ALASKA POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT FACT SHEET – PROPOSED FINAL

General Permit AKG332000 – Facilities Related to Oil and Gas Exploration, Production, and Development in the North Slope Borough

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Issuance of an Alaska Pollutant Discharge Elimination System (APDES) general permit to:

FACILITIES RELATED TO OIL AND GAS EXPLORATION PRODUCTION AND DEVELOPMENT IN THE NORTH SLOPE BOROUGH

The Alaska Department of Environmental Conservation (Department or DEC) is issuing APDES general permit AKG332000 – Facilities Related to Oil and Gas Exploration, Production, and Development in the North Slope Borough (NSGP or Permit). The Permit authorizes and sets conditions on the discharge of pollutants from these facilities to fresh waters located in the North Slope Borough and coastal marine waters of the United States (U.S.) offshore of the North Slope Borough and landward of the inner boundary baseline (Attachment A – Figure A. 1). The Permit is considered a hybrid general permit as it includes authorizations to both Waters of the U.S. (WOTUS) per 18 AAC 83 – Alaska Pollutant Discharge Elimination System Program and discharges to state waters and disposal to land per 18 AAC 72 – Wastewater Disposal. In order to ensure protection of water quality and human health, the permit places limits on the types and amounts of pollutants that can be discharged from these operations and outlines best management practice requirements.

This fact sheet explains the nature of potential discharges from oil and gas exploration, production and development facilities operating in the North Slope Borough and the development of the permit including:

- Information on appeal procedures;
- A description of the industry;
- A listing of effluent limits, monitoring requirements, and other conditions; and
- Technical material supporting the conditions in the permit.

Informal Reviews and Adjudicatory Hearings

A person authorized under a provision of 18 AAC 15 may request an informal review of a contested decision by the Division Director in accordance with 18 AAC 15.185 and/or an adjudicatory hearing in accordance with 18 AAC 15.195 – 18 AAC 15.340. See DEC's "Appeal a DEC Decision" web page https://dec.alaska.gov/commish/review-guidance/ for access to the required forms and guidance on the appeal process. Please provide a courtesy copy of the adjudicatory hearing request in an electronic format to the parties required to be served under 18 AAC 15.200.

Requests must be submitted no later than the deadline specified in 18 AAC 15.

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1.0 INTRODUCTION

The Alaska Department of Environmental Conservation (DEC or Department), Division of Water, Wastewater Discharge Authorization Program (WDAP) is reissuing AKG332000 – Facilities Related to Oil and Gas Exploration, Development and Production in the North Slope Borough (Permit or NSGP) issued by DEC, which represents the second reissuance of the permit by DEC after transfer of primacy to State of Alaska (See Section 2.2.1).

1.1 Legal Basis for Permit

Per Alaska Statutes (AS), Chapter 46, Title 3, Section 100(a) (AS 46.03.100(a)), a person may not construct, modify, or operate a treatment works or dispose of liquid waste into the waters or onto the land of the State without prior authorization from the Department. Per AS 46.03.110(d), the Commissioner may provide, as a term of a general permit, that a person intending to dispose (or discharge) wastewater under the general permit shall first obtain specific authorization from the Department. The following section discusses the regulatory basis for developing the Permit and covers the discharge of wastewater to freshwater and marine waters of the U.S. (WOTUS), discharges to state waters, and disposal into or onto land.

1.1.1 Wastewater Discharges to Waters of the United States (WOTUS) in Alaska

Section 301(a) of the Clean Water Act (CWA) and Title 18 of the Alaska Administrative Code (AAC), Chapter 83, Section 15 (18 AAC 83.015) provide that the discharge of pollutants to WOTUS located in Alaska is unlawful except in accordance with an Alaska Pollutant Discharge Elimination System (APDES) permit. Often the discharge of pollutants is regulated through an APDES individual permit. However, 18 AAC 83.205 authorizes the issuance of a general APDES permit to categories of discharges when a number of point sources are:

- located within the same geographic area and warrant similar pollution control measures;
- involve the same or substantially similar types of operations;
- discharge the same types of wastes;
- require the same effluent limits or operating conditions;
- require the same or similar monitoring requirements; and
- in the opinion of DEC, more appropriately controlled under a general permit than under individual permits.

Per 18 AAC 83.210(a), a general permit is to be administered according to the individual permit regulations in 18 AAC 83.115 and 18 AAC 83.120. Like an individual permit, a violation of a condition contained in a general permit constitutes a violation of the CWA and subjects the Permittee of the facility with the permitted discharge to the penalties specified in AS 46.03.020(13). In accordance with 18 AAC 83.155, the Permit has a term of five years and those authorizations under the general permit can remain in force and effect via administrative extension should the Department be unable to reissue the permit prior to its expiration date. At present, the NSGP is expired with most existing authorizations administratively extended until it is reissued.

1.1.2 Wastewater Discharges into State Waters

WDAP authorizes discharges of domestic or non-domestic wastewater into state waters under the regulatory authority of 18 AAC 72 – Wastewater Disposal. Determining which waters are state waters is not straightforward because the new definition of WOTUS, as described in 40

CFR 120, is still without a clear guidance of how the WOTUS determination will be made in certain circumstances. Previously, nearly all waters and wetlands in the North Slope Borough (NSB) were categorized as WOTUS. However, in the recent Superior Court decision in the case of Sackett v. EPA the court held that the CWA's use of "waters" in 33 USC 1362(7) refers only to "geographic[al] features that are described in ordinary parlance as 'streams, oceans, rivers, and lakes' and to adjacent wetlands that are 'indistinguishable' from those bodies of water due to a continuous surface connection."

This recent decision means many waters and wetlands that were previously categorized as WOTUS are, at this time, now state waters. While the determination procedures remain in flux, the level of environmental protection remains the same regardless of whether waters are categorized as WOTUS or state waters. In other words, 18 AAC 70 - Water Quality Standards (WQS) applies to both designations and the resulting permit limits and conditions remain the same for either. The primary implication lies in the reporting of monitoring results. Reporting to the EPA is required for discharges to WOTUS while discharges to waters of the state are reported only to the State. Hence, the designation of receiving water only affects the method of reporting in this hybrid NSGP.

1.1.3 Wastewater Disposal into or onto Lands in Alaska

WDAP also authorizes disposal of domestic or non-domestic wastewater into or onto lands of the State under the regulatory authority of 18 AAC 72 – Wastewater Disposal. Section 8.0 provides a detailed discussion concerning plan review requirements for the Permit. For this permit, land disposal does not include Class I or II underground injection control (UIC) wells. For land disposal to upland areas, it is incumbent upon the applicant to demonstrate that the disposal area is neither WOTUS nor state waters. More importantly, DEC intends to restrict land disposal to those locations where infiltration into groundwater is the primary objective. Hence, land disposals to the subsurface requires an ability for the disposed water to infiltrate before flowing overland and becoming a potential discharge to surface waters, including waters of the state and WOTUS. DEC anticipates few situations where land disposal is appropriate instead of authorizing discharge to state waters or WOTUS. The burden of submitting the necessary information for DEC to make this determination will reside with the applicant.

Per 18 AAC 72.900, the Department can issue a State general permit for a term of five years. The authorization for disposal under a State general permit can be administratively extended per 18 AAC 15.110 upon a timely submittal by the applicant of an application for renewal. The permit term and administrative extension process is essentially the same for either APDES or state general permits.

1.2 Individual Permit

A Permittee authorized to discharge under a general permit may request to be excluded from coverage by applying for an individual permit. This request must be made by submitting APDES permit application Form 1 and Form 2C with supporting documentation to DEC; forms 2M (Mixing Zones) and 2G (Anti-Degradation) may also be required.

The Department may require any entity authorized by a general permit to apply for and obtain an individual permit, or any interested person may petition the Department to take this action. Per 18 AAC 83.215, the Department may consider the issuance of an individual APDES permit when:

- The discharger is not in compliance with conditions of the general permit,
- A change has occurred in technology or practices,
- Effluent limits guidelines (ELGs) are promulgated,
- A water quality management plan is approved,
- DEC determines that the discharge is significant, or
- Total Maximum Daily Load (TMDL) has been completed.

Similarly, per 18 AAC 72.910(c), the Department may require a person with an authorization under a State general permit to obtain an individual state permit if the Department determines that:

- The permittee is not in compliance with conditions of the general permit,
- The disposal poses an adverse impact on public health or water quality,
- A change has occurred in technology or practices, or
- Drinking water systems, public health, or environment are inadequately protected.

2.0 BACKGROUND

Oil-field operations in the NSB were initiated in the early 1920s when the U.S. Navy began to explore for oil and gas and established what would eventually become known as the National Petroleum Reserve. From the 1920s through early 1960s, pockets of exploration and development activities and support infrastructure began to appear. A permanent development and production workforce has been in place since the discovery and development of North America's largest oil field (Prudhoe Bay Unit) in 1968-1970 and the completion of the Trans Alaska Pipeline System (TAPS) in 1977. While more recent years have shown a steady decline in oil production on the North Slope, there is still significant activity on the North Slope, new reserve discoveries, and the development of existing gas resources as a commodity for instate and potentially international distribution.

The NSGP is designed to cover wastewater discharges associated with various phases of these oil-field operations, including discharges from third-party oil and gas service companies. Potential discharges associated with industry operations are evaluated by the Department during each permit cycle. The Permit is modified based on changes in the industry, environment, available technology, regulations, permitting authorities, and court decisions. Specifically, airports are excluded from coverage under the NSGP. Below is a brief history of the NSGP and descriptions of activities associated with oil-field operations on the North Slope.

2.1 Industry Description

Oil-field operations covered by the NSGP involve three distinct but closely related phases: exploration, development, and production. Seismic exploration on the North Slope typically includes the deployment of small to medium sized crews that place vibrating equipment and receivers in a pattern along the tundra or ice surface. Due to the nature of the terrain, these activities are generally conducted during winter months when the tundra and lakes freeze over and provide a traversable surface while minimizing environmental impacts. Seismic exploration crews can spend the entire winter collecting data for a single area of interest. Temporary camps and fuel tanks are fitted on sleds and transported across snow and ice from one area to the next using track equipment (Cat-trains). Cat-trains are often comprised of a

mixed-matched number of interchangeable units. When a commercially feasible quantity of oil or gas is suspected to be present based on seismic data, exploratory drilling may be done to prove the resource.

Exploratory drilling often also occurs in the winter. Temporary ice roads and ice pads are constructed on the tundra for transportation of equipment, housing people, delivering supplies, and transporting waste to approved disposal facilities. Large volumes of water from a variety of sources are used during these exploratory drilling operations for the construction of ice roads and pads, for consumption and domestic needs, equipment wash, and for drilling. Depending on the use, the water can be sourced by dewatering nearby gravel pit mine sites, lakes, reservoirs, wells, ice, and snow melt, or trucked in from a commercial source (NSB Service Area 10). Only the discharge of water from mine sites requires coverage under the NSGP.

When an economically viable discovery is made during exploration, the development phase follows on a schedule dictated by funding and a lengthy public process under the National Environmental Policy Act (NEPA). This phase involves additional drilling, and the construction of more permanent facilities such as gravel pads and roads, airstrips, waste disposal facilities, freshwater and seawater treatment plants, power generation facilities, fuel storage areas, buildings for storage and maintenance of supplies and equipment, and other oil-field related facilities.

Once infrastructure has been developed on a site, production can begin. The primary differences between the two initial stages and production are (1) the large volumes of fluids and wastes that are handled, transported, and disposed; (2) the semi-permanent infrastructure required; and (3) the ability to conduct certain activities year around.

2.2 Permit History

2.2.1 History of the Existing and Previous North Slope General Permit's

The NSGP was first issued by the Environmental Protection Agency (EPA) in 1997 and authorized Domestic Wastewater, Graywater, Gravel Pit Dewatering, and Excavation Dewatering discharges. In 1998, the permit was modified to extend the area of coverage to marine waters offshore of the NSB for discharges from Graywater, Domestic Wastewater, and meltwater from ice roads and ice pads constructed using mine site water. When the Permit was reissued in 2004, it included new discharges for Storm Water and Mobile Spill Response Units.

