NPDES Permit Number: ID-002075-3

FACT SHEET

Public Comment Period Start Date: November 25, 2013
Public Comment Expiration Date: December 26, 2013

The United States Environmental Protection Agency (EPA)
Plans To Reissue A National Pollutant Discharge Elimination System (NPDES) Permit
And
Notice of State Certification

The City of American Falls
Wastewater Treatment Plant
Valdez Street
American Falls, Idaho 83211

Technical Contact:
Kai Shum
email: Shum.Kai@epa.gov
Phone: 206-553-0060
800-424-4372 (within Alaska, Idaho, Oregon, and Washington)

EPA Proposes To Reissue NPDES Permit

EPA proposes to reissue the NPDES permit to 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

401 Certification for Facilities that Discharge to State Waters

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. This Notice also serves as Public Notice of the intent of the State of Idaho to consider certifying that the subject discharge will comply with the applicable provisions of Sections 208(e), 301, 302, 303, 306, and 307 of the Clean Water Act. The NPDES permit will not be issued until the certification

requirements of Section 401 have been met.

Comments regarding the certification should be directed to:

Idaho Department of Environmental Quality
DEQ Pocatello Regional Office
444 Hospital Way, #300
Pocatello, ID 83201

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 EPA as described in the Public Comments Section of the attached Public Notice.

After the Public Notice expires, and all comments have been considered, EPA's Regional Director for the Office of Water will make a final decision regarding permit reissuance. 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 comments are received, EPA will address the comments and issue the permit. The permit will become effective 30 days after the issuance date, unless an appeal is submitted to the Environmental Appeals Board within 30 days.

Documents are Available for Review.

The draft NPDES permit and related documents can be reviewed or obtained by visiting or contacting EPA's Regional Office in Seattle between 8:30 a.m. and 4:00 p.m., Monday through Friday (see address below). The draft permit, fact sheet, and other information can also be found by visiting the Region 10 website at "www.epa.gov/r10earth/water.htm."

United States Environmental Protection Agency, Region 10
1200 Sixth Avenue, Suite 900 (OWW-130)
Seattle, Washington 98101
(206) 553-2108 or
1-800-424-4372 (within Alaska, Idaho, Oregon and Washington)

The fact sheet and draft permit are also available at:

EPA Idaho Operations Office
950 W. Bannock, Suite 900
Boise, Idaho 83702

IDEQ
Pocatello Regional Office
444 Hospital Way, #300
Pocatello, ID 83201

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ACRONYMS

1Q10	1 day, 10 year low flow
7Q10	7 day, 10 year low flow
AML	Average Monthly Limit
BOD5	Biochemical oxygen demand, five-day
BE	Biological evaluation
BURP	State of Idaho's Beneficial Use Reconnaissance Program
°C	Degrees Celsius

cfs	Cubic feet per second
CFR	Code of Federal Regulations
CV	Coefficient of Variation
CWA	Clean Water Act0
DMR	Discharge Monitoring Report
DO	Dissolved oxygen
E.coli	Escherichia coli bacteria
EFH	Essential Fish Habitat
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
I/I	Inflow and Infiltration
lbs/day	Pounds per day
LTA	Long Term Average
mg/L	Milligrams per liter
ml	milliliters
ML	Minimum Level
ug/L	Micrograms per liter
mgd	Million gallons per day
MDL	Maximum Daily Limit
MPN	Most Probable Number
N	Nitrogen
NMFS	National Marine Fisheries Service
NPDES	National Pollutant Discharge Elimination System
OWW	Office of Water and Watersheds
O&M	Operations and maintenance
POTW	Publicly owned treatment works
QAP	Quality assurance plan
RP	Reasonable Potential
RPM	Reasonable Potential Multiplier
s.u.	Standard Units
TMDL	Total Maximum Daily Load
TRE	Toxicity Reduction Evaluation
TSD	Technical Support document (EPA, 1991)
TSS	Total suspended solids
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
UV	Ultraviolet radiation
WLA	Wasteload allocation
WQBEL	Water quality-based effluent limit
WWTP	Wastewater treatment plant

I. APPLICANT

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

City of American Falls
Wastewater Treatment Plant
2263 Valdez
American Falls, ID 83211
NPDES Permit Number: ID-002075-3

Mailing Address:
City of American Falls
550 North Oregon Trail
American Falls, ID 83211

Facility Contact:
Pete Cortez
Water/Waste Water Superintendent
208-226-2569

II. FACILITY INFORMATION

The City of American Falls (City) has a separate sanitary sewer collection system and a wastewater treatment plant providing secondary treatment using trickling filters and utilizing ultraviolet (UV) disinfection. According to the City's Permit Application, the system serves a population of 4111, and has a Design Flow Rate of 0.9 million gallons per day (mgd). The average flow in 2006 was 0.48 mgd. The point of discharge involves one outfall into the Snake River at the following location: Latitude: 42 46' 28" N; and, Longitude: 112 52' 21" W. The outfall is not equipped with a diffuser, and is approximately 20 feet from shore, and approximately 2 feet below surface.

The previous NPDES Permit for this facility went into effect on January 7, 2002, and expired at midnight of January 8, 2007. A complete application for permit reissuance was submitted to the EPA on September 26, 2006. Since the permit was not reissued before the expiration date of January 8, 2007 and since the City submitted a timely application, the permit was administratively extended pursuant to 40 CFR 122.6.

On July 9, 2012, EPA received a supplementary permit application from the City for an Upgraded Wastewater Treatment Plant (WWTP) that is currently under construction. This Upgraded WWTP will replace the aging existing mechanical WWTP that is currently in use. The Upgraded WWTP will be a Membrane Bio-Reactor (MBR) WWTP with UV disinfection. It will have a design capacity of 1.10 mgd, and will discharge from the same currently used outfall. The Upgraded WWTP is expected to begin discharge around January 1, 2014.

This Fact Sheet and the proposed permit are for both the existing WWTP and the Upgraded WWTP.

The previous permit included the following monitoring requirements and effluent limits:

Table 1: Effluent Limitations from the Previous Permit

Parameter	Units	Monthly Average	Weekly Average	Instantaneous Maximum
Biochemical Oxygen Demand, BOD_5	mg/l	30	45	---
	lbs/day	225	338	---
Total Suspended Solids, TSS	mg/l (lbs/day)	30	45	---
	lbs/day	225	338	---
***E.coli* Bacteria**	number/100 ml	126	---	406
Total Residual Chlorine	ug/l(lb/day)	120	210	---
	lbs/day	0.9	1.6	---
pH	Shall not be less than 6.5, nor greater than 9.0.			
Percent Removal for BOD_5 and TSS	Minimum 85% removal.			
Discharge	There shall be no discharge of floating solids or visible foam in other than trace amounts.			

Table 2: Monitoring Requirements from the Previous Permit				
Parameter	**Units**	**Sample Location**	**Sampling Frequency**	**Type of Sampling**
Total Flow	mgd	Influent or Effluent	Continuous	Recording
BOD_5	mg/l and lbs/day	Influent and Effluent	2/week	24-hour composite
TSS	mg/l and lbs/day	Influent and Effluent	Monthly	24-hour composite
pH	s.u.	Effluent	5/week	Grab
***E. coli* Bacteria**	Number/100ml	Effluent	2/week	Grab

In its NPDES Permit Application dated September 26, 2006, the facility reported the following information:

- The facility had a design flow rate of 0.9 mgd capacity.
- The facility is requesting to renew its NPDES permit for continuous discharge
- The annual average daily flow rate was 0.46 mgd in 2005 and 0.48 mgd in 2006.
- The maximum daily flow rate was 0.51 mgd in 2005 and 0.52 mgd in 2006.
- The facility's collection system is only from separate sanitary sewers. No contribution from a combined storm sewer was indicated.
- The facility does not land-apply treated wastewater
- The facility does not discharge or transport treated or untreated wastewater to another treatment works.
- The facility uses ultraviolet disinfection.
- On its permit application, the facility reported the following effluent testing information:

  Minimum pH: 6.3 s.u.

  Maximum pH: 8.1 s.u.

  Maximum daily flow rate: 0.79 mgd

  Average daily flow rate: 0.48 mgd

Temperature of effluent - Maximum Daily value (Winter): 13º C

Temperature of effluent - Maximum Daily value (Summer): 23 º C

Biochemical Oxygen Demand (BOD): Maximum Daily Discharge, 31.3 mg/L;

BOD_5: Average Daily Discharge, 17.3 mg/L.

Total Suspended Solids (TSS): Maximum Daily Discharge, 44.5 mg/L;

TSS: Average Daily Discharge, 20.2 mg/L.

Ammonia: Maximum Daily discharge, 2.96 mg/l;

Ammonia: Average Daily Discharge, 1.35 mg/l.

Total Phosphorus: Maximum Daily Discharge, 2.87 mg/l

Total Phosphorus: Average Daily Discharge, 2.06 mg/l

Discharge Monitoring Report (DMR) monitoring data from May 2001 through February 2007 were reviewed to determine the facility's compliance with its current effluent limits. The previous permit had effluent limits of 35 mg/L and 52 mg/L for monthly and weekly average TSS concentrations. The facility had one exceedance of its BOD limit (June, 2001); two exceedances of the TSS limit (June, 2001 and March, 2003); one exceedance of the TSS percent removal limit (November, 2006); two exceedances of its fecal coliform limit (June, 2005 and November, 2006); and, one DMR was not received (July, 2006). In the April 2006 DMR, the facility stated that it could not report the BOD percent removal rate because the influent sample was too weak.

Pursuant to the issuance of the draft NPDES Permit, EPA requested a draft certification of compliance with the Idaho Water Quality Standards (WQS) from the State of Idaho. On August 13, 2013, EPA received a Draft Certification dated August 7, 2013, from the Idaho Department of Environmental Quality (IDEQ) for the draft permit. Upon receipt of IDEQ's draft certification, EPA proceeded with the public comment process for issuance of the draft permit. The IDEQ Draft §401 Water Quality Certification is attached in Appendix C below.

