Response to Comments on the Draft NPDES Permit for the City of Ashton

US Environmental Protection Agency
Region 10
NPDES Permits Unit
January 2014
NPDES Permit Number ID0023710

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Overview

On November 20, 2009, the EPA issued a draft reissued National Pollutant Discharge Elimination System (NPDES) permit for the City of Ashton for public review and comment. The public comment period closed on December 21, 2009.

No comments were received during the 2009 public comment period. However, the EPA did receive a letter from the City of Ashton ("City") providing comments on the draft permit after the public comment period closed. The letter was dated December 28, 2009 and was received on December 30, 2009. Pursuant to 40 CFR 124.13, "all persons, including applicants, who believe any condition of a draft permit is inappropriate…must raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position by the close of the public comment period (including any public hearing) under section 124.10." Because the City did not submit comments during the public comment period, the City's letter of December 28, 2009 does not provide the City with legal standing to appeal the permit under 40 CFR 124.19. However, the EPA has responded to the City's 2009 comments in this document.

On May 7, 2013, the EPA reopened the public comment period pursuant to 40 CFR 124.14. The EPA issued a revised draft permit and a revised fact sheet for public review and comment at that time. The public comment period was scheduled to close on June 6, 2013, but it was extended until July 8, 2013 upon request from the City. The EPA received comments from the City during the reopened public comment period.

Comments from the City of Ashton Received during the Reopened Public Comment Period

Receiving Water Use Designations

Comment #1

The City stated that they believe the unnamed tributary to Spring Creek that the WWTP discharges into may not be suitable for coldwater aquatic life and salmonid spawning. The City stated that the stream is merely a drainage swale with a muddy grass-laden bed for about a half-mile downstream of the WWTP until backwater effects from a hot spring deepen the water in the stream, in the vicinity of the culvert beneath East 1425 North Street. From there to Spring Creek, two year-round flowing hot springs would seem to prevent any fish from migrating above. Since the Idaho State Legislature has never declared the value of this unnamed tributary we ask that we be given an opportunity to provide data to illustrate whether this unnamed tributary to Spring Creek should or should not be held to the standard required of those that do have salmonid spawning and cold water aquatic life.

The City of Ashton stated that the unnamed tributary that receives the discharge is located in private property along its entire reach except for the culvert at East 1425 North Street. It is also fenced. The City asked how this unnamed tributary be considered valuable for primary contact recreation? The City stated that it is not accessible and there is little water in it above the hot springs. The City stated that

the unnamed tributary is too small to swim in or boat in. The City stated that the unnamed tributary has little to no recreational value. The City asked the EPA to consider modifying the classification of this unnamed tributary to secondary contact recreation or no recreation value at all.

Response #1

As stated on Page 2 of the Final § 401 Water Quality Certification prepared by the Idaho Department of Environmental Quality (IDEQ), dated January 16, 2014, "The City of Ashton discharges to an unnamed tributary to Spring Creek, within the Upper Henrys assessment unit (AU) ID17040202SK001_02 (Henrys Fork-Warm River to Ashton Reservoir Dam). The unnamed tributary and Spring Creek are part of water body identification (WBID) unit US-1 in the Upper Henrys Subbasin. The WBID has the following designated beneficial uses: cold water aquatic life, salmonid spawning, primary contract recreation and domestic water supply. Additionally, all waters of the State are protected for aesthetics, wildlife habitat, and agricultural and industrial water supply (IDAPA 58.01.02.100)."

In order to change the use designations of the City's receiving water, IDEQ would be required to initiate rulemaking necessary to re-designate the receiving water (IDAPA 58.01.02.101.01.c). Such a change in use designations would be a change to the State of Idaho's water quality standards, which would need to be approved by the EPA before becoming effective for Clean Water Act purposes (40 CFR 131.21).

Unless and until the use designations are changed by the State of Idaho and the changes are approved by the EPA, the EPA must establish effluent limits in the permit which ensure compliance with the current water quality standards, including the designated uses.

Revisions to the Draft Permit

None.

