SSRAA
Southern Southeast Regional Aquaculture Association, Inc.
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February 3, 2023 Sent via email

Anne Weaver
Alaska Department of Environmental Conservation
Division of Water
Wastewater Discharge Authorization Program
555 Cordova Street
Anchorage, AK 99501
Anne.weaver@alaska.gov

RE: DEC Draft Permit AKG130000 Southern Southeast Regional Aquaculture Association Public Comments

Dear Ms. Weaver,

Southern Southeast Regional Aquaculture Association (SSRAA) submitted comments on October 10, 2022 during the comment period provided for the AKG130000 APDES Preliminary Draft Permit. While we appreciate that several of the areas SSRAA and the hatchery operators collectively had concerns about were addressed prior to posting for public comment on December 21, 2022, there are several areas remaining in the draft permit that are of significant concern.

The first and foremost concern for SSRAA facilities is:

3.2 Flow Through and Recirculation Facilities

3.21 Effluent Monitoring

Table 2 - pH minimum 6.5 maximum 8.5 S.U.

SSRAA operates three hatcheries that do not meet the pH limits based on the pH of the influent water source. In our comments submitted on October 10, 2022, SSRAA offered three possible alternatives to setting a minimum effluent pH range of 6.5; ADEC's proposed draft sets a minimum pH of 6.5 with some footnotes that are very confusing. We have received multiple interpretations as to what these footnotes actually mean, and whether or not our facilities could function under the proposed language of the new permit. Tables 1-3 summarize the influent and effluent pH values of three of our facilities over the time period from 2019 through 2022. During this time, Crystal Lake Hatchery did not meet the minimum pH level 94% of the time, Whitman Lake Hatchery 69% of the time, and Neets Bay Hatchery 47% of the time. All three of the facilities discharge into estuarine areas that are either

freshwater or saltwater depending on the tide. Under footnote (f) if we are considered freshwater, even though our pH is chronically below 6.5, in the four- year period under review, Crystal Lake would have been out of compliance once, and Whitman Lake twice. All other times, even though our pH was below 6.5, it did not vary more than 0.5 pH units from the natural conditions, **(Article 1. Water Quality Standards Section 18 AAC 70, pg. 61, definition (41) "***natural condition***")**. Via e-mail correspondence with ADEC we were informed that marine and estuarine discharges must meet the 6.5 – 8.5 pH standard, or a mixing zone would be required. We respectfully request the citation for this standard. **Article 1. Water Quality Standards Section 18 AAC 70 pg. 29 and 30** are the only references we could find, and it is our interpretation that this section as written does not apply to discharge but only use of the marine environment for propagation. Both Whitman Lake and Crystal Lake have hydroelectric facilities that release more water (of the same < 6.5 pH value) into the same receiving waters as do our facilities. Ketchikan Public Utilities tailrace discharges 100 feet from one of Whitman Lake's discharge pipes, sometimes at 10 times the flow rate of the entire hatchery. Any mixing zone would also have to mitigate for those discharges which we have no control over. Neets Bay's Bluff Lake (the same water source as the hatchery), naturally drains down Neets Creek into the same receiving waters as the hatchery discharge, often at fifty times the flow rate.

Since time immemorial these lakes have outflowed naturally into the same body of water that our hatcheries do. The thought that there is a need to artificially adjust for what has been going on since the last ice age, under the guise of protecting the natural environment, is nonsensical. The pH was below 6.5 before any of these hatcheries were built and will be below 6.5 long after these hatcheries are gone, and would have been below 6.5 now if they were never constructed.

- ***We respectfully request ADEC provide its reasoning for requiring effluent monitoring for pH by salmon aquaculture facilities when the EPA does not mandate this requirement and is on record for the Tamgas Creek Hatchery, located in Southeast Alaska, as stating, "there are no applicable technology-based guidelines for pH from discharges from aquaculture facilities…" (attached).***

- ***We respectfully request ADEC to exercise the site-specific criteria option allowed under 18 AAC 70.235, if pH effluent limits are included in the final permit re-authorization; and that SSRAA facilities be covered under section (c) (1).***

3.3 Net Pen Facilities

3.3.2

While we appreciate the extended time period of 60-days as compared to the draft version, we still emphasize that there is an EPA exemption from regulation on discharges from net pens rearing native species for a period of four months or less.

