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 Notus
Wastewater Treatment Facility

NPDES Permit Number: ID-00 2101-6

Public Comment Start Date: June 3, 2013
Public Comment Expiration Date: July 3, 2013

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

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

State Certification
The EPA 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
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
Boise, ID 83706
ph: (208) 373-0550
fx: (208) 373-0287

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
BE	Biological Evaluation
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
EA	Environmental Assessment
EFH	Essential Fish Habitat
The EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FR	Federal Register
HUC	Hydrologic Unit Code
IDEQ	Idaho Department of Environmental Quality
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
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 Unit
TKN	Total Kjeldahl Nitrogen
TMDL	Total Maximum Daily Load
TOC	Total Organic Carbon
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
Water Quality Standards	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 Notus Wastewater Treatment Facility
NPDES Permit # ID-002101-6

Mailing Address:
P.O. Box 257
Notus, ID 83656

Contact:
Mike Black, (208) 283-0237

B. Permit History

The most recent NPDES permit for the Notus Wastewater Treatment Facility (WWTF) was issued and became effective on September 30, 1999, and expired on September 30, 2004. The EPA did not receive a permit application for renewal prior to the expiration date of the permit. Because a complete application for renewal was not received in a timely manner, as required under 40 C.F.R. § 122.21(d), the previous permit expired and was not administratively extended. A NPDES complete application for permit reissuance was submitted by the permittee to the EPA on December 2, 2008.

II. Facility Information

A. Treatment Plant Description

The City owns, operates, and maintains the Notus WWTF located in Notus, Idaho. The facility treats domestic sewage from local residents and commercial establishments. Treatment of wastewater consists of secondary biological treatment through four facultative holding ponds. No active disinfection is provided; the permittee relies on natural disinfection via sunlight and/or natural microbial dieoff because of extended detention in the lagoons. Sludge is indefinitely stored at the bottom of the facultative ponds. The collection system has no combined sewers. Currently the effluent is stored in a lagoon and is periodically discharged to the Conway Gulch in the winter, which leads to the Boise River.

The facility's application indicates that the design flow of the facility is 110,000 gallons per day. The facility is made up of four facultative lagoon cells. Cells 1, 2, and 3 provide treatment. Cell 4 is a polishing/storage lagoon. Due to the lagoon capacity and evaporative losses, the facility discharges to Conway Gulch only when the lagoon #4 reaches its volume capacity. The previous permit authorized the Notus WWTF to discharge only during the period from November 1st to March 31st. In response to the permittee's request, the draft permit would authorize the facility to discharge year-round provided that the total phosphorus effluent limitation will be met for the summer season, in addition to all other permit requirements.

The facility's application indicates that the treatment plant serves a resident population of approximately 620. Details about the current wastewater treatment process and a map showing the location of the treatment facility and discharge are included in Appendix A.

B. Compliance History

A review of the discharge monitoring reports (DMRs) found that the facility was generally in compliance with the effluent limits and monitoring requirements of the 1999 permit. In January 2012, fecal coliform was however particularly high; exceeding 2260/100mL for the daily maximum, 384/100mL for the 30-day geometric mean, and 958/100mL for the weekly geometric mean. The operator attributed these measurements to unusually warmer weather, which triggered the ponds to turnover earlier in the year. During the winter, stratification can occur in the lagoons due to differences in density, as the water temperature falls. Generally, in the spring, ice melts causing the surface waters to warm and sink, and causing the pond to turnover. The unusually warm weather in January 2012, caused an early spring "turnover" during the period when the facility was discharging.

III. Receiving Water

The effluent from the Notus WWTF is discharged from Outfall 001 to the Conway Gulch, at latitude 43° 43'38" and longitude 116 ° 48'58" within the City of Notus, Idaho. Conway Gulch discharges to the Boise River at approximately river mile 13 on the Boise River, which is approximately 100 yards downstream of Outfall 001.

A. Low Flow Conditions

The low flow conditions of a water body are used to assess the need for and develop water quality based effluent limits (see Appendix C of this fact sheet for additional information on flows). The EPA estimated low flow conditions for Conway Gulch based on flow data submitted by the permittee. The low flow was estimated to be 13.90 cfs for the 30Q5 and 9.72 cfs for the 1Q10 in Appendix C.

B. 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 water quality standards. Federal regulations at 40 CFR §122.4(d) require that the conditions in NPDES permits ensure compliance with the water quality standards of all affected States. A State's water quality standards 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 Conway Gulch, which flows into the Boise River, does not have specific use designations in the Idaho Water Quality Standards (IDAPA 58.01.02.110 through 160). The

Idaho Water Quality Standards states that such "undesignated waterways" are to be protected for the uses of cold water aquatic life and primary contact recreation (IDAPA 58.01.02.101.01).

In addition, Idaho Water Quality Standards 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 Water Quality Standards:

- 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 Conway Gulch 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 water quality standards, 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).

C. Water Quality Limited Waters

Any water body for which the water quality does not, and/or is not expected to meet, applicable water quality standards 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) 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 applicable water quality standards. 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 the assumptions and requirements of any applicable TMDL allocations.

The segment of the Lower Boise River to which the Conway Gulch flows is impaired for sediment, bacteria, temperature, and total phosphorus.

In January 2000, the EPA has approved TMDLs for sediment and bacteria for the Lower Boise River *Lower Boise River TMDL, Subbasin Assessment, Total Maximum Daily Load* (IDEQ, September 1999). With regards to phosphorus, IDEQ intends to submit a draft TMDL to the EPA for approval by Spring 2014. IDEQ does not currently have a schedule for submittal of a TMDL for temperature for the Lower Boise.

Sediment

The Lower Boise River TMDL for sediment provided the Notus WWTF with WLAs for total suspended solids (TSS) for a discharge to Conway Gulch (*IDEQ Sediment and Bacteria Allocations Addendum to the Lower Boise River TMDL, April 2008*). The WLAs for TSS are 33 lbs/day monthly, and 50 lbs/day weekly.

Bacteria

The Lower Boise River TMDL for bacteria included a WLA for the Notus WWTF for bacteria based on fecal coliform concentrations. However, the TMDL stated that if the bacteria criterion were revised to require *E. coli* criteria rather than fecal coliform then "…compliance with the load allocations in this TMDL could be demonstrated using *E. coli* samples, rather than fecal coliform," and that "…[i]f *E. Coli* are used as the new Idaho criteria for contact recreation when the permits are re-issued, the new *E. Coli* criteria should be incorporated into the permits in place of fecal coliform requirements." (See *Lower Boise River TMDL, Subbasin Assessment, Total Maximum Daily Load*, Idaho Department of Environmental Quality, September 1999, Page 72, paragraph 4, line 2). Therefore, the *E.Coli* surface water quality criteria (IDAPA 58.01.02.251.01) shall be used.

IV. Effluent Limitations

A. Basis for Effluent Limitations

In general, the CWA requires 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 is designed to ensure that the water quality standards applicable to a water body are being met and may be more stringent than technology-based effluent limits. The basis for the effluent limits proposed in the draft permit is provided in Appendix D.

B. Proposed Effluent Limitations

The following summarizes the proposed effluent limits that are in the draft permit. The permit authorizes the permittee to discharge year round.

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: must be within the range of 6.5 – 9.0 standard units.
3. Ammonia, BOD5, TSS, E. coli, and phosphorus must meet the limits in Table 1.

Table 1: Proposed Effluent Limits

Parameter	Units	Effluent Limits		
		Average Monthly Limit	Average Weekly Limit	Maximum Daily Limit
Total Ammonia as N	mg/L	24	--	32
	lb/day	22	--	30
Five-Day Biochemical Oxygen Demand (BOD_5)	mg/L	40	60	--
	lb/day	37	55	--
BOD_5 Removal	percent	70 (minimum)		
Total Suspended Solids (TSS)	mg/L	45	65	--
	lb/day	33	50	--
TSS Removal	percent	70 (minimum)		
E. coli Bacteria	#/100 ml	126 (geometric mean)	--	406
Total Phosphorus (May 1st to Sept 30th)	mg/L	0.070	0.14	---
	lb/day	0.064	0.128	--

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.

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 2 below presents the proposed effluent monitoring requirements for the Notus 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 is only required when the facility discharges. If no discharge occurs during the reporting period, "no discharge" shall be reported on the DMR.