Effluent Limits

Comment #2

The City requested that the ammonia limit be recalculated after more field investigation reveals the true nature of the unnamed tributary to Spring Creek and its actual effects on downstream waters.

Response #2

The EPA has addressed this comment by recalculating the ammonia effluent limits on a seasonal basis. The two seasons used for the calculation are December – May and June – November. From December – May, the pH and temperature of the receiving water are lower than from June – November, which results in less-stringent water quality criteria, and, in turn, less stringent effluent limits. According to the City's comment letter of July 8, 2013, the City generally discharges from January – April. If this is the case, then, as a practical matter, the City will only need to comply with the less-stringent effluent limits, which apply from December – May.

From December – May, the 95th percentile downstream pH and temperature reported on the City's discharge monitoring reports (DMRs) are 7.81 standard units and 6.00 °C, respectively. From June – November, the 95th percentile downstream pH and temperature reported on the City's DMRs are 8.10

standard units and 20.3 °C, respectively. The re-calculated ammonia criteria based on these pH and temperature values are shown in Table 1, below.

In the 2009 fact sheet, the EPA had calculated the values of the ammonia criteria on a year-round basis. The acute and chronic ammonia criteria values calculated in the 2009 fact sheet were 3.18 mg/L and 1.43 mg/L, respectively (Page C-4).

Table 1: Water Quality Criteria for Ammonia

	Acute Criterion	Chronic Criterion
Equations:	$\frac{0.275}{1+10^{7.204-\text{pH}}}+\frac{39}{1+10^{\text{pH}-7.204}}$	$\left(\frac{0.0577}{1+10^{7.688-\text{pH}}}+\frac{2.487}{1+10^{\text{pH}-7.688}}\right)\times \text{MIN}\left(2.85,1.45\times 10^{0.028\times(25-\text{T})}\right)$
Results December – May	7.94	3.14
Results June – November	4.63	1.44

The re-calculated ammonia criteria do not change the outcome of the reasonable potential analysis; i.e., even though the criteria are less stringent from December – May, the discharge nonetheless has the reasonable potential to cause or contribute to excursions above water quality criteria for ammonia at all times of the year. Therefore, the permit must contain effluent limits for ammonia (40 CFR 122.44(d)(1)(i – iii)). The revised reasonable potential calculations are shown in Appendix A to this response to comments.

Revisions to Draft Permit

The re-calculated criteria described above result in the effluent limits shown in Table 2, below. The calculations are shown in Appendix A to this response to comments.

Table 2: Final Ammonia Effluent Limits

Parameter	Units	Effluent Limits		
		Average Monthly Limit	Average Weekly Limit	Maximum Daily Limit
Total Ammonia as N (December – May)	mg/L	2.92	—	7.64
	lb/day	8.89	—	23.3
Total Ammonia as N (June – November)	mg/L	1.34	—	3.51
	lb/day	4.08	—	10.7

Antidegradation

Comment #3

We question why this unnamed tributary to Spring Creek is deserving of Tier 2 protection as recommended in the Section 401 Water Quality Certification.

With regard to degradation, please inform us how the assimilative capacity of the receiving water was determined to decrease more than 10 percent. There is no WWTP discharge into the unnamed tributary except for January through April. There is no measurable water in the receiving body during the

discharge period except for April during spring runoff. How could DEQ be so sure that assimilative capacity of the receiving water would decrease more than 10 percent? What animal life is positively being degraded? Please illustrate for us this calculation. Perhaps this little drainage should only be held to Tier 1 standards.

Response #3

As stated in the State of Idaho's Final Clean Water Act Section 401 certification (Page 2), "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)." The final certification further states that "the cold water aquatic life and contact recreation beneficial uses in this AU have not yet been assessed (2010 Integrated Report). Unassessed water bodies are provided an appropriate level of protection on a case-by-case basis using available information (IDAPA 58.01.02.052.05.b). Monitoring by DEQ in 2011 indicated no bacteria or temperature standard exceedences. On the basis of this information, DEQ has determined that the receiving water body is a high quality water body. Therefore, Tier 2 protections, in addition to Tier 1 protections, apply to both the aquatic life use and the recreation beneficial uses."