On October 31, 2008, EPA approved an application from the State to administer the National Pollutant Discharge Elimination System (NPDES) program. Under the APDES program, EPA phased the transfer of authority to administer specific NPDES program components, leaving the oil and gas sector for the last phase. The Memorandum of Agreement between DEC and EPA required EPA to reissue the NSGP prior to the last phase of transfer in 2012. However, other sections had already been transferred to DEC, which complicated the last reissuance by EPA.

When EPA reissued the 2012 NSGP, they removed Graywater and Domestic Wastewater discharges because DEC had taken over primacy for domestic wastewater authority in 2008. To cover the gaps in the 2012 NSGP, the Department issued APDES general permits AKG426000 and AKG570000 for Graywater and Domestic Wastewater, respectively. The

2012 NSGP also added Secondary Containment (Discharge 008) as a discrete discharge, although it had been permitted previously as an allowable non-storm water discharge in a manner similar to closed RPs. Lastly, Hydrostatic Test Water (Discharge 005) was broadened to include existing pipelines that required limitations for petroleum hydrocarbons.

As of October 31, 2012, the authority for all four phases of the NPDES program was transferred to the State APDES program. As a result, the Department reinstated Graywater discharges while reissuing the Permit in 2017 to eliminate duplicative permitting. However, DEC kept Domestic Wastewater out of the 2017 NSGP and retained AKG570000. The 2017 NSGP provided clarification for permitting Gravel Pit Dewatering (003) sources by clarifying the applicability of limits for turbidity when not discharging directly to an open waterbody and removing the daily volume limit previously established to prevent sediment and erosion control problems. Instead, sediment and erosion control was addressed through implementation of Best Management Practices (BMPs). The Department also sought to align the reissued 2017 NSGP with other permits that had similar discharges as well as regulations not applicable to EPA permits. This alignment includes plan review requirements for domestic and nondomestic discharges under the most recent version of 18 AAC 72 for graywater treatment systems, minimum treatment waivers, and treatment processes or systems that were necessary to ensure compliance under the 2017 NSGP. The plan submittal requirements range from stamped and sealed engineering drawings for complex treatment systems to vender-supplied cut sheets when plan reviews are conducted to support BMPs.

During the next permit term, DEC will roll out the Environmental Data Management System (EDMS) that should streamline the submittal of Notices of Intent (NOIs) and certain aspects of reporting. Over the 2017 NSGP permit term, the most common non-compliance issues observed were failures to submit timely and complete annual reports, non-compliance notifications (NCNs), and Notices of Termination (NOTs) for inactive facilities where an authorization was no longer needed. In addition, there have been improper inputs of data, including no discharge (NODI) codes and failures to update facility contacts. The Permit will include directions on proper use of NODI codes. The Department anticipates that the new database system will provide more consistent prompting for submittals and permittees may eventually have access to the database that will allow for submitting common updates such as changes to contact information. However, currently permittees must continue to provide contact updates via email to DEC so staff can enter it into EDMS. The improved database is expected to make reporting easier and facilitate a better compliance rate. Rollout of the new database is ongoing but will be part of the reissuance process.

DEC recognizes that some compliance issues during the last permit cycle were attributable to the COVID-19 global pandemic. The pandemic created trying business conditions and prompted employee turn-over at an unprecedented level. DEC exercised lenience in compliance issues attributable to COVID-19 that did not affect the environment. In an effort to promote better compliance with the reissued NSGP, DEC will develop reporting instructions and provide training sessions to educate permittees on permit requirements and best practices during the first year of reissuance.

During the effective period of the 2017 NSGP, there were 63 permit authorizations of which 42 are under administrative extension (Attachment B – Table B. 1). Below is the number of active outfalls authorized for each discharge type under the 2017 NSGP:

OUTFALL	DISCHARGES DISCRIPTION	QUANTITY
002	Graywater	6
003	Gravel Pit Dewatering	20
004	Excavation Dewatering	0
005	Hydrostatic Test Water	0
006	Storm Water	35
007	Mobile Spill Response	3
008	Contaminated SCA	4

Because the 2017 NSGP has been expired, new authorizations could not be issued for excavation dewatering and hydrostatic test water. Therefore, DEC has allowed permittee to apply under two similar general permits: AKG002000 – Excavation Dewatering and AKG003000 – Hydrostatic and Aquifer Pump Testing. DEC is tracking these authorizations so that if there is an existing authorization under these similar general permits for North Slope facilities, DEC can automatically issue replacement authorizations under the reissued Permit and terminate the existing authorizations. Below are the authorizations currently being tracked for this purpose:

- AKG002262 – Accumulate Energy Alaska Hickory #1
- AKG002310 – Pikka Development Project Ugnuravik River
- AKG002314 – Lagniappe
- AKG002315 – ASRC Gravel Pit
- AKG002303 – Harrison Bay CPAI Willow Development

2.2.2 History of Electronic Reporting

The 2017 NSGP included the implementation of the NPDES Electronic Reporting (e-Reporting) Rule per 40 CFR Part 127. This rule requires electronic reporting for Discharge Monitoring Reports (DMRs). However, some discharge authorizations are of such brief duration that the time required to establish electronic reporting is not commensurate with timely execution of an oil and gas project. In such cases, DEC has applied waiver provisions in the e-Reporting Rule. Projects involving Excavation Dewatering (Discharge 004) and Hydrostatic Test Water (Discharge 005) are typically limited in scope and duration, most often being active only for a month or two during the winter or summer project season on the North Slope and are generally permitted and terminated in less than one calendar year. The small body of DMR data generated ultimately does not justify the effort involved in using the NetDMR system. The new EDMS system, once fully developed, is expected to support reporting of short-term discharges.

In addition to the short-term nature of certain discharge categories, the unresolved implementation of the new WOTUS rule also complicates e-Reporting. That is because most of the discharges that were previously considered applicable to the e-Reporting Rule (i.e., APDES discharges) will now be considered state waters. Discharges to state waters or land disposals are not applicable to e-Reporting. In addition, there currently is no established procedure to reconcile whether some discharges are to WOTUS or state waters leading to significant confusion. While the applicant is responsible for seeking determinations on discharge authority, there is no clear process for these determinations. Therefore, reporting under the Permit will be implemented with maximum flexibility until such issues are resolved.

2.2.3 Changes to the Reissued Permit

2.2.3.1 Reserve Pits (RPs)

Closed RPs: Based on the confirmation samples provided by permittees during the term of the Permit (see Table C. 4 in Attachment C) DEC is reinstating the previous approach by the EPA that all closed RPs are allowable non-storm water discharges that can be discharged with storm water. No additional verification sampling will be necessary for closed RPs. However, DEC will require adherence to BMPs to help ensure a sheen or suspended sediment will not be discharged when pumps are used and discharges will not result in sediment accumulation on the tundra or thermokarsting. The permittees Storm Water Pollution Prevention Plan (SWPPP) must clearly identify the closed RPs and show them on the site plans separate from the storm water impoundments, along with the proposed discharge location. RPs that are still open may discharge on a case-by-case basis pending confirmation that the water meets WQSs. While this opportunity exists currently under the 2017 NSGP, the regrouping of the discharges is proposed to make the reissued Permit more effective and less confusing.

Open RPs: [Placeholder] To authorize discharges from open reserve pits in the Permit, DEC must complete a case-by-case BPJ analysis in this section at a minimum. DEC will update this section as a Permit Modification as described in the Permit Section 3.5.1 Permit Reopener Clause. Also see Response to Comments Section 2.1.

2.2.3.2 Contaminated Secondary Containment (Discharge 008)

Contaminated Secondary Containment Area (SCA) authorizations have been seldom used under the 2017 NSGP because it only allows for discharge coverage if the SCA is known to be contaminated (e.g., reported spill of any volume or sheen observation); uncontaminated SCA discharges are considered storm water. Data from the few authorized discharges is difficult to evaluate due to the common practice of containerizing, or holding discharges, until acceptable test results are received before discharging. If results are found unacceptable, the contaminated SCA water is commonly captured and sent to an approved UIC well facility for disposal. Alternatively, the water may be discharged if there is treatment to remove free-phase and dissolved hydrocarbons; this alternative has not been used extensively. In at least one occurrence, the pre-discharge analytical results were below the water quality criteria for hydrocarbons but the official analytical result of the actual discharged water violated the permit limits. This suggests that between the time the pre-discharge sample was sampled and when the supposed uncontaminated SCA water was discharged, the contained water became contaminated or that the original sample was not representative of the wastewater. Without an approved treatment system, BMPs alone failed to ensure compliance. This concerns DEC.

Despite what was envisioned by DEC, no SCA treatment systems (e.g., filtration and carbon) have been consistently used during the permit term to ensure end-of-pipe compliance. Because permittees are making predeterminations of water quality prior to discharge and then possibly allowing additional contributions to the contained water while waiting for the analytical results, a different approach similar to RPs appears prudent. In addition, the provision in the 2017 NSGP for demonstrating that a given SCA is no longer contaminated was included to encourage appropriate cleanup of contaminated SCAs.

However, this provision has not been used to date, possibly due to the burdensome number of samples needed (12) to make that determination as well as a short, thawed season that is incongruent with collecting that many samples. DEC proposes to change this to four consecutive samples in the reissued Permit. Permittees have generally been inclined to inject the contaminated water rather than to clean up the source of contamination or install treatment as envisioned.

As with open RPs, sufficient data must be presented to DEC and BMPs must be established to seek authorization to discharge. In the case of contained water from contaminated SCAs, BMPs must include treatment approved by DEC or measures to ensure the contained water is not contaminated after sample collection to predetermine effluent quality prior to discharge. Until more site-specific data is collected, or treatment is installed, data must be provided prior to each discharge as well as during the discharge. Hence, contained water discharges from contaminated SCAs will be short-term authorizations with emphasis on eliminating the source of contamination once determined.

2.2.3.3 Anticipated General Trends in Reporting and Compliance

Authorizations under the NSGP are strongly influenced by arctic weather seasonality on the North Slope. Most APDES regulated discharges occur during the short summer months when frozen conditions do not inhibit them. Reporting is an important component of the CWA and there appear to be issues related to reporting during winter months for some permittees as the Permit often requires reporting even when no discharge occurs. A desktop audit of reporting under the 2017 NSGP found that many annual reports have not been submitted and a general failure to submit “no discharge” on monthly DMRs during periods of inactivity. Combined, these reporting inconsistencies represent the most frequent reporting non-compliance issues observed. Some of these omissions are likely the result of not understanding reporting requirements such as submitting DMRs even when a discharge did not occur during the reporting period. Understandably, some reporting non-compliance resulted from inability of staff and personnel to access discharges due to the COVID-19 pandemic since early in 2020. DEC provided a level of enforcement discretion in situations where COVID-19 influenced compliance. Lastly, there were also issues related to facility ownership transfers and staffing turnover. At times, DEC has found it difficult to communicate with applicants/permittees due to staff turnover without notification to DEC of changes in contacts. With the advent of EDMS, DEC hopes that EDMS can eventually be configured to facilitate real-time updates to facility ownership transfers and give permittees access to their contacts list to self-correct, however, until such time the permittee must still communicate with the permit writers to update them. DEC is hopeful the new EDMS reporting tools will result in less confusion and reporting burden over time, as well as streamline reporting.

The Department looks to reduce the number of these types of violations by providing education and communication opportunities for existing and new permittees to help ensure reporting obligations are fully understood. In addition, DEC will no longer require permittees to submit annual storm water inspection reports, QAPP, SWPPP, and BMP recertifications, or updates to gravel and ice road maps. Instead, permittees will be required to retain these documents onsite and provide them to DEC upon request (e.g., during compliance inspection). The Department will provide a post-issuance workshop to

permittees after the Permit is reissued. See Section 11 and Section 12 for more information on reporting requirements.

2.2.3.4 Short-term Versus Long-term Authorizations

To support the objective of allowing for hybrid permit situations, reducing unnecessary reporting burden, and improving reporting compliance, DEC is proposing to eliminate monthly DMRs through NetDMR. Instead, DEC plans to use EDMS as the reporting portal and require annual reports. Initially, annual reports may be uploaded in EDMS until DEC can develop report forms in EDMS for direct entry by permittees. The seasonal nature of North Slope projects and their typical short length is better aligned with annual reporting, or reporting when a Notice of Termination (NOT) is submitted if the project is less than one year in duration. To align with the intent of the reporting rule (i.e., 40 CFR 127.15 and 127.24) the permittee must request a temporary waiver with a term no greater than 5 years and that is not transferable. This process will be combined with the NOI and authorization processes. DEC will establish annual reporting for all discharges with the submittal date being January 31 following the monitoring period ending on December 31 of each year. During the term of the permit, DEC hopes to create online report forms that can transfer data to EPA's Integrated Compliance Information System (ICIS). The forms will consist of two types: one that collects and transfers monitoring data to ICIS (i.e., APDES permits) and those that collect data for state use only (i.e., state permits). This process will ultimately streamline the implementation of APDES/state hybrid permits.