Table 2: Effluent Monitoring Requirements				
Parameter	**Units**	**Sample Location**	**Sample Frequency[4]**	**Sample Type**
Flow (average daily flow for days during which discharge occurs)	Mgd	Effluent	Continuous	Recording
Number of days per month that an effluent discharge occurs	Days	Effluent		---
BOD_5	mg/L	Influent & Effluent	1/week	8-hour composite
	lb/day	Influent & Effluent	1/week	calculation[1]
	% Removal	--	1/month	calculation[2]
TSS	mg/L	Influent & Effluent	1/week	8-hour composite
	lb/day	Influent & Effluent	1/week	calculation[1]
	% Removal	--	1/month	calculation[2]
pH	standard units	Effluent	1/week	Grab
E. Coli	#/100 ml	Effluent	5/month	Grab
Total Phosphorus	mg/L	Effluent	1/week	8-hour composite
Total Ammonia as N	mg/L	Effluent	1/month	8-hour composite
	lb/day	Effluent		calculation[1]
Total Kjeldahl Nitrogen	mg/L	Effluent	3/permit cycle[3]	8-hour composite
Nitrate plus Nitrite	mg/L	Effluent	3/permit cycle[3]	8-hour composite
Total Dissolved Solids	mg/L	Effluent	3/permit cycle[3]	8-hour composite
Oil and Grease	mg/L	Effluent	3/permit cycle[3]	grab
Dissolved Oxygen	mg/L	Effluent	3/permit cycle[3]	meter
Temperature	°C	Effluent	Continuous	meter

Notes:
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. See Part V.A.
4. At the time the facility is discharging to the receiving water only

Effluent Monitoring Changes from the Previous Permit

Effluent monitoring was adjusted from the previous permit for the following:

For bacteria monitoring, fecal coliform was replaced with *E. coli*. Fecal coliform is no longer a water quality criterion in the Idaho water quality standards. The five sample per month monitoring frequency for *E. coli* is based on the IDEQ water quality criterion for *E. coli*. See section III.C for more info.

The draft permit require 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 to 40 CFR Part 122): dissolved oxygen, nitrate/nitrite, Kjeldahl nitrogen, oil and grease, and total dissolved solids, so that these data are available when the permittee is required to reapply for the NPDES permit. These parameters are not subject to effluent limits in the permit. 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 low.

Monitoring for orthophosphate is discontinued since total phosphorus is the nutrient parameter of concern in the lower Boise watershed.

The purpose of the recommended monitoring requirements is to ensure that the permittee is collecting adequate data to assess compliance with the temperature water quality standards. The data may also be for development of WLAs in the TMDL and ESA consultation.

C. Surface Water Monitoring

Table 3 presents the proposed surface water monitoring requirements for the draft permit. The City should continue to monitor receiving water upstream of outfall 001in Conway Gulch above the influence of the facility's effluent discharge. Surface water monitoring results must be submitted with the DMR. Monitoring should occur during the same week in which the facility is discharging to Conway Gulch.

Table 3. Conway Gulch Surface Water Monitoring

Parameter	Sample Frequency	Sample Type
Flow, mgd	1/week	Measured
pH, standard units	1/week	Grab
Temperature, °C	Continuous	Meter
Total Ammonia as N, mg/L	1/week	Grab
Total Phosphate, mg/L	1/week	Grab

pH was adjusted from a 1/month sampling frequency in the previous permit.

Temperature °C was adjusted from a 1/week sampling frequency in the previous permit on account that the Lower Boise River segment to which the Conway Gulch flows is impaired for temperature.

Total ammonia as N was adjusted from a 1/month sampling frequency in the previous permit.

In addition, ambient monitoring for orthophosphate is discontinued since total phosphorus is the nutrient parameter of concern in the lower Boise watershed.

D. Monitoring and Reporting

The draft permit includes new provisions to allow the permittee the option 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. The permittee may use NetDMR after requesting and receiving permission from the EPA Region 10.

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.

The EPA encourages permittees to sign up for NetDMR, and currently conducts free training on the use of NetDMR. 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

The federal regulation at 40 CFR §122.41(e) requires the permittee to have appropriate quality assurance procedures. This means that the City must develop a Quality Assurance Plan that includes, among other things, 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 Notus 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 water quality standards.

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. Design Criteria

The permit includes design criteria requirements. This provision requires the permittee to compare influent flow and loading to the facility's design flow and loading and prepare a facility plan for maintaining compliance with NPDES permit effluent limits when the annual average flow or loading exceeds 85% of the design criteria values for three consecutive months.

E. 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.

VIII. Other Legal Requirements

A. Endangered Species Act

The Endangered Species Act (ESA) and implementing regulations require federal agencies to consult with National Oceanic and Atmospheric Administration National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (FWS) if their actions could adversely affect any threatened or endangered species. A review of the threatened and endangered species located in Idaho finds that there are no threatened or endangered species located in vicinity of the Notus WWTF discharge, therefore ESA consultation is not required.

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. There are no EFH in the vicinity of the Notus WWTF discharge, therefore consultation 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 applicable water quality standards, 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

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

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

IDEQ and EPA. March 2012. *Predicted Effects of Dixie Drain Project on Phosphorus Concentrations in the Boise River*. Draft

Falter, C.M. 1992. Review of Technical Issues Relevant to Listing of Five Taxa of Snake River Molluscs under the Federal Endangered Species Act of 1973. Report to the Boise Field Office, updated March 24, 1992.

U.S. Fish and Wildlife Service (US FWS) - Idaho Fish and Wildlife Office Endangered, Threatened, Proposed, and Candidate Species with Associated Proposed and Critical Habitats in Idaho, updated September 17th 2012.

National Marine Fisheries Service (NMFS), Endangered Species Act Status of West Coast Salmon & Steelhead, updated August 11th, 2011.

Idaho Department of Environmental Quality (IDEQ). *Lower Boise River TMDL, Subbasin Assessment, Total Maximum Daily Load*. September 29, 1999

Appendix A: Facility Information

Narrative of Flow Diagram:
The Notus WWTF is made up of 4 facultative lagoons. Cells 1, 2, and 3 are the primary treatment lagoons and provide no storage capacity. Cell 4 is a polishing/storage lagoon. Its primary purpose is for storage but the treatment process continues in the pond. The facultative process has aerobic, facultative, and anaerobic zones all working to treat the wastewater. The body of water shown on the diagram, near the words "approximate discharge location", is the Lower Boise River.

Appendix B: Water Quality Criteria Summary

This appendix provides a summary of water quality criteria applicable to the Conway Gulch.

Idaho water quality standards include criteria necessary to protect designated beneficial uses. As discussed on Part III.B of the Fact Sheet, as an "undesignated waterway" Conway Gulch 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 Conway Gulch. 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 quality of the water in the Conway Gulch.

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 Water Quality Standards 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.

The City of Notus has collected pH and temperature data in the Conway Gulch upstream of outfall 001 from December 2010 to March 2012. These data were used to determine the appropriate pH and temperature values to calculate the ammonia criteria. As with any natural water body the pH and temperature of the water will vary over time. Therefore, to protect water quality criteria it is important to develop the criteria based on pH and temperature values that will be protective of aquatic life at all times. The EPA used the 95% percentile of the pH and temperature data for the calculations, which were 8.5 s.u. and 12.6 °C respectively.

Table B-1: Water Quality Criteria for Ammonia

	Acute Criterion	Chronic Criterion
Equations:	$\frac{0.275}{1+10^{7.204-\text{pH}}}+\frac{39}{1+10^{\text{pH}-7.204}}$	$\left(\frac{0.0577}{1+10^{7.688-\text{pH}}}+\frac{2.487}{1+10^{\text{pH}-7.688}}\right)\times \text{MIN}\left(2.85,1.45\times 10^{0.028\times(25-\text{T})}\right)$
Results:	2139.5 µg/L	1089.3 µg/L

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. This section states that 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 of itself, a violation of water quality standards. 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.). for primary and contact recreation.

Appendix C: Low Flow Conditions

A. Low Flow Conditions

The low flow conditions of a water body are used to determine water quality-based effluent limits. In general, Idaho's water quality standards require criteria be evaluated at the following low flow receiving water conditions (See IDAPA 58.01.02.210.03) as defined below:

Acute aquatic life	1Q10 or 1B3
Chronic aquatic life	7Q10 or 4B3
Non-carcinogenic human health criteria	30Q5
Carcinogenic human health criteria	harmonic mean flow
Chronic Ammonia	30B3, 30Q5 or 30Q10

1. The 1Q10 represents the lowest one day flow with an average recurrence frequency of once in 10 years.
2. The 1B3 is biologically based and indicates an allowable exceedence of once every 3 years.
3. The 7Q10 represents lowest average 7 consecutive day flow with an average recurrence frequency of once in 10 years.
4. The 4B3 is biologically based and indicates an allowable exceedance for 4 consecutive days once every 3 years.
5. The 30Q5 represents the lowest average 30 consecutive day flow with an average recurrence frequency of once in 5 years.
6. The 30Q10 represents the lowest average 30 consecutive day flow with an average recurrence frequency of once in 10 years.
7. The harmonic mean is a long-term mean flow value calculated by dividing the number of daily flow measurements by the sum of the reciprocals of the flows.

Idaho's water quality standards do not specify a low flow to use for acute and chronic ammonia criteria, however, the EPA's *Water Quality Criteria; Notice of Availability; 1999 Update of Ambient Water Quality Criteria for Ammonia; Notice* (64 FR 719769 December 22, 1999) identifies the appropriate flows to be used, shown in the table above. The 1Q10 and 30Q10/30Q5 (as opposed to the biologically based factors) must be used for seasonal limits.

The EPA calculated the critical low flow upstream of the discharge based on the limited flow data submitted by the facility. The data were collected at weekly and biweekly intervals from Dec 2011 to March 2012 for a total of 12 samples.