With respect to the decrease in assimilative capacity, as stated in the State of Idaho's Final Clean Water Act Section 401 certification (Page 4), "Because the discharge is treated as a new discharge, and given the comparison of the effluent flow to receiving water flow, the discharge of BODs, TSS, E. coli, pH, total residual chlorine, and total ammonia as allowed under the limits in the proposed permit will cause an increase in the concentration of these pollutants in the receiving water, and therefore, will cause degradation."

As stated on Page 9 of the 2013 fact sheet, "the EPA has reviewed this antidegradation review and finds that it is consistent with the State's 401 certification requirements and the State's antidegradation implementation procedures." This includes the determination of which tier of antidegradation protection should be provided for the receiving water. As stated in the 2009 fact sheet, "the minimum flow rate of the receiving water upstream from the point of discharge is 7,000 gallons per day, and the harmonic mean flow rate is 35,000 gallons per day. " In comparison, the design flow of the POTW is 365,000 gallons per day (gpd) and the average flow rate is 180,000 gpd (see the 2009 fact sheet at Page 7). Based on the harmonic mean upstream receiving water flow rate and the average effluent flow rate, the receiving water downstream from the discharge is 84% effluent.[1] Because the effluent composes a large fraction of the receiving water flow downstream of the discharge, the discharge will increase the concentration of BOD_5, TSS, E. coli, pH, total residual chlorine and total ammonia in the receiving water.

Furthermore, on July 23, 2013, the EPA disapproved the provision of Idaho's antidegradation implementation methods which allows the IDEQ to deem insignificant any change to an activity or discharge that will not cumulatively decrease the receiving water's assimilative capacity by more than

[1] 180,000 gpd ÷ (180,000 gpd + 35,000 gpd) = 84%

10% (Idaho Code Section 39-3603(2)(c)). Therefore, this provision of Idaho's antidegradation implementation methods is not in effect for Clean Water Act purposes. Thus, any decrease in assimilative capacity for any pollutant is considered significant degradation and therefore triggers the requirement for a Tier 2 antidegradation analysis.

Revisions to Draft Permit

None.

Compliance Schedules

Comment #4

The City states that there are operational problems that make compliance with the new water quality-based chlorine impossible right now. The City stated that, since they only discharge in the winter and late spring, ice forms on the surface of the water upstream of the sharp crested weir discharge meter in the chlorine contact chamber. Then, when the water level drops, the ice remains. The ultrasonic depth measuring device continues to read the ice level, thus overestimating our discharge. Second, when the chlorine contact chamber freezes (we estimate to about 40 percent of its depth), we have to drill a hole in the ice to sample to know how much sodium bisulfate to apply to achieve dechlorination prior to discharge. The City stated that they simply are not set up right now to do dechlorination immediately.

The City stated that, on page 10 of the fact sheet, the EPA indicates that we have installed a dechlorination system. The City stated that the dechlorination system is not adequate for winter discharge.

For these reasons, the City requested that the EPA not delete the compliance schedule for dechlorination. The City asked that the EPA adjust the schedule and give the City more time to figure out how to prevent freezing and figure out how to add the proper amount of dechlorination chemical. The City stated that being able to produce chlorine-free discharge will take some additional study and planning.

Response #4

In its final Clean Water Act Section 401 Certification of this permit, the IDEQ has authorized a compliance schedule for chlorine (Pages 6-7). The EPA agrees with IDEQ and with the commenter that a schedule of compliance is appropriate for the new water quality-based chlorine limits pursuant to 40 CFR 122.47.

The EPA had proposed a schedule of compliance for chlorine in the 2009 draft permit but had deleted it in the 2013 draft permit because the EPA believed, at the time, that the dechlorination system would allow the City to comply with the new water quality-based effluent limits for chlorine immediately upon the effective date of the final permit.