Most of the problems encountered in implementing the Permit derive from confusion around maintaining authorizations longer than required by project timelines and dealing with reporting no discharges. By moving to annual reporting, some of these issues will benefit from not having to report monthly even though no discharges have occurred. Annual reporting will allow permittees to focus on reporting only those occurrences where discharges occurred rather than being burdened by reporting that no discharges occurred.

The following discharges represent solely long-term discharges available under the permit:

- Discharge 006 – Storm water

The following discharges represent solely short-term discharges:

- Discharge 002 – Graywater
- Discharge 004 – Excavation Dewatering
- Discharge 005 – Hydrostatic Test Water

The following discharges may be long or short-term depending on the nature of the project or facility:

- Discharge 003 – Gravel Pit Dewatering
- Discharge 007 – Mobile Spill Response
- Discharge 008 – Contained Water

Because only storm water is identified as solely long-term and only requires annual reporting, none of the discharges are proposed to be reported through NetDMR at this time. Instead, applicants are expected to request temporary waivers per 40 CFR 127.15(a) as DEC will not support reporting to multiple portals given the anticipated expansion of EDMS to communicate with ICIS. All reporting will be annual through the new EDMS portal, which will ultimately serve as a replacement for NetDMR for the APDES program. Issuing temporary waivers and using EDMS helps prevent confusion created by dual reporting systems and accounts for reporting discharges to state waters as well as WOTUS.

3.0 PERMIT COVERAGE AND EXEMPTIONS

3.1 Industries Covered

The Permit covers oil and gas facilities on the North Slope of Alaska, including companies or entities providing services to oil and gas companies. These service providers, or entities, include but are not limited to, construction firms, fuel providers, transportation and logistics companies, and geophysical crews conducting seismic surveys.

3.2 Coverage Area

The Permit will authorize certain discharges to fresh waters located in the NSB and coastal marine waters of the U.S. offshore of the NSB that are landward of the inner boundary baseline per 18 AAC 83 (See Attachment A – Figure A. 1). Coverage does not apply to wastewater discharged into impaired waterbodies (as listed on the CWA Section 303(d) list if the wastewater contains the pollutant that causes or contributes to the impairment). DEC is not aware of any waterbodies on the North Slope that are impaired.

3.3 Exemptions from Oil and Gas Storm Water Coverage

In 1987, the Water Quality Act added section 402(*l*)(2) to the CWA which provided an exemption for the oil and gas industry in federal NPDES or APDES storm water permits. Section 402(*l*)(2) of CWA specifies that:

> "*Environmental Protection Agency (EPA) and States shall not require NPDES permits for uncontaminated storm water discharges from oil and gas exploration, production, processing or treatment operations, or transmission facilities."* In 2005, section 323 of the Energy Policy Act added a new provision to CWA defining the terms oil and gas

exploration, production, processing, or treatment operations or transmission facilities to mean, *"all field activities or operations associated with exploration, production, processing, or treatment operations, or transmission facilities, including activities necessary to prepare a site for drilling and for the movement and placement of drilling equipment, whether or not such field activities or operations may be considered to be construction activity,"* [per 33 U.S.C. 1362(24)] (EPA, 2014).

The additions to the CWA referenced above provide potential exemptions to the oil and gas industry (including associated construction activities), from federal NPDES or APDES storm water permits, in certain instances. However, facilities that have had a discharge of storm water resulting in a reportable quantity for which notification is, or was, required per 40 CFR 117.21, 40 CFR 302.6, or 40 CFR 110.6 or any storm water that contributes to a violation of a WQS [40 CFR 122.26(c)(1)(iii)]), are required to immediately obtain an APDES permit for storm water for the entire operating life of the facility. Because the exemption only applies until there has been a reportable quantity, the Department encourages all permittees to seek coverage for this discharge despite their ability to claim the exemption. Having a SWPPP developed for each facility improves site management and pollution control. This outfall is designated for those discharges which do not meet the requirements for the storm water exemption and for discharges from facilities electing to receive coverage.

4.0 WASTEWATER DESCRIPTIONS, CHARACTERIZATION, AND COMPLIANCE

The NSGP authorizes wastewater discharges from sources related to industrial oil and gas activities in the NSB. Data collected from DMRs from the 2017 NSGP have been used to support the characterization section, where applicable.

Permit coverage will include discharges associated with oil and gas exploration, development, and production activities and related facilities (e.g., service company facilities). However, the Permit does not apply to mobile offshore drilling units, lift boats, barges, or other floating facilities. The NSGP has been developed to provide multiple wastewater discharges authorizations for the oil and gas industry under a single general permit rather than several. The following wastewater discharges are authorized under the Permit:

OUTFALL	DISCHARGE DESCRIPTION
002	Graywater
003	Gravel Pit Dewatering
004	Excavation Dewatering
005	Hydrostatic Test Water
006	Storm Water from Industrial Facilities
007	Mobile Spill Response
008	Contained Water (Formerly Contaminated SCA)

4.1 Graywater Characterization and Compliance History (Discharge 002)

Per 18 AAC 72, graywater is a form of domestic wastewater that is defined as wastewater generated from laundry, kitchen, sink, shower, bath, or other domestic source (e.g., drinking water backwash). Graywater does not contain excrement, urine, or combined storm water. Graywater discharges on the North Slope are typically generated from mobile camps used to house geophysical exploration crews during winter months. These facilities are mounted on

sleds that are moved from site to site throughout a season. Some remote camps on the North Slope have a graywater treatment system that meets secondary treatment standards, but most are only equipped with a primary treatment system which removes settleable solids (SS) and possibly a method of disinfection such as ultraviolet (UV) or chlorination.

4.1.1 Graywater Characterization Data

Parameters of concern (POCs) for graywater include: flow in gallons per day (gpd), pH, total suspended solids (TSS), 5-day biochemical oxygen demand (BOD_5), fecal coliform bacteria (FC), residues, and total residual chlorine (TRC) when chlorine is used as a disinfectant. While there is no data currently available for marine discharges, DEC was able to evaluate available effluent data from facilities discharging during the 2017 NSGP to freshwater with mixing zones, as shown in Table 1 below.

Table 1: Characterization of DMR Data from Graywater Discharges (Discharge 002)

Parameter	Units	# of samples	Existing Limits		Measured Values[1]
			MDL	AML	(Low-High; Average)
Flow	Gpd	14	5000	Report	2-4000; 1380
TRC	µg/L	13	19	11	0 - **20.0**[2]; 10.1
BOD_5	mg/L	12	2305	826	111 - ≤ 2305; 558
TSS	mg/L	11	820	296	19 - ≤ 820; 193.7
FC	#/100mL	9	400	200	1-***2,420*** [3]; 83.5

NOTES:
1. All six authorized facilities utilized mixing zones for discharges.
2. Bold values represent an exceedance of criteria.
3. Italicized values represent a limit exceedance.

Escherichia coli (E. coli) and enterococci (EC) bacteria were monitored three times during the term of the 2017 permit, once for E. coli and twice for EC bacteria. All sample results were below detection. E. coli and EC bacteria are generally of concern near recreation areas where individuals may come into contact with bacteria (i.e., contact recreation criteria). For freshwater, E. Coli bacteria may not exceed 126 E. Coli Colony Forming Units (CFU) /100 mL, not more than 10% may exceed STV (statistical threshold value) of 410 E. Coli CFU/100 mL. E. Coli does not currently have marine water criteria. For both marine and fresh water, EC bacteria may not exceed 35 EC CFU/100 ml and not more than 10% may exceed STV of 130 EC CFU/100 mL. Averages for E. Coli and EC are based on geometric means.

While there were no exceedances of BOD_5 or TSS limits, each had values reported right at the limit value. This occurrence of matching the limit twice has a low probability. Although DEC is concerned these values may be inaccurate, the limits appear to be consistently attainable otherwise. A similar consideration is provided with respect to the anomalously high value for FC bacteria. Therefore, DEC considers the existing limits appropriate and no modification is warranted at this time. However, DEC may require submittal of analytical reports with DMRs so that DEC can provide compliance assistance for reporting accurate results.

4.1.2 Graywater Compliance History

During the 2017 NSGP there were six authorizations for graywater discharge from sleigh camps. Business conditions resulted in a lack of new exploration during the permit period. Additionally, during the oil price drop period associated with the global COVID-19 pandemic

there were no active sleigh camps on the North Slope. Therefore, few graywater discharges were authorized during the permit period. During the permit period all permittees utilized mixing zones for discharges. There was one exceedance of the FC daily maximum and the average monthly limit that took place on a discharge to fresh water. Because of the limited DMR data, this single exceedance resulted in a 7.1 percent exceedance rate for FC limits on graywater discharges. This exceedance rate is comparable to data evaluated for graywater compliance for the 2017 NSGP. During the 2017 permit term, the FC exceedance rate was slightly less than seven percent. The BOD_5 exceedance rate for data evaluated for the 2017 NSGP was 10 percent, which shows improvement during the permit period as no BOD_5 exceedances were reported.

During the 2017 NSGP, long-term authorizations led to a lack of DMR reporting for some sleigh camps during months of inactivity. This lack of activity also led to the skipping of some annual reports. These reporting failures occurred even though DEC had reminded permittees that even during periods with no activity or discharges permittees are required to submit "no-discharge" DMRs through NetDMR for this authorization.

Under the reissued Permit, to assist permittees with improving compliance reporting, graywater discharges will now be considered short-term authorizations. Sleigh camp activities are carried out project by project with long gaps in activity. Sleigh camps are additionally constrained to only the winter months when tundra is frozen and snow-covered to allow traversing the tundra without damage. This makes graywater discharge an ideal candidate for a short-term authorization similar to discharges for hydrostatic test water and excavation dewatering. Authorizations will now be limited to the duration of the project. At the end of the project, the applicant must submit all reporting requirements with a NOT. This change will mean permittees will have to apply each year for coverage based on active projects and will submit reports directly to EDMS instead of using NetDMR because the effort to set up NetDMR will not be commensurate with the short-term nature of the authorization. This change should minimize the difficulty of submitting electronic reports from remote areas and also help eliminate missed DMR reports during the summer which was frequently noted in the 2017 NSGP data review.

Another concern that suggests short-term authorizations are appropriate is that sleigh camps often go through reconfiguration to meet the unique staffing requirements for independent projects. Hence, more frequent review will help ensure that treatment systems are not over-tasked and have the appropriate Department approval (i.e., Plan Approvals and Waivers to Secondary Treatment).

4.2 Gravel Pit Dewatering Characterization and Compliance History (Discharge 003)

4.2.1 Gravel Pit Dewatering Characterization

Gravel deposits are typically composed of weathered and eroded unconsolidated rocks fragments (e.g., gravel and sand) that may include silt and clay lenses deposited by rivers and glaciers. Gravel pits are developed for construction of roads, pads, and other fill activities. These mine sites can accumulate water from groundwater infiltration, rain and snowmelt water during breakup, wash down activities used to clean rock material, or other sources. Water that accumulates in the pit is generally removed to provide access for material extraction. Mine site water may also be used for dust suppression or construction of ice roads and pads. Once a gravel pit is no longer used for gravel mining, dewatering for gravel

extraction is no longer applicable and the mine site is rehabilitated into a waterbody for habitat (i.e., a receiving water). Water from a rehabilitated mine site, as determined by Alaska Department of Fish and Game (DF&G), is no longer considered a wastewater source and does not require a discharge authorization under the NSGP. A list of active mine sites is provided in Attachment E.

The most common methods for gravel pit dewatering for gravel mining are submersible pumps. The discharge of gravel pit water is typically to a nearby waterbody or tundra (i.e., point source discharges). During spring break-up, flooding can necessitate the discharge of large volumes of water to access gravel when needed the most. This may require multiple pumps with multiple discharge points.

