# Department of Environmental Conservation
# Response to Comments

# For

# Alaska Pollutant Discharge Elimination System

# Individual Permit
# AK0023248 – Alyeska Pipeline Services Company
# Valdez Marine Terminal

## Public Noticed March 28, 2019 – April 29, 2019

## October 31, 2019

**Alaska Department of Environmental Conservation**
**Wastewater Discharge Authorization Program**
**555 Cordova Street**
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# 1 Introduction

## 1.1 Summary of Facility / Permit

Alyeska Pipeline Service Company (APSC) operates the Valdez Marine Terminal (VMT) located at the southern terminus of the Trans Alaska Pipeline System (TAPS) in Valdez, Alaska. The VMT serves as a storage and ship loading facility for crude oil transported by the pipeline and discharges treated wastewater originating from oil storage and handling operations, ship ballast water, and domestic wastewater system. Oily wastewater is directed to the VMT ballast water treatment facility (BWTF) for treatment prior to discharge to the waters of Port Valdez via Outfall 001. Domestic wastewater generated by personnel working at the VMT flows to a small activated sludge sequencing batch reactor for treatment prior to being discharged to the waters of Port Valdez via Outfall 002.

The Alaska Department of Environmental Conservation (DEC) is reissuing Permit AK0023248 – APSC, Valdez Marine Terminal (Permit) for the first time since obtaining primacy from the Environmental Protection Agency (EPA) to issue permits under the authority of the Alaska Pollutant Discharge Elimination System (APDES) Program. The original permit for the VMT was issued by EPA under the National Pollutant Discharge Elimination System in December 1974 and was subsequently reissued in August 1980, May 1989, May 1997, and October 2012. The 2012 Permit became effective on December 1, 2012 with an expiration date of November 30, 2017. APSC submitted a complete and timely application to DEC who subsequently granted an administrative extension for APSC to continue operation under the 2012 Permit until such time DEC could reissue the Permit.

## 1.2 Opportunities for Public Participation

DEC proposes to reissue the Permit after considering all substantive public comments. To ensure public, agency, and tribal notification and opportunities for participation, DEC:

- Identified the Permit on the annual Permit Issuance Plan posted online at: http://www.dec.state.ak.us/water/wwdp/index.htm,
- Notified potentially affected tribes and local governments that DEC would be working on this Permit via letter, fax and/or email,
- Posted a preliminary draft of the Permit on-line for a 10-day applicant review February 28, 2019 and notified tribes, local governments and other agencies,
- Posted the public notice on the DEC public notice web page March 28, 2018 for a 30-day public review on the Draft Permit and Fact Sheet,
- Posted the Proposed Final Permit, Fact Sheet, and Response to Comments (RTC) document on-line for a five-day applicant review on October 22, 2019, and
- Sent email notifications via the APDES Program List Serve when the Preliminary Draft, Draft, and Proposed Final Permits were available for review.

DEC requested comments on the Preliminary Draft documents from APSC, EPA, affected tribes and local governments, National Marine Fishery Service, United States (U.S.) Fish and Wildlife Service, and State agencies including, but not limited to, the Alaska Departments of Fish and Game and Natural Resources, as well as the Prince William Sound Regional Citizens Advisory Council (RCAC). During the public notice of the Draft Permit and Fact Sheet, only APSC and RCAC provided comments.

This RTC document summarizes the comments submitted and the justification for any actions taken or not taken by DEC in response to the comments received.

### 1.3 Final Permit

The Final Permit was adopted by the DEC on October 31, 2019. There were minor changes from the Draft Permit and Fact Sheet after public notice to correct typographical and grammatical errors and to clarify or update information. In addition, DEC incorporated some changes resulting from the outgrowth of comments received and responded to in this RTC. After the close of the public notice period, EPA approved new versions of mixing zone regulations and water quality reports that necessitate updates in the Fact Sheet. In addition, DEC received comments from APSC during the five-day applicant review of the Proposed Final Permit, Fact Sheet, and RTC. Because these comments were in character with comments received during the public notice, DEC considered these comments and made changes to the documents when appropriate (See RTC Section 5). All changes are identified in this RTC document and reflected in the Final Permit and Fact Sheet.

## 2 Comments Received from RCAC

DEC received comments on the Draft Permit and Fact Sheet from RCAC in a letter dated April 26, 2019. Given this is the first reissuance under the APDES Program, there are some distinct differences between the previous 2012 Permit issued by EPA and the proposed Permit issued by DEC that generated comments. Specifically, different requirements are proposed in the Permit for ongoing Environmental Monitoring Program (EMP) Studies and these changes have significant overlap with RCAC missions. Some of these comments have been considered during the previous two reissuances by EPA.

RCAC provided comments on the Permit under authority of 33 U.S. Code 2732(d)(6)(A) that states RCAC shall provide advice and recommendations to the Association (See 33 U.S. Code 2732(c)) on policies, permits, and site-specific regulations related to the operation and maintenance of terminal facilities which affect, or may affect, the environment in the vicinity of the terminal. RCAC also has a duty to monitor under 33 U.S. Code 2732(6)(B), which states RCAC shall monitor through the Environmental Monitoring Committee (See 33 U.S. Code 2732(e)) the environmental impacts of the operation of oil terminals. Under 33 U.S. Code 2732(d)(8), Scientific Work, RCAC is authorized to conduct their own scientific research and shall review the scientific work undertaken by, or on behalf, of the terminal operators as a result of a legal requirement (e.g., permit condition) to undertake that work. Furthermore, to the extent possible, to avoid unnecessary duplication, each Council (RCAC) shall coordinate their independent scientific work with the scientific work performed by, or on behalf of, the terminal operators.

RCAC has been conducting independent monitoring under the Long-term Environmental Monitoring Program (LTEMP) and collaborating with EPA and DEC concerning the scope of the EMP requirements in the Permit. The LTEMP has incorporated expanded analysis of polycyclic aromatic hydrocarbons (PAHs) using 50 analytes (PAH50) that represents the "standard of practice among environmental forensic chemists for hydrocarbon monitoring and oil spill investigation purposes." Over time the objectives of the LTEMP as determined by RCAC and the EMP requirements as determined by the Department have diverged due to significant reduction in hydrocarbons being discharged by the BWTF and observed in sediment samples in

Port Valdez. This trend appears appropriate given the underlying premise in RCAC mission to avoid duplication of effort to the extent possible.

RCAC has commented on the permit documents with emphasis on proposed reductions to the sampling scope and frequency specified for the EMP and the Outfall 001 discharge. RCAC recommends increasing the analytic suite to include PAH50 and 74 biomarkers as they are currently doing under the LTEMP as well as increasing the monitoring frequency. RCAC submitted similar comments during the previous 2004 and 2012 reissuances by EPA. EPA disagreed with the RCAC requests during the previous reissuances as DEC disagrees with them with this reissuance for a facility that has shown marked decreases in hydrocarbon discharges associated with the BWTF discharge as discussed in *Final Report of Environmental Studies in Port Valdez, Alaska, 2018* issued July 2019 (*2018 EMP Report*):

> "The interpretation of temporal and spatial trends in PAH concentrations used here rests on the assumption that if PAH concentrations remain constant or continue to decline from concentrations which in past years have been shown to be associated with at most minor biological and ecological effects, the likelihood of major ecological impacts remains low. Assessments made in this way rely on a major strength of this monitoring program-the 30-year series (1989-2018) of annual PAH determinations in Port Valdez sediments that form the basis for temporal comparisons."
>
> "Because the concentrations of PAH in 2018 are as low or lower than concentrations in 2000 to 2007 when negligible to at most minor biological effects were found to be associated with PAH, we conclude that the likelihood of adverse effects remains low. The sediment PAH concentrations in Port Valdez have in fact, approached background levels with at most, minimal biological effects anticipated (Blanchard et al., 2010, 2011)."