The acute (1Q10), and chronic (30Q10) low flow conditions may be calculated by first calculating the 7Q10 flow from the harmonic mean flow (Q_{hm}) and the arithmetic mean flow (Q_{am}) in accordance with the following equation (see Chapter 4, Section 4.6 of the TSD):

$$Q_{hm} = [1.194 * (Q_{am})^{0.473}] * [(7Q10)^{0.552}], \qquad \text{(Equation 1)}$$

Equation 1 may also be rearranged to solve for the 7Q10 as shown in equation 2.

$$7Q10 = \left(\frac{Q_{hm}}{1.194 Q_{am}{}^{0.473}}\right)^{1/0.552} \qquad \text{(Equation 2)}$$

The 1Q10 and the 30Q5 can, in turn, be estimated from the 7Q10 as follows:

$1Q10 = 7Q10 \div 1.3$

For streams with a 7Q10 less than or equal to 50 CFS:

$30Q5 = 7Q10 \times 1.1$

Based on the flow data, the Q_{hm} and Q_{am} are calculated to be:

Q_{hm} = 22.23 cfs
Q_{am} = 25.09 cfs

The final low flow conditions for the ammonia calculations are:

30Q5	13.90 cfs
1Q10	9.72 cfs

B. Mixing Zones and Dilution

In some cases a dilution allowance or mixing zone is permitted. A mixing zone is an area where an effluent discharge undergoes initial dilution and is extended to cover the secondary mixing in the ambient water body. A mixing zone is an allocated impact zone where the water quality standards may be exceeded as long as acutely toxic conditions are prevented (the EPA, 1994). The federal regulations at 40 CFR §131.13 states that "States may, at their discretion, include in their State standards, policies generally affecting their application and implementation, such as mixing zones, low flows and variances."

The Idaho Water Quality Standards at IDAPA 58.01.02.060 provides Idaho's mixing zone policy for point source discharges. The policy allows the IDEQ to authorize a mixing zone for a point source discharge after a biological, chemical, and physical appraisal of the receiving water and the proposed discharge.

In the IDEQ CWA 401 certification, the IDEQ proposes to authorize 25% mixing zone for ammonia.

Appendix D: Basis for Effluent Limits

The following discussion explains in more detail the statutory and regulatory basis for the technology and water quality-based effluent limits in the draft permit. Part A discusses technology-based effluent limits, Part B discusses water quality-based effluent limits in general and Part C discusses facility specific water quality-based effluent limits.

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 has developed and promulgated "secondary treatment" effluent limitations, which are found in 40 CFR §133.102. These technology-based effluent limits 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 (BOD_5), Total Suspended Solids (TSS) and pH. The federally promulgated secondary treatment effluent limits are listed in Table D-1.

Table D-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 standards that apply to facilities using "treatment equivalent to secondary" such as waste stabilization ponds and trickling filters, which are found in 40 CFR §133.105(a) - (c). These standards specify the maximum allowable discharge concentration of BOD_5, TSS, and a minimum percent removal requirement for qualified facilities as listed below in Table D-2.

Table D-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.	

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. 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 those alternative standards as shown above in Table D-2:

- Criterion #1 - "The BOD_5 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 C.F.R. 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 C.F.R. 133.101(g)(2).
- Criterion # 3 - "The treatment works provide significant biological treatment of municipal wastewater." 40 C.F.R. 133.101(g)(3). "Significant biological treatment" is defined in 40 C.F.R. 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 BOD_5."

All effluent monitoring data taken from Discharge Monitoring Reports (DMRs) from 01/31/2000 to 06/30/2012 for the City of Notus WWTF indicates that the facility meets the criteria to qualify for treatment equivalent to secondary limits for both BOD_5 and TSS. A summary of the effluent data is shown below in Tables D-3 and D-4 respectively. In figure D-1 below, the monthly average and weekly average of BOD_5 effluent concentration is graphed temporally. In figure D-2, the monthly average and weekly average of TSS effluent concentration is shown temporally.

TABLE D-3. Sum of BOD_5 at 20 C° Effluent DMR Values		
Monitoring Period	Monthly Average (mg/L)	Weekly Average (mg/L)
05/01/2000 to 5/31/2000	19	19
02/01/2001 to 2/28/2001	20	20
01/01/2003 to 1/31/2003	21	21
01/01/2005 to 1/31/2005	25	25
02/01/2005 to 2/28/2005	25	25
01/01/2007 to 1/31/2007	25	25
02/01/2007 to 2/28/2007	17	17
03/01/2008 to 3/31/2008	36.7	46
02/08/2009 to 2/28/2009	28.3	33
03/01/2009 to 3/31/2009	32.5	62
01/01/2010 to 1/31/2010	29	30
02/01/2010 to 2/28/2010	23.5	28
03/01/2010 to 3/31/2010	29.75	43
12/01/2010 to 12/31/2010	33.8	53
01/01/2011 to 1/31/2011	23	32
02/01/2011 to 2/28/2011	20.8	29
03/01/2011 to 3/31/2011	30.3	39
12/01/2011 to 12/31/2011	33	37
01/01/2012 to 1/31/2012	65.25	157
02/01/2012 to 2/29/2012	33	34
03/01/2012 to 3/31/2012	22	26

TABLE D-4. Sum of TSS Effluent DMR Values		
Monitoring Period	Monthly Average (mg/L)	Weekly Average (mg/L)
05/01/2000 to 5/31/2000	36.00	36.00
02/01/2001 to 2/28/2001	17.00	17.00
01/01/2003 to 1/31/2003	8.00	8.00
01/01/2005 to 1/31/2005	8.00	8.00
02/01/2005 to 2/28/2005	31.00	31.00
01/01/2007 to 1/31/2007	34.00	34.00
02/01/2007 to 2/28/2007	36.00	36.00
03/01/2008 to 3/31/2008	50.60	66.00
02/08/2009 to 2/28/2009	24.60	30.00
03/01/2009 to 3/31/2009	20.00	35.00
01/01/2010 to 1/31/2010	30.00	37.00
02/01/2010 to 2/28/2010	15.80	17.00
03/01/2010 to 3/31/2010	15.00	18.00
12/01/2010 to 12/31/2010	23.80	27.00
01/01/2011 to 1/31/2011	15.50	34.00
02/01/2011 to 2/28/2011	16.80	26.00
03/01/2011 to 3/31/2011	23.80	31.00
12/01/2011 to 12/31/2011	59.40	70.00
01/01/2012 to 1/31/2012	43.00	50.00
02/01/2012 to 2/29/2012	36.00	40.00
03/01/2012 to 3/31/2012	24.40	28.00

With regards to criterion #1, as shown in Table D-5 and Table D-6, BOD_5 and TSS effluent concentrations are consistently higher than the concentrations in the secondary treatment standards allowed for BOD_5 and TSS to meet the criterion. The 95th percentile value for the average monthly concentration is calculated to be 36.7 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 value is calculated to be 55.05 mg/L which also exceeds the 45 mg/L secondary treatment standard for BOD_5 7-day average. For background comparison, the statistical 95th percentile of the 7-day average effluent for BOD_5 is 62 mg/L (data not shown). All 95th percentile values are shown in table D-6 below.

Similarly, with TSS, the 95th percentile average monthly concentration is calculated to be 50.6 mg/L, consistently over the 30 mg/L secondary treatment standard for the TSS 30-day. The 7-day average value is calculated to be 75.9 mg/L which exceeds the 45 mg/L secondary treatment standard for TSS 7-day average. For background comparison, the statistical 95th percentile of the 7-day average effluent for TSS is 66 mg/L (data not shown). All 95th percentile values are shown in table D-6 below.

In addition the facility meets criterion #2, since the principal treatment process consists of biological treatment through four facultative ponds.

With regards to Criterion #3, Table D-5 outlines the sum of the percent removal from the DMRs. The data show that the Notus WWTF provided significant biological treatment of municipal wastewater; defined as using aerobic or anerobic biological treatment process to consistently achieve a 30-day average of at least 65% removal for BOD_5. The results indicate that the Notus WWTF achieves a 30-day average 5th percentile value of 79.7% removal as shown in Table D-6. As a result, the Notus WWTF meets the criteria to be eligible for equivalent to secondary treatment standards for BOD_5 and TSS.

The calculated limits were adjusted in Table D-7 from Table D-2 in order to be more congruent with the upper-bound discharge based on DMR data as specified in Table D-6 and as discussed earlier in this section.