4.2.1.1 Gravel Pit Dewatering Characterization Data

Gravel extraction often requires contained water that collects in the gravel pit to be discharged so that operating equipment can access the resource. Typically, this water is discharged to a nearby waterbody or to tundra. POCs associated with these activities include turbidity and sediment or SS from disturbing the material, as well as pH, and petroleum hydrocarbons (oil and grease/sheen) from operating equipment. When possible, industry prefers to reuse the gravel pit water for other purposes such as ice road construction and dust suppression. When the repurposed water is applied to gravel, roads, tundra, or ice, turbidity is not considered a POC. During the term of the 2017 NSGP, DEC required permittees to monitor turbidity in both the receiving water and effluent even when not strictly needed to comply with water quality criteria. This monitoring was required so that DEC could evaluate the potential need for mixing zones and limits. DEC also required monitoring for Total Aromatic Hydrocarbons (TAH) and Total Aqueous Hydrocarbons (TAqH) whenever a sheen is observed. Since no sheens were observed, no results for TAH or TAqH have been submitted. Flow was monitored as well, in millions of gallons per day (mgd). Table 2 provides a summary of data from available DMRs during the previous permit cycle that characterizes gravel pit discharges.

Table 2: Characterization of Max Daily Observations from Gravel Pit Dewatering (Discharge 003)

Parameter	Units	Existing Limits	Reported Data (Low-High; Average)
Flow	mgd	Report	0.01-10.28; 0.671
pH (Min)	S.U.	6.5	6.5-8.4; 7.8 [1]
pH (Max)	S.U.	8.5	6.6-**8.6** [2]; 8.1 [1]
Oil and Grease	Visual Monitor	No Sheen	No Sheen Reported
SS	mL/L	0.2	0.0 - <0.2; <0.02
Turbidity Receiving Water	NTU	Report	0.0-21.7; 3.865
Turbidity Effluent	NTU	Report	0.0-190; 23.737

NOTES:
1. For pH, median is used in place of average.
2. Bold values represent an exceedance with existing limits.

The results showed that there may be a potential to cause or contribute to an excursion water quality criterion for turbidity when discharging to streams for gravel extraction. Receiving

water samples averaged 4.1 Nephelometric Turbidity Units (NTU) while the effluent from gravel pits was 23.7 NTU. With the receiving waters being of low turbidity on the North Slope, the Department is issuing a 500-meter standard mixing zone for gravel pit dewatering under the Permit to ensure compliance with the WQS. Instead of issuing limits based on limited data, DEC proposes to control turbidity by monitoring the plume and implementing BMPs should turbidity in the plume demonstrate potential water quality concerns. While the streams have relatively low turbidity, an increase of 5 NTUs may not be distinguishable 500 ft downstream of the discharge. If a plume is distinguishable, then a correlated excursion is likely and additional BMPs would be triggered to ensure water quality criteria is not exceeded when considering the four-day exposure for chronic criteria (i.e., an excursion is based on a four-day exposure). The mixing zone analysis can be found in Section 7.2.

4.2.2 Gravel Pit Dewatering Compliance History

During the 2017 permit term, there have been 13 authorizations for gravel pit dewatering. The Department collected 159 data observation points from DMR submittals and summarized the information in Table 2 above. There was one exceedance for pH in the five-year period indicating limits are attainable using current practices and BMPs. Although no limits were imposed, turbidity data was collected to inform potential future discharge limits during the 2017 NSGP.

4.3 Excavation Dewatering Characterization and Compliance History (Discharge 004)

Excavation dewatering is the removal of water from excavated areas where precipitation, snowmelt water, or groundwater infiltration accumulates and hinders the construction activity. Excavation dewatering is primarily related to trenching activities while installing or repairing utilities and pipelines but may also be related to other activities such as foundation or vertical support member (VSM) installations. The most common methods for dewatering include submersible pumps, wells, well points, and vacuum trucks for small volumes. Dewatering activities near gravel bed streams will likely require higher rates of discharge as larger grain sizes associated with gravel tend to be more permeable when compared to locations with less permeable sediments (i.e., silts and clays). Although mostly composed of gravel, silt lenses at gravel sites may cause turbidity spikes.

Excavation dewatering projects are typically limited to summer months on the North Slope when conditions are not frozen. Because most of these projects are typically completed in one season, the wastewater discharge authorization is likely only necessary to be effective for a few months during the summer. This seasonality results in limited reporting and authorizations that have historically been effective for less than three months. The short authorization window makes NetDMR reporting not commensurate with the effort that permittees would need to set up the online reporting account. Therefore, excavation dewatering is classified as a short-term authorization that is reported directly to the Department with EDMS that can be submitted with the NOT, or annually if the authorization is extended beyond one season.

4.3.1 Excavation Dewatering Characterization Data

The main POCs for excavation dewatering are sediment and turbidity. Sediment can typically be effectively controlled using filtration or sediment basins. Turbidity may be more difficult to control depending on how much the turbidity is associated with fine-grained materials. Finer silts and clays are not readily removed in filters or basins unless enhanced by the use of

coagulant aids. Excavation water may also come into contact with small quantities of petroleum hydrocarbons, oils, and grease from operating equipment. Infrequently, excavation dewatering may encounter existing sources of underground hydrocarbon contamination.

When excavations occur next to underground sources of contamination, the discharges can include additional POCs depending on the nature of the contaminant. Typically, the contaminants are petroleum hydrocarbons. However, solvents and metals may also be contaminants of concern. These excavations near contaminated sites require coordination with DEC Contaminated Sites Program (CSP).

4.3.2 Excavation Dewatering Compliance History

During the 2017 NSGP term, there were two authorizations for this discharge. One of the authorizations did not complete any discharges resulting in no reportable DMR data. The other authorization was active for two months prior to termination, generating two effluent data points from monthly DMR reporting. However, because the discharges were to tundra, or land, no receiving water data is available; the monitoring of turbidity is not required when there is no direct nexus to receiving water. The maximum discharge rate reported was 0.179 mgd. Maximum turbidity of the discharge was measured at 102 NTUs. No oil and grease sheens were observed so TAH and TAqH testing was not triggered. There were no exceedances of limits. Because of the limited data from the permit cycle, qualitative POCs are carried forward from the 2017 NSGP which are consistent with other permits authorizing excavation dewatering discharges. However, modifications for turbidity monitoring should be considered in order to be consistent with mine site discharges and other DEC permits authorizing excavation dewatering discharges. Hence, DEC proposes to use visual plume monitoring in the receiving water 500 feet (i.e., the edge of the mixing zone) from the discharge to determine if corrective actions may be necessary.

4.4 Hydrostatic Test Water Characterization and Compliance History (Discharge 005)

Before a new or repaired pipeline or tank is entered into service, a pressure test using water is required per construction standards, guidance, or regulations to verify that no leaks are present. Certain hydrostatic test practices include the use of chemicals to prevent corrosion and/or development or proliferation of bacteria. Although the use of these chemicals is considered atypical, chemical additions may be allowed by submitting chemical information and BMPs that help ensure WQS are not violated due to their use.

4.4.1 Hydrostatic Test Water Characterization Data

For pipelines or other infrastructure that have not previously been exposed to hydrocarbons, the primary POC is for hydrostatic test water is sediment or debris left behind during construction and pH. Sometimes, source water for the hydrostatic test may play an important role. Therefore, hydrostatic test water sources must be identified and scrutinized to ensure it would not contribute to a Permit limit violation or WQS violation. Alternatively, infrastructure which has previously been exposed to hydrocarbons may also contain petroleum hydrocarbons (e.g., existing pipeline or tank repairs). Sediment, turbidity, petroleum hydrocarbons, oil and grease, and TAH/TAqH) are typical POCs for existing infrastructure in contact with hydrocarbons. Depending on the infrastructure being tested, the volume of the discharge may be a bigger issue than pollutants. Common treatment and other BMPs include settling ponds, portable filtration systems with chemical injection for pH adjustments,

sediment and erosion control including but not limited to velocity reduction on splash pads, rubble mound infiltration into dry stream channels, pumping to tundra areas, and pumping to ice or snow areas. While the 2017 NSGP used the hydrostatic test water discharge category as a catchall for various contained water scenarios, under the Permit hydrostatic test will be implemented solely for hydrostatic testing of pipelines or tanks necessary to meet construction codes, standards, and guidance such as American Petroleum Institute (API) or American Society of Mechanical Engineers (ASME) or other industry construction requirements. These other standards may stipulate certain source water conditions affecting effluent quality.

4.4.2 Hydrostatic Test Water Compliance History

During the 2017 NSGP, there have been four authorizations for hydrostatic test water. No permit limit exceedances occurred during the 2017 NSGP permit cycle. All authorizations were for new projects that had not previously been exposed to hydrocarbons. No oily sheens were observed therefore no TAH or TAqH testing was triggered. All four authorizations, once discharges began, were completed within one month so only one monthly DMR was submitted with discharge data for each authorization. Hence, like excavation dewatering, the authorized discharge of hydrostatic test water is of short duration such that reporting electronically is not practicable.

During the permit term, turbidity monitoring of discharges to fresh receiving water was required to characterize the discharge and receiving water to determine whether a mixing zone and/or limit for turbidity is necessary. Two of the four authorizations discharged to fresh receiving water and provided receiving water and discharge data for turbidity. The average turbidity of discharge was 5.82 NTU while the average receiving water turbidity was 16.43 NTU. Although the data is limited, the results tend to confirm that neither a mixing zone nor limits for turbidity are necessary in the permit. No limits will be developed for turbidity and monitoring of turbidity in the effluent and receiving water will be discontinued for hydrostatic test water discharges. Note also that the elimination of various catch-all sources supports this decision given the unlikeliness of turbidity in tanks and pipelines. Hence, the turbidity requirements are passed along to the contained water category so there is no backsliding.

4.5 Storm Water Characterization from Industrial Facilities (Discharge 006)

Storm water runoff originates from rain, snow, and snowmelt events that, if not appropriately managed, can come into contact with contaminants (contact storm water) such as sediment, debris, and chemical pollutants, which can eventually discharge into receiving waters. The management techniques used to prevent discharges from coming into contact with sources of contamination are dependent upon the type of facility and the risks associated with the industrial activities. Water that has come into contact with a source of contamination that would result in violation of water criteria is not allowed to be discharged as storm water (non-allowable storm water discharges). In addition, there are specific types of discharges that are allowed to be discharged along with storm water such as firefighting water without additives (allowable non-storm water discharges). Lastly, there are discharges that are prohibited because they are specifically covered by effluent limitation guidelines for the specific industrial activity (e.g., gravel pit dewatering). Only discharges of non-contact storm water or allowable non-storm water discharges are authorized by the Permit.

Similar to the 2017 NSGP, DEC has identified the following activities associated with oil and gas industrial facilities that have the potential to be a source of pollutants in storm water discharges:

1. Industrialized resource extraction areas including drill sites and gravel removal areas located on existing roads and pads;
2. Access roads, docks and airstrips used or traveled by carriers of raw materials, intermediate products, or finished products;
3. Sites used for storage of manufactured products, waste material or byproducts used or created by the facility;
4. Material handling and storage sites, refuse sites, and sites used for the application or disposal of process wastewaters;
5. Production RPs which have not been closed under 18 AAC 60 and demonstrate through sampling for metals that the pit water does not exceeds a water quality criteria;
6. Sites used for residual treatment, storage, or disposal of production or remediation wastes:
    a. Shipping and receiving areas;
    b. Manufacturing buildings, including electric power generation plants, storage areas (including tank farms) for raw materials and intermediate and finished products;
7. Areas where industrial activity has taken place in the past and significant materials remain and are exposed to storm water. Significant materials include but are not limited to raw materials, fuels, solvents, detergents, plastic pellets, finished materials, fertilizers, pesticides, and waste products such as sludge.