- ***We respectfully request ADEC utilize the EPA exemption from regulation in the final permit. "EPA CAAP Effluent Guidelines Subpart B Net Pen Category 451.20"***

3.3.2.3

Many of our net pen sites are situated near the outflow of small rivers or streams that deposit woody debris as a natural occurrence. This organic matter can remain on the seafloor for extended periods of time without flushing and develop a fungal mat. How are we to account for and differentiate naturally occurring fungal mats from those that are produced

from net pen activity? As written, there is no means to exclude natural bacterial and fungal growth from being erroneously related to our activity.

3.3.2.4

This section, with the additional language of 3.3.2.4.1 and 3.3.2.4.2, essentially says that if we can see detectible benthic residues (by definition, the residue is > 2%), and we are consequently in noncompliance and need to have an approved ZOD. However, **Article 1. Water Quality Standards Section 18 AAC 70(b)** for residues states-

> **70.020 (20) (C) Residues, For Marine Water Uses:**
> Growth and Propagation of Fish
>
> Residues are not allowed in surface waters of the state, in concentrations or amounts that have the following effects
> o may impair designated uses;
> o cause nuisance or objectionable conditions; or
> o result in undesirable or nuisance species.
>
> **70.020 (21) (C) Sediment, For Marine Water Uses:**
> Growth and Propagation of Fish
> No measurable increase in concentration of settleable solids above natural conditions, as measured by the volumetric Imhoff cone method (see note 11).

Using these criteria, we believe we are in compliance of the State standards and don't see that a ZOD is mandated.

If the concern is that detectable benthic residue that might be observed within 60 days of release may accumulate over time, we propose monitoring the benthos beneath the net pen sites prior to re-introducing fish the next rearing season. If a build-up of benthic residue is evident, then it may be appropriate to require a ZOD, a mixing zone, or some other mitigation; but that evidence should come first. The observations of clams, sea cucumbers, shrimp, seaweed, fish, etc… under the pens during past monitoring, along with the growth of commercial and personal use shrimping and crabbing activities in these areas, would seem to indicate that our activities have had a positive, not negative, impact on the surrounding areas.

- ***If ADEC does not utilize the EPA exemption for net pens and continues to require monitoring, we respectfully request the removal of section 3.3.2.4.2, edit section 3.3.2.4 to allow for subsequent observations prior to the possible need for a ZOD, and edit section 3.3.2.3 to address natural woody debris decomposition.***

1.5 Notification of Intent Requirements

1.5.6

We are unsure of the intent or expectations of ADEC to comply with Section 1.5.6. Our understanding is that this has not been a requirement in the past, thus we have several clarification questions. Our primary concern would be requiring modification to long existing systems, and an undefined review period jeopardizing current construction plans and timelines.

- ***We respectfully request ADEC respond to the following questions:***
    - ***How does this apply to existing facilities? Will they be grandfathered in?***
    - ***Existing engineered and planned activities for projects spanning multi-years, what will be the process for compliance, since they are already underway?***
    - ***18AAC 72.600 – Application for department approval 6. (e) states that plans must be submitted within 90 days of construction. What is the timeline for review?***

In closing, we are hopeful that the hatchery operators and ADEC can work together to address areas that we feel are confusing, over burdensome, or will have no impact on ensuring our activities are environmentally sound. We have proven to be good stewards of the environment over the last forty years, while creating food security and a huge economic engine to local communities. Our success depends on maintaining a pristine environment in which to conduct our activities, so we have every incentive without any regulations to "do the right thing". Thank you for your time, and the opportunity to address our concerns.