Revisions to the Draft Permit

The EPA has incorporated the chlorine schedule of compliance from the final Clean Water Act Section 401 certification into the final permit. The schedule of compliance requires compliance with the new

water quality-based effluent limits for chlorine within 5 years and 6 months of the effective date of the final permit.

Comment #5

Regarding ammonia, the City stated that they would like more flexibility in the time frame to implement the changes that this permit may require us to make. The City asked that the IDEQ and the EPA remove from the §401 water quality certification and the draft permit the compliance schedule necessitated by the need for ammonia removal. The City stated that, before they commit and agree to a plan of major WWTP upgrade requirements, they want to better understand why the current level of ammonia discharged in the wintertime and early spring during spring runoff into the intermittent unnamed tributary is so damaging to a stream that may not support cold water aquatic life and salmonid spawning. Until the unnamed tributary can be properly characterized and an ammonia limit recalculated to match unnamed tributary characteristics, we do not want to enter into a compliance schedule that encourages us to reduce ammonia discharge beyond what is determined to be necessary or a benefit to the area.

The City asked that the compliance schedule be given additional consideration after the unnamed tributary is better characterized and the final ammonia limit is better justified and agreed to.

The City also stated that they just brought on-line a nitrate removal system for our drinking water system. The discharge brine from our nitrate removal system is collected and flows into the WWTP. We do not yet know the affects this will have on the discharge ef fluent of the WWTP. We want time to see how the effects of the nitrate removal waste affect effluent water quality at the WWTP.

Response #5

Because removing the compliance schedule for the new water quality-based ammonia limits without also removing the water quality-based ammonia limits themselves would mean that the City would need to comply with the new water quality-based effluent limits for ammonia immediately upon the effective date of the final permit, which would not be in the City's interest, the EPA will interpret this comment as a request to remove the water quality-based effluent limits for ammonia from the draft permit.

As explained in the response to comment #2, the EPA has re-calculated the ammonia limits based on seasonal variations in pH and temperature. However, as also explained in the response to comment #2, effluent limits for ammonia are nonetheless necessary.

As stated on Page 12 of the 2009 fact sheet, federal regulations and the Idaho WQS allow a schedule of compliance for new water quality-based effluent limits because the facility cannot comply with the new limits immediately upon the effective date of the final permit. As stated on Pages 10-11 of the 2013 fact sheet, the compliance schedule was revised because the City determined that it was not feasible to eliminate the discharge.

Even though the revised limits for December – May are less stringent than those in the draft permit, the facility nonetheless cannot comply with the new water quality-based effluent limits immediately upon

the effective date of the final permit. Therefore, the final permit includes a schedule of compliance for the new water quality-based ammonia limits.

Revisions to the Draft Permit

None.

Receiving Water Monitoring

Comment #6

The City stated that they only discharge in January, February, March and April. The City stated that there is typically no flow in the receiving stream past the WWTP from January to March and the unnamed tributary is frozen over and covered with several feet of snow. The City stated that, in April, the weather moderates, the snow begins to melt and the unnamed tributary flows continuously during spring runoff. The City proposed that all receiving stream monitoring be done during spring runoff in April when there is flow in the receiving stream past the WWTP only. We propose EPA reduce the sampling of dissolved oxygen to one per year at the same time as the other constituents and that it be done in April during spring runoff.

Response #6

The EPA agrees that receiving water sampling for total nitrogen and total phosphorus is most valuable when the facility is discharging wastewater and the receiving stream is flowing upstream from the discharge. In addition, the EPA recognizes the practical difficulties of sampling the receiving water during times of deep snow.

However, in its final Clean Water Act Section 401 certification, IDEQ stipulated that the City of Ashton must "conduct monthly dissolved oxygen sampling of the receiving water using an EPA-approved method to measure compliance with Idaho's dissolved oxygen criteria" (Page 7). IDEQ clarified that this condition was intended to require dissolved oxygen sampling both upstream and downstream of the discharge (personal communication with Troy Saffle, IDEQ, January 24, 2014). NPDES permits issued by the EPA must incorporate the requirements specified in a CWA Section 401 certification (40 CFR 122.44(d)(3), 124.53(e), 124.55(a)(2)).