Allowable non-storm water discharge activities generally discharged with storm water discharges include:

1. Fire-fighting flows, fire water storage vessel and fire hydrant flushing discharges, including periodic fire suppression test discharges, and fire training discharges;
2. Waters used to wash vehicles where detergents are not used;
3. Water used for dust control from anthropogenic sources other than mine sites that meet water quality criteria.
4. Potable water sources including uncontaminated waterline flushing and drinking fountain water;
5. Landscape watering and irrigation drainage – Not a common practice but may be used on occasion for re-vegetation projects;
6. Routine external building, pipeline, and power line wash down that does not use detergent or other compounds;
7. Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used;
8. Uncontaminated condensate from air conditioners, coolers, and other compressors and from the outside storage of refrigerated gases or liquids;
9. Uncontaminated, non-turbid discharges springs or groundwater;
10. Uncontaminated foundation or footing drains; and
11. Electrical insulator steaming;
12. Production RPs which have been closed under 18 AAC 60 and demonstrate through sampling for metals that the pit water complies with water quality criteria.

13. Other uncontaminated discharges meeting water quality criteria that the Department approves on a case-by-case basis.

The volume of storm water discharged, and pollutants of concern are dependent on many variables, including the type of industrial activity that the facility is engaged in (sector of industry), and the type and intensity of the runoff event. However, the typical POCs associated with storm water runoff and allowable non-storm water runoff from these facilities are sediment, petroleum hydrocarbons, and oil and grease but may also include metals or other chemicals stored at a facility. For the NSGP, DEC purposefully excludes storm water coverage for conditions that require benchmark monitoring. An example is Sector S where airports may use greater than 100,000 gallons of glycol and/or 100 tons of urea annually for deicing. Because these conditions trigger benchmark monitoring for Chemical Oxygen Demand, BOD_5, and ammonia it is appropriate for those facilities to obtain coverage under the MSGP.

4.6 Mobile Spill Response Characterization and Compliance History (Discharge 007)

Mobile Spill Response covers discharges associated with treated snowmelt, rainwater, or other water that has come into contact with hydrocarbons such as motor oil, diesel, gasoline, transmission, hydraulic oil from small leaks that are collected from motorized vehicles and equipment. Other sources include, but may not be limited to, drip pan water and shop melt water. Treatment for small volumes of hydrocarbon impacted water is generally achieved by removing the sheen and placing the impacted water in a 55-gallon water-scrubbing unit which contains oleophilic absorbents to remove the dissolved hydrocarbon. Currently, these types of systems have been demonstrated to be effective and are used extensively on the North Slope. To ensure adequate removal of free-phase and dissolved hydrocarbons can be attained, information about the proposed treatment system is submitted to the Department before it is adopted as a BMP control**.**

4.6.1 Mobile Spill Response Characterization Data

Water impacted by petroleum hydrocarbons will be the only source considered under mobile spill response. Accordingly, petroleum hydrocarbons are the POCs associated with mobile spill response discharges. The discharge must receive an adequate level (i.e., BMPs) of treatment that can remove free-phase and dissolved hydrocarbons.

4.6.2 Mobile Spill Response Compliance History

During the 2017 NSGP permit cycle, there were five authorizations for this discharge. A total of 17 data points were generated during the 2017 NSGP permit cycle and a total of approximately 13,400 gallons were reportedly treated and discharged. The table below summarizes the data received from DMRs. No detection of sheen was reported. BMP plans should ensure compliance with the no sheen limit because of the small volumes and the ability to re-treat sheen containing effluent before discharge.

Table 3: Characterization Data from Mobile Spill Response (Discharge 007)

Parameter	Units	Existing Limits	Reported Data (Low-High; Average)
Flow	gpd	Report	3.33-7,150; 787.3
Oil and Grease (oily sheen)	Observation	No Discharge	No Sheen Reported

Based on the successful approval and implementation of treatment BMPs during the permit term, no exceedances were reported. Therefore, the discharge of mobile spill response water remains unchanged from the current permit.

4.7 Secondary Containment Characterization and Compliance History (Discharge 008)

SCAs are a specific type of facility included in the general category "Contained Water". SCAs are diked or bermed areas around oil storage tanks, tank farms, fuel transfer stations, and tanker truck loading racks which provide an emergency storage area and help to prevent accidental spills from reaching the environment, state waters, or Waters of the U.S. These areas are susceptible to rain or snowmelt accumulation which must be discharged to ensure the volume capacity is retained for Spill Prevention, Control, and Countermeasures Plan (SPCC) contingencies. SCAs are designed to contain the volume of the largest tank within the SCA plus freeboard based on precipitation (e.g., precipitation from a two-year, 24-hour storm event) or a percent over the largest tank volume. SCAs are typically constructed of steel, bare synthetic liners, or synthetic liners with a layer of gravel on top to protect the liner. While SCAs may be used in limited instances for the storage of non-petroleum chemicals, the NSGP was developed to cover only discharges for SCAs around petroleum hydrocarbon storage tanks or transfer areas. Accordingly, SCAs described in this Fact Sheet are required by 40 CFR 112 – Oil Pollution Prevention or 18 AAC 75 – Oil and Other Hazardous Substances Pollution Control, Article 1. Furthermore, the 2017 NSGP only required coverage under Discharge 008 if there had been a spill and/or residual contamination that would preclude it from being considered storm water (i.e., meets WQS).

During the term of the 2017 NSGP, there have been three separate exceedances of SCA discharges for both TAH and TAqH (two by AKG332041 and one by AKG332014). One of these exceedances appears to be the result of commingling clean SCA water with contaminated SCA water in a holding tank after a predischarge sample was collected to confirm the water was uncontaminated and was found to be below criteria for both TAH and TAqH. Then the sample collected during discharge was 1,400 μg/L. This exceedance appears to have occurred by mishandling clean SCA water with contaminated SCA water. Although a notice of non-compliance was submitted by the permittee, the reported value has been removed in the database and was not addressed during the most recent inspection. Whether or not this violation is recognized by the Compliance and Enforcement Program (CEP) is unknown at this time.

4.7.1 Secondary Containment Coverage History

Prior to the 2012 NSGP, all discharges of accumulated storm water in SCAs were treated as allowable non-storm water that could be discharged with Storm Water (Discharge 006). The 2012 NSGP issued by the EPA noted that coverage for storm water in the Permit was meant to mimic industrial storm water coverage under the Multi-Sector General Permit (which did not include SCAs). As a result, EPA disallowed discharges from uncontaminated SCAs to continue to be managed with storm water discharges and added a discrete outfall (Discharge 008) for discharges from SCAs, whether contaminated or not. The 2017 NSGP issued by DEC separated contaminated and uncontaminated water, with the uncontaminated water considered storm water and the contaminated water limited to Discharge 008 – Contaminated SCAs. The 2017 NSGP required discharges from contaminated SCAs to obtain separate coverage for Secondary Containment (008) where permittees must comply with limits, primarily TAH and

TAqH. As discussed previously in Section 2.2.3.2, the Permit will continue the practice of allowing uncontaminated SCAs to discharge as storm water (Discharge 006). However, water discharged from contaminated SCAs will be authorized under a new designation called "contained water" (Discharge 008). The new "Discharge 008 – Contained Water" will include contaminated SCAs, water from open RPs, and various discharges previously included under hydrostatic test water.

The contaminated SCA discharge category in the 2017 NSGP was intended to reduce authorizations to only those where the SCA is contaminated and needs a treatment system prior to discharge. DEC also believed it would incentivize good housekeeping for permittees to keep SCAs clean and avoid additional testing and disposal costs caused by having a contaminated SCA. This concept has not worked as intended as the practice of containerizing or holding back discharges until acceptable test results are received before discharging has not proven to be consistently successful alone. The data reviewed indicates the time between pre-discharge sample collection and the actual discharge event leaves a gap in environmental protection and indicates BMPs alone may not be sufficient to ensure compliance. In addition, the operation of vehicle loading/dispensing SCAs may not be compatible with the test-and-hold-for-confirmation approach. DEC believes treatment is needed to comply with effluent limits in conjunction with BMPs whether or not discharges are held or directly discharged after treatment. In addition, when the held fluid is shown to be contaminated there are two choices, haul away for injection or install a treatment system to remove contaminants. This assertion is partly based on the smaller containment volume and the greater risk of fuel spillage during dispensing to vehicles or transfers to trucks. While both have costs and burdens, the installation of treatment seems the more prudent alternative because it does not affect the timing of water removal from the SCAs. If containerizing and/or holding SCA water is to continue, there must be better site control BMPs to prevent cross-contamination or commingling with other wastes while the sample is being analyzed.

As stated previously, BMPs alone have not been sufficient to ensure compliance with the limit. Therefore, treatment must be available onsite so that compliance samples required by the Permit are more certain to meet the limits. A treatment system BMP also seems appropriate so that water contained at fuel transfer/loading areas where contamination is most likely can be treated and discharged as needed. While DEC does not prohibit holding for confirmation prior to discharge, contained water management BMPs must be implemented to ensure no additional water is placed in the container while waiting for sample results. At a minimum, a treatment BMP must be approved by DEC and available onsite so if an out-of-compliance discharge occurs, it can be immediately implemented before the next discharge. Lastly, should an SCA become contaminated, the contained water must be permitted separately from storm water. A spill of any volume or an observation of a sheen on the water surface triggers separation from storm water and the permittee must contact DEC to discuss what actions must be taken based on incident- and site-specific conditions. Note that while NSGP requires a spill notification for any volume, this is a separate requirement from spill reporting required by DEC Spill Prevention and Recovery, which has a 50-gallon trigger for spill reporting inside of an SCA.

4.7.2 Secondary Containment Characterization History

Four secondary containment outfalls were permitted for SCA Discharge 008 under the 2017 NSGP in two authorizations, AKG332014 (two outfalls) and AKG332042 (two outfalls). Due

to the common practice of testing and holding water until confirming effluent quality prior to discharge, only two of the four authorized outfalls provided data from actual discharges; predetermination analytical results are excluded. Based on comparisons of TAH versus TAqH for individual samples it is apparent that there is a data quality issue for TAqH. TAH includes the sum of benzene, toluene, ethylbenzene, and xylenes (BTEX) compounds. TAqH is the sum of the BTEX compounds plus 16 select polycyclic aromatic hydrocarbons (PAHs). The values reported on DMRs show that most TAH values are higher than the TAqH values and those that are not higher are equal. Because TAH is a component of TAqH, TAqH can be equal to TAH but most likely higher. DEC suspects that the values provide for TAqH represent the 16 PAHs and should be added to the TAH value to result in correct reporting for TAqH. However, the data overwhelmingly suggest that most of the observed hydrocarbons are predominantly related to BTEX compounds (i.e., gasoline). Because there appears to be minimal contribution from PAHs and the criterion for TAH is more stringent than TAqH, TAqH is not a driving POC, TAH is the driving POC. Therefore, DEC is evaluating only the TAH results in the characterization of SCA discharges. Below is a summary table of the nine distinct data points from the permit cycle.

Table 4: Characterization Data from Secondary Containment (Discharge 008)

Parameter	Units	Existing Limits	Reported Data (Low-High; Average)
Flow	gpd	Report	14.3-925; 317.2
pH (Min)	SU	6.5	6.52-8.46; 7.8[1]
pH (Max)	SU	8.5	6.60-8.46; 7.8[1]
TAH	µg/L	10	< 2.7-**190 [2, 3]; 27.2**

NOTES:
1. For pH, median is used in place of average.
2. Bold values represent an exceedance with existing limits.
3. A value of 1,400 mg/L has been excluded (read below).

While there is an indication that the excluded value of 1,400 µg/L was once considered to represent an effluent violation, the apparent elimination of this value in the database and the compliance history suggests that CEP does not recognize this value as representative or pertinent. Therefore, it has been excluded from the data table as an outlier.

There appears to be ongoing confusion on reporting TAH and TAqH for the SCA discharges as well as implementing BMPs to ensure no cross-contamination prior to discharge. Both TAH and TAqH remain as driving POCs requiring limits in the Permit. However, the reorganization of contaminated SCA water under the discharge category "Contained Water" will result in imposing BMPs for pre-discharge sampling, preventing commingling while awaiting sample results, hydrocarbon treatment, and sampling, testing, and reporting of TAH and TAqH.

4.7.3 Other Potential Contained Water Characteristics

The characteristics of contained water are highly variable and dependent on the nature of the containment. Examples include, but are not limited to:

1. [Placeholder] To authorize discharges from open reserve pits in the Permit, DEC must complete a case-by-case BPJ analysis in this section at a minimum. DEC will update this

section as a Permit Modification as described in the Permit Section 3.5.1 Permit Reopener Clause. Also see Response to Comments Section 2.1.