III. RECEIVING WATER

The facility discharges to the Snake River approximately 0.25 mile downstream from the American Falls Dam. Discharge from the dam heavily influences the quantity and ambient quality of water in the Snake River at the point of discharge. According to the State of Idaho's 1999 Lake Walcott Subbasin total maximum daily load (TMDL), the Subbasin (HUC #17040200) encompasses about 3,670 square miles. The population in the Subbasin was about 37,000 in 1990, and is estimated at 40,000 in 1999. 54% of the land is considered range, and 25% considered agricultural. The American Falls Dam is

located at mile 714 on the Snake River. It is a concrete gravity dam and spillway with earth embankments at either end. This dam was first completed in 1926, and was rebuilt in 1976 and 1977. Its reservoir is managed by the United States Bureau of Reclamation and is used for flood control and irrigation. Power generation by Idaho Power Company is incidental to those releases. Although Idaho Power has 44,274 acre-feet of storage space in American Falls Reservoir which they can control for release through the power plant, usually for delivery at Milner Dam for power generation downstream.

A. Low Flow Conditions

The *Technical Support Document for Water Quality-Based Toxics Control* (hereafter referred to as the TSD) (EPA, 1991) and the State of Idaho WQS recommend the flow conditions for use in calculating water quality-based effluent limits (WQBELs) using steady-state modeling. The TSD and the WQS state that WQBELs intended to protect aquatic life uses should be based on the lowest seven-day average flow rate expected to occur once every ten years (7Q10) for chronic criteria and the lowest one-day average flow rate expected to occur once every ten years (1Q10) for acute criteria. Because the chronic criterion for ammonia is a 30-day average concentration not to be exceeded more than once every three years, EPA typically uses the 30B3 for the chronic ammonia criterion instead of the 7Q10. The 30B3 is a biologically-based flow rate designed to ensure an excursion frequency of no more than once every three years for a 30-day average flow rate. For human health criteria, the Idaho water quality standards recommend the 30Q5 flow rate for non-carcinogens, and the harmonic mean flow rate for carcinogens.

Flow data (2000-2012) from the United States Geological Survey (USGS) were used to determine the flow conditions for the receiving water from USGS Gauge #13077000, on Snake River at Neeley, Idaho. The USGS gauge location is at: Lat 42° 46'03", long 112° 52'46" (NAD83), in NE1/4 SW1/4 sec.31, T.7 S., R.31 E., Power County, American Falls SW quad., Hydrologic Unit 17040209, on right bank 400 ft upstream from fish hatchery buildings, approximately, 0.9 mile downstream from American Falls Dam, and at mile 714.1 of the Snake River. The station is approximately 0.6 miles downstream from the outfall.

The American Falls Dam is situated immediately upstream of the WWTP, and operations at the dam determine the amount of water flowing into this reach of the Snake River. Because of the controlled flow in the river, EPA calculated low flows based on the understanding that significantly lower flow volumes are allowed into the river in winter months than during summer months. Based on discussions with IDEQ, EPA understands that Bureau of Reclamation valve adjustments at the dam are typically made around October 15th and during spring of each year. Given this information, EPA believes that it would be appropriate to characterize low flows seasonally accounting for flow operations

from the dam. Therefore, low flow calculations are determined for the summer season from June to September, and separately for the winter season from October to May. EPA also chose the seasonal period to differentiate warmer water temperatures in summer from cooler water temperatures in winter for calculating the projected ammonia concentrations in the river.

Using the DFLOW program, EPA calculated the flow information in Table 3 using the USGS river flow data set from 2000 to 2012. For the Winter Season from October to May, EPA is using the Year-Round flows because the 30B3 biological flows can only be calculated on a year-round basis, and believes that the year-round low flows are representative estimates for the winter season. Since DFLOW does not calculate 30B3 values for seasonal periods, for the Summer Season from June to September, EPA computed the 30Q10 hydrologic flow to calculate the dilution factor for the chronic ammonia criterion condition.

Table 3: Critical Flow Rates
Based on USGS Gauge Station #13077000 on the Snake River at Neeley, Idaho (1980-2010)

Season	1Q10	7Q10	30B3 or 30Q10	Harmonic Mean
Oct 1 to May 31	242 cfs (156.1 mgd)	246 cfs (158.7 mgd)	30B3 345 cfs (222.6 mgd)	1110 cfs (716 mgd)
June 1 to Sept. 30	3370 cfs (2174.2 mgd)	---	30Q10 5290 cfs (3412.9 mgd)	---

Using the equation below, EPA calculated the relevant dilution factors:

Dilution Factor = (Effluent Design Flow + (Stream Flow x 25%))/ Effluent Design Flow

Table 4: Ammonia Dilution Factors at the American Falls WWTP with 25% Mixing for the existing 0.9 mgd WWTP

Season	Acute Criterion Condition (based on 1Q10)	Chronic Ammonia Criterion Condition (based on 30B3 for Winter and 30Q10 for Summer)
Winter: Oct 1 to May 31	44.36	62.83
Summer: June 1 to Sept 30	604.94	949.03

Table 5: Ammonia Dilution Factors at the American Falls WWTP with 25% Mixing for the Upgraded 1.1 mgd WWTP		
Season	**Acute Criterion Condition** (based on 1Q10)	**Chronic Ammonia Criterion Condition** (based on 30B3 for Winter and 30Q10 for Summer)
Winter: Oct 1 to May 31	36.48	51.59
June to October	495.14	776.66

For example, dilution factors for the Existing WWTP,
For the Winter Season the Acute ammonia criterion is:
Dilution Factor = (0.9 mgd + (156.1 mgd x 0.25)) / 0.9 mgd = 44.36
And for the Summer Season Chronic Ammonia criterion is:
Dilution Factor = (0.9 mgd + (3412.9 mgd x 0.25))/ 0.9 mgd = 949.03

B. Water Quality Standards

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 in 40 CFR 122.4(d) prohibit the issuance of an NPDES permit which does not 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 (such as cold water biota, contact recreation, etc.) that each water body is expected to achieve. The numeric and/or 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.

This facility discharges to the Snake River in the Lake Walcott Subbasin (USGS HUC 17040209). At the point of discharge (IDEQ designated segment US-11: Snake River – American Falls Reservoir Dam to Rock Creek), the Snake River is protected for the following designated uses (IDAPA 58.01.02.150.11):

- cold water aquatic life habitat
- salmonid spawning
- primary contact recreation
- domestic water supply

According to the Idaho Water Quality Standards for cold water aquatic life use (IDAPA 58.01.02.250.02): "waters designated for cold water aquatic life are not to vary from characteristics due to human activities" which include:

a. Dissolved Oxygen Concentrations exceeding six (6) mg/L at all times.
b. Water temperatures of 22º C or less with a maximum daily average of no greater than 19º C.
c. Ammonia. The standards include calculations for ammonia concentrations.

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 consecutive days.

The WQS state, in Section 100, that all waters of the State of Idaho are protected for the uses of industrial and agricultural water supply (100.03.b. and c.), wildlife habitats (100.04.) and aesthetics (110.05.). The WQS state, in Sections 252.02, 252.03, and 253, that these uses are to be protected by narrative criteria which appear in Section 200. These narrative criteria state that all surface waters of the State shall be free from hazardous materials, toxic substances, deleterious materials, radioactive materials; floating, suspended, or submerged matter; excess nutrients; oxygen-demanding materials; and sediment concentrations which would impair beneficial uses. According to the Idaho WQS, Section 252.02, the criteria from Water Quality Criteria 1972, also referred to as the "Blue Book" (EPA R3-73-033) can be used to determine numeric criteria for the protection of water supply use.

The proposed permit includes secondary treatment limits. These effluent limits in the draft permit are based on current water quality criteria or technology-based limits that have been shown to not cause or contribute to an exceedence of water quality standards. In addition, the discharge as authorized in the draft permit will not result in degradation of the receiving water.

Based on the above limits imposed by IDEQ for surface water quality for cold water aquatic life use designations, effluent and surface water monitoring has been proposed for dissolved oxygen, temperature and ammonia in the draft permit.

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. Idaho has provided EPA with an antidegradation analysis that complies with the State's antidegradation implementation procedures in the State's 401 certification.

C. Water Quality Limited Segment

Any waterbody 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) management plan for water bodies determined to be water quality limited segments. The TMDL documents the amount of a pollutant a water body can assimilate without violating a state's water quality standards and allocates that load to known point sources and nonpoint sources.

IDEQ prepared a TMDL applicable to this permit, entitled, "The Lake Walcott Subbasin Assessment and Total Maximum Daily Load," dated December 20, 1999. This TMDL on page 140, provided a Waste Load Allocation for TSS to the American Falls WWTP of 0.162 tons/day which is based on the permitted monthly concentration limit, as described on page 125 of TMDL. This TMDL's wasteload allocation for TSS is equivalent to 324 pounds/day based on monthly loading (see page 125 of TMDL). EPA's proposed permit has a Monthly Average Loading limit for TSS of 225 pounds/day at the Existing WWTP, and 275 pounds/day at the Upgraded WWTP. These proposed loading limits are technology-based effluent limits. Pursuant to CWA Section 301, EPA is required to implement the more stringent of the calculated technology-based effluent limit and water quality-based effluent limit. In this case, the technology-based loading effluent limits for TSS are more stringent. Therefore, since the TMDL waste load allocation results in an effluent limit that is less stringent than the technology-based effluent limit, EPA is requiring the facility to comply with the technology-based effluent limit. Other than TSS, there is no other parameter in the TMDL that has a wasteload allocation for American Falls WWTP.

IV. EFFLUENT LIMITATIONS

A. Basis for Effluent Limits

In general, the CWA requires that the discharge limits for a particular pollutant be the more stringent of either: technology-based effluent 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 of a waterbody are being met and they may be more stringent than technology-based effluent limits. The basis for the proposed effluent limits in the draft permit is provided in Appendix B.