APSC last modified the BWTF in 2011, which resulted in optimized treatment performance for removal of total aromatic hydrocarbons (TAH) and total aqueous hydrocarbons (TAqH) such that limits for either are no longer necessary in the Permit. DEC questions the recommendation by RCAC to expand the EMP when the 30-year history of the EMP Studies suggest it is appropriate to reduce the overall scope of monitoring based on historic study results. Attempting to convince DEC to expand the EMP requirements in the Permit appears to support the RCAC mission to conduct scientific research under U.S. Code 2732(8) more than it supports the Permit objectives of evaluating impacts from the BWTF discharge, which RCAC states is currently low and not likely to adversely impact the environment. DEC considers imposing permit limitations that are unnecessary to be in conflict with appropriate administration of the APDES Program. Further discussion on this general comment is presented in in more detail in the following sections.

## 2.1 Draft Individual Permit Comments by RCAC

### 2.1.1 More Frequent Monitoring of Total Aromatic Hydrocarbons

RCAC commented that Permit Section 1.3 should require TAH in the Outfall 001 discharge to be monitored weekly, at a minimum, rather than monthly as specified in the Draft Permit to allow for direct comparison with past data. RCAC states that reporting the monthly averages using more frequent monitoring is "critical for understanding any

kind of water quality monitoring data" and without it "no legitimate analysis of such data could be made." Furthermore, RCAC suggests that reporting standard deviations should be added to discharge monitoring reports (DMRs) to provide a better understanding of statistical significance of the reported data. In addition, because the BWTF occasionally receives contaminated ballast water multiple times in some months, weekly monitoring is necessary to ensure spikes in TAH concentration are captured during monitoring. RCAC maintains that the request to impose weekly monitoring for TAH is justifiable because APSC is already monitoring TAH more frequently using continuous inline monitoring equipment such that imposing weekly monitoring would not affect sampling costs. RCAC also requests that the limit tables in the Permit include columns for "Reported Value" as the 2012 Permit did to illustrate the need to report both single maximum and average monthly results.

**DEC Response:**

DEC disagrees with the RCAC comment that more frequent monitoring for TAH and reporting monthly averages and standard deviations is appropriate. Per Alaska Administrative Code (AAC) 18 AAC 83.455, monitoring frequencies are developed on a case-by-case basis based on what is appropriate for the regulated activity and whether the monitoring is for compliance with limits or for characterizing the effluent and, possibly for conducting a reasonable potential analysis (RPA) during the next permit reissuance. These are two disparate objectives rather than one, which leads to different monitoring frequencies and reporting requirements. Typically, monitoring for compliance is more frequent than monitoring for characterization. While TAH was a limited parameter with weekly monitoring in the 2012 Permit, it does not have limits in the proposed Permit, but instead, requires monitoring for characterization at a reduced frequency.

The data collected for TAH during the term of the Permit will likely be used to determine whether TAH has reasonable potential to exceed, or contribute to an exceedance, of chronic water quality criteria at the boundary of the chronic mixing zone. The procedure to determine whether a parameter requires water-quality based effluent limits (WQBELs), is based on conducting an RPA per 18 AAC 83.435(c) as described in *Reasonable Potential Analysis and Effluent Limits Development Guide, June 30, 2014* (*RPA/WQBEL Guidance*). The data quality objective for the RPA is to obtain a statistically significant set of discrete data points for calculating parameters such as the average, standard deviation, and coefficient of variation that are used in the RPA. If considered to be still representative, DEC may use historic data as well. Hence, monthly averages and standard deviations are not required to be submitted in DMRs because the RPA requires calculating these statistical parameters using the entire discrete data set comprised of the reported monthly monitoring results and historic data, if appropriate.

Per the *RPA/WQBEL Guidance*, the RPA uses the discrete data points to project the maximum expected effluent concentration (MEC) in the effluent based on the 99 percentile and a 95 percent (%) confidence interval and then accounts for the authorized mixing zone dilution to determine if water quality criteria is exceeded at the boundary of the authorized mixing zone. During the term of the 2012 Permit, APSC collected 118 discrete data points for TAH, which resulted in an maximum observed concentration of 180 micrograms per liter (µg/L), a minimum observed concentration of less than (<) 3

µg/L and an average concentration of 11.5 µg/L. Due to the relatively low observed concentrations of TAH during the term of 2012 Permit, TAH was no longer the driving parameter needing the most dilution to meet chronic water quality criteria such that a limit is not required for TAH in the Permit. Instead, zinc was determined to be the driving parameter for the chronic and acute mixing zones and this resulted in zinc having reasonable potential at the boundary of the respective mixing zones and required development of WQBELs, maximum daily limits and average monthly limits (AML). Hence, zinc is now the WQBEL parameter used for monitoring the effectiveness of the pollution control and has an associated increase in monitoring frequency for this reason; zinc is to be monitored monthly in the Permit where zinc was monitored semi-annually in the 2012 Permit to support the RPA for this reissuance much like TAH is now monitored to support the next RPA. Because TAH no longer has a WQBEL, the monitoring frequency for TAH has been reduced to monthly, which will result in a statistically significant data set of 60 discrete points. DEC has determined that the specified monthly monitoring of TAH will be sufficient for data objectives and adequate to evaluate the discharge performance of the VMT and that weekly monitoring would be superfluous even when frequent ballast water deliveries occur.

DEC evaluated RCAC concern that potential spikes in TAH could be missed with monthly monitoring by evaluating the detention time and reactor hydraulics for key process units in the BWTF, specifically, the 90s Tank and the Biological Treatment Tank (BTT). The working capacity of one 90s Tank is 18.25 million gallons and the BTT is 5.5 million gallons, for a combined volume of 23.75 million gallons while the average recorded flow observed during the last term of the permit was 1.72 million gallons per day (mgd). Therefore, on average the treatment system will have greater than 13 days of detention. Furthermore, because the BTT is aerated it resembles a completely mixed bioreactor, which does not support the likelihood of a spike in TAH concentration occurring in the treatment system let alone a spike being missed by monthly sampling. Again, DEC refers to the 118 data points collected for TAH during the term of the 2012 Permit where the highest observed concentration was 180 µg/L and the average was only 11.5 µg/L because there were significant number of results that were < 3 µg/L. Note that this data includes treatment of the ballast water deliveries highlighted in RCAC comment. Hence, the nature and potential impact of the discharge does not warrant weekly monitoring.

DEC considered the suggestion to include columns in the limits table describing reporting values for maximum daily and average monthly and concluded it is not necessary given monthly average reporting is required for limited parameters. In addition, the Permit Appendix A – Standard Conditions, Section 3.3 pertains to collection of "additional data" and use of this data when "calculating" averages for reporting on DMRs. Again, because monthly averages are not being reported for TAH, Section 3.3 is not applicable to this particular situation. However, Section 3.3 is applicable to those limited parameters with AMLs. Lastly, RCAC indicates that there would not be an increase in sample costs because APSC is already sampling on a more frequent basis using inline monitoring equipment. DEC establishes monitoring requirements in permits that are based on what is necessary for compliance and characterization and does not stipulate requirements just because the permittee can afford it; there are no cost-based requirements in Alaska

Administrative Code (AAC) 18 AAC 83.455. Imposing superfluous requirements because the permittee can afford is not consistent with the DEC implementation strategy for the APDES Program.

No modifications to the Draft Fact Sheet or Permit have been made based on this comment.

### 2.1.2 TAH and TAqH Monitoring Permit Section 2.2.5.1.2

RCAC agrees that based on samples collected in 2014 and 2018 from the affected secondary containment areas (SCAs) it is reasonable to presume that SCA water would meet applicable water quality criteria and using the observation of no sheen as a means to verify this prior to discharge is appropriate. However, RCAC questions whether the data from 2014 and 2018 is sufficient and points out that TAqH did not appear to be analyzed in the 2014 samples used to make the initial determination that the SCA discharge can be considered storm water. RCAC states there have been numerous spills, both reported and not reported, during the life of the facility. TAqH should be analyzed because the analytes in TAqH are less volatile than those in TAH and remain in the environment longer and just because TAH results are below criteria does not necessarily mean TAqH would be also. For these reasons, RCAC recommends that Permit section 2.2.5.1.2 should specify both TAH and TAqH testing for any SCA discharge during an extreme storm event as a best management practice (BMP). RCAC notes that the testing is not meant as a basis for deciding whether or not to discharge water from an SCA as the visual sheen testing is adequate, but instead the results would be used to confirm the associated SCA water currently meets water quality criteria given the concerns that the testing in 2014 and 2018 was insufficient for this initial determination. RCAC comments that the inclusion of monitoring for each extreme event would not impose undue costs because the discharge events would be infrequent.