Sincerely,

Susan Doherty
General Manager SSRAA
(907) 228-4389
(907) 225-9605

attachments

Table 1. Crystal Lake pH

Year	Facility	Month	Influent	Effluent	Date Collected	pH in range?	Difference Between Influent and Effluent
2022	Crystal Lake Hatchery	January	6.01	5.83	01/19/22	no	0.18
2022	Crystal Lake Hatchery	February	5.63	5.23	02/09/22	no	0.40
2022	Crystal Lake Hatchery	March	5.81	5.43	03/08/22	no	0.38
2022	Crystal Lake Hatchery	April	5.69	5.32	04/06/22	no	0.37
2022	Crystal Lake Hatchery	May	5.82	5.63	05/03/22	no	0.19
2022	Crystal Lake Hatchery	June	6.11	5.89	06/08/22	no	0.22
2022	Crystal Lake Hatchery	July	5.92	5.81	07/06/22	no	0.11
2022	Crystal Lake Hatchery	August	5.91	6.18	08/10/22	no	0.27
2022	Crystal Lake Hatchery	September	5.68	5.61	09/07/22	no	0.07
2022	Crystal Lake Hatchery	October	6.78	6.13	10/13/22	no	0.65
2022	Crystal Lake Hatchery	November	6.3	5.94	11/17/22	no	0.36
2022	Crystal Lake Hatchery	December	5.98	5.78	12/14/22	no	0.20
2021	Crystal Lake Hatchery	January	5.72	5.46	01/06/21	no	0.26
2021	Crystal Lake Hatchery	February	5.49	5.52	02/10/21	no	0.03
2021	Crystal Lake Hatchery	March	5.85	5.83	03/10/21	no	0.02
2021	Crystal Lake Hatchery	April	5.64	5.87	04/07/21	no	0.23
2021	Crystal Lake Hatchery	May	5.11	4.92	05/12/21	no	0.19
2021	Crystal Lake Hatchery	June	5.88	5.83	06/09/21	no	0.05
2021	Crystal Lake Hatchery	July	6.23	5.98	07/07/21	no	0.25
2021	Crystal Lake Hatchery	August	6.32	5.84	08/04/21	no	0.48
2021	Crystal Lake Hatchery	September	5.84	5.76	09/08/21	no	0.08
2021	Crystal Lake Hatchery	October	5.62	5.77	10/06/21	no	0.15
2021	Crystal Lake Hatchery	November	6.41	6.32	11/17/21	no	0.09
2021	Crystal Lake Hatchery	December	6.16	5.89	12/15/21	no	0.27
2020	Crystal Lake Hatchery	January	5.82	5.47	01/09/20	no	0.35
2020	Crystal Lake Hatchery	February	5.87	5.62	02/20/20	no	0.25
2020	Crystal Lake Hatchery	March	5.95	5.85	03/19/20	no	0.10
2020	Crystal Lake Hatchery	April	No sample due to Covid				
2020	Crystal Lake Hatchery	May	5.67	5.72	05/18/20	no	0.05
2020	Crystal Lake Hatchery	June	5.52	5.44	06/11/20	no	0.08
2020	Crystal Lake Hatchery	July	5.63	5.54	07/09/20	no	0.09
2020	Crystal Lake Hatchery	August	5.44	5.18	08/06/20	no	0.26
2020	Crystal Lake Hatchery	September	6.13	5.8	09/10/20	no	0.33
2020	Crystal Lake Hatchery	October	6.12	6.08	10/06/20	no	0.04
2020	Crystal Lake Hatchery	November	6.11	6.09	11/11/20	no	0.02
2020	Crystal Lake Hatchery	December	6.1	6.08	12/09/20	no	0.02
2019	Crystal Lake Hatchery	January	6.24	6.31	01/15/19	no	0.07
2019	Crystal Lake Hatchery	February	6.69	6.6	02/25/19	yes	0.09
2019	Crystal Lake Hatchery	March	6.69	6.68	03/19/19	yes	0.01
2019	Crystal Lake Hatchery	April	6.68	6.55	04/08/19	yes	0.13
2019	Crystal Lake Hatchery	May	6.04	6.14	05/21/19	no	0.10
2019	Crystal Lake Hatchery	June	6.18	6.14	06/26/19	no	0.04
2019	Crystal Lake Hatchery	July	6.31	5.88	07/09/19	no	0.43
2019	Crystal Lake Hatchery	August	6.44	6.42	08/13/19	no	0.02
2019	Crystal Lake Hatchery	September	6.48	6.41	09/11/19	no	0.07
2019	Crystal Lake Hatchery	October	6.18	6.22	10/16/19	no	0.04
2019	Crystal Lake Hatchery	November	5.94	5.85	11/05/19	no	0.09
2019	Crystal Lake Hatchery	December	5.81	5.43	12/11/19	no	0.38