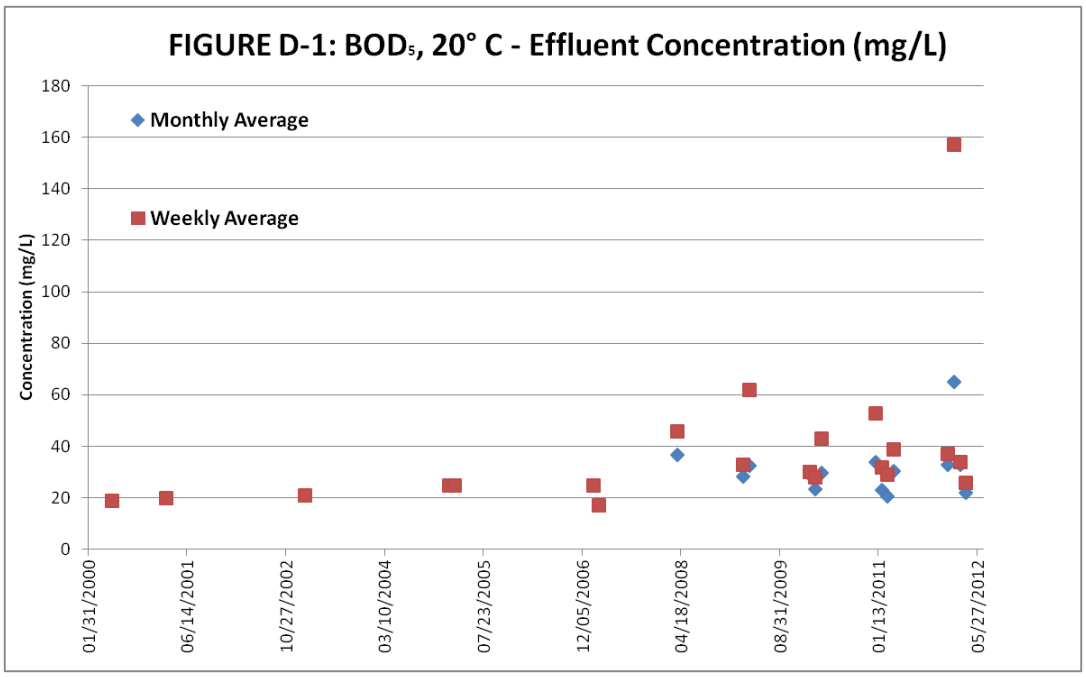


FIGURE D-1: BOD5, 20° C - Effluent Concentration (mg/L)
Monthly Average
Weekly Average
Concentration (mg/L)
180
160
140
120
100
80
60
40
20
0
01/31/2000
06/14/2001
10/27/2002
03/10/2004
07/23/2005
12/05/2006
04/18/2008
08/31/2009
01/13/2011
05/27/2012

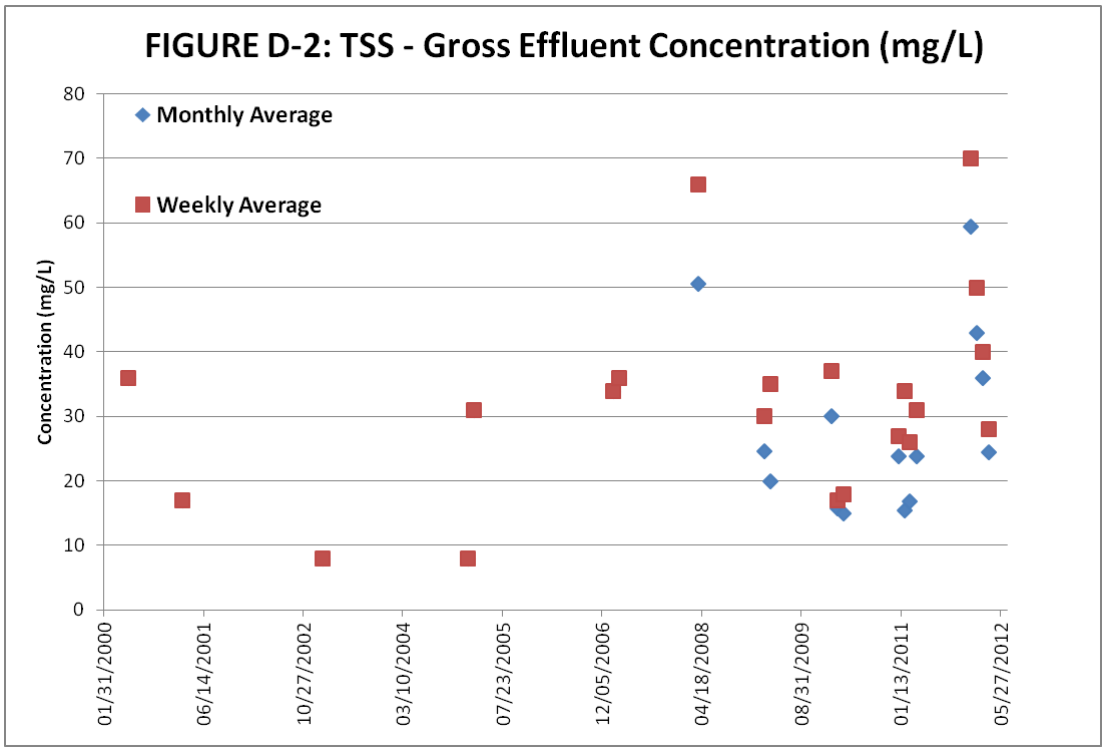


FIGURE D-2: TSS - Gross Effluent Concentration (mg/L)
Monthly Average
Weekly Average
Concentration (mg/L)
80
70
60
50
40
30
20
10
0
01/31/2000
06/14/2001
10/27/2002
03/10/2004
07/23/2005
12/05/2006
04/18/2008
08/31/2009
01/13/2011
05/27/2012

TABLE D-5. Sum of BOD_5 Percent Removal DMR Values	
Monitoring Period	% Removal
05/01/2000 to 5/31/2000	93
02/01/2001 to 2/28/2001	80
01/01/2003 to 1/31/2003	93
02/01/2005 to 2/28/2005	91
01/01/2007 to 1/31/2007	87
02/01/2007 to 2/28/2007	92
03/01/2008 to 3/31/2008	90
02/08/2009 to 2/28/2009	93
03/01/2009 to 3/31/2009	90
01/01/2010 to 1/31/2010	83
02/01/2010 to 2/28/2010	92.7
03/01/2010 to 3/31/2010	87.7
12/01/2010 to 12/31/2010	88
01/01/2011 to 1/31/2011	92
02/01/2011 to 2/28/2011	93
03/01/2011 to 3/31/2011	90
12/01/2011 to 12/31/2011	87.4
01/01/2012 to 1/31/2012	73.8
02/01/2012 to 2/29/2012	91.33
03/01/2012 to 3/31/2012	93.6

Table D-6: Maximum Effluent Averages Representative of DMRs				
Parameter	**Units**	**Monthly Average 95th Percentile**	**Weekly Average 95th Percentile**	**% Removal 5th Percentile**
BOD_5	mg/L	36.7	55.05	--
	lb/day	154.8	232.2	--
	% Removal	--	--	79.7
TSS	mg/L	50.6	75.9	--
	lb/day	309.8	464.71	--
	% Removal	--	--	79.7

Table D-7: Adjusted Equivalent to Secondary Treatment Effluent Limits incorporated as proposed effluent limits (40 CFR §133.105)			
Parameter	**Average Monthly Limit**	**Average Weekly Limit**	**Range**
BOD_5	40 mg/L	60 mg/L	---
TSS	45 mg/L	65 mg/L	---
Minimum Removal Rates for BOD_5 and TSS	70%	---	---
pH	---	---	6.0 - 9.0 s.u.

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*L)/(mg*10^6 gallons). The mass-based limits, expressed in lbs/day, are calculated as follows based on the design flow:

Mass-based limit (lbs/day) = concentration limit (mg/L) × design flow (mgd) × 8.34

The mass limits for BOD_5 are calculated as follows:

Average Monthly Limit = 40 mg/L × 0.110 mgd × 8.34 = 36.69 lbs/day

Average Weekly Limit = 60 mg/L × 0.110 mgd × 8.34 = 55.04 lbs/day

The mass limits for TSS are calculated as follows:

Average Monthly Limit = 45 mg/L × 0.110 mgd × 8.34 = 41.28 lbs/day

Average Weekly Limit = 65 mg/L × 0.110 mgd × 8.34 = 59.63 lbs/day

These TSS mass-based limits are less stringent than the given WLA provided by the TMDL for the City of Notus, and were therefore not incorporated in the proposed effluent limits in Table 1. See Section B below for more background information regarding WQBELs for TSS.

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 water quality standards. 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 water quality standards 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 water quality standards.

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 water quality standards are met, and must be consistent with the assumptions and requirements of 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.

Sometimes it may be appropriate to allow a small area of the receiving water to provide dilution of the effluent. These areas are called mixing zones. Mixing zone allowances will increase the mass loadings of the pollutant to the water body and will decrease treatment requirements. Mixing zones can be used only when there is adequate receiving water flow volume and the concentration of the pollutant in the receiving water is less than the criterion necessary to protect the designated uses of the water body. Mixing zones must be authorized by the State.

The reasonable potential analysis for ammonia was based on a mixing zone of 25% per IDEQ's draft certification. If the IDEQ does not grant the mixing zone in its final certification of this permit, the water quality based effluent limit will be recalculated such that the criteria are met before the effluent is discharged to the receiving water.

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 water quality standards 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 water quality standards, 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 water quality standards for that pollutant.

To ensure that these waters will come into compliance with water quality standards, Section 303(d) of the CWA requires TMDLs to be developed for those water bodies that will not meet water quality standards 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 water quality standards). 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 water quality standards.