**DEC Response:**

The above RCAC comment requests additional TAH and TAqH monitoring of SCA containment waters while concurrently noting it is not needed to inform the decision whether or not to discharge water from SCAs and stating the visual sheen observations specified in the Permit is adequate for making this decision. The impetus for additional testing appears to be for confirmation of previous results for TAH and TAqH in 2014 and 2018 and also to demonstrate conditions have not changed since. DEC disagrees that the testing done in 2014 and 2018 is insufficient. This assertion is based on acknowledging that DEC failed to report results for TAqH in the Fact Sheet (See DEC Response to Comment 2.1.2(c)). Additional monitoring in the Permit is conditionally required based on observed new conditions, either observation of sheen or spill in the SCA. The RCAC request for unconditional monitoring is not necessary (Also see response to comment 2.2.3(c)). In response to the portion of the comment justifying the request for additional TAH and TAqH monitoring on the basis that the additional costs would not be onerous for APSC, DEC refers readers to DEC Response in 2.1.1 with respect to imposing superfluous permit requirements.

DEC has not modified the Permit in response to this comment.

### 2.1.3 Address Fire Foam Fighting Foam in Permit Section 2.2.5.1.9

RCAC commented that APSC stores the use of aqueous firefighting foam (AFFF) containing polyfluoroalkyl (PFAS) at the VMT and was recently informed by APSC staff that any discharge of such AFFF, for testing purposes or otherwise, is now considered a spill and must be reported to the Spill Prevention and Response (SPAR) Division of DEC. RCAC continues by noting that Permit Section 2.2.4.1.9 does not prohibit the discharge of AFFF for testing purposes and only mandates that APSC "must maintain BMPs to limit, manage, and control discharges from the jockey pump, firewater pump maintenance and testing, berth fire foam system testing, and hydrant maintenance and testing. RCAC is concerned that AFFF will enter the industrial wastewater system (IWS) and be discharged, noting the BWTF is not designed to treat PFAS. RCAC asks what plan does the DEC, Division of Water have for ensuring it does not contaminate the environment surrounding the VMT, through the terms of this Draft Permit or otherwise?

**DEC Response:**

Currently, there is no approved surface water quality criteria established for PFAS. SPAR Contaminated Sites and the DEC Drinking Water Programs currently have oversight over PFAS concerns and have adopted health-based action levels and guidance applicable to groundwater and surface water used for drinking water per Technical Memorandum updated on April 9, 2019. However, this action level is currently not applicable to discharges as it would require adoption of the criteria in 18 AAC 70 – Alaska Water Quality Standards "and" approval by EPA for it to be used in APDES permits. Nonetheless, the APDES Program acknowledges PFAS is a contaminant of emerging concern warranting consideration. The APDES Program is addressing this comment by modifying Permit Section 2.2.5.1.9 Terminal Water Fire System Tests with the revised language shown below with additional language bolded and underlined and deleted text struck out:

> "The permittee must maintain BMPs to limit, manage, and control discharges from the jockey pump, firewater pump maintenance and testing, berth fire foam system testing, and hydrant maintenance and testing. ~~**The BMPs shall, to the extent possible, (1) direct discharges to the oily water sewer system, (2) minimize fire water discharges during snowless conditions, (3) prevent discharges into No Name and Dayville Creeks, (4) discharge when the ground surface is covered with snow and/or ice, and (5) minimize floating residue from the berth fire foam testing system.**~~ **The uncontrolled release of Aqueous Fire-fighting Foam (AFFF) containing perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic (PFOS) to the environment is not permitted unless such action is warranted by an emergency. Any non-emergency action associated with AFFF must be performed with appropriate controls to prevent releases to the environment, including storage, training, and maintenance of the firefighting system. If an environmentally suitable substitute becomes available and approved for use by other agencies having jurisdiction, APSC must remove, dispose, and replace the legacy AFFF.**"

In addition, if surface water criteria for AFFF is established during the permit term, DEC can require additional monitoring for AFFF at that time to inform future permit decisions

per Permit Section 1.5.3 if this information is not already obtained due to requirements from the lead DEC programs.

### 2.1.4 Port Valdez Reference in Permit Section 2.3 EMP

RCAC commented that the waterbody of interest, Port Valdez, should be mentioned somewhere in Permit Section 2.3 describing the EMP. RCAC suggests that the first sentence be edited to read, "The Permit requires an EMP focusing on the collection and analysis of PAH and ambient water samples for zinc *in Port Valdez* to assist in future permit development."

**DEC Response:**

DEC considers this comment as stylistic comment, rather than substantive. Both the Fact Sheet and the Permit identifies Outfalls 001 and 002 as discharging to Port Valdez Alaska. Therefore, Permit Section 2.3 presents no ambiguity in describing the EMP as investigating the effects of the Outfall 001 discharge on the surrounding sediments (e.g., Port Valdez). DEC is not concerned that the permittee would conduct an EMP study in some other waterbody.

No modifications to the Permit or Fact Sheet have been made as a result of this comment.

### 2.1.5 EMP Sampling Twice Every Five Years in Permit Section 2.3.1.1,

RCAC commented it does not support changing from annual EMP sampling to twice every five years as specified in Draft Permit Section 2.3.1.1. RCAC states at a minimum, the sampling should be biennial so a robust dataset is obtained for evaluating trends and would more appropriate align with the purpose of the monitoring. RCAC presumes the "…primary purpose of the monitoring is to be able to detect anomalous events and/or distinguish the onset of negative trends during the years of delayed data acquisition." RCAC's recommendation for more frequent sampling is accompanied by a statement acknowledging that BWTF outputs are at historic low concentrations and that impacts appear minimal (but not zero). RCAC presumes further the rationale for twice per permit term is to allow for time to evaluate data and prepare for the next permit application and then indicates their perspectives need to be explicitly stated in the Permit. Otherwise, the permittee "…could just sample the first two years and take a three-year respite." In addition, RCAC comments that "it does not seem too onerous to require annual monitoring in return for permitting the discharge of oil effluents into the Port Valdez environment" but then indicates, at a minimum, it should occur every other year.

**DEC Response:**

RCAC interjects the envisioned purpose for the study by RCAC in place of the purpose stated by DEC in the Permit and Fact Sheet. The purpose for the EMP per DEC is to identify that the discharge is not impacting sediments surrounding Outfall 001 by conducting a statistical comparison to past data and comparing results to established sediment quality values (SQVs). DEC is imposing monitoring reductions for the EMP Study based on the wealth of data collected over 30-years. Hence, the EMP is focused on whether the BWTF discharge is having an adverse impact on the environment and over the years the EMP Study has conclusively shown there is minimal impacts occurring such that continuing, or expanding, the EMP Study is not necessary for DEC objectives.

RCAC incorrectly states the monitoring frequency as twice in five years. Per Permit Section 2.3.1, the EMP requires data collection during the first and third full-calendar years following reissuance of the Permit (e.g., years one and three). DEC has determined that the two required sampling events are appropriately spaced throughout the permit term and will meet the purpose of the EMP. Additionally, DEC has determined that while annual EMP monitoring might not be onerous, annual data collection is not needed to accomplish the stated purpose of the EMP. In addition, see DEC Response to Comment 2.1.1 with respect to imposing superfluous permit requirements.

No changes to the Permit or Fact Sheet have been made based on this comment.

### 2.1.6 PAH50 and 74 Biomarkers Analysis in Permit Section 2.3.1.4

RCAC submitted a lengthy comment (17 of 38 pages total) recommending Permit Section 2.3.1.4 specify a PAH50, 74 biomarkers, and more frequent monitoring for the Outfall 001 discharge (monthly) and the Port Valdez sediment samples (biennially) required by the EMP. RCAC asserts that a more the more extensive suite of PAH50 and 74 biomarkers would more defensively distinguish between hydrocarbons from Outfall 001 from other sources of potential pollutants such as past oil spills, boat harbor fuel spills, or pyrogenic sources.