Table 2. Whitman Lake pH

Year	Facility	Month	Influent	Effluent	Date Collected	pH in range?	Difference Between Influent and Effluent
2022	Whitman Lake Hatchery	January	6.33	6.27	01/16/22	no	0.06
2022	Whitman Lake Hatchery	February	5.94	6.02	02/22/22	no	0.08
2022	Whitman Lake Hatchery	March	5.19	5.20	03/22/22	no	0.01
2022	Whitman Lake Hatchery	April	5.79	5.89	04/19/22	no	0.10
2022	Whitman Lake Hatchery	May	5.91	5.89	05/17/22	no	0.02
2022	Whitman Lake Hatchery	June	6.17	6.19	06/22/22	no	0.02
2022	Whitman Lake Hatchery	July	7.50	7.40	07/19/22	yes	0.10
2022	Whitman Lake Hatchery	August	6.64	6.33	08/23/22	no	0.31
2022	Whitman Lake Hatchery	September		6.18	09/20/22	no	N/A
2022	Whitman Lake Hatchery	October	6.38	6.19	10/19/22	no	0.19
2022	Whitman Lake Hatchery	November	6.80	6.29	11/29/22	no	0.51
2022	Whitman Lake Hatchery	December	6.67	6.71	12/27/22	yes	0.04
2021	Whitman Lake Hatchery	January	5.98	5.60	01/13/21	no	0.38
2021	Whitman Lake Hatchery	February	5.93	5.85	02/23/21	no	0.08
2021	Whitman Lake Hatchery	March	6.43	6.20	03/16/21	no	0.23
2021	Whitman Lake Hatchery	April	6.05	5.58	04/27/21	no	0.47
2021	Whitman Lake Hatchery	May	6.47	6.08	05/11/21	no	0.39
2021	Whitman Lake Hatchery	June	6.14	5.82	06/29/21	no	0.32
2021	Whitman Lake Hatchery	July	6.25	5.97	07/27/21	no	0.28
2021	Whitman Lake Hatchery	August	6.66	6.14	08/24/21	no	0.52
2021	Whitman Lake Hatchery	September	5.59	5.61	09/21/21	no	0.02
2021	Whitman Lake Hatchery	October	4.55	4.06	10/05/21	no	0.49
2021	Whitman Lake Hatchery	November	5.55	5.51	11/29/21	no	0.04
2021	Whitman Lake Hatchery	December	6.28	6.30	12/28/21	no	0.02
2020	Whitman Lake Hatchery	January	6.74	6.74	01/09/20	yes	0.00
2020	Whitman Lake Hatchery	February	7.70	7.46	02/20/20	yes	0.24
2020	Whitman Lake Hatchery	March	No DEC for March 2020 per Covid-19 protocol				
2020	Whitman Lake Hatchery	April	No DEC for March 2020 per Covid-19 protocol				
2020	Whitman Lake Hatchery	May	6.68	6.37	05/12/20	no	0.31
2020	Whitman Lake Hatchery	June	6.59	6.56	06/17/20	yes	0.03
2020	Whitman Lake Hatchery	July	6.34	6.35	07/28/20	no	0.01
2020	Whitman Lake Hatchery	August	6.28	6.08	08/25/20	no	0.20
2020	Whitman Lake Hatchery	September	6.03	5.95	09/22/20	no	0.08
2020	Whitman Lake Hatchery	October	6.18	6.16	10/20/20	no	0.02
2020	Whitman Lake Hatchery	November	6.29	6.18	11/18/20	no	0.11
2020	Whitman Lake Hatchery	December	6.03	5.98	12/15/20	no	0.05
2019	Whitman Lake Hatchery	January	7.70		01/07/19		
2019	Whitman Lake Hatchery	February	7.37	7.07	02/13/19	yes	0.30
2019	Whitman Lake Hatchery	March	7.21	6.72	03/19/19	yes	0.49
2019	Whitman Lake Hatchery	April	6.93	6.89	04/02/19	yes	0.04
2019	Whitman Lake Hatchery	May	6.80	6.94	05/21/19	yes	0.14
2019	Whitman Lake Hatchery	June			06/24/19		
2019	Whitman Lake Hatchery	July	6.54	6.27	07/17/19	no	0.27
2019	Whitman Lake Hatchery	August	6.59	6.56	08/21/19	yes	0.03
2019	Whitman Lake Hatchery	September	6.92	6.62	09/11/19	yes	0.30
2019	Whitman Lake Hatchery	October	6.61	6.67	10/09/19	yes	0.06
2019	Whitman Lake Hatchery	November	6.68	6.79	11/20/19	yes	0.11
2019	Whitman Lake Hatchery	December	6.81	6.78	12/11/19	yes	0.03