B. Proposed Effluent Limitations

The following summarizes the proposed effluent limitations that are in the draft permit (See Table 6).

1. Removal Requirements for BOD and TSS: The monthly average effluent concentration must not exceed 15 percent of the monthly average influent concentration. Percent removal of BOD and TSS must be reported on the Discharge Monitoring Reports (DMRs). For each parameter, the monthly average percent removal must be calculated from the arithmetic mean of the influent values and the arithmetic mean of the effluent values for that month. Influent and effluent samples must be taken over approximately the same time period

2. There must be no discharge of any floating solids, visible foam in other than trace amounts, or oily wastes that produce a sheen on the surface of the receiving water.

3. Tables 6 and 7 below presents the proposed average monthly, average weekly, and instantaneous maximum effluent limits for 5-day biochemical oxygen demand (BOD), total suspended solids (TSS), and Escherichia coli (*E. coli*), pH, and the percent removal requirements for BOD, and TSS.

4. The effluent limits shown in Table 7 shall take effect when the Upgraded WWTP begins discharging.

Table 6: Proposed Effluent Discharge Limitations for the Existing WWTP

Parameters	Average Monthly Limit	Average Weekly Limit	Percent Removal[4]	Max. Daily Limit[3]
BOD Concentration and Mass-Based Limits [1]	30 mg/l (225 lbs/day)[1]	45 mg/l (338 lbs/day)[1]	85% (Min.)[4]	---
TSS Concentration and Mass-Based Limits [1]	30 mg/l (225 lbs/day)[1]	45 mg/l (338 lbs/day)[1]	85% (Min.)[4]	---
E. coli Bacteria [2,3] (colonies/100 ml)	126 [2]	---	---	406[3]
pH	6.5 to 9.0			

Table 6 Footnotes:

1. Loading is calculated by multiplying the concentration in mg/L by the average daily flow for the day of sampling in mgd and a conversion factor of 8.34. If the concentration is measured in μg/L, the conversion factor is 0.00834. For more information on calculating, averaging, and reporting loads and concentrations see the NPDES Self-Monitoring System User Guide (EPA 833-B-85-100, March 1985).
2. The average monthly *E. coli* bacteria counts must not exceed a geometric mean of 126/100 ml based on a minimum of five samples taken every 3-7 days within a calendar month. See Part VI for a definition of geometric mean.
3. Reporting is required within 24 hours of a maximum daily limit or instantaneous maximum limit violation.
4. Percent removal is calculated using the following equation:
   ((average monthly influent – average monthly effluent) / average monthly influent) X 100
   Influent and effluent samples must be taken over approximately the same time period.
5. Effluent limits for E.coli Bacteria and pH are the same for both the Existing WWTP and the Upgraded WWTP.
6. The Existing WWTP has a Design Capacity of 0.9 mgd; effluent limits are in effect from the effective date of the permit.

Table 7: Proposed Effluent Discharge Limitations for the Upgraded WWTP

Parameters	Average Monthly Limit	Average Weekly Limit	Percent Removal[4]	Max. Daily Limit[3]
BOD Concentration and Mass-Based Limits [1]	30 mg/l (275 lbs/day) [1]	45 mg/l (413 lbs/day) [1]	85% (Min.)[4]	---
TSS Concentration and Mass-Based Limits [1]	30 mg/l (275 lbs/day) [1]	45 mg/l (413 lbs/day) [1]	85% (Min.)[4]	---
E. coli Bacteria [2,3] (colonies/100 ml)	126 [2]	---	---	406[3]
pH	6.5 to 9.0			

Table 7 Footnotes:

1. Loading is calculated by multiplying the concentration in mg/L by the corresponding flow (in mgd) for the day of sampling and a conversion factor of 8.34. For more information on calculating, averaging, and reporting loads and concentrations see the *NPDES Self-Monitoring System User Guide* (EPA 833-B-85-100, March 1985).
2. Average Monthly Limit for E. coli: The permittee must report the geometric mean for e-coli concentration. If any value used to calculate the geometric mean is less than 1, the permittee must round that value up to 1 for purposes of calculating the geometric mean. Based on a minimum of five (5) samples taken every three (3) to seven (7) days over a thirty (30) day period.
3. Reporting is required within 24 hours of a maximum daily limit or instantaneous maximum limit violation.
4. Percent removal is calculated using the following equation:
   ((average monthly influent – average monthly effluent) / average monthly influent) X 100
   Influent and effluent samples must be taken over approximately the same time period.
5. Effluent limits for E.coli Bacteria and pH are the same for both the Existing WWTP and the Upgraded WWTP.
6. The Upgraded WWTP will have a Design Capacity of 1.10 mgd.
7. The effluent limits for the Upgraded WWTP as shown above will take effect when it begins discharging.

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 pemittee to perform effluent monitoring required by the NPDES Form 2A application, 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 Discharge Monitoring Reports (DMRs) to the U.S. Environmental Protection Agency (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 can be used for averaging if they are conducted using EPA approved test methods (generally found in 40 CFR 136) and if the Method Detection Limits (MDLs) are less than the effluent limits.

Table 8 presents the effluent monitoring requirements in the draft permit. The sampling location must be after the last treatment unit and prior to discharge to the receiving water. If no discharge occurs during the reporting period, "no discharge" shall be reported on the DMR. Table 10 presents monitoring changes from the previous permit.

Table 8: Proposed Effluent Monitoring Requirements for both the Existing WWTP and the Upgraded WWTP

Parameter	Unit	Sample Location	Sample Frequency	Sample Type
Flow	Mgd	Effluent	Continuous	Recording
BOD	mg/L	Influent and Effluent	2/week	24-hour composite
	lbs/day	---	1/month	Calculation[1]
	% Removal	--	1/month	Calculation[2]
TSS	mg/L	Influent and Effluent	2/week	24-hour composite
	lbs/day	---	2/week	Calculation[1]
	% Removal	--	1/month	Calculation[2]
E.coli[3,5]	colonies/100 ml	Effluent	5/month	Grab
Dissolved Oxygen	mg/L	Effluent	2/week	Grab
Temperature	ºC	Effluent	5/week	Grab
Total Ammonia[6,] as N	mg/L	Effluent	2/week	24-hour composite
Total Phosphorus[6] as P	mg/l	Effluent	1/Quarter	24-hour composite
pH	s.u.	Effluent	5/week	Grab
NPDES Application Form 2A (Part B.6) Effluent Testing Data	mg/l	Effluent	3 times[4]	See footnote 4
NPDES Application Form 2A (Part D) Expanded Effluent Testing Data	Mg/l	Effluent	3 times[4]	See footnote 4

Table 8: Proposed Effluent Monitoring Requirements for both the Existing WWTP and the Upgraded WWTP

Parameter	Unit	Sample Location	Sample Frequency	Sample Type
NPDES Application Form 2A (Part E) Toxicity Testing Data	TcU	Effluent	4 times[7]	See footnote 7

Notes:

1. Loading is calculated by multiplying the concentration in mg/L by the corresponding flow (in mgd) for the day of sampling and a conversion factor of 8.34. For more information on calculating, averaging, and reporting loads and concentrations see the *NPDES Self-Monitoring System User Guide* (EPA 833-B-85-100, March 1985).
2. Percent removal is calculated using the following equation:
   (average monthly influent concentration – average monthly effluent concentration))/ average monthly influent x 100. Influent and effluent samples must be taken over approximately the same time period.
3. Average Monthly Limit for E. coli: The permittee must report the geometric mean for e-coli concentration. If any value used to calculate the geometric mean is less than 1, the permittee must round that value up to 1 for purposes of calculating the geometric mean. Based on a minimum of five (5) samples taken every three (3) to seven (7) days over a thirty (30) day period.
4. In accordance with instructions in NPDES Application Form 2A, Part B.6, and Part D, and where a minimum of one scan for each test to be conducted during years 2014, 2015, and 2016.
5. Reporting is required within 24 hours of a maximum daily limit or instantaneous maximum limit violation.
6. The maximum ML for Total Ammonia is 0.05 mg/l, and the maximum ML for Total Phosphorus is 0.01 mg/l.
7. To be conducted quarterly (total of 4 times) during 2017. For quarterly monitoring frequency, quarters are defined as: January 1 to March 31; April 1 to June 30; July 1 to September 30 and October 1 to December 31.
8. For Flow, Ammonia, Temperature and Total Phosphorus report Average Monthly and Maximum Daily values in DMRs. For Dissolved Oxygen, report Average Monthly and Minimum Daily values in the DMRs.

Table 9: Monitoring Changes from the Previous Permit

Differences in effluent monitoring frequency in proposed permit vs existing permit:

Parameter	Proposed Permit Frequency	Existing Permit Frequency	Reason for Change
Total Flow	Continuous	Continuous	No Change
BOD	2/week	2/week	No Change
TSS	2/week	2/ week	No Change
E.coli bacteria	5/month	2/ week	Revised due to current requirements in the Idaho WQS
Dissolved Oxygen	2/ week	None	Added due to applicable Idaho WQS for D.O. concentration in Cold Water Aquatics classification.
Temperature	5/ week	None	Added due to Idaho WQS for temperature for Cold Water Aquatics classification.
Total Ammonia	2/week	2/week	No Change
Total Phosphorus	1/quarter	1/quarter	No Change
pH	5/week	5/week	No Change

Total Residual Chlorine	None	5/week	Revised due to elimination of chlorine usage for disinfection after UV disinfection was installed.
Nitrate-Nitrite	None	1/Quarter	Nutrient loading can be monitoring with continued phosphorus monitoring at this facility.
Expanded Effluent Testing (Part D)	3 times (2014, 2015, 2016)	None	Added due to increase in Design Capacity from plant upgrade.
Toxicity Testing (Part E)	1/Quarter during 2017	None	Added due to increase in Design Capacity from plant upgrade.