Based on previous unsuccessful attempts to have EPA expand PAH monitoring, RCAC submitted a white paper describing how the recommended approach is the standard of practice in the field of forensic chemistry and the importance of measuring PAHs and biomarkers to distinguish between pollutant sources. “Without measuring the parent and alkylated PAHs…, the EMP can only speculate on the precise source of PAH contamination in the Port Valdez ecosystem.” RCAC also presents ongoing research on the toxicity of various PAH homologues, although no new and approved criteria is currently available. RCAC notes that the main argument for expanding PAH testing to the full list of PAH50 parameters is that the results would lead to a more accurate characterization and identification of the source(s) of potential pollutants in the Outfall 001 discharge and surrounding sediments. Furthermore, adding the 74 biomarkers to the sampling regime would similarly increase the ability to characterize and identify sources of potential pollutants because the biomarker parameters are more resistant to weathering and degradation over time than the PAH50 parameters. Lastly, RCAC provides a cost estimate suggesting economic considerations is justification for the expansion.

**Background:**

The 2004 Draft Permit by EPA initially included requirements for monitoring alkylated PAH homologues based on recommendation by RCAC. The expanded PAH monitoring was opposed by APSC in Draft Permit review comments noting the collection, analytical testing, and reporting of PAH homologues was not technically justified and no comparative standards existed that were scientifically appropriate. The comment prompted EPA to reassess the requirements and subsequently removed these requirements based on EPA general concurrence with the technical arguments presented by APSC. RCAC indicated their opposition to the removal of the monitoring requirements in a letter to EPA and DEC dated June 28, 2004 stating “comprehensive monitoring has always been and always will be the price of allowing the willful discharge of pollutants into public waters: Although RCAC requested an informal appeal with

DEC, the request was ultimately denied and the 2004 EPA Permit did not include expanded PAH and biomarker requirements.

Again in 2012, RCAC requested expanded PAH and biomarkers be included in the EPA Permit in their comments on the Draft Permit. EPA responded that it had several reservations with monitoring alkylated PAH homologs citing uncertainty of the reliability of quantified results and the availability of standards for instrumentation calibration. In addition, given the lack of criteria for PAH alkylated homologs, such data would be difficult to evaluate and would not provide an effective indicator of impacts from the discharge. EPA indicated to the extent that RCAC is concerned with potential toxic effects of parameters not specifically monitored, the ongoing chronic whole effluent toxicity (WET) testing would evaluate overall toxicity including those that are specifically monitored or for which no water quality criteria currently exist. The Final 2012 Permit did not include monitoring for expanded alkylated PAH Homologs.

**Current DEC Response:**

While concurring that the additional monitoring requested by RCAC may provide academically interesting information, DEC maintains that APDES permits must be based on applicable laws and regulations rather than third-party research objectives. As noted in previous responses, current state water quality criteria approved by EPA and other exposure thresholds such as SQVs are the common metrics DEC uses for demonstrating environmental protection. Reliability and uncertainty of the data aside, the fact that one cannot compare results to criteria would be a regulatory flaw leading to an arbitrary conclusion of environmental impacts. The measurement of the additional PAH50 and 74 biomarker parameters may provide additional information to RCAC but there would be no direct link between these results and currently established criteria allowing for the permittee to demonstrate whether environmental impacts are occurring per the EMP objective. As EPA stated previously, the ongoing chronic WET monitoring requirements account for toxicity from all parameters in the effluent and provide a direct measure of chronic environmental impact to aquatic life.

DEC finds it additionally difficult to argue for more extensive PAH50 and 74 biomarker monitoring to be added to the Permit at a time when both the operational practices at the VMT and current studies indicate PAH concentrations in the sediments in the vicinity of the BWTF discharge have been trending lower and approaching background levels. As noted in the Fact Sheet, the transition to double hull oil tankers in recent years has significantly reduced inputs of hydrocarbons to the BWTF and the treatment modifications installed in 2012 have improved hydrocarbon removal efficiencies. To penalize a permittee for good performance and environmental stewardship, reducing and targeting the elimination of pollutants, would serve as a disincentive for the pollution control strategy promoted by the APDES Program.

The following conclusions from the *2018 EMP Report* describe the general stability and improvement of environmental conditions in the vicinity of the BWTF discharge in recent years for which the reduction in EMP requirements is based:

- "…during the period 2000 to 2007 PAH concentrations were associated with negligible to at most minor effects on benthic infauna with some minor faunal effects detected near the VMT…"

- "…PAH concentrations in sediments in 2012 through 2018 are generally as low or lower than concentrations in 2000 through 2007…"
- "As in other years since 2012 this supports the conclusion that the likelihood of adverse biological effects associated with PAH in Port Valdez sediments is generally low."
- "TARO (i.e., TAH) is only moderately elevated near the discharge after 1998 and continues to remain comparatively low through 2018."
- It appears that as VMT-associated inputs decline, the PAH patterns in various parts of the fjord become more alike and separation between near-shallow and far-deep stations is less distinct."
- It is clear that evidence of PAH associated with the BWTF effluent discharge is largely limited to stations near the VMT. The spatial PAH distribution also support the tentative analysis that in deep-water sediments of Port Valdez the PAH are primarily attributable to refined petroleum products with some additional contribution from BWTF." and
- The decline in hopane concentrations away from the VMT indicates that refined petroleum (distillate) is the major source of residues in deep sediment."

There is a clear pattern of less contaminated sediment overtime and with distance from the VMT approaching background and with less contribution from the BWTF with distance and depth. Instead of expanding the EMP by adding PAH50 and 74 biomarkers to the testing requirements, DEC believes the appropriate approach is to systematically reduce the EMP Study requirements, when appropriate, to be commensurate with the environmental impacts, which is reportedly low at this time.

No modifications to the Permit or Fact Sheet have been made in response to this comment.

## 2.2 Draft Fact Sheet Comments by RCAC

### 2.2.1 Fact Sheet Should Include Acronyms Appendix

RCAC commented that the Fact Sheet should include an acronyms appendix, like the Permit does, so the many acronyms can be readily referenced.

**DEC Response:**

DEC's current practice is to include an acronyms appendix in the Permit document, which is also applicable to the Fact Sheet. DEC has chosen this approach because these closely related documents are made available and reviewed concurrently thus negating duplicating an appendix in both documents.

DEC has not revised the current Permit documents in response to this comment but notes that it is considering whether or not to include an acronyms list in the front of the Fact Sheet in future permit issuances.

### 2.2.2 Miscellaneous Comments on Fact Sheet Section 2.1

RCAC presented the following comments regarding the first paragraph of Fact Sheet Section 2.1:

a. The fact that VMT began operations in 1977 should be included somewhere in this section.
b. The pipeline throughput information may not be accurate and should be corrected to note the specific measurement location (TAPS Pump Station 1 or other location) and that the average daily throughput at Pump Station 1 has never been less than 500,000 barrels per day (bpd).

**c.** The discussion of where the ballast water treated by the BWTF comes from should be expanded to note that ballast water deliveries from double hull tankers may include petroleum contamination because these vessels sometimes take on additional ballast water in their crude storage tanks when sea conditions demand more ballast be carried for stability.

**DEC Response:**

DEC considered the above comments "a" through "c" and disagrees with RCAC that the fact sheet should be revised. Each unique comment is addressed below:

a. The additional detail does not affect the content of the Fact Sheet and the text as provided is correct and has been generated based on information provided by and subsequently reviewed APSC prior to the public notice of the Draft Fact Sheet.
b. The current text as written is accurate. As of June 2019 the annual average production is reported as 499,103 bpd. Where the measurement is made has no bearing on DEC decisions.
c. The additional detail does not affect the content of the Fact Sheet and the general description is correct and the level of detail is adequate for an introduction to the facility.

No modifications to the Permit or Fact Sheet have been made as a result of these comments.