Revisions to the Draft Permit

The EPA has changed the receiving water monitoring requirements for nitrogen and phosphorus so that receiving water sampling is required once per year, in April, when the facility is likely to discharge, the receiving water is likely to flow upstream from the discharge, and snow is less likely to interfere with sampling. The EPA has also changed the start date for receiving water monitoring from 120 days after the permit's effective date to April 1, 2014.

The final permit includes requirements to sample the receiving water for DO both upstream and downstream of the outfall, consistent with the final Clean Water Act Section 401 certification.

Effluent Monitoring Requirements

Comment #7

The City of Ashton requested that the EPA & DEQ reduce the monitoring of alkalinity, dissolved oxygen, nitrate plus nitrite, oil and grease, total dissolved solids, total Kjeldahl nitrogen and total phosphorus to only once per year. The City stated that they only discharge from January through April. The City stated that if they discharged year-round it would be understandable to do two per year. From January to March there is no flow in the unnamed tributary at the point of discharge. There is usually flow at the point of discharge during spring runoff in April. The City stated that it does not seem that doing two tests in the same season of the year is going to tell us any more than one test will tell us during our brief discharge period. The City proposes that sampling once per year and timing the sampling with spring run-off when there is the greatest chance of upstream flow in the intermittent portion of the unnamed tributary.

Response #7

Effluent monitoring for the parameters listed by the permittee in its comment has been required in order to characterize the effluent so that the EPA can determine whether water quality-based effluent limits are necessary for any of these pollutants when the permit is reissued. The process of determining whether water quality-based effluent limits are necessary for a given pollutant is called a reasonable potential analysis.

If there are less than 10 data points available, the uncertainty is too large to calculate an average or a standard deviation with sufficient confidence (see the *Technical Support Document for Water Quality-based Toxics Control* at Page 53). A sampling frequency of twice per year was chosen so that there would be at least 10 results available for each parameter at the end of the 5-year permit term. This will allow a more accurate reasonable potential analysis to be performed because the permit writer will be able to use the actual coefficient of variation (the standard deviation divided by the mean) of the effluent data. Therefore, the twice per year monitoring frequency for alkalinity, dissolved oxygen, nitrate plus nitrite, oil and grease, total dissolved solids, total Kjeldahl nitrogen and total phosphorus has been maintained in the final permit.

However, the EPA agrees that effluent sampling should coincide with receiving water sampling, for nitrogen and phosphorus. See also the response to comment #6.

Revisions to the Draft Permit

The permit now includes a footnote in Table 1 requiring at least one of the two yearly effluent samples for total phosphorus, total Kjeldahl nitrogen, and nitrate + nitrite be taken in April, on the same day as receiving water samples.

Comment #8

The City requested that the EPA & DEQ reduce the monitoring of E. coli bacteria to once a week. The city stated that, since we discharge from January through April, all of our testing would be better timed and correlated if you allowed sampling of E. coli bacteria on a once per week schedule. This way we could sample for E. coli at the same time as temperature, chlorine and ammonia, BOD and TSS and

always be able to time the delivery of the E. coli samples to the laboratory with the BOD and TSS samples. We could use the last five samples to calculate the monthly E. coli average monthly limit. This would eliminate a costly fifth sample each month taken all alone and delivered to the lab. We would still obtain five samples over 28 days which would satisfy the sampling criteria in subsection 251.01.a of the Idaho Water Quality Standards.

Response #8

Section 251.01.a of the Idaho WQS requires that the geometric mean E. coli concentration be calculated based on "a minimum of five (5) samples taken every three (3) to seven (7) days over a thirty (30) day period."