Table 3. Neets Bay pH

Year	Facility	Month	Influent	Effluent	Date Collected	pH in range?	Difference Between Influent and Effluent
2022	Neets Bay Hatchery	January	6.24	6.16	01/11/22	no	0.08
2022	Neets Bay Hatchery	February	6.60	6.40	02/16/22	no	0.20
2022	Neets Bay Hatchery	March	6.49	6.25	03/16/22	no	0.24
2022	Neets Bay Hatchery	April	6.50	6.54	04/13/22	yes	0.04
2022	Neets Bay Hatchery	May	5.95	6.61	05/11/22	yes	0.66
2022	Neets Bay Hatchery	June	6.42	6.33	06/15/22	no	0.09
2022	Neets Bay Hatchery	July	6.32	6.12	07/12/22	no	0.20
2022	Neets Bay Hatchery	August	6.30	6.23	08/17/22	no	0.07
2022	Neets Bay Hatchery	September	6.42	6.35	09/14/22	no	0.07
2022	Neets Bay Hatchery	October	6.14	6.19	10/19/22	no	0.05
2022	Neets Bay Hatchery	November	6.15	6.30	11/16/22	no	0.15
2022	Neets Bay Hatchery	December	6.98	6.70	12/20/22	yes	0.28
2021	Neets Bay Hatchery	January	7.07	7.34	01/06/21	yes	0.27
2021	Neets Bay Hatchery	February	7.60	7.51	02/22/21	yes	0.09
2021	Neets Bay Hatchery	March	7.83	7.77	03/24/21	yes	0.06
2021	Neets Bay Hatchery	April	6.89	6.87	04/22/21	yes	0.02
2021	Neets Bay Hatchery	May	7.43	7.09	05/12/21	yes	0.34
2021	Neets Bay Hatchery	June	6.36	6.85	06/08/21	yes	0.49
2021	Neets Bay Hatchery	July	6.59	6.61	07/07/21	yes	0.02
2021	Neets Bay Hatchery	August	7.10	6.89	08/04/21	yes	0.21
2021	Neets Bay Hatchery	September	6.56	6.40	09/15/21	no	0.16
2021	Neets Bay Hatchery	October	6.52	6.37	10/14/21	no	0.15
2021	Neets Bay Hatchery	November	6.61	6.54	11/16/21	yes	0.07
2021	Neets Bay Hatchery	December	6.56	6.42	12/07/21	no	0.14
2020	Neets Bay Hatchery	January	5.73	5.65	1/23/2020	no	0.08
2020	Neets Bay Hatchery	February	6.54	6.48	2/17/2020	no	0.06
2020	Neets Bay Hatchery	March	6.55	6.47	3/16/2020	no	0.08
2020	Neets Bay Hatchery	April	No DEC for April 2020 per Covid-19 protocol				
2020	Neets Bay Hatchery	May	6.63	6.57	5/13/2020	yes	0.06
2020	Neets Bay Hatchery	June	6.18	6.20	6/24/2020	no	0.02
2020	Neets Bay Hatchery	July	6.31	5.98	7/29/2020	no	0.33
2020	Neets Bay Hatchery	August	6.67	6.20	8/19/2020	no	0.47
2020	Neets Bay Hatchery	September	6.40	6.00	9/16/2020	no	0.40
2020	Neets Bay Hatchery	October	6.64	6.46	10/6/2020	no	0.18
2020	Neets Bay Hatchery	November	7.23	7.16	11/11/2020	yes	0.07
2020	Neets Bay Hatchery	December	6.64	6.60	12/9/2020	yes	0.04
2019	Neets Bay Hatchery	January	6.55	6.58	1/31/2019	yes	0.03
2019	Neets Bay Hatchery	February	6.61	6.50	2/20/2019	yes	0.11
2019	Neets Bay Hatchery	March	6.67	6.73	3/6/2019	yes	0.06
2019	Neets Bay Hatchery	April	6.61	6.46	4/19/2019	no	0.15
2019	Neets Bay Hatchery	May	6.56	6.42	5/13/2019	no	0.14
2019	Neets Bay Hatchery	June	6.81	6.90	6/5/2019	yes	0.09
2019	Neets Bay Hatchery	July	6.42	7.14	7/4/2019	yes	0.72
2019	Neets Bay Hatchery	August	6.45	6.25	8/7/2019	no	0.20
2019	Neets Bay Hatchery	September	6.59	6.27	9/5/2019	no	0.32
2019	Neets Bay Hatchery	October	7.47	7.33	10/3/2019	yes	0.14
2019	Neets Bay Hatchery	November	6.88	6.60	11/7/2019	yes	0.28
2019	Neets Bay Hatchery	December	6.59	6.53	12/11/2019	yes	0.06