Summary - Water Quality-based Effluent Limits

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

Ammonia

A reasonable potential calculation showed the Notus Wastewater Treatment Facility discharge would have the reasonable potential to cause or contribute to a violation of the water quality criteria based on data from November 1st through March 31st. No data for ammonia were available for the summer months. Therefore, the draft permit water quality-based effluent limit for the winter season will be applied year-round. In addition, the draft permit requires that the permittee continue to monitor the receiving water for ammonia, pH and temperature to evaluate ammonia limits year round. See Appendix E for the reasonable potential analysis for ammonia.

pH

The Idaho water quality standards 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. The effluent pH data were limited, with a total of 21 samples since the year 2000. The data ranged from 7.0 – 9.64 standard units. The pH range of the effluent is within the State's water quality criterion of 6.5 – 9.0 standard units with the exception of one water sample in 2005, therefore no mixing zone is necessary for this discharge. The EPA is retaining the water quality based limits in the permit because the NPDES regulations require that the permit include the more stringent of either technology based limits or water quality based effluent limits.

TSS

The EPA-approved *1999 Lower Boise River TMDL* provided the Notus WWTF with WLAs for total suspended solids (TSS) of 33 lbs/day (monthly) and 50 lbs/day (weekly) based on a 0.056 mgd design flow. These loadings are more stringent than the TSS mass-based limits based on a 0.110 mgd design flow as shown in section a of Appendix D. Henceforth, the TSS WLAs were incorporated into the proposed effluent limits (Table 1).

Phosphorus

The Notus WWTF discharges to Conway Gulch, which leads to the Boise River. The segment of the Boise River into which Conway Gulch flows is listed on Idaho's 2010 303(d)/305(b) integrated report as being impaired for nutrients. The elevated phosphorus concentration in the Boise River is contributing to the impairment of the Snake River, and the Snake River Hells Canyon TMDL (Idaho DEQ and Oregon DEQ 2003, 2004) calls for a reduction in phosphorus loading to the Snake River from the Boise River and other tributaries during a critical season (May 1st through September 30th). The Snake River Hells Canyon TMDL requires the Boise River to achieve a load allocation of less than or equal to 70 µg/L. The EPA has used this 70 µg/L load allocation to interpret Idaho's narrative criterion for nutrients. The narrative criterion for nutrients, which is in Section IDAPA 58.01.02.200.06 of the Idaho WQS, reads as follows: "Surface waters of the state shall be free from excess nutrients that can cause visible slime growths or other nuisance aquatic growths impairing designated beneficial uses." While the 70 µg/L interpretation of the narrative criterion applies to the Boise River at the mouth as opposed to Conway Gulch, the current concentrations of total phosphorus in Conway Gulch are greater

than 70 µg/L. Therefore, Conway Gulch cannot provide dilution of the effluent phosphorus. Any discharge of phosphorus from the Notus WWTF at a concentration greater than 70 µg/L will contribute to an excursion above the 70 µg/L total phosphorus load allocation at the mouth of the Boise River. Therefore, the proposed permit requires the City to meet the 70 µg/L target total phosphorus concentration consistent with the EPA-approved Snake River Hells Canyon TMDL at the end-of-pipe from May 1 through September 30.

Since the federal regulation at 40 CFR 122.45 (f) requires limitations to be expressed as mass based limits using the design flow of the facility, mass based limits applicable from May 1 through September 30 are calculated as follows:

Average Monthly Limit = 0.070 mg/L × 0.110 mgd × 8.34 = 0.064 lbs/day

Average Weekly Limit = 0.140 mg/L × 0.110 mgd × 8.34 = 0.128 lbs/day

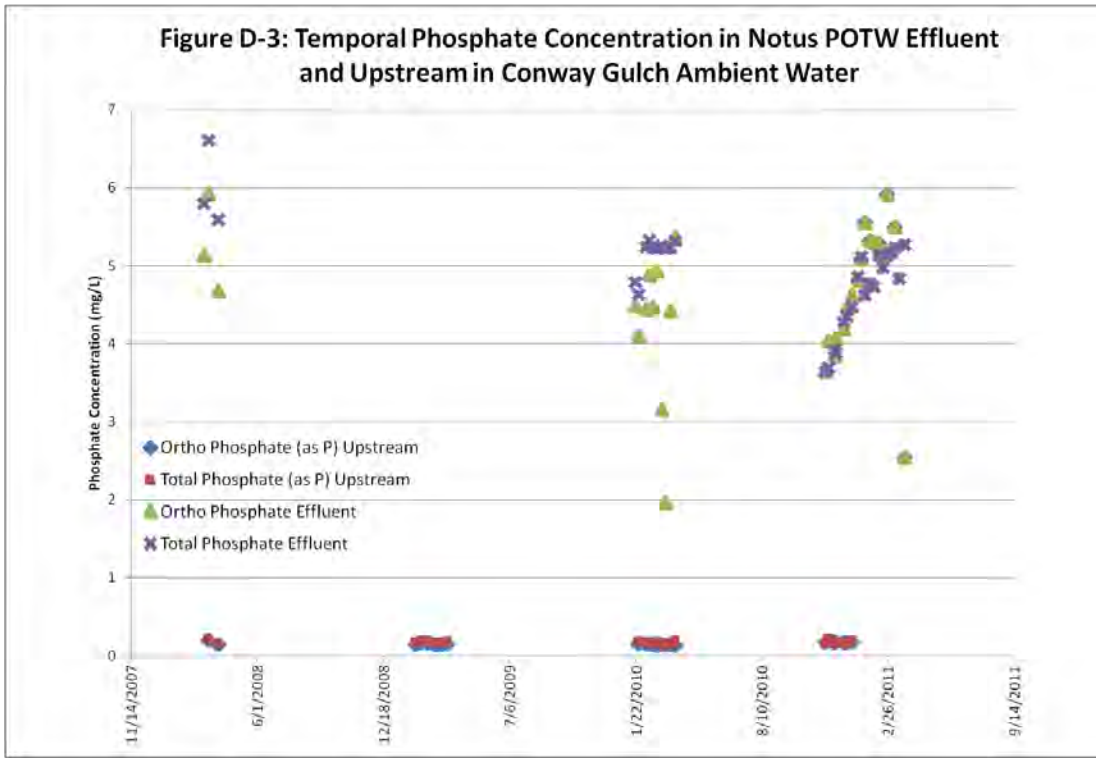
At this stage, it is not possible to evaluate the need for winter phosphorus limits. The EPA recognizes the technical challenge involved in trying to establish winter limits for one point source in a complex watershed in the absence of a comprehensive watershed analysis and evaluation of all contributing sources. In addition, the EPA recognizes that winter discharges of phosphorus may under certain conditions impact downstream reservoirs. The IDEQ intends to submit to the EPA a draft nutrient TMDL for the lower Boise by spring 2014. The IDEQ plans to collect data to enable them to evaluate the nutrient loading to the river during multiple seasons, including winter and summer. The EPA expects the TMDL to evaluate the need for year-round nutrient limits and to establish wasteload allocations for point sources and load allocations for non-point sources to meet water quality standards. The EPA intends to incorporate the assumptions and requirements of any approved wasteload allocations in the next permit for this facility.

Calculation of Average Weekly Limits

The draft permit includes average monthly limits (AMLs) to ensure that the WLA is attained except for short-term excursions occurring within a calendar month. The EPA must comply with the NPDES regulations, 40 CFR § 122.45(d)(2), that requires that permit effluent limitations be expressed as both average monthly and average weekly discharge limitations for POTWs. Average weekly limits (AWLs) were calculated based on the EPA's *Technical Support Document for Water Quality-Based Toxics Control* (EPA/505/2-90-001, March 1991).

Each AWL is calculated from the AML by the same method used to calculate each maximum daily limit (MDL) from the average monthly limit (AML) and accounts for expected effluent variability and sampling frequency. See Table 5-3 of the TSD and Appendix E for more info. The EPA assumed a coefficient of variation (CV) of 0.6 which is the recommended default CV in the TSD and is also a typical CV for facilities removing phosphorus. The EPA used the 95th percentile probability basis for the average monthly limit and the 99th percentile probability basis for the average weekly limit. Per Table 5-3 of the TSD the results indicate an AWL/AML ratio of 2.01.

The City has collected ortho and total phosphorus monitoring data for both the ambient receiving water and the WWTF effluent data for the winter season only each year from November 1st to March 31st beginning in 2007. Figure D-3 below illustrates phosphorus concentration for the Conway Gulch upstream from outfall 001, and in the effluent from November 1st 2007 to March 31st 2011. Effluent concentrations range from 3.64 mg/L to 6.61 mg/L for total phosphorus. Ambient water quality concentrations in Conway Gulch ranged from 0.15 mg/L to 5.27 mg/L of total phosphorus.



E. coli

The 1998 Lower Boise River TMDL included seasonal monthly, weekly, and daily wasteload allocations for fecal coliform bacteria for the City of Notus WWTF. The WLAs were based on fecal coliform concentrations because when the TMDL was developed the Idaho water quality standards used fecal coliform as the indicator organism for bacteria for the protection of contact recreation. However, the TMDL also stated that if Idaho's bacteria criteria were revised to require E. coli as the indicator organism rather than fecal coliform then "…compliance with the load allocations in this TMDL could be demonstrated using E. Coli samples, rather than fecal coliform," and that "…[i]f E. Coli are used as the new Idaho criteria for contact recreation when the permits are re-issued, the new E. Coli criteria should be incorporated into the permits in place of fecal coliform requirements." (See Lower Boise River TMDL; Page 75).