C. Proposed Receiving Water Monitoring

Table 10 presents the proposed receiving (surface) water monitoring requirements for the draft permit. The City must conduct surface water monitoring at the Snake River, upstream of the outfall. Quarterly surface water monitoring must start in the quarter beginning in July 2014 (see Table 10, Footnote 1 for definition of quarterly monitoring frequency) and continue for the duration of the permit. EPA proposed in the draft permit that acceptable surface water sampling locations must be reviewed by the IDEQ prior to initial sampling. Surface water monitoring results for the previous calendar year must be submitted with the January DMR. At a minimum, the annual report must include the following:

- Dates of sample collection and analyses.
- Results of sample analysis.
- Relevant quality assurance/quality control (QA/QC) information.

The Compared to the previous permit, all the parameters are the same except for the elimination of nitrate-nitrite and TKN because nutrient load can be estimated by the amount of phosphorus which is proposed for continued monitoring.

Table 10: Proposed Receiving Water Monitoring

Parameter	Units	Sample Location	Sample Frequency	Sample Type	Minimum Level (ML)
Temperature	°C	Up stream	Quarterly	Grab	—
pH	s.u.	Up stream	Quarterly	Grab	—
Total Ammonia as N	mg/l	Up stream	Quarterly	Grab	0.05 mg/l
Total Phosphorus as P	mg/L	Up stream	Quarterly	Grab	0.01 mg/l

Footnote: 1. Quarterly monitoring frequency: Quarters are defined as follows: January 1 to Mach 31; April 1 to June 30; July 1 to September 30; and, October 1 to December 31.

VI. SLUDGE (BIOSOLIDS) REQUIREMENTS

EPA Region 10 separates wastewater and sludge permitting. Under the CWA, EPA has the authority to issue separate sludge-only permits for the purposes of regulating biosolids. 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 permittees 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 develop procedures to ensure that the monitoring data submitted is accurate and to explain data anomalies if they occur. The permittee is required to develop and implement a Quality Assurance Plan within 180 days of the effective date of the final permit. The Quality Assurance Plan shall consist of standard operating procedures the permittee must follow for collecting, handling, storing and shipping samples, laboratory analysis, and data reporting. The plan shall be retained on site and made available to EPA and IDEQ upon request.

B. Operation and Maintenance Plan

The permit requires the Permittee 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 after the effective date of this permit. The Permittee is also required to develop and implement an operation and maintenance plan for their Upgraded WWTP by May 1, 2014. The plans shall be retained on site and made available to EPA and 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 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, 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 *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 EPA inspectors to evaluate a collection system's 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. The CMOM Guide is currently available on the EPA website at: "www.epa.gov/npdes/sso/featuredinfo.cfm."

D. Standard Permit Provisions

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

E. Pretreatment Requirements

The facility certified in its permit application that it does not receive Industrial User Discharges and RCRA/CERCLA Wastes; therefore, no pretreatment requirements are proposed in the draft permit. In addition, the design flow of the treatment plant is less than 5 mgd, therefore, EPA does not believe it is necessary to develop a pretreatment program for EPA's approval at this time. However, the permit contains conditions requiring that the facility monitor and control industrial users.

F. Monitoring and Reporting

During the period from the effective date of the permit to six months from the effective date of the permit, the permittee must either submit monitoring data and other reports in paper form, or must report electronically using NetDMR, a web-based tool that allows permittees to electronically submit DMRs and other required reports via a secure internet connection.

Within six months of the effective date of the permit, the permittee must submit monitoring data and other reports electronically using NetDMR.

Specific requirements regarding submittal of data and reports in paper form and submittal using NetDMR are described below.

Paper Copy Submissions.

Monitoring data must be submitted using the DMR form (EPA No. 3320-1) or equivalent and must be postmarked by the 20th day of the month following the completed reporting period. The permittee must sign and certify all DMRs, and all other reports, in accordance with the requirements of Part V.E. of this permit ("Signatory Requirements"). The permittee must submit the legible originals of these documents to the Director, Office of Compliance and Enforcement, with copies to IDEQ at the following addresses:

US EPA Region 10
Attn: ICIS Data Entry Team
1200 Sixth Avenue, Suite 900
OCE-133
Seattle, Washington 98101-3140

Idaho Department of Environmental Quality
DEQ Pocatello Regional Office
444 Hospital Way, #300
Pocatello, ID 83201

Electronic Copy Submissions

Monitoring data must be submitted electronically to EPA no later than the 20th of the month following the completed reporting period. All reports required under this permit must be submitted to EPA as a legible electronic attachment to the DMR. The permittee must sign and certify all DMRs, and all other reports, in accordance with the requirements of Part V.E. of the draft permit ("Signatory Requirements"). Once a permittee begins submitting reports using NetDMR, it will no longer be required to submit paper copies of DMRs or other reports to EPA and IDEQ.

The permittee may use NetDMR after requesting and receiving permission from US EPA Region 10. NetDMR is accessed from http://www.epa.gov/netdmr.

VIII. OTHER LEGAL REQUIREMENTS

A. Endangered Species Act

The Endangered Species Act requires federal agencies to consult with the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) if their actions could beneficially or adversely affect any threatened or endangered species.

EPA had determined that there is no effect on threatened or endangered species as the result of the issuance of this permit.

EPA obtained the map entitled "Status of ESA Listings & Critical Habitat Designations for West Coast Salmon and Steelhead" (Updated October 31, 2012) from NMFS, which according to the map, did not list any protected species in this stretch of the Snake River where the American Falls WWTP discharges. Previously, EPA has also consulted with NMFS and understands that there are no threatened or endangered species under NMFS' jurisdiction in the Snake River drainage upstream of the Hells Canyon Dam, which is located at river mile 247.5 (email from Bill Lind (NOAA) to Brian Nickel (EPA), dated January 21, 2009). The City of American Falls' WWTP is very close to the American Falls Dam, which is located at mile 714 on the Snake River. This location is far upstream of the Hells Canyon Dam, and thus salmon is not present at American Falls. Therefore, the reissuance of this permit will have no effect on any listed threatened or endangered species under NMFS' jurisdiction.

EPA also obtained a letter and a species list from USFWS entitled, "Candidate, Proposed and Listed Species & Proposed And Designated Critical Habitat in Idaho" (dated June 7, 2013). This document provides species listings for each County in Idaho. For Power County where the American Falls WWTP is located, there is only one species listed: the Greater Sage-Grouse (*Centrocercus urophasiunus*). The Greater Sage-Grouse is a terrestrial species, and terrestrial species are not expected to be susceptible to water quality impacts that may result from the reissuance an NPDES permit.

Therefore, reissuance of an NPDES permit to the City of American Falls will have no effect on threatened or endangered species because salmon and steelhead are not present at this location, and the Greater Sage-Grouse being a terrestrial species could not be impacted.

B. State Certification

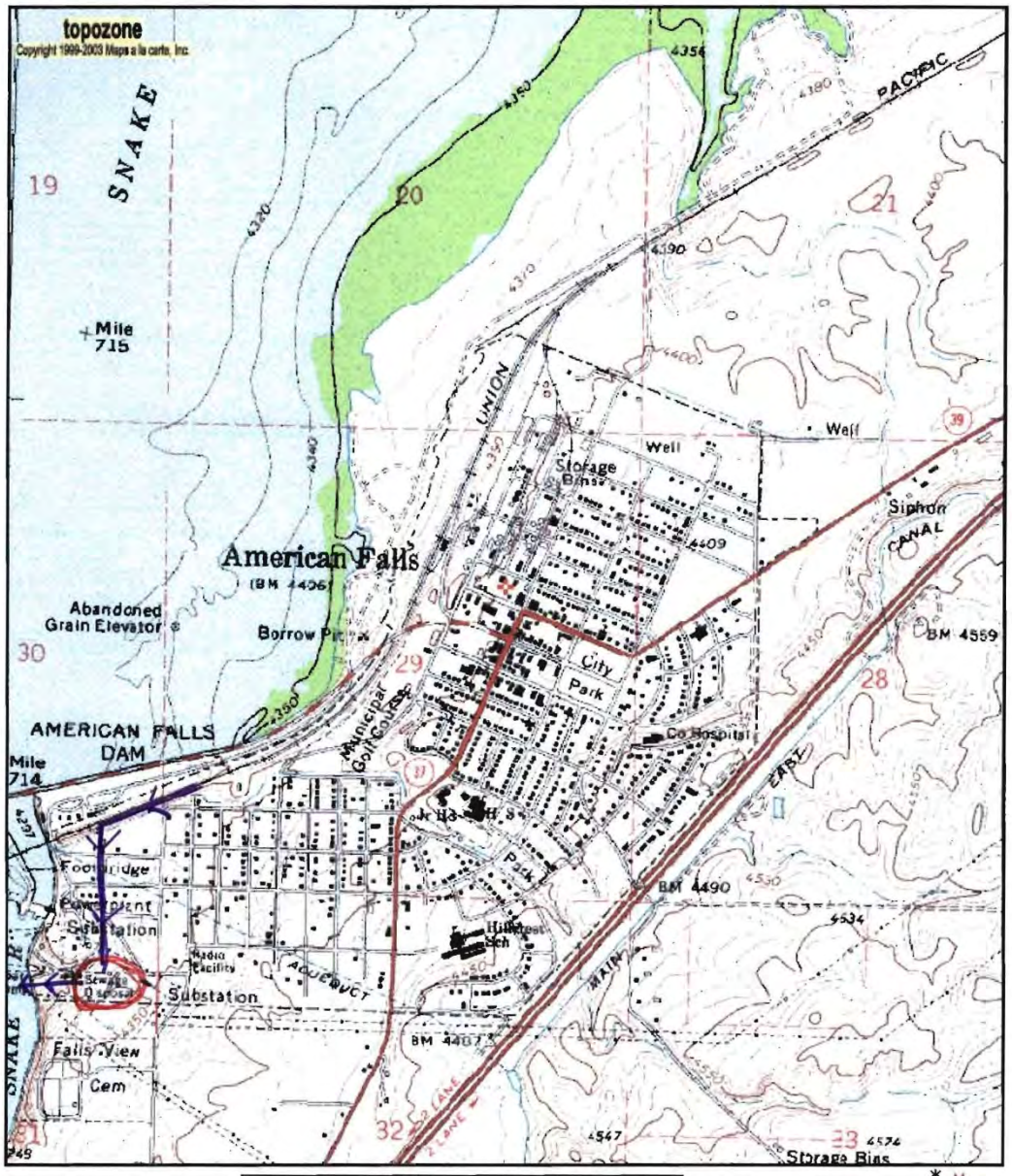
Section 401 of the CWA requires EPA to seek State certification before issuing a final permit. As a result of the certification, the State may require more stringent permit conditions or additional monitoring requirements to ensure that the permit complies with water quality standards.