In general, effluent limits for continuous discharges from POTWs must be stated, in part, as average monthly discharge limitations (40 CFR 122.45(d)(2)). An "average monthly discharge limitation" is defined as "the highest allowable average of 'daily discharges' over a *calendar month*…" (40 CFR 122.2, emphasis added). As explained on Pages C-4 – C-5 of the 2009 fact sheet, the EPA has not expressed the E. coli limits as average monthly discharge limitations because the "average monthly discharge limitation" is defined as the highest allowable arithmetic average, and it is impracticable to properly implement the 30-day geometric mean criterion using arithmetic average limits. However, the effluent limits for BOD_5, TSS, chlorine, and ammonia are stated in part as average monthly discharge limitations. Since effluent limitations must generally be stated in part as average monthly discharge limitations, and the average monthly discharge limitation is defined in federal regulations as the highest allowable average discharge over a calendar month, the EPA has required reporting of the discharge on a monthly basis.

If reporting is required on a monthly basis, then a required sampling frequency of once per week for E. coli may or may not ensure that the reported monthly geometric mean E. coli concentration is based on at least 5 samples. For example, for the month of September 2013, if sampling were performed every Monday, samples would be taken on the 2nd, 9th, 16th, 23rd, and 30th of September, which would result in five samples for the month, thus complying with a sampling requirement of five samples per month as well as a once per week sampling requirement. However, if weekly sampling was performed every Wednesday, then samples would be taken on the 4th, 11th, 18th, and 25th of September, resulting in only four samples for the month.

Therefore, the EPA has required an E. coli sampling frequency of five times per month, which is the minimum necessary to ensure consistency with Section 251.01.a of the Idaho WQS. As explained above, this requirement does not necessarily preclude sampling once per week for E. coli, if once per week sampling would provide the necessary 5 samples. However, if once per week sampling would provide only four samples for a particular month, then at least one additional E. coli sample must be taken in order to comply with the E. coli monitoring requirements.

Revisions to the Draft Permit

None.

Comments Submitted by the City on December 28, 2009

Comment #9

The City stated that the 2009 draft permit requires the City to test twice monthly for total suspended solids (TSS) and five-day biochemical oxygen demand (BOD_5). The City stated that this requirement doubles the cost of testing and manpower for a small City system with a limited budget.

Response #9

This comment was addressed by changes made to the revised draft permit that was issued for public review and comment on May 7, 2013. The revised draft permit, as well as the final permit, requires sampling for BOD_5 and TSS once per month, which is the same sampling frequency as the prior permit, which was issued in 2001.

Comment #10

The City stated that the draft permit requires the City to test twice monthly for ammonia. The City stated that this requires six times the amount of testing that was required by the previous permit, for a small city system with a limited budget.

Response #10

In the 2009 draft permit, the EPA proposed an increased monitoring frequency for ammonia relative to the previous permit because, unlike the previous permit, the reissued permit includes water quality-based effluent limits for ammonia. The quarterly monitoring frequency for ammonia in the previous permit would not have been frequent enough to accurately determine compliance with the ammonia limits.

However, the permit includes a compliance schedule for ammonia. Interim effluent limits for ammonia, which are less stringent than the final effluent limits, apply during the term of the compliance schedule. During the term of the compliance schedule, EPA believes that monthly sampling for ammonia is acceptable.

Therefore, in the 2013 draft permit as well as the final permit, the required sampling frequency for ammonia is once per month until the final effluent limits take effect on October 1, 2019.

Comment #11

The City stated that the draft permit requires the City to report total alkalinity, dissolved oxygen, nitrate, nitrite, oil and grease, total dissolved solids, and total phosphorus (as P) twice yearly. The City stated that this will raise the cost of testing and manpower for a small city with a limited budget.

Response #11

The City made a similar comment on the revised draft NPDES permit. See the response to comment #7, above.

Comment #12

The City stated that, according to Table 1, there are both interim and final total residual chlorine testing requirements. The City requested clarification of the limits and meaning of these requirements.

Response #12

This comment and response are applicable only to the 2009 draft permit, because the 2013 draft permit did not include interim effluent limits or a compliance schedule for new water quality-based chlorine limits.