### 2.2.3 Miscellaneous Comments on Fact Sheet Section 2.1.1.1

RCAC presented the following comments on Fact Sheet Section 2.1.1.1:

a. RCAC noted it is not clear what the "raw water" mentioned in the second paragraph of Fact Sheet Section 2.1.1.1 is and this should be clarified. The comment further notes that raw water is not mentioned again in this section or elsewhere the Fact Sheet and asks if the raw water originates from "boiler blowdowns and scrubbing units, and process water" mentioned later in this section?
b. RCAC noted that the third paragraph in draft Fact Sheet Section 2.1.1.1 mentions groundwater" is infiltrating into the IWS, but this should not be happening because the IWS is supposed to be a closed system, at least in regards to groundwater infiltration. The comment continues by questioning whether groundwater is the wrong term or is surface water inflow is correct. RCAC requests clarification whether groundwater is actually infiltrating into the IWS and how and where this is happening, or if this groundwater is actually surface water inflow or some other type of input to the BWTF.
c. RCAC noted that the fifth paragraph in Fact Sheet Section 2.1.1.1 describes testing that was done to measure hydrocarbon concentrations in storm water from the

SCAs at the terminal but that more information is needed to understand if the results support the proposal to allow storm water to be pumped out of the SCAs during extreme storm events. The request for additional information asks the following questions:

i. What specific SCAs were sampled in 2014 and 2018 (e.g. Dike Cells 1-7 in the East Tank Farm)?
ii. Were all SCAs sampled where storm water might be diverted during a future extreme storm event (e.g. East Tank Farm, 90s Tanks, and Diesel Tanks)?
iii. What were the limits of quantitation (LOQ) in 2014 and 2018? How many samples were taken in 2018 (we assume nine)?

RCAC ended the comment by noting it doesn't necessarily oppose the proposal to divert storm water from the SCAs during extreme storm events but wants to ensure thorough testing was performed to justify such actions.

**DEC Response:**

DEC considered RCAC comments "a" though "c" and provides individual responses in the following paragraphs:

a. The description in Fact Sheet Section 2.1.1.1 works best when reading the text as written and referring to Figure A-3 while reading as indicated. Per Figure A-3, raw water is treated to produce water for operations such as potable and utility water, boilers and scrubbers, and process water utilized by the terminal. DEC has not revised the Fact Sheet in response to this comment.
b. Similar to raw water, DEC includes infiltration based on the application submitted by the permittee and provides a reference to Figure A-3, which shows an average of 4,200 gallons per day (gpd) of infiltration entering the IWS. Regardless of attempts to make a collection system liquid-tight, collection systems are rarely perfectly sealed. In addition, DEC understands that the IWS associated with the West Tank Farm has not been renovated because it is out-of-service and not necessary to renovate it to be liquid tight because no oil is being stored at that location as coordinated through DEC SPAR. Given the estimated infiltration is less than 1 % of the overall flow into the IWS, DEC considers this to be a de minimis volume entering the collection system and not a concern. DEC has not revised the Fact Sheet in response to this comment.
c. The 2014 SCA sampling consisted of nine samples collected from the East and West Tank Farms with one sample each being collected from the SCAs for Tanks 1 & 2, 3 & 4, 5 & 6, 7 & 8, 9 & 10, 11 & 12, and 13 & 14 in the East Tank Farm and for Tanks 15 & 16, and 17 & 18 in the West Tank Farm. All 2014 samples were tested for TAH and TAqH with three of the TAH results having detectable concentrations of 6.0, 6.3, and 6.6 µg/L. All remaining TAH results were reported as being less than the LOQ of 3.0 µg/L. For TAqH, all results except one were less than the LOQ and the detectable samples was reported as 0.45 µg/L. The repeat samples in 2018 excluded the East Tank Farm since it has been taken out-of-service. The six samples were analyzed for TAH and TAqH with all results below detection using sufficiently sensitive methods.

Although only one TAqH result was above detection, DEC acknowledges Fact Sheet Section 2.1.1.1 should have included discussion on the TAqH results from 2014 and explicitly indicated which SCAs were sampled. In addition, DEC discovered a typographical error for the highest reported results for 2014 TAH where the Fact Sheet indicated the maximum was 8.6 µg/L where the corrected maximum is 6.6 µg/L. Therefore, DEC is modifying the paragraph in Fact Sheet Section 2.1.1.1 sto read as follows with the new text shown underlined, in bold and deletions in strike-out:

> "As stated previously, the SCA water is expected to be uncontaminated under normal conditions due to adherence to stringent best management practices (BMPs) at the VMT such that it likely meets water quality criteria prior to treatment in the BWTF. In support of this assertion, APSC submitted analytical results for total aromatic hydrocarbons (TAH) and **total aqueous hydrocarbons (TAqH)** for nine water samples collected from terminal SCA **(one per each SCA in the East and West Tank Farms)** in 2014. Review of the analytical results shows that six of the results were below the limit of quantitation (LOQ) and the highest of the remaining three results was ~~8.6~~ **6.6** µg/L, which is lower than the water quality criteria of 10 µg/L for TAH. **Only one of the nine TAqH results was detectable at 0.45 µg/L, which is less than the water quality criteria of 15 µg/L.** In September 2018, APSC collected **seven** confirmation samples from each of the same SCAs **in the East Tank Farm only (the West Tank Farm is out-of-service)** and analyzed them for TAH and TAqH. All 2018 confirmation sample results were below LOQs…"

### 2.2.4 Corrections for BWTF in Fact Sheet Section 2.1.2.1

RCAC commented that corrections need to be made to Draft Fact Sheet Section 2.1.2.1 as summarized on a paragraph by paragraph bases below:

a. Paragraph 1: RCAC comments that this paragraph be modified to note the two operational 90s tanks (Tank 93 and Tank 94) are used both for ballast water storage and gravity separation and that the BWTF also includes one recovered crude oil tank (Tank 80).
b. Paragraph 2: RCAC comments that all references to the "80s tanks" should be changed to "Tank 80" as the other 80s tanks are no longer in service and have been removed. RCAC additionally comments that a new sentence should be added after the existing third sentence to note that oil skimmed from the 90s tanks is piped over to Tank 80.
c. Paragraph 3: RCAC comments the term "charge stream" in this paragraph should be changed to "waste stream" because the contaminated waste stream is injected with polymer.
d. Paragraph 4: RCAC comments the word "microbial" should be added ahead of the word "starvation" in this paragraph to better describe what is starving and the word "sporadically" should be added ahead of the phrase "experiencing algae blooms during summer" because the blooms don't happen every summer.

**DEC Response:**

DEC has considered RCAC comments "a" through "d" above and concurs with only comment "b". Accordingly, each location where text describes "the 80s Tank" has been replaced with Tank 80. The fourth and fifth sentence in paragraph two now reads:

> The recovered oil from **~~the 80s tanks~~ tank 80** is routed to the oil transfer system for loading onto tankers. **~~The 80s tanks~~ Tank 80** also enable**s** additional gravity separation of the wastewater from the recoverable oil with the separated wastewater routed back to the 90s tanks for treatment through the BWTF.

DEC does not concur with the RCAC comments associated with paragraphs 1, 2, and 4. The additional detail does not affect the content of the Fact Sheet or DEC decisions and the text as provided is correct and has been generated based on information provided by and subsequently reviewed by APSC prior to the public notice of the Draft Fact Sheet. Hence, 90's tanks is the terminology used by APSC during operations and is appropriate to have parallel terminology in the Fact Sheet. Algal blooms do occur during the summer whether sporadic or not. Starvation is qualified in the existing text as "low organic loading relative to hydraulic loading." Lastly, charge stream is the correct term for a waste stream that has been "charged" with chemical addition to enhance removal efficiency in the Dissolved Air Flotation (DAF) system.

No other modifications to the Fact Sheet have been made as a result of these comments other than for "Tank 80."

### 2.2.5 Corrections to Fact Sheet Section 2.1.3.1 Table 1

RCAC commented that a number of corrections should be made to Table 1 in in Draft Fact Sheet Section 2.1.3.1. RCAC notes that:

a. The title of the Observed Range column should say "Avg." not "Ave"
b. Within the Observed Range column there are a bunch of numbers in bold face that don't need to be and one unnecessarily italicized number.
c. RCAC additionally notes that in Note 3 the word "associated" should be deleted because it is redundant.