C. Permit Expiration

The permit will expire five years from the effective date of the permit.

Appendix A - Facility Information

City of American Falls Waste Water Treatment Plants	
NPDES ID Number:	ID-00-2075-3
Mailing Address:	550 North Oregon Trail American Falls, Idaho 83211
Facility Background:	The facility's existing permit became effective January 2, 2002; this permit has been administratively extended
Collection System Information	
Service Area:	City of American Falls
Service Area Population:	4,111 (from 2012 supplementary permit application)
Collection System Type:	100% Separated Sanitary Sewer
Facility Information	
Treatment Train:	Secondary Treatment with ultraviolet disinfection
Design Flow:	Existing WWTP: 0.9 mgd; Upgraded WWTP: 1.10 mgd
Existing Flow:	0.79 mgd (max. daily value from 2006 permit application) 0.48 mgd (average daily value from 2006 permit application)
Months when Discharge Occurs:	Continuous
Outfall Location:	42º 46' 28" N, 112º 52' 21" W at City of American Falls, Idaho; Snake River, 20 ft. from shore, 2 feet below surface.
Receiving Water Information	
Receiving Water:	Mile 713 of the Snake River
Subbasin:	Lake Walcott Subbasin TMDL (HUC #17040200)
Beneficial Uses:	Industrial and agricultural water supply, wildlife habitats and aesthetics, cold water communities, primary contact recreation, and domestic water supply.
Water Quality Limited Segment:	1) According to the State of Idaho 2010 Integrated Report: Category 5 (Section 303(d)) report, page 76, the receiving water having ID17040209SK011_02, this segment of the Snake River is listed as: Snake River – American Falls Reservoir Dam to Rock Creek, is 31.61 miles long, and listed as "Combined Biota/Habitat Bioassessment". 2) The TMDL has a wasteload allocation for TSS of 0.162 tons/day based on monthly concentration limit.

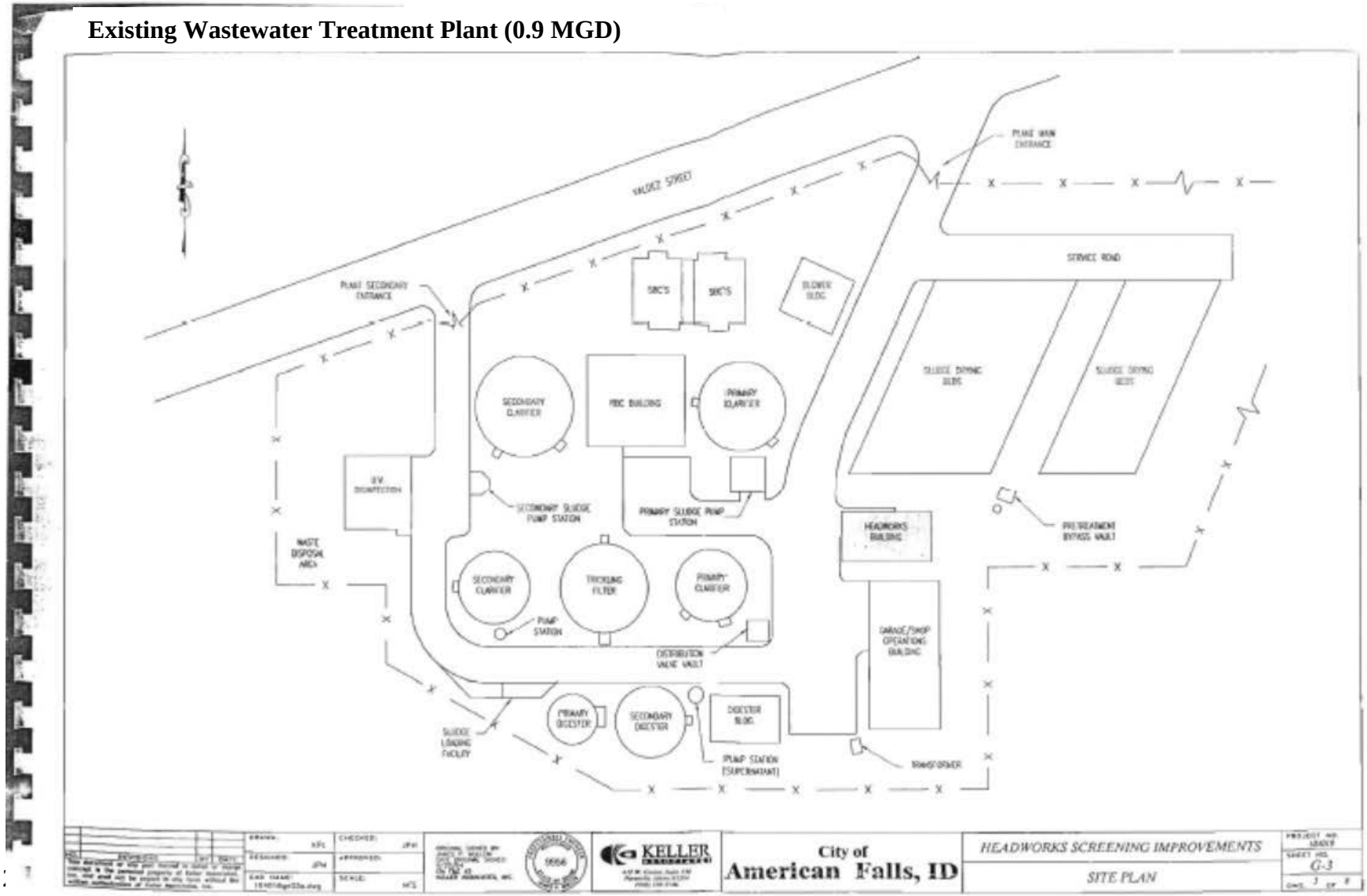


UTM 12 348354E 4738514N (NAD27)

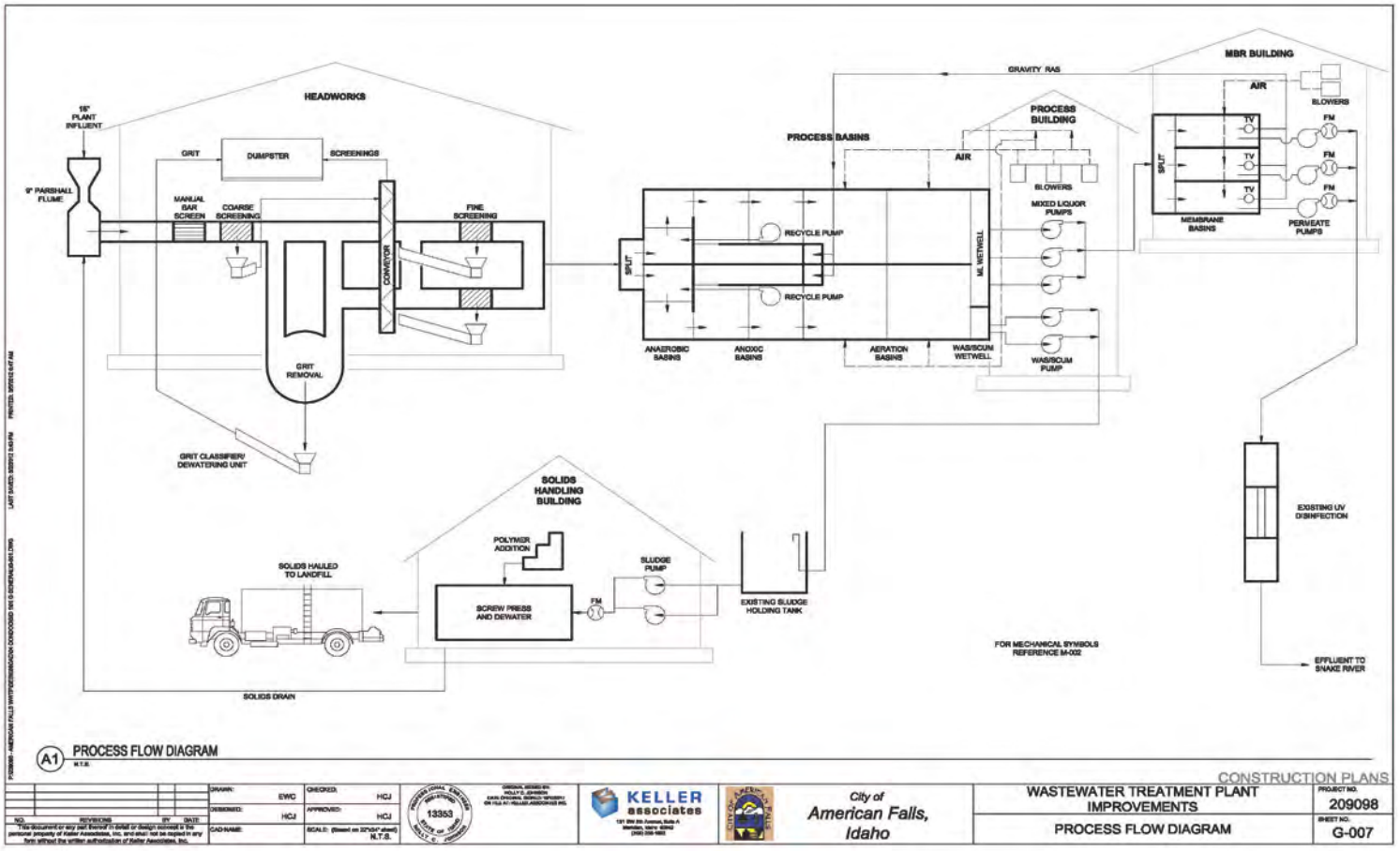
American Falls, USGS American Falls (ID) Quadrangle

Projection is UTM Zone 12 NAD83 Datum

Existing Wastewater Treatment Plant (0.9 MGD)



Process Flow Diagram of the Upgraded WWTP (1.10 mgd)
City of American Falls
Projected date to begin discharge: January, 2014



Appendix B – Basis for Effluent Limitations

The Clean Water Act (CWA) requires Publicly Owned Treatment Works (POTW) to meet effluent limits based on available wastewater treatment technology. These types of effluent limits are called secondary treatment effluent limits. EPA may find, by analyzing the effect of an effluent discharge on the receiving water, that secondary treatment effluent limits are not sufficiently stringent to meet water quality standards. In such cases, EPA is required to develop more stringent water quality-based effluent limits, which are designed to ensure that the water quality standards of the receiving water are met.