2. Valve vaults or utilidors where there is a potential for hydrocarbons, visible sheen, and TAH/TAqH.
3. Containerized water that may be impacted through contact with various pollutants.
4. Sedimentation basins, other than those used for excavation dewatering, that may have coagulants or other additives to enhance settling. Specifically, this scenario would cover treating dredge material from shallow ports on the North Slope to maintain vessel access. The POCs are assumed to be turbidity and low-level chronic whole effluent toxicity (WET). Discharges from dredge sedimentation ponds may require a mixing zone by conducting a 30-day public notice on a statement of basis per 18 AAC 83.120.

5.0 EFFLUENT LIMIT DEVELOPMENT

5.1 Basis for Permit Effluent Limits

18 AAC 83.015 prohibits the discharge of pollutants to waters of the U.S. unless first obtaining a permit implemented by the APDES point source discharge program that meets the purposes of AS 46.03 and in accordance with CWA Section 402 and the requirements adopted by reference at 18 AAC 83.010. Per these statutory and regulatory provisions, the Permit includes effluent limits for discharges to water of the U.S. that require the discharger to (1) meet standards reflecting levels of technological capability, (2) comply with WQSs in 18 AAC 70 (WQS), and (3) comply with other state requirements that may be more stringent.

In establishing permit limits, DEC first determines which technology based effluent limits (TBELs) from national ELGs must be incorporated into the permit. Where national ELGs have not been developed, or did not consider specific pollutant parameters in discharges, the same performance-based approach applied to develop national ELGs is applied to specific industrial discharges using Best Professional Judgment (BPJ) to develop TBELs for the permit. If ELGs exist for a parameter in another industry, DEC may adopt this TBEL without conducting a lengthy evaluation if there is a significant correlation between the activity and effluent characterization in the permit compared to these ELG's for a different activity (See Section 5.2.2). DEC then evaluates the effluent quality (See Section 4) expected to result from these technological controls to determine if the discharge could result in an excursion of the water quality criteria in the receiving water. If the expected quality of the effluent could cause or contribute to an excursion of an applicable water quality criteria, a water quality based effluent limit (WQBEL) must be included in the permit. The limits in the permit reflect whichever requirements (technology-based or water quality-based) are more stringent. Using this process as described, DEC has developed permit conditions that comply with WQS and protect existing or designated uses of the receiving waterbody.

5.2 TBELs

TBELs include specific effluent limits promulgated for industrial categories (ELGs) or TBELs developed using case-by-case BPJ. The following sections discuss applicable TBELs evaluated during effluent limit development and ultimately compared to any WQBEL for selecting the most stringent effluent limit.

5.2.1 Developing TBELs Using ELGs

National ELGs are developed based on the demonstrated performance of a reasonable level of treatment that is within the economic means of specific categories of industrial facilities. For conventional pollutants (see 40 CFR § 401.16), CWA Section 301(b)(1)(E) requires the imposition of effluent limits based on Best Conventional Pollutant Control Technology (BCT). For nonconventional and toxic pollutants, CWA Section 301(b)(2)(A), (C), and (D) require the imposition of effluent limits based on Best Available Technology Economically Achievable (BAT). CWA Section 301(b) requires compliance with BCT and BAT no later than March 31, 1989. The compliance deadline for Best Practicable Control Technology Currently Available (BPT) was July 1, 1977. DEC reviewed existing ELGs to the type of industrial facilities covered by the NSGP and compared them to applicable ELGs. As a result of the review, DEC determined there are applicable TBELs based on ELGs for coastal marine discharges of Graywater (Discharge 002), Gravel Pit Dewatering (Discharge 003), and Storm Water (Discharge 006).

5.2.1.1 ELGs for Graywater Discharges (Discharge 002)

Per 18 AAC 83.010(g)(3), DEC adopted by reference federally promulgated national ELGs for the Oil and Gas Extraction Point Source Category (40 CFR Part 435). The Oil and Gas Extraction Point Source Category is further divided into Subpart A (Offshore Subcategory) and Subpart D (Coastal Subcategory); both subcategories are applicable to the regions authorized by the NSGP. In the coastal subcategory of 40 CFR Part 435 Subpart D, EPA expressly regulates the discharge of graywater (defined as "domestic waste" in the ELG) and provides narrative effluent limits prohibiting the discharge of solids, garbage, and foam. The offshore subcategory (Subpart A) is essentially the same as Coastal. The geographical regions to which each subpart apply are detailed in the aforementioned CFR subsections.

5.2.1.2 ELGs for Gravel Pit Dewatering (Discharge 003)

Effluent limits based on BPT for Gravel Pit Dewatering are published in 40 CFR Part 436 Mineral Mining and Processing, Subpart C – Construction Sand and Gravel Subcategory. The BPT ELG states that mine dewatering discharges shall not be less than a pH of 6 or greater than a pH of 9.

5.2.1.3 ELGs for Storm Water (Discharge 006)

Similar to graywater discharges (Section 5.2.1.1), DEC adopted by reference [per 18 AAC 83.010(g)(3)] federally promulgated national ELGs for the Oil and Gas Extraction Point Source Category (40 CFR Part 435). In the coastal subcategory of 40 CFR Part 435 Subpart D; BPT, BAT, BCT, and new source performance standards (NSPS) requirements (40 CFR 435.12 through 435.15) contain provisions that apply to the discharge of storm water runoff from deck drainage areas requiring no discharge of free oil, as determined by the presence of a visual sheen upon the surface of the receiving water. Although appropriate for platforms with decks (i.e., deck drainage), the use of 40 CFR 435 does not appear to be directly applicable to onshore facilities. Instead, the appropriate comparison is the MSGP and the oil and gas storm water exemption (see Section 3.3). The exemption can be applied so long as there is no reportable quantity of oil; a sheen is the reportable quantity and is an appropriate limitation. Consistent with the previous NSGP issuance, DEC has evaluated pollution

control options and does not believe specific numeric effluent limitations or a specific design or performance standard are necessary to meet the BAT/BCT standards.

5.2.1.4 ELGs for Open Reserve Pits

40 CFR 435 Subpart D – Coastal Subcategory does not allow for the discharge of drilling fluids and drill cuttings based on Best Available Technology Economically Achievable (BAT) or Best Conventional Pollutant Control Technology (BCT). Because Best Practicable Control Technology Currently Available (BPT) is less stringent than BAT and BCT it is not applicable. Per 40 CFR 435.43 (BAT) and 40 CFR 435.44 (BCT), all coastal facilities except Cook Inlet must meet a no discharge prohibition for drilling fluids and drill cuttings. However, for dewatering effluent both the BAT and BCT limitations state in Note 1, that:

> "BCT limitations for dewatering effluent are applicable prospectively. BCT limitations in this rule are not applicable to discharges of dewatering effluent from reserve pits which as of the effective date of this rule no longer receive drilling fluids and drill cuttings. Limitations on such discharges shall be determined by the NPDES permit issuing authority."

The effective date of this rule is January 15, 1997 and reportedly, none of the affected open reserve pits have actively received drilling fluids or drill cuttings since the promulgation date. The applicant must certify in their request for coverage that this is correct. Hence, the discharge of dewatering effluent is allowable with limitations determined by the NPDES authority (i.e., DEC). The authority for DEC to determine limitations associated with precipitation and runoff that has come into contact with an industrial waste product is consistent with stormwater regulations associated with industrial activities. However, prior to having EPA approval to authorize discharges from open reserve pits in the Permit, DEC must complete a case-by-case BPJ TBEL analysis per Section 5.2.2.3.

5.2.2 Developing TBELs Using Case-by-Case BPJ

Per Section 402 of the CWA, developing a TBEL using case-by-case BPJ requires the permitting authority to consider the age of equipment and facilities involved, the process employed, the engineering aspects of the application of various types of control techniques, process changes, the cost of achieving such effluent reduction, non-water quality environmental impact (including energy requirements), the cost of implementing these conditions relative to the environmental benefits achievable, and such other factors as deemed appropriate. Frequently, existing ELGs established for similar industries that are believed to have similar waste streams, treatment technology, and waste characteristics are used to justify TBELs using BPJ because an analysis has already been performed. There is always a risk that the comparison is not appropriate because the waste stream or the waste characteristics are not as similar as originally conceived.

The Department reviewed TBELs based on BPJ for discharges from graywater, gravel pit dewatering, excavation dewatering, hydrostatic test water, and SCAs to ensure compliance with Section 402 of the CWA.

5.2.2.1 BPJ for Graywater Discharges (Discharge 002)

As discussed in Section 4.1, POCs for Graywater (Discharge 002) include pH, TSS, BOD_5, TRC (when chlorine is used as a disinfectant), residues, and bacteria; neither Alaska WQS

(18 AAC 70) nor 40 CFR 435 ELGs contain effluent limits for TSS and BOD_5 in graywater. DEC has considered factors outlined in Section 5.2.2 in developing TBELs using case-by-case BPJ for TSS and BOD_5 and determined that the current model treatment technology of filtration is the most appropriate technology upon which to develop effluent limits.

BOD_5 and TSS: As these facilities are not publicly-owned treatment works, federally promulgated secondary treatment requirements do not apply to the discharge. In addition, only permittees with graywater treatment systems that comply with 18 AAC 72 are eligible for coverage under this discharge (See Section 8.1). This may mean that systems which do not meet secondary treatment would require a waiver from minimum treatment standards (i.e., secondary treatment).

During the Graywater General Permit (GP) development, DEC previously developed TBELs using BPJ for TSS and BOD_5, using performance data submitted under the 2004 NSGP that included 23 data points for TSS and 22 data points for BOD_5. From this performance data, DEC developed average monthly limits (AML) and maximum daily limits (MDL) using an approach consistent with EPA's *Technical Support Document for Water Quality-based Toxics Control* (TSD), the methodology used in establishing WQBELs, and the methodology EPA uses to develop effluent limits for ELGs. Below are the AMLs and the MDLs that were developed for TSS and BOD_5 in the Graywater GP:

	MDL	AML
TSS (mg/L)	820	296
BOD_5 (mg/L)	2305	826

The Department reapplied the same method described for the 2017 NSGP limits to evaluate TSS and BOD_5 data collected throughout the permit cycle of the Graywater GP (AKG426000) that included 32 data points for TSS and 27 data points for BOD_5. Evaluation of the Graywater GP data set yielded higher AML and MDL results for TSS and BOD_5 than those developed from the 2004 NSGP data set. Additional evaluation data from the 2017 NSGP term shows effluent limits for TSS were exceeded less than seven percent of the time and less than ten percent of the time for BOD_5. These percentages indicate upsets are not a reoccurring issue and that more than 90% of the time, limits can be met. Instances of operator error or equipment malfunction likely contributed to those few exceedances, which can be resolved through improvements to operations and maintenance procedures in the BMPs. As the AML and MDL calculations were not an indication that the available treatment is unable to achieve the effluent limits established previously in the Graywater GP, DEC found that relaxation of these limits was not warranted at that time. Per Section 4.1.2, there were no exceedances reported during the term of the 2017 NSGP for BOD_5 and TSS. Hence, similar to before, the limits for TSS and BOD_5 appear attainable such that less stringent limits would not be necessary. Because there were cases where the results were right at the limits, more stringent limits would also be inappropriate. Therefore, DEC is retaining the existing TBELs for graywater in the permit.

5.2.2.2 BPJ for Gravel Pit Dewatering, Excavation Dewatering, Hydrostatic Test, and Contained Water (Discharges 003-005, 008)

The 2012 NSGP found the treatment technologies used to remove sediment from a gravel pit dewatering and excavation dewatering activities were similar to the practice used for gold placer mining discharges. In the Gold Placer Mining category (40 CFR §440 Subpart

M) the only parameter published is SS with a limit of 0.2 mL/L. DEC evaluated the previous case-by-case TBEL development using BPJ for the Permit and carries them forward in this fact sheet to be compared to WQBELs. While the presence of SS from hydrostatic test water is less likely than excavation dewatering activities, poor construction practices could result in slugs of SS. Therefore, DEC is establishing the 0.2 mL/L SS TBEL for hydrostatic test water discharges to be compared to an equivalent WQBEL.

Because the Contained Water discharge category is intentionally broad, the application of TBELs should be flexible, as not all contained waters may require TBELs using case-by-case BPJ. Below are some situations where the SS TBEL would be applicable. Because the discharge category is broad, DEC may apply this TBEL to other situations where SS may be in other contained water sources requested by the applicant.