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 water quality standards; 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 water quality standards 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 water quality standards 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 of itself, a violation of water quality standards. 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 water quality standards 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 water quality standards 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 water quality standards 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 water quality standards 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 technology-based effluent limits 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 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 water quality standards or effluent limit guidelines.

Pathogenic Indicators – E. Coli replaces Fecal Coliform

The draft permit proposes to remove the water quality-based fecal coliform limits as imposed by the 1999 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 the WLAs for the Notus WWTF in the EPA-approved, 1998 Lower Boise River TMDL and the 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 - Water Quality-based Effluent Limits.* 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.*

For waters where standards have not yet been attained, Section 303(d)(4)(A) of the CWA states that "any effluent limitation based on a total maximum daily load or other waste load allocation established under this section may be revised only if (i) the cumulative effect of all such revised effluent limitations based on such total maximum daily load or waste load allocation will assure the attainment of such water quality standard, or (ii) the designated use which is not being attained is removed in accordance with regulations established under this section."

The EPA-approved 1998 Lower Boise TMDL has load and wasteload allocations for all known sources of bacteria to the Lower Boise River. The cumulative effect of all of the load and wasteload allocations for *E. coli* in the 1998 Lower Boise River TMDL will assure the attainment of water quality standards for bacteria in the receiving water.

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 from May 1 to September 30

and secondary contact recreation from October 1 to April 30. The effluent limits in this draft permit use the indicator organism currently specified in the Idaho water quality standards (*E. coli*) and provide protection for the beneficial use of primary contact recreation year round.

BOD_5 Mass-based limits

Mass-based BOD_5 limits are less stringent in the proposed permit. These are technology-based limits. The revised mass based limits are based on a reassessment of the design flow of the facility by the City Engineer. Because the mass-based BOD5 limits were not established using best professional judgment (i.e. based on Section 402(a)(1)(B)), the prohibition on anti-backsliding does not apply. See section 33 U.S.C. 1342(o)(1).

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 D-8 summarizes the numeric effluent limits that are in the proposed permit. These final limits are the more stringent of technology treatment requirements, water quality based limits or limits retained as the result of anti-backsliding analysis or to meet the State's anti-degradation policy.

Table D-8: Proposed Effluent Limits					
Parameter	**Units**	**Effluent Limits**			**Basis for Permits Limit**
		Average Monthly Limit	**Average Weekly Limit**	**Maximum Daily Limit**	
Total Ammonia as N	mg/L	24	--	32	The WQBELs are based on the Idaho WQS see Appendix E
	lb/day	22	--	30	
Five-Day Biochemical Oxygen Demand (BOD_5)	mg/L	40	60	--	The effluent limit BOD is based on the technology-based – (treatment equivalent to secondary) limit. Additionally, according to 40 CFR §133.103(f) the EPA is required to include more stringent limitations when it determines through analysis that more stringent concentrations are achievable. See Appendix D
	lb/day	37	55	--	
BOD_5 Removal	Percent	70 (minimum)			
Total Suspended Solids (TSS)	mg/L	45	65	--	The concentration effluent limit for TSS is based on the technology-based – (treatment equivalent to secondary) limit. See BOD Basis for Permit Limits above. The mass- limits are based on EPA-approved *1999 Lower Boise River TMDL specifies* WLAs loadings
	lb/day	33	50	--	
TSS Removal	Percent	70 (minimum)			
E. coli Bacteria	#/100 ml	126 (geometric mean)	--	406	The effluent limit for bacteria is based on the 1998 Lower Boise TMDL and the water quality criteria with no mixing zone allowed. Replaces the *fecal coliform* for bacteria. Refer to discussion under Anti-backsliding, Appendix D section C.
Total Phosphorus (May to Sept)	mg/L	0.070	0.14	--	The WQBEL is consistent with the load allocation for the Boise River in the SRHC TMDL. See 40 CFR122.44 (d)(1)(vii)(B) and Appendix D section B. For mass based limits see 40 CFR 122.45(f).
	lb/day	0.064	0.128	--	
pH	s.u	6.5 – 9.0			The effluent for pH is based on the WQBEL with no mixing zone allowed. The pH limits are more stringent than the 1999 permit. See IDAPA 58.01.02.250

Appendix E: 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 water quality standards. Part A demonstrates how the water quality-based effluent limits (WQBELs) in the draft permit were calculated. Part B provides the results of the 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.

Mass Balance

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

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

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:

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

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:

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

Where:

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

If a mixing zone is not allowed, dilution is not considered when projecting the receiving water concentration and,

$$C_d = C_e \qquad \text{Equation 4}$$

Maximum Projected Effluent Concentration

When determining the projected receiving water concentration downstream of the effluent discharge, the EPA's Technical Support Document for Water Quality-based Toxics Controls (TSD, 1991) recommends using the maximum projected effluent concentration (Ce) in the mass balance calculation (see equation 3, page C-5). To determine the maximum projected effluent concentration (Ce) the EPA has developed a statistical approach to better characterize the effects of effluent variability. The approach combines knowledge of effluent variability as estimated by a coefficient of variation (CV) with the uncertainty due to a limited number of data to project an estimated maximum concentration for the effluent. Once the CV for each pollutant parameter has been calculated, the reasonable potential multiplier (RPM) used to derive the maximum projected effluent concentration (Ce) can be calculated using the following equations:

First, the percentile represented by the highest reported concentration is calculated.

$$p_n = (1 - \text{confidence level})^{1/n} \qquad \text{Equation 5}$$

where,
p_n = the percentile represented by the highest reported concentration
n = the number of samples
confidence level = 99% = 0.99

The data set contains 18 ammonia samples collected from the effluent, therefore:

$p_n = (1 - 0.99)^{1/18}$
$p_n = 0.774$

This means that we can say, with 99% confidence, that the maximum reported effluent ammonia concentration is greater than the 77^{th} percentile.

The reasonable potential multiplier (RPM) is the ratio of the 99th percentile concentration (at the 99% confidence level) to the maximum reported effluent concentration. This is calculated as follows:

$$RPM = \frac{C_{99}}{C_{P_n}} = \frac{e^{Z_{99} \times \sigma - 0.5 \times \sigma^2}}{e^{Z_{P_n} \times \sigma - 0.5 \times \sigma^2}}$$ Equation 6

Where,

σ^2 = $\ln(CV^2 + 1)$
Z_{99} = 2.326 (z-score for the 99th percentile)
Z_{Pn} = z-score for the P_n percentile (inverse of the normal cumulative distribution function at a given percentile)
CV = coefficient of variation (standard deviation ÷ mean)

In the case of ammonia:

CV = coefficient of variation = 0.44
$\sigma^2 = \ln(CV^2 + 1) = 0.176$
$\sigma = \sqrt{\sigma^2} = 0.420$
z = 2.326 for the 99th percentile; 0.751 for the 77th percentile.

$C_{99} = \exp(2.326 \times 0.420 - 0.5 \times 0.176) = 2.435$
$C_{77} = \exp(0.751 \times 0.420 - 0.5 \times 0.176) = 1.256$

$RPM = C_{99}/C_{77} = 2.435/1.255$
RPM = 1.95

The maximum projected effluent concentration is determined by simply multiplying the maximum reported effluent concentration by the RPM:

$$C_e = (RPM)(MRC)$$ Equation 7

where MRC = Maximum Reported Concentration

In the case of ammonia,

$$C_e = (1.95)(13.9 \text{ mg/L}) = 27.10 \text{ mg/L}$$

Reasonable Potential

The discharge has reasonable potential to cause or contribute to an exceedance of water quality criteria if the maximum projected concentration of the pollutant at the edge of the mixing zone exceeds the most stringent criterion for that pollutant.

It was determined that ammonia has reasonable potential to cause or contribute to an exceedance of water quality criteria at the edge of the mixing zone. The results of the calculations are presented in Table E-1 of this Appendix.

A. WQBEL Calculations

The following calculations demonstrate how the water quality-based effluent limits (WQBELs) in the draft permit were calculated.

WQBEL calculations are intended to protect all designated uses. The following discussion presents the general equations used to calculate the water quality-based effluent limits.

Calculate the Wasteload Allocations (WLAs)

Wasteload allocations (WLAs) are calculated using the same mass balance equations used to calculate the concentration of the pollutant at the edge of the mixing zone in the reasonable potential analysis (Equations 3 and 4). To calculate the wasteload allocations, C_d is set equal to the acute or chronic criterion and the equation is solved for C_e. The calculated C_e is the acute or chronic WLA. Equations 3 and 4 are rearranged to solve for the WLA, becoming:

$$C_e = WLA = \frac{C_d (Q_u \times MZ) + C_d Q_e - (C_u \times (Q_u \times MZ))}{Q_e} \qquad \text{Equation 8}$$

The next step is to compute the "long term average" concentrations which will be protective of the WLAs. This is done using the following equations from the EPA's *Technical Support Document for Water Quality-based Toxics Control* (TSD):

$$LTA_{acute} = WLA_{acute} \times e^{(0.5\sigma^2 - z\sigma)} \qquad \text{Equation 9}$$

$$LTA_{chronic} = WLA_{chronic} \times e^{(0.5\sigma_4^2 - z\sigma_4)} \qquad \text{Equation 10}$$

where,

σ^2 = $\ln(CV^2 + 1)$
Z_{99} = 2.326 (z-score for the 99th percentile probability basis)
CV = coefficient of variation (standard deviation ÷ mean)
σ_4^2 = $\ln(CV^2/4 + 1)$

For ammonia, because the chronic criterion is based on a 30-day averaging period, the Chronic Long Term Average (LTAc) is calculated as follows:

$$LTA_c = WLA_c \times e^{(0.5\sigma_{30}^2 - z\sigma_{30})} \qquad \text{Equation 11}$$

where,

σ_{30}^2 = $\ln(CV^2/30 + 1)$

The acute and chronic LTAs are compared and the more stringent is used to develop the daily maximum and monthly average permit limits as shown below.