The 2009 fact sheet states, on Page 12, that the facility cannot comply with the new, water quality-based effluent limits for chlorine immediately upon the effective date of the final permit. Therefore, a schedule of compliance was proposed in the 2009 draft permit. The final limits proposed in the 2009 draft permit, which were more stringent than the interim limits, were the new, water quality-based limits. The 2009 draft permit proposed that the final limits would take effect at the end of the compliance schedule. As stated in the fact sheet, the interim effluent limits would have applied during the term of the compliance schedule. See the 2009 draft permit at Part I.D.

References

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

Appendix A: Revised Reasonable Potential and Effluent Limit Calculations for Ammonia

Ammonia Reasonable Potential Calculations

The general procedures and equations used in the reasonable potential calculations are explained in Appendix D to the 2009 fact sheet. Revised reasonable potential calculations for ammonia are summarized in Table A-1, below. The outcome of the reasonable potential analysis (i.e. the findings of whether or not effluent limits were necessary for ammonia) did not change based on the revisions to the reasonable potential calculations.

Ammonia Effluent Limit Calculations

The general procedures and equations used in the effluent limit calculations for ammonia are explained in Appendix E to the 2009 fact sheet. Revised effluent limit calculations are summarized in Table A-2, below. The revised effluent limit calculations incorporate the following revisions, relative to those shown in the fact sheet:

- Effluent limits for ammonia were re-calculated on a seasonal basis.
- The EPA has assumed a sampling frequency of 30 samples per month in the effluent limit calculations, instead of the actual sampling frequency. This is necessary in this case because the chronic LTA is the limiting LTA. Thus, it is necessary to assume a sampling frequency of 30 samples per month in order to ensure that the average monthly limit is less than or equal to the chronic WLA (64 FR 71976).

Table A-1: Revised Reasonable Potential Calculations for Ammonia

Effluent Percentile value	99%																	
		State Water Quality Standard		Max concentration at edge of...														
	Ambient Concentration (metals as dissolved)	Acute	Chronic	Acute Mixing Zone	Chronic Mixing Zone	LIMIT REQ'D?		Max effluent conc. measured (metals as total recoverable)	Coeff Variation		# of samples	Multiplier	Acute Dil'n Factor	Chronic Dil'n Factor		Metal Criteria Translator as decimal	Metal Criteria Translator as decimal
Parameter	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*		*Pn*	*ug/L*	*CV*	*s*	*n*				COMMENTS	Acute	Chronic
Ammonia, Dec. - May mg/L		7.94	3.14	59.26	59.26	**YES**	0.853	27.1	0.675	0.613	29	2.19	1.00	1.00	EOP	1.00	1.00
Ammonia, June - Nov. mg/L		4.63	1.44	59.26	59.26	**YES**	0.853	27.1	0.675	0.613	29	2.19	1.00	1.00	EOP	1.00	1.00

Table A-2: Revised Effluent Limit Calculations for Ammonia

Statistical variables for permit limit calculation																		
LTA Probability Basis	99%																	
MDL Probability Basis	99%																	
AML Probability Basis	95%																	
					Permit Limit Calculation Summary					**Waste Load Allocation (WLA) and Long Term Average (LTA) Calculations**								
	Acute Dil'n Factor	Chronic Dil'n Factor	Ambient Concentration	Water Quality Standard Acute	Water Quality Standard Chronic	Average Monthly Limit (AML)	Maximum Daily Limit (MDL)	Comments	WLA Acute	WLA Chronic	LTA Acute	LTA Chronic	Limiting LTA	Coeff. Var. (CV)	# of Samples per Month	Metal Criteria Translator	Metal Criteria Translator
PARAMETER			*ug/L*	*ug/L*	*ug/L*	ug/L	ug/L		*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*decimal*	*n*	Acute	Chronic
Ammonia, mg/L Dec. - May	1.00	1.00		7.94	3.14	**2.92**	**7.64**	EOP	7.94	3.14	2.55	2.45	2.45	0.60	30.00	1.00	1.00
Ammonia, mg/L June - Nov.	1.00	1.00		4.63	1.44	**1.34**	**3.51**	EOP	4.63	1.44	1.49	1.13	1.13	0.60	30.00	1.00	1.00