendix explains the process the EPA has used to determine if the discharge authorized in the draft permit has the reasonable potential to cause or contribute to a violation of Idaho's federally approved WQS. Part A demonstrates how the water quality-based effluent limits (WQBELs) in the draft permit are normally calculated. However, the results of these calculations could not be determined because there are not sufficient effluent and surface water quality data to properly execute a Reasonable Potential Analysis.

The EPA uses the process described in the *Technical Support Document for Water Quality-based Toxics Control* (EPA, 1991) to determine reasonable potential. To determine if there is reasonable potential for the discharge to cause or contribute to an exceedance of water quality criteria for a given pollutant, the EPA compares the maximum projected receiving water concentration to the water quality criteria for that pollutant. If the projected receiving water concentration exceeds the criteria, there is reasonable potential, and a water quality-based effluent limit must be included in the permit. This following section discusses how the maximum projected receiving water concentration is determined.

A. WQBEL Calculations

Mass Balance

For discharges to flowing water bodies, the maximum projected receiving water concentration is determined using the following mass balance equation:

$$C_d Q_d = C_e Q_e + C_u Q_u \quad \text{Equation 1}$$

where,

- C_d = Receiving water concentration downstream of the effluent discharge (that is, the concentration at the edge of the mixing zone)
- C_e = Maximum projected effluent concentration
- C_u = 95th percentile measured receiving water upstream concentration
- Q_d = Receiving water flow rate downstream of the effluent discharge = $Q_e + Q_u$
- Q_e = Effluent flow rate (set equal to the design flow of the WWTF)
- Q_u = Receiving water low flow rate upstream of the discharge (1Q10, 7Q10 or 30B3)

When the mass balance equation is solved for C_d , it becomes:

City of New Plymouth Wastewater Treatment Facility

$$C_d = \frac{C_e \times Q_e + C_u \times Q_u}{Q_e + Q_u} \quad \text{Equation 2}$$

The above form of the equation is based on the assumption that the discharge is rapidly and completely mixed with 100% of the receiving stream.

If the mixing zone is based on less than complete mixing with the receiving water, the equation becomes:

$$C_d = \frac{C_e \times Q_e + C_u \times (Q_u \times \%MZ)}{Q_e + (Q_u \times \%MZ)} \quad \text{Equation 3}$$

Where:

% MZ = the percentage of the receiving water flow available for mixing.

Reasonable Potential Determination

The effluent and surface water data available were not sufficient to determine if the New Plymouth WWTF has reasonable potential to cause or contribute to an exceedance of water quality criteria.

Appendix E: Clean Water Act Section 401 Certification



STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

1445 North Orchard • Boise, Idaho 83706 • (208) 373-0550
www.deq.idaho.gov

C.L. "Butch" Otter, Governor
Curt Fransen, Director

August 18, 2014

Mr. Michael J. Lidgard
NPDES Permits Unit Manager
EPA Region 10
1200 Sixth Avenue, Suite 900
Seattle, Washington 98101-3140

Subject: DRAFT 401 Water Quality Certification for the City of New Plymouth WWTP,
ID-002038-9

Dear Mr. Lidgard:

The Boise Regional Office of the Department of Environmental Quality (DEQ) has reviewed the above-referenced permit for the City of New Plymouth. Section 401 of the Clean Water Act requires that states issue certifications for activities which are authorized by a federal permit and which may result in the discharge to surface waters. In Idaho, DEQ is responsible for reviewing these activities and evaluating whether the activity will comply with Idaho's Water Quality Standards, including any applicable water quality management plans (e.g., total maximum daily loads). A federal discharge permit cannot be issued until DEQ has provided certification or waived certification either expressively, or by taking no action.

This letter is to inform you that DEQ is issuing the attached draft 401 certification subject to the terms and conditions contained therein. Please contact Lauri Monnot at (208) 373-0461 to discuss any questions or concerns regarding the content of this certification.

Sincerely,

A handwritten signature in black ink, appearing to read "Pete Wagner", is written over a horizontal line.

Pete Wagner
Regional Administrator
Boise Regional Office

c: Daniel Haskell, EPA Region 10
Miranda Adams, DEQ State Office



Idaho Department of Environmental Quality Draft §401 Water Quality Certification

August 18, 2014

NPDES Permit Number(s): ID-0020389, City of New Plymouth

Receiving Water Body: Unnamed Drainage Ditch to Payette River

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 its 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, including without limitation, the approval from the owner of a private water conveyance system, if one is required, to use the system in connection with the permitted activities.

Antidegradation Review

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

- **Tier 1 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 1 review is performed for all new or reissued permits or licenses (IDAPA 58.01.02.052.07).
- **Tier 2 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 3 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 1 protection for that use, unless specific circumstances warranting Tier 2 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

The City of New Plymouth discharges the following pollutants of concern: BOD₅, total suspended solids (TSS), pH, *E. coli* bacteria, total ammonia as nitrogen, total phosphorus (TP), temperature, total Kjeldahl nitrogen (TKN), nitrate + nitrite, total dissolved solids and oil & grease. Effluent limits have been developed for BOD₅, TSS, pH and *E. coli*. No effluent limits are proposed for total ammonia as nitrogen, total phosphorus (TP), temperature, total Kjeldahl nitrogen (TKN), nitrate + nitrite, total dissolved solids or oil & grease; however, monitoring requirements are included in the permit for these pollutants.