The technology based effluent standards in the Federal Secondary Treatment Standards for POTWs are: five-day biochemical oxygen demand (BOD), total suspended solids (TSS), the minimum removal rates for BOD and TSS, and pH. In addition, effluent from a POTW may contain other pollutants such as bacteria, chlorine, ammonia, or metals depending on the type of treatment system used and the service area of the POTW (i.e., industrial facilities as well as residential areas discharge into the POTW). When technology based effluent limits do not exist for a particular pollutant expected to be in the effluent, EPA must determine if the pollutant may cause or contribute to an exceedance of the water quality standards for the water body. If a pollutant causes or contributes to an exceedance of a water quality standard, water quality-based effluent limits for the pollutant must be incorporated into the permit.

The following discussion explains in more detail the derivation of technology based effluent limits, and water quality based effluent limits. Part A discusses technology based effluent limits, Part B discusses water quality based effluent limits, and Part C discusses facility specific limits.

A. Technology Based Effluent Limits

1. BOD, TSS and pH

Secondary Treatment:
The CWA requires POTWs to meet performance-based requirements based on available wastewater treatment technology. Section 301 of the CWA established a required performance level, referred to as "secondary treatment," that all POTWs were required to meet by July 1, 1977. EPA developed "secondary treatment" regulations, which are specified in 40 CFR 133. These technology-based effluent limits apply to all municipal wastewater treatment plants, and identify the minimum level of effluent quality attainable by secondary treatment in terms of BOD, TSS, and pH.

Table B-1 below illustrates the technology based effluent limits for "Secondary Treatment" effluent limits:

Table B-1: Secondary Treatment Effluent Limits (40 CFR 133.102)			
Parameter	**Average Monthly Limit**	**Average Weekly Limit**	**Range**
BOD	30 mg/l	45 mg/l	---
TSS	30 mg/l	45 mg/l	---
Removal Rates for BOD and TSS	85% (minimum)	---	---
pH	---	---	6.0 - 9.0 s.u.

2. Mass-based Limits

The federal regulation at 40 CFR § 122.45 (f) require BOD and TSS limitations to be expressed as mass based limits using the design flow of the facility.

a. The mass based limits are expressed in lbs/day and are calculated as follows for the Existing WWTP:

Mass based limit (lbs/day) = concentration limit (mg/L) x design flow (mgd) x 8.34
For BOD and TSS:
Average Monthly Limit = 30 mg/l x 0.9 mgd x 8.34 = 225.18 lbs/day
Average Weekly Limit = 45 mg/l x 0.9 mgd x 8.34 = 337.77 lbs/day

The mass based limits are expressed in lbs/day and re calculated as follows for the Upgraded WWTP:
Average Monthly Limit = 30 mg/l x 1.1 mgd x 8.34 = 275.22 lbs/day
Average Weekly Limit = 45 mg/l x 1.1 mgd x 8.34 = 412.83 lbs/day

B. Water Quality-Based Effluent Limits

The following discussion is divided into four sections. Section 1 discusses the statutory basis for including water quality based effluent limits in NPDES permits, section 2 discusses the procedures used to determine if water quality based effluent limits are needed in an NPDES permit, section 3 discusses the procedures used to develop water quality based effluent limits, and section 4 discusses the specific water quality based limits.

The City of American Falls WWTP has only technology-based limits for BOD, and TSS.

The pH range, E.Coli bacteria, and ammonia effluent limits are based on the State's Water Quality Standards.

1. Statutory Basis for Water Quality-Based Limits

Section 301(b)(1)(C) of the CWA requires the development of limitations in permits necessary to meet water quality standards by July 1, 1977. Discharges to state/tribal waters must also comply with limitations imposed by the state/tribe as part of its certification of NPDES permits under section 401 of the CWA.

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/tribal water quality standard, including state/tribal narrative criteria for water quality.

The regulations require that this evaluation be made 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 any available wasteload allocation.

2. Reasonable Potential Analysis

When evaluating the effluent to determine if water quality-based effluent limits are needed based on chemical specific numeric criteria, a projection of the receiving water concentration (downstream of where the effluent enters the receiving water) for each pollutant of concern is made. The chemical specific concentration of the effluent and receiving water and, if appropriate, the dilution available from the receiving water are factors used to project the receiving water concentration. If the projected concentration of the receiving water exceeds the numeric criterion for a specific chemical, then there is a reasonable potential that the discharge may cause or contribute to an excursion above the applicable water quality standard, and a water quality-based effluent limit is required.

Sometimes it is appropriate to allow a small area of 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 decrease treatment requirements. Mixing zones can be used only when there is adequate receiving water flow volume and the receiving water is below the chemical specific numeric criterion necessary to protect the designated uses of the

water body. Mixing zones must be authorized by the IDEQ.

3. Procedure for Deriving Water Quality-Based Effluent Limits

The first step in developing a water quality based permit limit is to develop a wasteload allocation (WLA) for the pollutant. A wasteload allocation is the concentration or loading of a pollutant that the permittee may discharge without causing or contributing to an exceedance of water quality standards in the receiving water.

In cases where a mixing zone is not authorized, either because the receiving water already exceeds the criterion, the receiving water flow is too low to provide dilution, or the state/tribe does not authorize one, the criterion becomes the WLA. Establishing the criterion as the wasteload allocation ensures that the permittee will not contribute to an exceedance of the criterion. The wasteload allocations have been determined for pH and E. coli bacteria in this way because the State does not generally authorize mixing zones for these pollutants. For these particular parameters, the wasteload allocation translates directly into the effluent limit without any statistical conversion.

4. Specific Water Quality-Based Effluent Limits

(a) Toxic Substances

The Idaho Water Quality Standards (IDAPA 58. 01.02.200.02) require surface waters of the state to be free from toxic substances in concentrations that impair designated uses. Because there are no significant industrial discharges to the facilities, and concentrations of priority pollutants from cities without a significant industrial component are low, it is anticipated that toxicity will not be a problem in the facility discharges. Therefore, except for ammonia which is discussed separately, water quality-based effluent limits have not been proposed for toxic substances in the draft permit.

(b) Floating, Suspended or Submerged Matter/Oil and Grease

The Idaho Water Quality Standards (IDAPA 58.01.02.200.05) require surface waters of the state to be free from floating, suspended, or submerged matter of any kind in concentrations causing nuisance or objectionable conditions that may impair designated beneficial uses. A narrative condition is proposed for the draft permit that states there must be no discharge of floating solids or visible foam or oil and grease other

than trace amounts.

(c) Sediment/ TSS

The draft permit includes technology-based limits for TSS. IDEQ prepared a TMDL applicable to this permit, entitled, "The Lake Walcott Subbasin Assessment and Total Maximum Daily Load", dated December 20, 1999. This TMDL on page 140, provided a Waste Load Allocation for TSS to the American Falls WWTP of 0.162 tons/day, based on a monthly concentration limit, as described on page 125 of TMDL). This TMDL's wasteload allocation for TSS is equivalent to 324 pounds/day. EPA's proposed permit has a Monthly Average Loading limit for TSS of 225 pounds/day for the Existing Plant, and 275 pounds/day for the Upgraded Plant, which are lower than the TMDL's wasteload allocation. EPA is required to implement the more stringent of the technology-based or water quality-based effluent limit in the permit. Since the technology-based TSS limit is more stringent than the TMDL wasteload allocation, EPA is implementing the more stringent technology-based limit in the permit.

(d) pH

The Idaho Water Quality Standards (IDAPA 58.01.02.250.01.a) require surface waters of the state to have a pH value within the range of 6.5 - 9.5 standard units. The federal Secondary Treatment technology-based effluent limits for pH are 6.0 - 9.0 standard units. These limits must be met before the effluent is discharged to the receiving water. To ensure that both water quality-based requirements and technology-based requirements are met, the draft permits incorporate the Idaho Water Quality Standards with the range from 6.5 standard units to 9.0 standard units.

(e) Dissolved Oxygen (DO)

The Idaho water quality standards require the level of dissolved oxygen concentration in a receiving water to exceed 6 mg/L at all times when the water body is protected for cold water aquatic life use.

Dissolved Oxygen was not listed on the State's Section 303(d) list; however, effluent and surface water monitoring has been proposed for this parameter so that data can be generated for further evaluation during the next permit cycle.

(f) Temperature

This segment of the Snake River, designated for cold water aquatic life, should maintain water temperature of twenty-two (22) degrees C (instantaneous maximum) or less, with a maximum daily average of no greater than nineteen (19) degrees C. For comparison, the 95th percentile of Daily Average surface water temperature downstream at Neeley (using all data from 2006 to April 2013) is 21.75 degrees C. According the permit application, the maximum daily value of the effluent was 23 degrees C, and the average daily value is 20.2 degrees C. Effluent and surface water monitoring has been proposed in the draft permit to obtain additional data to determine if temperature limits are necessary for the next permit cycle.