**DEC Response:**

DEC considered RCAC comments for Table 1 and made the following minor revisions to the Fact Sheet:

a. The term "Ave" was changed to "Avg" in both Table 1 and Table 2.
b. The word "associated" was removed from Note 3.
c. RCAC failed to accurate describe which table entries were incorrectly bolded or italicized for DEC to respond. Therefore, DEC conducted an open-ended review of both Table 1 and Table 2 and found that all bolded values and all italicized values were correct. No other modifications to the Fact Sheet have been made based on these comments.

### 2.2.6 Corrections to Fact Sheet Section 2.1.3.3.1

RCAC commented that following corrections are needed in the sixth sentence of the second paragraph of Fact Sheet Section 2.1.3.3.1. RCAC's suggested changes are shown next in italics, "On average, the $BOD_5$ mass discharge *was* 13 ounces per day (oz/d) and for TSS it *was* 5 oz/d."

**DEC Response:**

DEC concurs with the above recommended changes and has incorporated them into the revised Fact Sheet.

### 2.2.7 Expand Discussion of BWTF and PAH50 in Fact Sheet Section 2.2

RCAC provided multiple comments for Fact Sheet Section 2.2 as summarized below:

a. RCAC comments that although the statement "As previously discussed, over time the treatment efficiency of the BWTF has increased." is true, the referenced improvements were not previously discussed the Fact Sheet and should be discussed before such a statement is made.
b. RCAC comments this section is missing important contextual information needed to fully understand the results of the permit-mandated EMP and, as previously stated in Comment 2.1.6, advocates the EMP testing schedule be expanded to include PAH50 parameters. The comment notes that while the findings of previous EMP Studies may be true based on the parameters considered, this section should acknowledge that monitoring of additional PAHs may contribute to an improved understanding the overall toxicity of the BWTF effluent.
c. RCAC comments that the statement "widespread persistence of PAH in the sediments is not observed" is not accurate and should be deleted from this section. As a basis for this statement RCAC notes the results of previous EMP Studies, and RCAC LTEMP Studies in Port Valdez, indicate the persistence of PAHs in sediments, albeit at low concentrations.

**DEC Response:**

DEC has considered RCAC comments "a" through "c" above and provides the following responses.

a. The decline in throughput and optimization of treatment performance was discussed, albeit briefly, in the first paragraph of Fact Sheet Section 1.2.1.2. To provide a more direct link to this previous discussion, DEC has modified Fact Sheet Section 2.2, second sentence to read:
"As previously discussed **in Section 2.1.2.1**, overtime…."
b. The response to the comment concerning expanding the EMP to include PAH50 and 74 biomarkers is provided in Section 2.1.6 in this RTC document. Over time the treatment efficiency of the BWTF has increased while the annual volume of the discharge has significantly decreased. The benefits of the overall mass reduction of hydrocarbons are exemplified by the sediment monitoring results obtained in recent years. No modification to the Fact Sheet has been made as a result of this comment.

c. DEC applies the definition for persist per 18 AAC 70.990(44), persist "means the ability of a substance or chemical not to decay, degrade, transform, volatilize, hydrolyze, or photolyze." Because PAH concentrations have been observed to be decreasing overtime and are approaching background concentrations, PAH are not persisting based on the definition applied from the Alaska Water Quality Standards. No modification to the Fact Sheet has been made as a result of this comment.

### 2.2.8 Mixing zone pH and Word Choices in Fact Sheet Section 3.3.1.1

RCAC commented a correction is needed to the first sentence of the first paragraph of this section because pH was not identified by the effluent characterization (Fact Sheet Section 2.1.3) as a parameter potentially requiring a mixing zone. RCAC additionally commented that the word "side" should be corrected to "sides" in the last sentence of the second paragraph.

**DEC Response:**

Fact Sheet Appendix B, part B.2.4.3 establishes limits for pH of between 6.0 and 9.0 in the Permit because the permittee has experienced difficulties in meeting applicable criteria at the point of discharge due, in part, to seasonal influences from algal blooms. Therefore, DEC includes pH in the authorization for the chronic mixing zone to allow for minor exceedances at the point of discharge. Based on this comment, DEC also reviewed Fact Sheet Section 2.1.3.1.1 that discusses characterization for pH and discovered there was no mention of inclusion of pH in the mixing zone. Therefore, DEC has added the following sentence at the end of last paragraph of this section that reads:

> "**However, because pH is observed to exceed water quality criteria, pH is a parameter under consideration for inclusion in the mixing zone.**"

DEC reviewed the use of the word "side" in the last sentence of the second paragraph in Fact Sheet Section 3.3.1.1 and found the current wording to be correct. The modeling is conducted in the prevailing downstream current direction with the discharge assumed to occur on that side of the diffuser array only. DEC has not modified the Fact Sheet based on this comment.

### 2.2.9 Regulatory Size Constraints Fact Sheet Section 3.3.3

RCAC commented that Fact Sheet section 3.3.2.1 describes the acute mixing zone as measuring 58 m long whereas the last paragraph of Fact Sheet Section 3.3 refers to measuring 29 m long for the purpose of calculating the amount of time an organism would spend in it. RCAC notes that perhaps DEC is assuming that the organism would only be exposed to the BWTF effluent on the down current side of the mixing zone and that this is not an unreasonable assumption provided it is clearly stated in this paragraph.

**DEC Response:**

RCAC is correct in their interpretation that a drifting organism will only be exposed to effluent in current direction and the overall size of the mixing zone accounts for both current directions. DEC concurs with the RCAC recommendation to more clearly describe the portion of the acute mixing zone where drifting organisms are may be exposed to lethality from the BWTF effluent and has modified the first sentence in the

third paragraph of Fact Sheet Section 3.3 with bold and underlined additional text as shown below:

> For the Outfall 001, the exposure time is calculated by dividing the length of the mixing zone (29 m **in the down current direction**) by the 10th percentile current (0.02 m/s). .

### 2.2.10 Unsupported Conclusions in Fact Sheet Section 3.3.9

RCAC commented that multiple conclusions made in the second paragraph of Fact Sheet Section 3.3.9 are speculative and should be deleted from the document. The comment specifically referenced the second and third sentences of the second paragraph; referencing the historical effects of the BWTF discharge on the surrounding water, sediment chemistry, and biology; and noted they are overstated. RCAC provided example language for DEC to consider.

**DEC Response:**

DEC has reviewed the referenced paragraph and agrees with RCAC that as currently written the language melds multiple thoughts in a matter that implies the studies have direct relationship to stated conclusions when it was intended to be anecdotal. DEC has modified the second and third sentence in the second paragraph that now reads:

> "During this lengthy period of studying water and sediment chemistry and effects on biology, **there has been an observed decline in sediment concentrations of PAH that are approaching background levels. The PAH sediment concentrations are less than 1/10th of the Effect Range Low (ERL) sediment criteria (Long 1998) suggesting impacts to aquatic wildlife are negligible. Accordingly, the discharge is not expected to cause** a reduction in the Port Valdez fish or shellfish populations,…"

### 2.2.11 Clarification of Monitoring Frequency in Fact Sheet Section 4.3.1.2

RCAC commented the last sentence of this section is confusing and seems to indicate that invertebrate species toxicity testing could only occur from December through February or June through August. RCAC asks if this means no invertebrate testing would occur or be required from September through November or March through May and based on the monitoring frequency information specified in Fact Sheet Section 4.3.2 invertebrate testing is required quarterly.

**DEC Response:**

DEC has reviewed Fact Sheet Section 4.3.1.2 in response to this comment and sees no conflicts with the required monitoring schedule for invertebrate species which specifies quarterly testing. The referenced timeframes in the RCAC comments is merely indicating typical species availability. No changes have been made in response to this comment.

### 2.2.12 Map Replacement for Appendix A, Figure A-1

RCAC commented that the map in Appendix A, Figure A-1 is insufficient and should be replaced with an improved version. RCAC recommends the replacement map be similar to the one presented in Figure 6 of APSC's 2017 renewal application, but with an enlarged extent showing the entire terminal, the locations of Outfalls 001 and 002 with

their respective mixing zones, and identify the locations of the BWTF and the sewage treatment plant.

**DEC Response:**

DEC concurs the figure could be improved and has revised Figure A-1 to show the recommended changes utilizing an air photo. However, DEC did not concur with all of the recommended facility identifications and primarily emphasized mixing zones.