Derive the maximum daily and average monthly effluent limits

Using the TSD equations, the MDL and AML effluent limits are calculated as follows:

$$MDL = LTA \times e^{(z_m\sigma - 0.5\sigma^2)} \quad \text{Equation 12}$$

$$AML = LTA \times e^{(z_a\sigma_n - 0.5\sigma_n^2)} \quad \text{Equation 13}$$

where σ, and σ² are defined as they are for the LTA equations above, and

σ_n^2 = $\ln(CV^2/n + 1)$
z_a = 1.645 (z-score for the 95th percentile probability basis)
z_m = 2.326 (z-score for the 99th percentile probability basis)
N = number of sampling events required per month. With the exception of ammonia, if the AML is based on the LTA_c, i.e., $LTA_{minimum} = LTA_c$), the value of ''n'' should is set at a minimum of 4. In the case of ammonia, if the AML is based on the LTA_c, i.e., $LTA_{minimum} = LTA_c$), the value of ''n'' should is set at a minimum of 30.

WQBEL Calculations determined that ammonia does have reasonable potential to cause or contribute to an exceedance of water quality criteria at the edge of the acute and chronic mixing zone. The following section derives the water quality based effluent limits. Wasteload allocations (WLAs) are calculated using the same mass balance equations used to calculate the concentration of the pollutant at the edge of the mixing zone. The results of the calculations are presented in Table E-1 below.

$C_dQ_d = C_eQ_e + C_uQ_u$ where,

C_d = water quality criterion
C_e = WLA
C_u = Maximum measured receiving water upstream concentration (the 95th percentile of the data set is used)
Q_d = Receiving water flow rate downstream of the effluent discharge = $Q_e + Q_u$
Q_e = Effluent flow rate (set equal to the highest discharge from facility)
Q_u = Receiving water low flow rate upstream of the discharge
To calculate a wasteload allocation (*i.e.*, C_e), C_d is set equal to the criterion and the equation is solved for C_e. This procedure is done for both the acute criterion, and the chronic criterion. If mixing zones are allowed, the equation becomes:

$$C_e = WLA = \frac{C_d(Q_u \times MZ) + C_dQ_e - (C_u \times (Q_u \times MZ))}{Q_e}$$

Calculation is provided below for ammonia.

(1) Ammonia, Outfall 001 (discharge to Conway Gulch)

C_d (acute) = 2139.5 µg/L
C_d (chronic) = 1089.3 µg/L
$Q_{u(acute)}$ = 9.72 cfs * (1mgd/1.54 cfs) = 6.31 mgd
$Q_{u(chronic)}$ = 13.90 cfs * (1mgd/1.54 cfs) = 9.02 mgd
C_u = 40 µg/L
Q_e = 0.110 mgd
$C_{e(acute)} = WLA_{(acute)}$
$C_{e(chronic)} = WLA_{(chronic)}$
MZ (acute) = 25% (0.25)
MZ(chronic) = 25% (0.25)

$$WLA_{acute} = \frac{2139.5(6.31 \text{ X } 0.25) + (2139.5 \text{ X } 0.110) - [(40 \text{ X } (6.31 \text{ X } 0.25)]}{0.110} = 32248.2 \text{ µg/L}$$

$$WLA_{chronic} = \frac{1089.3(9.02 \text{ X } 0.25) + (1089.3 \text{ X } 0.110) - [(40 \text{ X } (9.02 \text{ X } 0.25)]}{0.110} = 22600 \text{ µg/L}$$

The next step is to compute the "long term average" (LTA) concentrations which will be protective of the WLAs. This is done using the following equations from Section 5.4 of the TSD:

$LTA_a = WLA_{acute} \times \exp(0.5\sigma^2 - z\,\sigma)$
$LTA_c = WLA_{chronic} \times \exp(0.5\,\sigma_{30}^2 - z\,\sigma_{30})$

where,

$\sigma^2 = \ln(CV^2+1)$
$\sigma = (\sigma^2)^{1/2}$
$\sigma_{30}^2 = \ln(CV^2/30 + 1)$
$\sigma_{30} = (\sigma_{30}^2)^{1/2}$

z = 2.326 for 99th percentile probability basis

For Ammonia,

CV = 0.44

$\sigma^2 = \ln(0.44^2+1) = 0.17$

$\sigma = \sqrt{\sigma^2} = 0.42$

$\sigma_{30}^2 = \ln(0.44^2/30 + 1) = 0.006$

$\sigma_{30} = \sqrt{\sigma_4^2} = 0.08$

z = 2.326 for 99th percentile probability basis

Therefore,

LTA_a = 13217 µg/L

LTA_c = 18782 µg/L

The acute and chronic LTAs are compared and the more stringent is used to develop the daily maximum (MDL) and average monthly (AML) permit limits as shown below. The acute LTA of 13217 µg/L is more stringent.

Derive the maximum daily and average monthly effluent limits

Using the equations in Section 5.4 of the TSD, the MDL and AML effluent limits are calculated as follows:

$MDL = LTA \times \exp(z_m\sigma - 0.5\,\sigma^2)$

$AML = LTA \times \exp(z_a\sigma_n - 0.5\,\sigma_n^2)$

where σ, and σ^2 are defined as they are for the LTA equations and,

$\sigma_n^2 = \ln(CV^2/n + 1) = 0.17$

$\sigma_n = \sqrt{\sigma^2} = 0.42$

z_a = 1.645 for 95th percentile probability basis

z_m = 2.326 for 99th percentile probability basis

n = for ammonia the number of sampling events required per month equals 1

CV = 0.44

The water quality based effluent limits for ammonia are:

MDL = 13217 µg/L x 2.44 = 32.25 mg/L

AML = 13217 µg/L x 1.83 = 24.22 mg/L

The associated mass based limits are derived as follows:

MDL = 32.25 × 8.34 × 0.11 = 30 lbs/day

AML =24.22 × 8.34 × 0.11 = 22 lbs/day

The NPDES regulations at 40 CFR §122.45(d) require permit limits for POTW be expressed as average monthly limits (AMLs) and average weekly limits (AWLs) unless impracticable. Region 10 considers it impracticable to incorporate weekly limits for toxic pollutants into permits because federal regulations do not prohibit a permittee from increasing their sampling events above what is required in an NPDES permit. This is significant because a permittee may collect as many samples as necessary during a week to bring the average of the data set below the average weekly effluent limit. In such cases, spikes of a pollutant, which could be harmful to aquatic life, could be masked by the increased sampling.

TABLE E-1

This spreadsheet calculates the reasonable potential to exceed state water quality standards for a small number of samples. The procedure and calculations are done per the procedure in Technical Support Document for Water Quality-based Toxics Control, U.S. EPA, March, 1991 (EPA/505/2-90-001) on page 56. User input columns are shown with red headings. Corrected formulas in col G and H on 5/98 (GB)

CALCULATIONS

		State Water Quality Standard		Max concentration at edge of...												
	Ambient conc.	Acute	Chronic	Acute Mixing Zone	Chronic Mixing Zone	**LIMIT REQ'D?**	Effluent percentile value	See Footnote A	Max effluent conc. measured	Coeff Variation	See Footnote B	# of samples	Multiplier (See Footnote C)	Acute Dil'n Factor	Chronic Dil'n Factor	
Parameter	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*			*Pn*	*ug/L*	*CV*	*s*	*n*				COMMENTS
Ammonia	40.0000	2139.5000	1089.3000	1814.67	1305.96	YES	0.99	0.774	13900.00	0.44	0.42	18	1.95	15.28	21.42	

A: The percentile represented by the highest reported concentration pn = (1 - effluent confidence level)1/n

B: Sigma repsented by the formula: ln(CV^2 +1) with CV equal to the coefficient of variation (standard deviation ÷ mean)

C: See Appendix E, equation 6 of the Fact Sheet

Appendix F: Clean Water Act Section 401 Certification

STATE OF IDAHO
DEPARTMENT OF
ENVIRONMENTAL QUALITY

1445 North Orchard • Boise, Idaho 83706 • (208) 373 0550

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

April 11, 2013

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

Subject: Draft 401 Certification for the City of Notus Wastewater Treatment Plant; NPDES Permit No. ID-002101-6

Dear Mr. Lidgard:

On February 27, 2013, EPA provided DEQ with a preliminary draft of the above-referenced permit and requested DEQ provide a draft §401 certification of the permit pursuant to section 401 of the Clean Water Act. Upon review of the preliminary draft permit DEQ prepared and now submits the enclosed draft §401 certification for the permit. As we have discussed with Daniel Haskell, the NPDES permit writer, our only additional condition is that the permittee monitor temperature as described in the draft 401 certification.