(g) Escherichia coli (*E.coli*) Bacteria

The receiving water is designated for primary contact recreation; therefore, the proposed water quality-based effluent limits must comply with Idaho's Geometric Mean Criterion with an average monthly limit of 126 organisms/100 ml and an instantaneous maximum limit of 406 organisms/100 ml. For comparison, according to the permit application, the effluent discharged had an average daily value of 28 organisms/100 ml, and the maximum daily discharge of 52.7 organisms/100 ml.

(f) Phosphorus

EPA reviewed the general receiving water and effluent characteristics to determine if the facility may have reasonable potential to cause or contribute to excursions above the water quality standards for nutrients and whether further analysis is warranted. EPA considered the following facts:

- The segment of the receiving water is not impaired for nutrients, and is not impaired for phosphorus in particular. Specifically, IDEQ has concluded that phosphorus data and other information do not suggest any impairment of cold water aquatic life or recreational beneficial uses.

- The segment of the receiving water has no designated target concentration for phosphorus.

- Currently, no site specific performance data is available, however, the upgraded plant will include the installation of MBR technology which will likely reduce the discharge of phosphorus.

- According to data from Idaho's Draft 2012 Integrated Report, the next three downstream segments of the Snake River, up to, and inclusive of Lake Walcott, are also not impaired for phosphorus.

Based on these facts, no effluent limit is required. EPA has proposed to require continued monitoring for total phosphorus in the draft permit and evaluate if an effluent limit is appropriate for the next permit cycle.

(g) Total Ammonia

The ammonia criteria are dependent on pH and temperature, 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. The table below details the equations used to determine water quality criteria for ammonia. EPA applied the 95th percentile of ambient stream temperature and pH.

IDEQ has developed water quality criteria to protect aquatic life against short term and long term adverse impacts from ammonia.

With data provided by IDEQ, EPA calculated ammonia criteria based on the pH and temperature data of the receiving water:

For Summer Season (June to September):
Ambient ammonia concentration is 0.120 mg/l (95th percentile)
Temperature: 22.80 C (95th percentile)
Ambient pH: 8.83 standard units (95th percentile)

For the Winter Season (October to May):
Ambient ammonia concentration is 0.126 mg/l (95th percentile);
Temperature: 13.11 C (95th percentile);
Ambient pH: 8.6 standard units (95th percentile)

Table B-2: Water Quality Criteria for Ammonia

	Acute Criterion[1]	**Chronic Criterion[2]**
Equations:	$\frac{0.275}{1+10^{7.204-pH}}+\frac{39}{1+10^{pH-7.204}}$	$\left(\frac{0.0577}{1+10^{7\,688-pH}}+\frac{2.487}{1+10^{pH-7\,688}}\right)\times MIN\left(2.85,1.45\times10^{0\,028\times(25-T)}\right)$

For Summer Season (June to September)	1.2 mg/l	0.37 mg/l
Winter Season (October to May)	1.8 mg/l	0.92 mg/l

Using the computed ammonia Acute and Chronic Criteria, EPA performed a reasonable potential analysis based on the site specific effluent data from the facility (See Table B-5).

Based on these calculations, EPA determined that the facility did not have reasonable potential to exceed the Idaho Water Quality Standards for both the Summer Season and the Winter Season.

The proposed monitoring frequency for ammonia of twice per week is retained from the previous permit. The proposed twice weekly effluent monitoring for ammonia will begin at the effective date of the proposed permit.

C. Anti-backsliding Provisions

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 limits 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)), but in this case, the effluent limits being revised are water quality-based effluent limits (WQBELs).

Section (o)(2) of the CWA states that with respect to Section (o)(1), a reissued permit may contain a less stringent effluent limitation applicable to a pollutant if there are material and substantial alterations or additions to the permitted facility. EPA believes the Upgraded WWTP at the City of American Falls would meet the definition of “a material and substantial alterations or additions to the permitted facility” because the

Upgraded WWTP will not only ultilize a different technology (MBR), but also has a higher design capacity. Therefore, the final loading limits for BOD and TSS meant for the Upgraded WWTP which are higher than the loading limits for the Existing WWTP (which could be viewed as being less stringent) This increase in loading limits meets an exception to the antibacksliding provision because the higher final loading limits for BOD and TSS is due to the increase in design flow of the upgraded facility. The proposed technology based concentration limits for BOD and TSS remain the same from the previous permit.

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, Section 402(o)(3) prohibits backsliding which would result in violations of water quality standards or effluent limit guidelines.

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. See Appendix C for IDEQ's antidegradation analysis.

Reasonable Potential Calculations

The following describes the process 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 the State of Idaho's federally approved WQS. 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, EPA compares the maximum projected receiving water concentration to the 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 section discusses how the maximum projected receiving water concentration is determined.

A. Mass Balance

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

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

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 WWTP)
Q_u = Receiving water low flow rate upstream of the discharge (1Q10, 7Q10, 30B3 or 30Q5)

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

$$C_d = \frac{C_e Q_e + C_u Q_u}{Q_e + Q_u} \qquad \text{(Equation B-2)}$$

The above form of the equation is based on the assumption that the discharge is rapidly and completely mixed with the receiving stream. If the mixing zone is based on less than complete mixing with the receiving water, the equation becomes:

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

Where MZ is the fraction of the receiving water flow available for dilution. In this case, the mixing zone is based on complete mixing of the effluent and the receiving water, and MZ is equal to unity (1). Therefore, in this case, Equation B-3 is equal to Equation B-2.

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

$$C_d = C_e \qquad \text{(Equation B-4)}$$

Equation B-2 can be simplified by introducing a "dilution factor,"

$$D = \frac{Q_e + \% MZ \times Q_u}{Q_e} \qquad \text{(Equation B-5)}$$

EPA obtained the flow data from the nearest USGS gauge station, which is downstream from American Falls, located at Neeley, Idaho (USGS Gauge # 13077000, dates from 2000 to 2012, Snake River at Neeley, Idaho), approximately 0.6 miles downstream from the outfall. Using the equation above, and the critical low flows, EPA calculated the relevant dilution factors as shown in Table B-3 and B-4.:

Table B-3: Ammonia Dilution Factors at the American Falls WWTP with 25% Mixing for the existing 0.9 mgd WWTP

Season	**Acute Criterion Condition** (based on 1Q10)	**Chronic Ammonia Criterion Condition** (based on 30B3 for Winter and 30Q10 for Summer)
Winter: Oct 1 to May 31	44.36	62.83
Summer: June 1 to Sept 30	604.94	949.03

Table B-4: Ammonia Dilution Factors at the American Falls WWTP with 25% Mixing for the Upgraded 1.1 mgd WWTP

Season	**Acute Criterion Condition** (based on 1Q10)	**Chronic Ammonia Criterion Condition** (based on 30B3 for Winter and 30Q10 for Summer)
Winter: Oct 1 to May 31	36.48	51.59
June to October	495.14	776.66

EPA calculated the 95th percentile of the ambient stream concentration of ammonia by using data obtained from IDEQ (for the American Falls); the 95th percentile of the ambient ammonia concentration.

Summer Season (June to September): 0.120 mg/l
Winter Season (October to May): 0.126 mg/l

B. Maximum Projected Effluent Concentration

To calculate the maximum projected effluent concentration, EPA has used the procedure described in Section 3.3 of the TSD, "Determining the Need for Permit Limits with Effluent

Monitoring Data." In this procedure, the 99th percentile of the effluent data is the maximum projected effluent concentration in the mass balance equation.

Since there are a limited number of data points available, the 99th percentile is calculated by multiplying the maximum reported effluent concentration by a "reasonable potential multiplier" (RPM). The RPM is the ratio of the 99th percentile concentration to the maximum reported effluent concentration. The RPM is calculated from the coefficient of variation (CV) of the data and the number of data points. The CV is defined as the ratio of the standard deviation of the data set to the mean, but when fewer than 10 data points are available, the TSD recommends making the assumption that the CV is equal to 0.6. Since there are more than 10 points for the existing WWTP, EPA is able to calculate the CV for ammonia for the reasonable potential calculation in both summer and winter seasons. The CV is 0.88 for June to September, and 0.87 for October to May.

EPA used ammonia effluent data from DMRs submitted from April 2005 to December 2011 to evaluate the 95th percentile of concentrations discharged. For the summer season, the 95th percentile of ammonia in the effluent was 16.81 mg/l, and in the winter season, the 95th percentile of ammonia in the effluent was 20.92 mg/l.

In Table B-5, EPA computed reasonable potential using a programmed spreadsheet. The results show that data from the Existing WWTP showed that ammonia from the facility did not have the potential to exceed applicable WQSs. Since there is no reasonable potential for exceeding Idaho's Water Quality Standards for Ammonia, no water quality based effluent limits are proposed for the Existing WWTP. At this time for the Upgraded WWTP, EPA did not perform a reasonable potential calculation because there is no performance data for the Upgraded WWTP, and it would be unlikely that the Upgraded WWTP would exceed WQS since there is no change in the waste stream entering the WWTP. EPA will use data generated in the next permit cycle to determine and verify if the Upgraded WWTP has the potential to exceed WQS.

Table B-5: Reasonable Potential Calculations for the Existing WWTP

Parameter		Idaho Water Quality Standards		Max concentration at edge of mixing zone											
	95th Percentile of Ambient Concentration	Acute	Chronic	Acute	Chronic	LIMIT REQUIRED?	Effluent percentile value		95th Percentile of effluent conc. measured (metals as total recoverable)	Coeff of Variation		# of samples	Reasonable Potential Multiplier	Acute Dilution Factor	Chronic Dilution Factor
	Ug/l	*ug/L*	*ug/L*	*ug/L*	*ug/L*			*Pn*	*ug/L*	*CV*	*S*	*n*			
Ammonia (as N) (June to Sept.)	120	1200	370	195	168	**NO**	0.99	0.843	16810	0.88	0.76	27	2.71	604.9	949.03
Ammonia (as N (October to May)	126	1800	920	1080	800	**NO**	0.99	0.917	20920	0.87	0.75	53	2.03	44.36	62.83

Footnotes:

Based on State of Idaho water quality standards.