# 3 Comments Submitted by Alyeska Pipeline Service Company

DEC received comments on the Draft Permit and Fact Sheet from APSC in Government Letter 42385 dated April 29, 2019. APSC comments focus on two general categories including revised descriptions for various features and requested revisions to the limitations and monitoring requirements required by the Permit.

## 3.1 Draft Individual Permit and Fact Sheet Comments

### 3.1.1 Limitations and Monitoring Requirements, Permit Table 2 and Table 3

APSC requests that the air strippers referenced in Permit Table 2, and Permit Section 2.2.5.1.7, be referred to as the BTT air strippers to avoid confusion with the 7-tray air strippers located downstream of the DAF cells. APSC additionally commented that Table Note 3 should reference Section 1.4, not Section 1.6, for chronic WET requirements.

**DEC Response:**

DEC concurs with the above with the above recommendations and has modified the Permit accordingly. In addition, the Fact Sheet has been modified in those tables and sections where these comments apply for the BTT air strippers. [Once FS and P are available provide FS references]

### 3.1.2 Limitations and Monitoring Requirements, Table 3

APSC commented that the increase in monitoring frequency from quarterly to monthly parameters will likely result in APSC's inability at times to meet the 8 hour hold time for analyses due to flights from Valdez to Anchorage often being delayed or canceled. APSC request the ability to extend the hold time to 24 hours as they understand this is common for other remote facilities in Alaska.

**DEC Response:**

Although APSC did not indicate which parameters require 8 hours hold time, DEC assumes that it is the bacteria fecal coliform and enterococci. DEC is unaware that other domestic wastewater discharge facilities have been granted such extension and such extensions could only be issued by EPA under the jurisdiction of Title 40 of the Code of Regulations, Part 136 (40 CFR 136). DEC believes APSC may be indicating the variance that the DEC Drinking Water Program provides to remote communities for their bacteria monitoring of public water systems, which is not under the jurisdiction of 40 CFR 136. Unfortunately, DEC does not have the authority to grant exemptions to holding times required under the methods approved by 40 CFR 136, unless the methods themselves

allows for such exemption. DEC recommends early sample collection to allow for multiple attempts during the month to help ensure compliance.

No modification to the Permit or Fact Sheet have been made as a result of this comment.

### 3.1.3 Chronic WET Monitoring Permit Section 1.4.2 and Fact Sheet Section 4.3.2

APSC indicates that there are new species required for testing and an initial quarterly monitoring frequency is appropriate for this reason. However, APSC requests the chronic WET monitoring frequency for vertebrate species specified in the Draft Permit be changed to once/year for the entire permit life and for invertebrate species be changed to quarterly for the first year followed by annual monitoring for the remaining term of the Permit. This request for frequency reduction is based on 30 years of WET testing results, and more recently, results from January 2014 to April 2017 where the highest reported chronic toxicity unit ($TU_c$) was 15 for invertebrates and the average for all 62 test results was 1.72 $TU_c$. For vertebrates, there were no observation of chronic toxicity endpoints for all chronic WET tests during this period. Alternatively, if DEC requires additional data points for analysis for the next reissuance, APSC requests the vertebrate species monitoring frequency be changed to semi-annually instead of quarterly for the entire permit term and invertebrate species monitoring be changed semi-annually, instead of quarterly, for all years beyond the first year for the Permit.

**DEC Response:**

Per 18 AAC 83.455(b), the Department will establish requirements to report monitoring results, including frequency of require reports, on a case-by-case basis depending on the nature and effect of the discharge. Per 18 AAC 83.455(a)(2), the permit must include requirements for monitoring and reporting that include the type, interval, and frequency of monitoring required to yield data that are representative of the monitored activity. In general, DEC bases frequencies on whether the parameter has a limit or is being monitored to collect data to inform future permit decisions (e.g., whether limits are required through the RPA). For example, parameters with limits tend to be monitored more frequently (e.g., monthly) due to the necessity to demonstrate compliance. Whereas, parameters that are being monitored to inform future permit decisions tend to have the same, or less, frequency depending on how likely the parameter could become the driving parameter during the next reissuance and require a WQBEL. Parameters requiring a WQBEL are typically the parameters that are the driving parameter for sizing the mixing zone (i.e., the parameter needing the most dilution to meet water quality criteria).

During development of the Permit, DEC conducted an RPA on three parameters that had the potential to be the driving parameter of the chronic mixing zone: zinc, TAH, and chronic toxicity. Using the most sensitive species observed in the chronic WET testing (purple sea urchin), DEC determined after applying a reasonable potential multiplier (RPM) on the maximum observed toxicity of 16 $TU_c$ out of 24 test results that chronic toxicity was a close second to zinc for being the driving parameter. RPMs are sensitive to the number of data points evaluated such that more data results in a smaller RPM. The chronic WET testing frequency specified in the Draft Permit was developed to document permit compliance for zinc and provide TAH and chronic toxicity data for future permit reissuances. While DEC understands APSC's desire to reduce the overall number of

WET tests required under the Permit, DEC notes that the quarterly sampling frequency specified in the Draft Permit is intended to provide a sufficient number of samples to adequately evaluate the nature and effect of the effluent during reissuance. Thus, the recommended quarterly sampling interval specified in the draft permit would result in 20 data points and provide a more statistically significant data set to evaluate against zinc and TAH with 60 data points each. DEC believes further reduction for the invertebrate chronic WET monitoring would be ill-advised as the invertebrate species are typically more sensitive. However, DEC agrees that in the case of vertebrates, which have not resulted in observation of chronic endpoints during the last permit term, a reduction can be applied. This reduction is appropriate based on the premise that one of the invertebrate species will be the most sensitive species for consideration in future permit decisions. Therefore, DEC agrees that vertebrate chronic WET testing frequency can be reduced to semi-annual throughout the permit term.

To implement this modification in the Permit, DEC has replaced the "**~~1/quarter~~**" frequency in Table 2 for chronic WET with "**See Section 1.4.2**."

Permit Section 1.4.2 has been modified to read:

> "The Permit specifies WET **~~testing~~** **monitoring** to be conducted once per quarter "**for invertebrates and twice per year for vertebrates**" on Outfall 001 – BWTF.

In the Fact Sheet, the frequency in Table 3 has been changed from:

> "**~~1/quarter~~**" to "**See Section 4.3.2.**"

Fact Sheet Section 4.3.2 has been modified to read:

> "The Permit specifies WET monitoring to be conducted once per quarter "**for invertebrates and twice per year for vertebrates**" on Outfall 001 – BWTF."

### 3.1.4 Chronic WET Dilutions Permit Section 1.4.3.4 and Fact Sheet Section 4.3.3.4

APSC requests that the 50% and 75% WET dilutions be eliminated in the series based *Method Guidance and Recommendations for Whole Effluent Toxicity (WET)Testing (40 CFR 136) (Method)* that recommends five dilutions while bracketing previously observed toxicity and the instream waste concentration (1/dilution factor). The maximum observed toxicity during the previous permit term was 16 $TU_c$, which equates to a dilution of 6.25 % and the IWS is 1.8 % (1/56). Hence, the series 0.9, 1.8, 3.6, 7.5, and 15 would satisfy this recommendation.

**DEC Response:**

The initial dilution series recommended in Draft Permit and Fact Sheet was developed by DEC based on the *Method*, maximum observed toxicity, the IWS, "and" unknown responses of the new invertebrate species specified in the Permit. First, the 75 % dilution (or maximum dilution after salinity adjustment) is required to be included per the Method as representative of the maximum dilution after saline adjustment. As discussed in Draft Fact Sheet section 2.1.3.2, chronic endpoints were observed for the most sensitive species, sea urchin, 11 out of 24 tests conducted. The highest dilution represented with an observed endpoint was 40 % and average of all results represents 56 %. Given these previous results, a changed to new species, and the need to more accurately characterize

the effluent DEC included one additional series that may be eliminated once new results under the Permit have been obtained. Permit Section 1.4.3.4 includes provisions for allowing the series to be modified to better bracket toxicity endpoints as new data is obtained under the permit and to eliminate extraneous dilutions if not necessary. Based on the above discussion DEC concludes that the requested changes to the initial WET testing dilutions are not appropriate and has therefore not revised the Permit in response to this request.