Receiving Water Body Level of Protection

The City of New Plymouth discharges to an unnamed drainage ditch which ultimately flows into the Payette River within the Payette Subbasin after passing through wetlands located within the Payette River Wildlife Management Area. The unnamed drainage ditch is a man-made waterway, not designated in sections 110 through 160 of Idaho's WQS. As such, this waterway is protected for the use for which it was developed; in this case, agricultural water supply (IDAPA 58.01.02.101.02). Thus, DEQ will provide Tier 1 protections to this waterway (IDAPA 58.01.02.051.01).

Effluent limits and monitoring requirements are included in the permit to protect beneficial uses of the downstream Payette River Wildlife Management Area wetland ponds and the Payette River. The cold water aquatic life use in the Payette River (AU ID17050122SW001_06) is not fully supported due to excess temperature (2012 Integrated Report). In addition to exceedances in temperature monitoring data, the biological and habitat data for the AU does not indicate a healthy cold water community. The primary contact recreation beneficial use is not fully supported due to excess *E. coli* (2012 Integrated Report). As such, DEQ will provide Tier 1 protection only for the aquatic life and recreation beneficial uses (IDAPA 58.01.02.051.02; 58.01.02.051.01).

Additionally, all waters of the state are also protected for domestic and industrial water supply, wildlife habitat, and aesthetics (IDAPA 58.01.02.100).

Protection and Maintenance of Existing Uses (Tier 1 Protection)

As noted above, a Tier 1 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 uses and the level of water quality necessary to protect existing uses shall be maintained and protected. In order to protect and maintain designated and existing 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 designated beneficial uses. The effluent limitations and associated requirements contained in the City of New Plymouth permit are set at levels that ensure compliance with the narrative and numeric criteria in the WQS.

Water bodies not supporting existing or designated beneficial uses must be identified as water quality limited, and a total maximum daily load (TMDL) must be prepared for those pollutants causing impairment. A central purpose of TMDLs is to establish wasteload allocations for point source discharges, which are set at levels designed to help restore the water body to a condition that supports existing and designated beneficial uses. Discharge permits must contain limitations that are consistent with wasteload allocations in the approved TMDL.

In the absence of a TMDL and depending upon the priority status for development of a TMDL, the WQS stipulate that either there be no further impairment of the designated or existing beneficial uses or that the total load of the impairing pollutant remains constant or decreases (IDAPA 58.01.02.055.04 and 58.01.02.055.05). Discharge permits must comply with these provisions of Idaho WQS. The Payette Subbasin is a high priority watershed for temperature TMDL development. This discharge has been previously permitted at the current design flow so there is no increase in thermal load to the water body. While the receiving water is impaired for temperature, the sources of the impairment are flow and habitat modification not related to point source dischargers. Additionally, the critical time period for salmonid spawning is in the spring timeframe when temperatures are not likely to be elevated. A temperature TMDL is not planned for the Lower Payette River because the impairment is not due to point source or nonpoint sources. The draft permit includes continuous temperature monitoring requirements for the effluent and receiving water.

The Payette River, at the point where the unnamed drainage ditch and wetlands meet it (AU 17050122SW001_06), is not fully supporting its designated contact recreation beneficial uses due to *E. coli* exceedances. The *Lower Payette River TMDL Implementation Plan and Addendum to the Lower Payette River Subbasin Assessment and TMDL* (2003) establishes wasteload allocations (WLAs) for *E. coli* which replace the WLAs for fecal coliform originally set forth in the EPA-approved *Lower Payette River Subbasin Assessment and TMDL* (2000). These WLAs are designed to ensure the Lower Payette River will achieve the water quality necessary to support its existing and designated contact recreation beneficial uses and comply with the applicable numeric and narrative criteria. The effluent limitations and associated requirements contained in the City of New Plymouth permit are set at levels that comply with these WLAs.

In sum, the effluent limitations and associated requirements contained in the City of New Plymouth permit are set at levels that ensure compliance with the narrative and numeric criteria in the WQS and the wasteload allocations established in the *Lower Payette River TMDL Implementation Plan and Addendum*. Therefore, DEQ has determined the permit will protect and maintain existing and designated beneficial uses in the unnamed drainage ditch in compliance with the Tier 1 provisions of Idaho's WQS (IDAPA 58.01.02.051.01 and 58.01.02.052.07).

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

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 Lauri Monnot, Boise Regional Office, at 208-373-0461 or via email at lauri.monnot@deq.idaho.gov.

DRAFT

Pete Wagner
Administrator
Boise Regional Office