- [Placeholder] To authorize discharges from open reserve pits in the Permit, DEC must complete a case-by-case BPJ analysis in this section at a minimum. DEC will update this section as a Permit Modification as described in the Permit Section 3.5.1 Permit Reopener Clause. Also see Response to Comments Section 2.1.
- Pumps over soil: In any circumstances where a pump is placed at, or near, a source with the potential for SS (e.g., valve vaults), DEC may impose the TBEL limitation at their discretion.

5.2.2.3 BPJ for Discharges from Open Reserve Pits (Discharge 008)

[Placeholder] To authorize discharges from open reserve pits in the Permit, DEC must complete a case-by-case BPJ analysis in this section at a minimum. DEC will update this section as a Permit Modification as described in the Permit Section 3.5.1 Permit Reopener Clause. Also see Response to Comments Section 2.1.

5.3 WQBELs

CWA Section 301(b)(1) requires the establishment of limits in permits necessary to meet WQS by July 1, 1977. All discharges to state waters must comply with WQS, including the antidegradation policy. The APDES regulations at 18 AAC 83.435(a)(1) require that permits develop WQBELs that "achieve WQSs established under CWA Section 303, including State narrative criteria for water quality." For discharges where comparisons are available between TBELs and WQBELs, the most stringent limit is adopted.

5.3.1 Narrative Limitations for All Discharges

Narrative criteria are established to help ensure that discharges do not result in objectionable conditions or make the receiving water unsafe or unfit or existing uses. DEC applies the following narrative limitations to all discharges under the permit.

Residues: Residues are defined in 18 AAC 70.990(49) as any floating solids, debris, sludge, deposits, foam, scum, or other material or substance remaining in a waterbody as a result of direct or nearby human activity. Based on the use classification for fresh water supply used for aquaculture per 18 AAC 70.020(b)(8)(A)(i) and marine water supply used for seafood processing per 18 AAC 70.020(b)(20)(A)(ii), discharges may not alone or in combination with other substances or wastes, make the water unfit or unsafe for the use; cause a film, sheen, or discoloration on the surface of the water or adjoining shorelines; cause leaching of

toxic or other deleterious substances; or cause a sludge, solid, or emulsion to be deposited beneath or upon the surface of the water, within the water column, on the bottom, or upon adjoining shorelines.

5.3.2 Graywater (Discharge 002)

Based on the characterization of graywater in Section 4.1, the Department believes there is reasonable potential to cause, or contribute to an excursion of numeric water quality criteria for the following parameters: TRC (when chlorine is used as a disinfectant or introduced to the system by some other means), pH, and FC Bacteria. Note that E. Coli and EC bacteria were monitored during the term of the 2017 NSGP were below the detection limit and no reasonable potential was determined. Therefore, DEC establishes WQBELs for TRC, pH, and FC bacteria based on applicable water quality criteria to ensure protection of water quality and existing uses of the waterbody. All numeric criteria apply to the effluent at the point of discharge. However, a mixing zone may be authorized for FC bacteria and residues (Section 7.2) with supportive information supplied in the mixing zone request form. For an authorized mixing zone, FC bacteria limits will be based on an appropriate wasteload allocation by applying a dilution factor of 10. The mixing zone dilution factor does not apply to WQBELs for TRC or pH.

Total Residual Chlorine: The *Alaska Water Quality Criteria Manual for Toxic and Other Deleterious Organic and Inorganic Substances (Toxics Manual)* [adopted by reference in 18 AAC 70.020(b)] lists acute and chronic water quality criteria for TRC which is protective of aquatic life for freshwater and marine waterbodies separately. Acute criterion is based upon a 1-hour average concentration and the chronic criterion is based upon a four-day average concentration. The freshwater effluent limits for TRC are 19µg/L (acute) and 11µg/L (chronic). The marine water effluent limits for TRC are 13µg/L (acute) and 7.5µg/L (chronic). The method detection limit for this parameter is 100µg/L using EPA approved analytical methods and will be used as the compliance level for this parameter.

FC Bacteria: FC bacteria are a non-pathogenic indicator species whose presence suggests the likelihood that pathogenic bacteria are present. The most stringent freshwater quality criteria per 18 AAC 70.020(b)(2)(A)(i) provides protection of waterbodies for water supply designated for drinking, culinary, and food processing. For discharges without an authorized mixing zone, water quality criteria requires that in a 30-day period, the geometric mean may not exceed 20 FC/100mL (applied as an AML), and not more than 10% of the samples may exceed 40 FC/100mL (applied as a MDL). Per Section 7.2.1 and Section 7.2.4, graywater discharges with an authorized mixing zone receive a dilution factor of 10 for FC bacteria. The resulting freshwater AML is 200 FC/100mL and the MDL is 400 FC/100mL.

The most stringent marine water quality criteria per 18 AAC 70.020(b)(14)(D) and 18 AAC 70.020(b)(14)(A)(ii) provides protection of waterbodies for water supply designated for harvesting and consumption of raw mollusks or other raw aquatic life as well as seafood processing. The water quality criteria requires that in a 30-day period, the geometric mean may not exceed 14 FC/100mL (applied as the AML), and not more than 10% of the samples may exceed 40 FC/100mL (applied as the MDL). For graywater discharges to marine waters with a mixing zone, the AML is 140 FC/100mL and the MDL is 400 FC/100mL.

Permittees may demonstrate compliance with the MDL (with or without a mixing zone) in one of two ways: by showing the calculated 90th percentile of a data set does not exceed the

MDL, or by determining that the maximum observed concentration does not exceed the MDL more than 10% of the time. Although there are numerous methods for monitoring FC bacteria and these methods have different criteria in WQS, the permittee may mix and match various methods and report the results as FC/100 mL despite there being different limits listed in the WQS.

pH: Based on the use classification for water supply used for aquaculture per 18 AAC 70.020(b) (6)(A)(iii) and (b)(18)(A)(i), pH must meet two criteria. Effluent must be no less than 6.5 standard units (SU) and no greater than 8.5 SU ($6.5 \leq pH \leq 8.5$) and may not vary from natural conditions by more than 0.5 SU for freshwaters or 0.2 SU for marine waters. Because sleigh camps operate during the winter graywater cannot be discharged to open waters and monitoring of natural receiving water conditions is infeasible. The Department only applies the first part of this criteria.

5.3.3 Gravel Pit Dewatering (Discharge 003)

Based on the characterization section for gravel pit dewatering (Section 4.2) and the identified POCs, the Department finds there is reasonable potential to cause or contribute to an excursion, of numeric water quality criteria at the point of discharge for the following parameters: pH, and sediment. Accordingly, to ensure protection of water quality and existing uses of the waterbody the Department applies numeric WQBELs for pH and sediment. Although turbidity showed reasonable potential at the point of discharge based on the average of the available data, DEC will allow a mixing zone for direct discharges to flowing water and is imposing BMPs to ensure there is no excursion above the water quality criterion, which is variable and based on background receiving water turbidity. In addition, the Department establishes a prohibition to discharge oil and grease determined by an observation of a sheen. The presence of a sheen may indicate the presence of dissolved hydrocarbons, although there were no observations of sheen during the term of the 2017 permit. The following sections provide details concerning the WQBELs for gravel pit dewatering discharges.

pH: Limits for pH discussed in Section 5.3.2 apply.

SS: Per 18 AAC 70.020(b)(9)(A)(i) and (b)(21)(B)(i), discharges to freshwaters protected for drinking, culinary, and food processing and marine waters used for contact recreation water supply, may not have a measurable increase in concentrations of SS above natural conditions, as measured by the volumetric Imhoff cone.

Petroleum Hydrocarbon, Oil and Grease: Per 18 AAC 70.020(b)(5)(B)(i) and (b)(17)(A)(ii) discharges may not cause a film, sheen or other discoloration on the surface or floor of the waterbody or adjoining shorelines. Surface waters must be virtually free from floating oils. Sites should have no direct contact with oil production activities. Furthermore, appropriate BMPs should be in place to ensure equipment is not operated in a manner that would allow contact of hydraulic fluids, lubricants, fuel, or other hydrocarbon-based products with melt water.

The Department does not have sufficient information at this time to determine whether there is reasonable potential to exceed numeric water quality criteria in 18 AAC 70.020(b)(5)(A)(iii) and (b)(17)(A)(i) for TAH and TAqH. Therefore, the Permit establishes a monitoring requirement for TAH and TAqH whenever a sheen is observed.

Turbidity Observations: Because DEC is authorizing a mixing zone for direct discharges, no excursion above the criterion is anticipated. There is a requirement to observe the discharge plume at the boundary of the mixing zone and if a turbidity plume is distinguishable from the background, the permittee must implement BMPs to reduce the plume. The BMPs specifically must ensure that the numeric water quality criteria per 18 AAC 70.020(b)(12)(B)(i) and per 18 AAC 70.020(b)(24)(A)(i) is not exceeded over four days of exposure (i.e., no excursion). Therefore, the Permit establishes a monitoring requirement for turbidity to provide information for future permit development decisions.

Most Stringent Limits: As discussed in Section 5.2.1.2, there are applicable TBELs based on ELGs for pH. However, the WQBEL of not less than 6.5 and not greater than 8.5 ($6.5 \leq pH \leq 8.5$) is more stringent. After evaluating WQBELs for SS and comparing it to the equivalent TBEL, the Department determines the WQBEL for SS is more stringent than the TBEL developed using case-by-case BPJ. The water quality criteria establish there to be no trace of SS as represented by lowest detectable quantity in the Imhoff Cone. By this method, the lowest measurable increase of SS above natural conditions is 0.2 mL/L.

5.3.4 Excavation Dewatering (Discharge 004)

Excavation dewatering WQBELs are the same as those of gravel pit dewatering, except for turbidity. Based on the characterization section for excavation dewatering (Section 4.3) and the identified POCs, the Department finds there is reasonable potential to cause, or contribute to, an excursion, of numeric water quality criteria at the point of discharge for the following parameters: pH, turbidity, and sediment. Although DEC authorizes a mixing zone for turbidity, data indicates there is less ability to use BMPs to ensure compliance with WQS. Therefore, to ensure protection of water quality and existing uses of the waterbody the Department applies numeric WQBELs for pH, sediment, and turbidity. In addition, the Department establishes a prohibition to discharge oil and grease determined by an observation of a sheen. The presence of a sheen may indicate the presence of dissolved hydrocarbons but there is insufficient information to determine if limits are appropriate. The following provides additional details on the WQBELs for excavation dewatering discharges:

pH: Limits for pH discussed in Section 5.3.2 apply.

Turbidity: Per 18 AAC 70.020(b)(12)(B)(i) discharges to open freshwaters used for contact recreation water supply may not exceed 5 NTU above natural conditions when the natural turbidity is 50 NTU or less and may not have more than 10% increase in turbidity when the natural turbidity is more than 50 NTU, not to exceed a maximum increase of 15 NTU. Discharges may not exceed 5 NTU above natural turbidity for all lake waters. Per 18 AAC 70.020(b)(24)(A)(i) discharges to open marine waters used for aquaculture water supply may not exceed 25 NTU. For discharges to non-WOTUS (i.e., wetlands without open water, dry stream channels, tundra, or snow), turbidity limits are not applicable because the criterion is based on background turbidity, which is nonexistent at these locations. In these situations, the criteria and resulting limits are not applicable because there is no legitimate basis of reference. As such, DEC recommends applicants to seek to discharge to non-WOTUS locations and to avoid flowing or open waterbodies as much as practicable. The limits are based on criteria using background turbidity and the compliance point is at the boundary of the 500-ft mixing zone, if authorized.

SS: SS limits discussed in Section 5.3.3 apply. Unlike turbidity, the limits for SS always apply and are an indicator that the BMPs applied are appropriate. In addition, SS limits protect vegetation when the discharge is to tundra or other potentially sensitive vegetation. Like turbidity, an exceedance of SS limits triggers re-evaluation of BMPs.

Petroleum Hydrocarbon, Oil and Grease: Narrative petroleum hydrocarbon, oil and grease limits discussed in Section 5.3.3 apply.

Petroleum Hydrocarbon, TAH and TAqH: The monitoring requirements triggered by the presence of a sheen per Section 5.3.3 apply.