### 3.1.5 SCA Water Diversions, Permit Section 2.2.5.1.2

APSC commented in support of the Permit condition authorizing the discharge of uncontaminated SCA water to drainage conveyances during extreme rain events noting it will reduce the risk of noncompliance due to hydraulically overloading the BWTF. The comment additionally requested that this permit condition be modified to state that "The Permit allows for the discharge of uncontaminated SCA water to drainage conveyances adjacent to each SCA as storm water during extreme rain events or during other operational or maintenance activities that either threaten damage to infrastructure or noncompliance due to hydraulic overloading of the BWTF.

**DEC Response:**

The SCA water diversions authorized in Permit section 2.2.5.1.2 are intended to address emergency conditions; whereas, the requested modification would expand the language to address anticipated noncompliance events as discussed in Permit Appendix A Standard Condition 2.2 Anticipated Noncompliance. Having considered that the VMT has operated successfully for over forty years using proper planning without such a condition in the Permit, DEC concludes that the requested expansion to the language would exceed the original intent of the Permit Section 2.2.5.1.2 and has therefore not revised the Permit, or Fact Sheet, in response to this request.

## 4 Modifications Due to Adoption of Revised Regulations and Integrated Reports

### 4.1 Final 2014/2016 Integrated Water Quality Monitoring and Assessment Report

On November 2, 2018 EPA approved *Alaska's Final 2014/2016 Integrated Water Quality Monitoring and Assessment Report (2014/2016 Report)*, which supersedes the *2010 Report* referenced in the Draft Fact Sheet that was issued for public comment. There were no public comments concerning the 2010 Report received by DEC. However, because the previous *2010 Report* is superseded by the *2014/2016 Report*, two reference to the *2014/2016 Report* is required: Fact Sheet Sections 3.2 and 6.2. In addition, DEC reevaluated whether the *2014/2016 Report* included new information that affects the Permit and found that there were no changes since the *2010 Report* for Port Valdez.

### 4.2 EPA Approval of the 2006 Version of Mixing Zone Regulations in 18 AAC 70

On September 30, 2019 EPA conditionally approved the 2006 version of 18 AAC 70.240 – Mixing Zones. However, EPA did not approve 18 AAC 70.240(g)(2),(3), and (4) that was intended to allow submittal of mitigation plans by the applicant that have been approved by Alaska Department of Fish and Game. These unapproved portions of the regulations are not applicable to the Permit; the mitigation plans are for freshwater where

there are spawning redds or important rearing areas near the mixing zone. In addition, DEC evaluated the approved regulations and has modified Fact Sheet Sections 3.3.3 through 3.3.10 and Appendix D – Mixing Zone Checklist to correct water quality standard citations that have changed due to restructuring of the regulations. None of the restructuring of the mixing zone regulations has resulted in changes to the previous evaluation, only the applicable location of the citation in the new regulations have changed in the Fact Sheet.

# 5 Modifications Due to APSC Comments Received on Proposed Final Permit

During the five-day applicant review, DEC received comments from APSC that were in character with comments receieved during the public notice of the Draft Permit and Fact Sheet. DEC has considered these comments and made modifications to the Final Permit, Fact Sheet, and RTC document when appropriate as described in the following sections.

## 5.1 Clarification on Water Quality Parameters Required to be Sampled with WET

APSC requested Note 3 of Table 2 of the Permit be modified to clarify which parameters in Table 2 require simultaneous sampling during chronic WET test sampling.

**DEC Response:**

The intent of this permit requirement is for APSC to consider conducting routine sampling simultaneously with chronic WET monitoring so if there is an episodic spike in chronic toxicity it may be compared with results of parameters that could pose toxicity. The requirement to sample other water quality parameters includes those parameters listed in Table 2 of the Permit or Table 3 of the Fact Sheet that have applicable marine water quality criteria. This list includes pH, zinc, TAH, TAqH, and Ammonia. The first sentence of Note 3 in Permit Table 2 and Note 3 in Fact Sheet Table 3 have been modified to read"

> "The initial chronic WET samples must be collected simultaneously with other water quality parameters **(i.e., pH, zinc, TAH, TAqH, and Ammonia)** in this Table."

## 5.2 Paragraph Restructuring for Clarification of Chronic WET Species

APSC suggests separating paragraph two in Permit Section 1.4.3.1 to have a third paragraph starting with "The WET Testing will determine the 25 percent (%) effect…) to help clarify which requirements apply to which species.

**DEC Response:**

DEC agrees that separation of the second paragraph could lead to better understanding of the requirements and has separated this text in both the Permit Section 1.4.3.1 and Fact Sheet Section 4.3.3.2.

## 5.3 Recommended Modifications of BMP Requirements in Permit Section 2.2.5.1.9

APSC requests modifications to the first and last sentences of the referenced section to clarify requirements and potential transitions to new AFFF. The first sentence is suggested to read "The Permittee must maintain BMPs to limit, manage, and control AFFF discharges from the fire system during maintenance and testing." The last sentence is suggested to read "If an

environmentally suitable substitute becomes available and is approved by other agencies having jurisdiction, APSC must evaluate it for compatibility with facility systems and if suitable, remove, dispose, and replace legacy AFFF."

**DEC Response:**

DEC agrees with these modifications and has modified Permit Section 2.2.5.1.9 and Fact Sheet Section 7.3.1.8 to read verbatim the suggested modifications proposed by APSC as shown with strikeout of removed text and bold and underlining of new text.

First Sentence now reads:

"The permittee must maintain BMPs to limit, manage, and control ~~discharges from the jockey pump, firewater pump maintenance and testing, berth fire foam system testing, and hydrant~~ **AFFF discharges from the fire system during** maintenance and testing."

Last Sentence now reads:

"If an environmentally suitable substitute becomes available and approved for use by other agencies having jurisdiction, APSC must **evaluate it for compatibility with facility systems and if suitable,** remove, dispose, and replace the legacy AFFF.

### 5.4 The EMP parameter list in Permit Section 2.3 should include TOC

APSC requests modification to Permit Section 2.3 to include analysis of TOC in the EMP rquirements.

**DEC Response:**

DEC agrees with these modifications and has modified the first sentence in Permit Section 2.3 and Fact Sheet Section 7.4 to read:

"…collection and analysis of sediment samples for PAHs **and total organic carbon (TOC)**, and ambient water samples for zinc, to assist in future permit development."

### 5.5 Correct Reference in Permit Section 2.3.1.2

APSC requests the reference in Permit Section 2.3.1.2 be corrected from Section 1.4 to Section 1.5.

**DEC Response:**

DEC agrees with APSC recommendations and has corrected the reference in Permit Section 2.3.1.2 from Section 1.4 to Section 1.5. Upon review, the equivalent Fact Sheet sections was properly referenced.

### 5.6 Clarification of DMR Submittal Deadline Requested

APSC requests clarification between the DMR submittal deadline in Permit Appendix A – Standard Conditions Sections 3.2.1 and 3.2.3 that indicates DMRs are due on the 15$^{th}$ of the month where Permit Table 1 indicates the 28$^{th}$ of the month.

**DEC Response:**

Standard Conditions Sections 3.2.1 and 3.2.3 are superseded by the submittal date shown in Permit Table 1 – Table of Submissions, which includes note b stating this superseding condition. No modifications to the Permit or Fact Sheet have been made as a result of this comment.

## REFERENCES

1. Shaw, D.G. & Blanchard, A.L. (July 2019). *Environmental Studies in Port Valdez, Alaska: 2018*. Fairbanks, Alaska: Institute of Marine Science, College of Fisheries and Ocean Sciences, University of Alaska Fairbanks, July 2019.
2. EPA 2000. Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing (40 CFR Part 136). EPA 821-B-00-004, July 2000.
3. Alaska Department of Environmental Conservation. 18 ACC 70. Water Quality Standards, Section 240 as amended through August 14, 2006.
4. Alaska Department of Environmental Conservation. *18 ACC 70. Water Quality Standards*, as amended through April 6, 2018.