Table B-2
Total Residual Chlorine Effluent Limitations

Type of Water	MDEL (µg/L)	AMEL (µg/L)
Fresh Water	18.0	9.0

6. pH

There are no applicable technology-based effluent guidelines for pH from discharges from aquaculture facilities; however the most stringent criteria for pH in fresh waters from applicable state standards is 6.5 - 8.5, with no variation attributable to discharges allowed greater than 0.5 pH units from natural conditions.

pH is not a pollutant of concern in this Permit. The EPA has determined that discharges from fish hatcheries do not have reasonable potential to cause or contribute to an exceedance of the water quality standard for pH, and therefore, no discharge limitation for pH is being proposed by the Permit.

Water Quality Standards for Designated Uses	
POLLUTANT & WATER USE	**CRITERIA**
(20) RESIDUES, FOR MARINE WATER USES: Floating solids, debris, sludge, deposits, foam, scum, or other residues (See note 13)	
(A) Water Supply (i) aquaculture	Residues are not allowed in surface waters of the state, in concentrations or amounts that have the following effects o may impair designated uses; o cause nuisance or objectionable conditions; o result in undesirable or nuisance species; or o produce objectionable odor or taste.
(A) Water Supply (ii) seafood processing	Same as (20)(A)(i).
(A) Water Supply (iii) industrial	Same as (20)(A)(i).
(B) Water Recreation (i) contact recreation	Same as (20)(A)(i).
(B) Water Recreation (ii) secondary recreation	Same as (20)(A)(i).
(C) Growth and Propagation of Fish, Shellfish, Other Aquatic Life, and Wildlife	Residues are not allowed in surface waters of the state, in concentrations or amounts that have the following effects o may impair designated uses; o cause nuisance or objectionable conditions; or o result in undesirable or nuisance species.
(D) Harvesting for Consumption of Raw Mollusks or Other Raw Aquatic Life	Same as (20)(A)(i).
(21) SEDIMENT, FOR MARINE WATER USES	
(A) Water Supply (i) aquaculture	No imposed loads that will interfere with established water supply treatment levels.
(A) Water Supply (ii) seafood processing	Below normally detectable amounts.
(A) Water Supply (iii) industrial	Same as (21)(A)(i).
(B) Water Recreation (i) contact recreation	No measurable increase in concentration of settleable solids above natural conditions, as measured by the volumetric Imhoff cone method (see note 11).
(B) Water Recreation (ii) secondary recreation	May not pose hazards to incidental human contact or cause interference with the use.
(C) Growth and Propagation of Fish, Shellfish, Other Aquatic Life, and Wildlife	Same as (21)(B)(i).
(D) Harvesting for Consumption of Raw Mollusks or Other Raw Aquatic Life	Not applicable.