If you have questions or need further information please contact Lauri Monnot at (208) 373-0461 or by email at Lauri.Monnot@deq.idaho.gov.

Sincerely,

Pete Wagner
Regional Administrator
Boise Regional Office

Enclosure: DEQ Draft 401 Certification for NPDES Permit No. ID-002101-6

C: Miranda Adams, DEQ 401 Program Coordinator
Lance Holloway, DEQ Boise Regional Water Quality Manager

Idaho Department of Environmental Quality

Draft §401 Water Quality Certification

April 11, 2013

NPDES Permit Number(s): ID-002101-6, City of Notus Wastewater Treatment Facility (WWTF)

Receiving Water Body: Conway Gulch

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 Notus WWTF discharges the following pollutants of concern: BOD_5, TSS, *E. coli*, pH, ammonia, temperature (heat), and total phosphorus (TP). Effluent limits have been developed for BOD_5, TSS, *E. coli*, pH, ammonia, and TP. No effluent limits are proposed for temperature.

Receiving Water Body Level of Protection

The City of Notus WWTF discharges to Conway Gulch. Conway Gulch is a man-made water body which carries agricultural runoff, groundwater and stormwater drainage from the lands north and east of the wastewater treatment facility. Man-made water bodies, for which uses are not designated in IDAPA 58.01.02, sections 110-160, are to be protected for the uses for which they were developed; in this case agricultural water supply (IDAPA 58.01.02.101.02).

Because no aquatic life or recreational uses are designated for Conway Gulch, DEQ will provide Tier 1 protection only for the Conway Gulch (IDAPA 58.01.02.051.02).

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.

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). Conway Gulch discharges to the Boise River assessment unit (AU) 17050114SW001_06. The Boise River, at this location (AU 17050114SW001_06), is impaired for sediment, bacteria, temperature and TP. The EPA-approved *Lower Boise River TMDL* (DEQ 1999) establishes load allocations for sediment and bacteria at the mouth of Conway Gulch and also wasteload allocations for sediment and bacteria for the City of Notus WWTF. These allocations are designed to ensure the Boise River will achieve the water quality necessary to support its existing and designated aquatic life beneficial uses and comply with the applicable numeric and narrative criteria. The *Snake River Hells Canyon* (SR-HC) *TMDL* (DEQ 2003) established a load allocation for the Boise River based upon a total phosphorus concentration of 0.07 mg/L at the mouth of the Boise River. The Lower Boise Watershed Council and DEQ (2008) developed the *Lower Boise Implementation Plan Total Phosphorus* (Implementation Plan), which implements the SR-HC TMDL for the Lower Boise watershed and assigns wasteload allocations to the point sources and load allocations to non-point sources in order to meet the target for total phosphorus set in the SR-HC TMDL. Since the SR-HC TMDL has been approved and implemented in the Lower Boise watershed through the Implementation Plan, Notus' discharge must be consistent with the SR-HC TMDL and the Implementation Plan.

The NPDES permit allows the City of Notus to discharge a monthly average of 0.06 lbs/day phosphorus to Conway Gulch, and ultimately the Boise River. The Implementation Plan established a WLA in years 10-15 of implementation to the City of Notus WWTF of 0.66 lbs/day (0.20 Kg/day), as a monthly average. The WLAs in the Implementation Plan allow the 0.07 mg/l TP target to be met at the mouth of the Boise River in Parma, which would also allow the Boise River to meet its beneficial uses. The permit limit is more stringent than the target limit set forth in the Implementation Plan; therefore, DEQ believes the Notus WWTF discharge will not increase TP concentrations in the Boise River.

In sum, the effluent limitations and associated requirements for BOD_5, TSS, *E. coli*, pH and ammonia contained in the City of Notus WWTF 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 Boise River TMDL*. Therefore, DEQ has determined the permit limits for these pollutants will protect and maintain existing and designated beneficial uses in Conway Gulch in compliance with the Tier 1 provisions of Idaho's WQS (IDAPA 58.01.02.051.01 and 58.01.02.052.07). There is no existing TMDL for temperature or TP in the Boise River; therefore, the discharge permit limits must comply with these provisions of Idaho WQS (IDAPA 58.01.02.055.04 and 58.01.02.055.05). DEQ is working with EPA to bring the permit into compliance for temperature and TP with the conditions outlined below.

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

Compliance with IDAPA 58.01.02.055.04 Temperature Impairment

As noted above, IDAPA 58.01.02.055.04 provides that until a TMDL or equivalent process is completed, new or increased discharges of pollutants to a high priority impaired water body may be allowed only if the total load of the pollutant remains constant or decreases within the watershed. Once the TMDL or equivalent process is completed, the discharge must be consistent with the approved document. The Boise River at this location (AU 17050114SW001_06), is impaired by excess water temperature (heat) during the critical time period for cold water aquatic life (June 21-September 21). There is no TMDL for temperature developed for this AU, and the Lower Boise River is high priority water for TMDL development. Therefore, there must be no net increase of temperature in the watershed as a result of the Notus WWTF discharge.

In order to determine compliance with the no net increase requirement, DEQ must look at temperature impacts to the Boise River. In addition, IDAPA 58.01.02.055.04 requires the load of causative pollutants be kept constant, or decrease. For several reasons however, using a heat load is an inappropriate measure to determine compliance with IDAPA 58.01.02.055.04. First, heat is a non-conservative pollutant, and therefore, loading is not as relevant to water quality as it is for other pollutants. Second, there is no "zero load" of heat because a wastewater discharge will always have some heat load to it. This makes it impossible, or at least impractical, to prevent any increase in heat loading from a discharge. For these reasons, DEQ determines compliance with the no net increase requirement by looking at whether the Notus WWTF discharge will increase temperatures in Conway Gulch, and ultimately, the Boise River.

DEQ has a limited data set to determine the impact of the Notus WWTF discharge. For example, there is inadequate flow data regarding the relevant waters, and limited temperature data for the effluent, Conway Gulch and the Boise River. In order to evaluate the impact, instantaneous temperature and flow data collected in Conway Gulch in 2005 and instantaneous temperature data collected from the effluent were used to determine whether the discharge would result in a net increase in water temperature in Conway Gulch. Irrigation season average flow in Conway Gulch was estimated at 17 MGD (32 cfs), and the design flow of the facility is 0.11 MGD. The average flow in Conway Gulch during non-irrigation season was estimated at 5.2 MGD (9.7 cfs). Modeling results for both seasons show the temperature of Conway Gulch would not measurably increase with effluent temperatures as high as 30 degrees Centigrade. In addition, due to lagoon capacity and evaporative loss the WWTF currently only discharges from November through March, which is not during the critical period for cold water aquatic life. Based on the available data, DEQ believes the Notus WWTF discharge will not increase temperatures in Conway Gulch or the Boise River.

To improve the accuracy of the analysis regarding the temperature impacts of the discharge and in order to determine compliance with WQS and other appropriate requirements of state law, DEQ requires, as a condition in the permit, the City to commit to continuous temperature monitoring of the treated effluent and of Conway Gulch, above the discharge point. This monitoring will assist in determining whether temperature effluent limits are required in future

permits. Prior to discharging to Conway Gulch during the critical time period for cold water aquatic life the City of Notus will need to develop, and obtain DEQ approval of, a plan that depicts how the discharge and the receiving water bodies will be monitored to ensure consistency with IDAPA 58.01.02.055.04. As part of this plan, Notus may include implementation measures to offset the amount of heat load, if any, that is in excess of the WQS and the stream temperature in the Boise River. No discharge that raises the instream temperature of Conway Gulch, and ultimately the Boise River, during the critical time period for cold water aquatic life may occur until DEQ has approved the offset measures contained in the plan.

At a minimum, the plan shall:

(1) Describe a temperature monitoring plan for the effluent and receiving water body that includes, at a minimum, the monitoring described in the preceding paragraph.

(2) Describe measures the City may implement to ensure the discharge from the facility is consistent with Conway Gulch instream water temperature, including without limitation, any measures the City may implement to ensure that the addition of heat load that is in excess will be offset.

(3) Include a schedule for the implementation of the monitoring plan and any necessary offset measure(s).

(4) Identify remediation steps that may be taken if the City identifies their discharge is exceeding temperature requirements for the Boise River.

Once approved by DEQ, the plan shall be implemented according to the schedule in the approved plan. In addition, the City of Notus must send the plan, along with documentation of DEQ's approval of the plan, to EPA.

Mixing Zones

Pursuant to IDAPA 58.01.02.060, DEQ authorizes a mixing zone that utilizes 25% of the critical flow volumes of Conway Gulch for ammonia.

Other Conditions

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

Right to Appeal Final Certification

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

Questions or comments regarding the actions taken in this certification should be directed to Lauri Monnot, DEQ Boise Regional Office, (208) 373-0461, Lauri.Monnot@deq.idaho.gov.

DRAFT

Pete Wagner
Regional Administrator
Boise Regional Office