Notes for Ammonia RP calculation:

(a) Acute &Chronic criteria based on 95th percentile to stream temperature and pH.

(b). Ambient concentration based on 95th percentile from IDEQ data.

As reference, the following demonstrate how the water quality-based effluent limits (WQBELs) are calculated to determine WQBELs, if such effluent limits are necessary.

C. 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 D-6 and D-7). 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. Equation B-6 is rearranged to solve for the WLA, becoming:

$$C_e = WLA = D \times (C_d - C_u) + C_u \qquad \text{(Equation F-1)}$$

For metals, the Federal regulation at 40 CFR 122.45(c) requires that effluent limits be expressed as total recoverable metal. Therefore, EPA must calculate a wasteload allocation in total recoverable metal that will be protective of the dissolved criterion. This is accomplished by dividing the WLA expressed as dissolved by the criteria translator, as shown in equation F-2. The criteria translator (CT) is equal to the conversion factor, because site-specific translators are not available for this discharge. For ammonia, CT=1 for a non-metal, and C_u is the background concentration:

$$C_e = WLA = \frac{D \times (C_d - C_u) + C_u}{CT} \qquad \text{(Equation F-2)}$$

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 EPA's *Technical Support Document for Water Quality-based Toxics Control* (TSD):

$$LTA_a = WLA_a \times \exp(0.5\,\delta^2 - z\,\delta) \quad \text{(Equation F-3)}$$
$$LTA_c = WLA_c \times \exp(0.5\,\delta_4^2 - z\,\delta_4) \quad \text{(Equation F-4)}$$

where,

$\delta^2 = \ln(CV^2 + 1)$

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

$\delta_4^2 = \ln(CV^2/4 + 1)$

$\delta = \sqrt{\sigma_4^2}$

$z = 2.326$ for 99^{th} percentile probability basis

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

To derive the maximum daily and average monthly effluent limits

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

$$MDL = LTA \times \exp(z_m\,\delta - 0.5\,\delta^2) \quad \text{(Equation F-5)}$$
$$AML = LTA \times \exp(z_a\,\delta_n - 0.5\,\delta_n^2) \quad \text{(Equation F-6)}$$

where δ, and δ^2 are defined as they are for the LTA equations (F-2 and F-3) and,

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

$\delta = \sqrt{\sigma_n^2}$

$z_a = 1.645$ for 95^{th} percentile probability basis

$z_m = 2.326$ for 99^{th} percentile probability basis

n = number of sampling events required per month (minimum of 4)

APPENDIX C – Idaho Department of Environmental Quality Draft §401 Water Quality Certification

Idaho Department of Environmental Quality

Draft §401 Water Quality Certification

August 7, 2013

NPDES Permit Number(s): ID-002075-3, City of American Falls

Receiving Water Body: Snake River below American Falls Dam

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.

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 American Falls discharges the following pollutants of concern: BOD, TSS, *E. coli*, ammonia and phosphorus. Effluent limits have been developed for BOD_5, TSS, and *E. coli*. No effluent limits are proposed for ammonia and phosphorus. Previous permit limits for chlorine were removed as a result of changes in the treatment process being used at this facility.

Receiving Water Body Level of Protection

The City of American Falls discharges to the Snake River below American Falls Dam within the Lake Walcott Subbasin assessment unit (AU) ID17040209SK011_07 (Snake River – American Falls Reservoir Dam to Rock Creek). This AU has the following designated beneficial uses: cold water aquatic life, primary contact recreation and domestic water supply. There is no available information indicating the presence of any existing beneficial aside from those that are already designated.

The cold water aquatic life use in the Snake River below American Falls Dam is fully supported. (2010 Integrated Report). The primary contact recreation beneficial use is also fully supported. As such, DEQ will provide Tier 2 protection, in addition to Tier 1 protection, for these beneficial uses (IDAPA 58.01.02.051.02; 58.01.02.051.01).

Protection and Maintenance of Existing Uses (Tier 1 Protection)

As noted above, a Tier 1 review is performed for all new or reissued permits or licenses, applies to all waters subject to the jurisdiction of the Clean Water Act, and requires demonstration that existing uses and the level of water quality necessary to protect existing uses shall be maintained and protected. In order to protect and maintain designated and existing beneficial uses, a permitted discharge must comply with narrative and numeric criteria of the Idaho WQS, as well as other provisions of the WQS such as Section 055, which addresses water quality limited waters. The numeric and narrative criteria in the WQS are set at levels that ensure protection of designated beneficial uses. The effluent limitations and associated requirements contained in the City of American Falls permit are set at levels that ensure compliance with the narrative and numeric criteria in the WQS.

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

The EPA-approved *Lake Walcott Subbasin Assessment and Total Maximum Daily Load* (DEQ, 1999) established a wasteload allocation for total suspended solids. This wasteload allocation was designed to ensure the Snake River below American Falls Dam maintains the existing water quality necessary to support existing and designated aquatic life beneficial uses and comply with the applicable numeric and narrative criteria. The effluent limitations and associated requirements contained in the City of American Falls permit are set at levels that comply with this wasteload allocation.

In sum, the effluent limitations and associated requirements contained in the City of American Falls permit are set at levels that ensure compliance with the narrative and numeric criteria in the WQS and the wasteload allocations established in the *Lake Walcott TMDL*. Therefore, DEQ has determined the permit will protect and maintain existing and designated beneficial uses in the Snake River below American Falls Dam in compliance with the Tier 1 provisions of Idaho's WQS (IDAPA 58.01.02.051.01 and 58.01.02.052.07).

High-Quality Waters (Tier 2 Protection)

The Snake River below American Falls Dam is considered high quality for cold water aquatic life, primary contact recreation and domestic water supply. As such, the water quality relevant to cold water aquatic life, primary contact recreation and domestic water supply uses of the Snake River below American Falls Dam must be maintained and protected, unless a lowering of water quality is deemed necessary to accommodate important social or economic development.

To determine whether degradation will occur, DEQ must evaluate how the permit issuance will affect water quality for each pollutant that is relevant to cold water aquatic life, primary contact recreation and domestic water supply uses of the Snake River below American Falls Dam (IDAPA 58.01.02.052.05). These include the following: BOD_5, TSS, *E. coli*, ammonia and total phosphorus**.** Effluent limits are set in the proposed and existing permit for these pollutants except ammonia and total phosphorus.

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

Pollutants with Limits in the Current and Proposed Permit

For pollutants that are currently limited and will have limits under the reissued permit, the current discharge quality is based on the limits in the current permit or license (IDAPA 58.01.02.052.06.a.i), and the future discharge quality is based on the proposed permit limits (IDAPA 58.01.02.052.06.a.ii). For the City of American Falls permit, this means determining the permit's effect on water quality based upon the limits for BOD_5, TSS, pH and *E. coli* in the current and proposed permits.

Table 1. Comparison of current and proposed permit limits for pollutants of concern.

Pollutant	Units	Current Permit			Proposed Permit			Change[a]
		Average Monthly Limit	Average Weekly Limit	Single Sample Limit	Average Monthly Limit	Average Weekly Limit	Single Sample Limit	
Pollutants with limits in both the current and proposed permit								
Five-Day BOD	mg/L	30	45		30	45		NC
	lb/day	225	338		225	338		
	% removal	85			85			
TSS	mg/L	30	45		30	45		*
	lb/day	225	338		225/ 275*	338/ 413*		
	% removal	85			85			
pH	standard units	6.5–9.0 all times			6.5–9.0 all times			NC
E. coli	no./100 mL	126		406	126		406	NC
Total Residual Chlorine (final)	ug/L	120	210		UV **	UV**		**
	lb/day	0.9	1.6					
Pollutants with no limits in both the current and proposed permit								
Total Ammonia	mg/L			Report			Report	NC
Phosphorus	mg/L			Report			Report	NC

*These effluent limits are effective once plant upgrades are in place and reflect new design flow and are consistent with the WLA set in the 1999 Lake Walcott TMDL.
**This treatment plant has switched over to ultraviolet disinfection, no effluent limit for chlorine needed.

Pollutants with No Limits

There are two pollutants of concern, ammonia and phosphorus that currently are not limited and for which the proposed permit also contains no limit. For such pollutants, a change in water quality is determined by reviewing whether changes in production, treatment, or operation that will increase the discharge of these pollutants are likely (IDAPA 58.01.02.052.06.a.ii). With respect to these pollutants, there is no reason to believe they will be discharged in quantities greater than those discharged under the current permit and there is no reasonable potential to exceed water quality standards based on EPA's analysis. In addition there have been no significant changes to influent quality and the proposed treatment plant upgrades will increase treatment capacity and will not lead to an increased discharge of these pollutants. Because the proposed permit does not allow for any increased water quality impact from these pollutants, DEQ has concluded that the proposed permit should not cause a lowering of water quality for these non-limited pollutants. As such, the proposed permit should maintain the existing high water quality in Snake River below American Falls Dam.

In sum, DEQ concludes that this discharge permit complies with the Tier 2 provisions of Idaho's WQS (IDAPA 58.01.02.051.02 and IDAPA 58.01.02.052.06).

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

Mixing Zones

Pursuant to IDAPA 58.01.02.060, DEQ authorizes a mixing zone that utilizes 25% of the critical flow volumes of Snake River below American Falls Dam to calculate Reasonable Potential to Exceed (RPTE) for ammonia and phosphorus.

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 Lynn Van Every, Pocatello Regional Office, (208) 236-6160 or via e-mail at lynn.vanevery@deq.idaho.gov.

DRAFT

Bruce Olenick
Regional Administrator
Pocatello Regional Office