Most Stringent Limits: The most stringent limits applied to excavation dewatering are the same as gravel pit dewatering per Section 5.3.3.

5.3.5 Hydrostatic Test Water (Discharge 005)

General Considerations: Hydrostatic test water characteristics for new pipelines or tanks (Section 4.4) is partly determined by requirements for source water during hydrotesting for that particular pipe or tank and the applicable industry codes, standards, and guidance (e.g., ASME or API). In addition, the source water may be a lake, potable water, or other sources that may contribute to the characteristics of the discharge. Hence, DEC understands that hydrostatic test source water is a variable that must be considered in the RPA and this acknowledgement leads to evaluating multiple scenarios with implications on BMPs and associated plan reviews under 18 AAC 72.

Based on research into hydrostatic testing industry practices, the type of infrastructure being tested, and common source water used on the North Slope, there is an overarching reasonable potential for pH and sediment to cause, or contribute to, an excursion of water quality criteria at the point of discharge regardless of the type of pipe or tank being hydrostatically tested or source water. Accordingly, pH and SS limits are established for each scenario. Although presence of hydrocarbons is not anticipated for new pipes, evaluating TAH and TAqH upon observation of a sheen is a practicable approach to ascertain compliance with WQS and to inform future reissuances of the Permit.

New Pipelines and Tanks: The Department finds that new pipelines or tanks that have not been previously exposed to hydrocarbons are not likely to cause, or contribute to, an excursion of petroleum hydrocarbons (sheen), TAH, and TAqH. This is also the case for existing pipelines that have not been used to transport hydrocarbons (e.g., waterflood pipelines). However, depending on the overlying hydrostatic test requirements for that particular type of infrastructure, there may be chemical additions to the test water such as corrosion inhibitors, pH adjustment, chloride adjustments, biocides, or freeze protection chemicals. In the 2017 NSGP, chemical additions such as biocides or antifreeze agents are prohibited under the hydrostatic test discharge. Because it is not possible to account for the multiple degrees of freedom in the scenario where chemical additions may be dictated by construction practices, codes, and guidance DEC will require any water quality parameter present due to chemical additions to meet the respective water quality criterion for that parameter. Hence, hydrostatic test with chemical additives must be evaluated via plan review of the chemical dosing and any treatment necessary to comply with WQS. These plan reviews will be conducted per 18 AAC 72 to ensure compliance with 18 AAC 70 with appropriate stipulations included in the plan approval. Accordingly, the overarching requirement for the

discharge to meet WQS is demonstrated via plan review and confirmation sampling based on the plan review approval. So long as the discharge complies with WQS, the discharge will be found to comply with the Permit.

Existing Pipelines or Tanks: Regardless of robustness of cleaning existing pipelines or tanks prior to hydrotesting, there remains a reasonable potential for TAH and TAqH to cause, or contribute to, an excursion of water quality criteria for these parameters. Accordingly, the Permit includes WQBELs for TAH and TAqH based on meeting WQS. Note that pipeline cleaning for the purpose of the Permit will be treated as a hydrostatic test water with chemical additions requiring plan review as stated previously. Because there is reasonable potential for TAH or TAqH, treatment BMPs must be developed and implemented as approved by DEC under the Permit. If previously unidentified chemical additions are needed for hydrostatic testing or cleaning, BMPs must be developed based on a plan review conducted under 18 AAC 72 similar to the chemical additions for new pipelines or tanks.

Summary of Stepwise Approach: The result of the stepwise approach provides four separate scenarios whereby the limits may be applied as appropriate under the permit and supplemented by plan reviews under 18 AAC 72, when necessary to comply with WQS. The following provides the stepwise progression of the four scenarios and the application of limitations, BMPs, and plan reviews under 18 AAC 72.

Scenario 1 – New pipeline or tank without chemical additions to source water requirements include:

- WQBELs for pH and hydrocarbon sheen;
- Observation of sheen triggers TAH and TAqH monitoring;
- TBEL for SS;
- BMPs for erosion control and thermokarsting; and
- Optional treatment BMPs under the Permit.

Scenario 2 – New pipeline or tank with chemical additions to source water requirements include:

- Same requirements for Scenario 1, plus;
- Plan review and approval under 18 AAC 72 for chemical additions.

Scenario 3 – Existing pipeline or tank without chemical addition or cleaning chemical requirements include:

- Same requirements as Scenario 1, plus;
- WQBELs for TAH and TAqH.

Scenario 4 – Existing pipeline or tank with chemical addition or cleaning chemicals requirements include:

- Same requirements as Scenario 3, plus;
- Plan review and approval under 18 AAC 72 for chemical additions.

The specific requirements are discussed below for each parameter.

pH: Limits for pH discussed in Section 5.3.2 apply.

SS: SS limits discussed in Section 5.3.3 apply.

Petroleum Hydrocarbon, Oil and Grease: Narrative oil and grease (sheen) WQBEL discussed in Section 5.3.3 apply for hydrostatic test water discharged from pipelines or tanks that have not previously been exposed to hydrocarbons. The discharge of a visible sheen is prohibited.

Petroleum Hydrocarbon, TAH and TAqH: Hydrostatic test water discharged from existing pipelines or tanks that have previously been exposed to hydrocarbons have been determined to have reasonable potential to cause, or contribute to, an excursion of numeric water quality criteria for TAH and TAqH. Therefore, DEC applies the following WQBELs which are protective of freshwater and marine water supply used for aquaculture:

TAH: Per 18 AAC 70.020(b)(5)(A)(iii) and (b)(17)(A)(i) discharges shall not have a TAH concentration in the water column exceeding 10 µg/L. The analytical measurement for TAH consists of summing the individual concentrations of the monoaromatic hydrocarbons including BTEX.

TAqH: Per 18 AAC 70.020(b)(5)(A)(iii) and (b)(17)(A)(i) discharges shall not have a TAqH concentration in the water column exceeding 15 µg/L. TAqH is the sum of monoaromatic hydrocarbons (i.e., TAH) plus the sum of the individual concentrations of polynuclear aromatic hydrocarbons.

If a sheen is observed in a discharge from a new pipeline or tank not anticipated to have petroleum hydrocarbons, the permittee must monitor the discharge for TAH and TAqH. This information may be used to inform permit decisions in subsequent reissuances of the Permit.

Most Stringent Limits: After evaluating WQBELs for SS and comparing it so the equivalent TBEL, the Department determines the WQBEL for SS is more stringent than the TBEL developed using case-by-case BPJ.

5.3.6 Storm Water Discharges from Industrial Facilities (Discharge 006)

Based on the characterization section (Section 4.5) for storm water discharges from industrial facilities (including allowable non-storm water discharges) and the identified POCs, Department finds there is reasonable potential to cause or contribute to an excursion of water quality criteria for petroleum hydrocarbons, oil, and grease. As discussed in Section 5.2.1.3, there are applicable ELG-based TBELs for free oil (visual sheen) which apply to offshore deck drainage. However, WQBELs for petroleum hydrocarbons, oil, and grease are more stringent and apply to all Coastal and Offshore stormwater discharges. Other POCs identified in Section 4.5 (i.e. sediment) are rigorously controlled through implementation of a SWPPP submitted upon application per 40 CFR 122.26(c) (Section 11.3), and inspection and monitoring requirements. To ensure protection of water quality and existing uses of the waterbody the Department applies narrative criteria for residues, and petroleum hydrocarbons, oil, and grease (visible petroleum sheen).

Petroleum Hydrocarbon, Oil and Grease: Per 18 AAC 70.020(b)(5)(B)(i) and (b)(17)(A)(ii) discharges may not cause a film, sheen or other discoloration on the surface or floor of the waterbody or adjoining shorelines. Surface waters must be virtually free from floating oils. The discharge of a visible sheen is prohibited.

5.3.7 Mobile Spill Response (Discharge 007)

Mobile spill response discharges must be treated using a treatment process or system (scrubber unit) capable of removing free-phase and dissolved-phase hydrocarbons. Once a treatment unit has been evaluated (Section 8.2) it can be adopted into the BMP Plan for subsequent use under the Permit. Based on the POCs identified in the characterization section for mobile spill response (Section 4.6), DEC has determined that discharges from an appropriately designed and operated treatment system would not have reasonable potential to discharge petroleum hydrocarbons. The Department has found that there were previously applied TBELs based on BPJ treatment unit evaluation, which applied a narrative limit of no sheen. The Department finds the WQS narrative criteria for this parameter is more stringent. Narrative criteria for petroleum hydrocarbon, oil and grease, and residues are adopted and discussed below.

Petroleum Hydrocarbon, Oil and Grease: Per 18 AAC 70.020(b)(5)(B)(i) and (b)(17)(A)(ii) discharges may not cause a film, sheen or other discoloration on the surface or floor of the waterbody or adjoining shorelines. Surface waters must be virtually free from floating oils. The discharge of a visible sheen is prohibited. The observation of a sheen triggers cessation of the discharge and triggers implementation of specific BMPs to conduct operation and maintenance on the treatment system to restore treatment capacity.

Most Stringent Limits: After evaluating WQBELs for SS, the Department retains the TBEL for sediment based on case-by-case BPJ. All other limits for hydrostatic test water were developed using WQBELs.

5.3.8 Contained Water (Discharge 008)

Contained Water (Discharge 008) represents a combination of contaminated SCAs, open RPs, sedimentation basins, and other miscellaneous contained water that is outside the narrow description of hydrostatic test water. The miscellaneous infrastructure includes, but may not be limited to, vaults, utilidors, basements, water tanks, water lines, sedimentation basins, or other infrastructure with contained water at oil and gas facilities. The reason contained water requirements are developed separately from hydrostatic test water is because there is a broader potential for pollutants such as metals (e.g., RPs) or use of coagulants (e.g., sedimentation basins) or even water that is anticipated to have no pollutants (e.g., valve vaults or water tanks). The main takeaway is that hydrostatic test water was previously the conglomerate catchall category, but now contained water is the catchall as it is better suited to handle a wide variety of situations and their similarity to contaminated SCAs.

General Considerations: Having evaluated the broad category of contained water sources at various oil and gas facilities on the North Slope, the Department finds there is generally always reasonable potential to cause, or contribute to, an excursion of water quality criteria for pH, oil and grease (sheen), and suspended solids. These baseline limitations should suffice for discharges from vaults, utilidors, and water tanks, and other contained water that is not likely contaminated with hydrocarbons, metals, or chemical additions. Note that whenever a sheen is unexpectedly observed, the standard requirement is to monitor for TAH and TAqH similar to new pipelines or tanks under hydrostatic test.

Hydrocarbon contaminated sources: For contained water that is known or suspected to be contaminated with hydrocarbons (e.g., contaminated SCAs), there is reasonable potential to

cause or contribute to, an excursion of water quality criteria for TAH and TAqH. At a minimum, the authorization of contained water from contaminated SCAs requires treatment BMPs to remove dissolved hydrocarbons (e.g., carbon filtration). Depending on the nature and extent of the contamination issue, DEC may require submittal of plans under 18 AAC 72 or clean-up of the contaminated source.

Sources with metals: [Placeholder] To authorize discharges from open reserve pits in the Permit, DEC must complete a case-by-case BPJ analysis in this section at a minimum. DEC will update this section as a Permit Modification as described in the Permit Section 3.5.1 Permit Reopener Clause. Also see Response to Comments Section 2.1.

Sedimentation basins for marine dredge material: While sedimentation basins are a common treatment BMP for excavation dewatering, they may also be considered under contained water to cover conditions dissimilar to excavation dewatering. At least one applicant on the North Slope has indicated the desire to use sedimentation basins with coagulants to treat dredge material from coastal dock facilities. The use of a diamond head suction dredge would require onshore treatment prior to discharging the decant water back to the coastal waters of the Beaufort Sea. The primary POCs of such a discharge include turbidity, SS, pH, and potentially chronic WET if chemical coagulants are used. Accordingly, DEC finds there is reasonable potential to cause, or contribute to, an excursion of water quality criteria for turbidity and SS associated with the sediment and pH and chronic WET associated with the potential use of coagulants. Turbidity is likely the driving parameter but there is also the potential for low-levels of chronic WET, which suggests a mixing zone for pH, turbidity, and chronic WET could be necessary when discharging the marine water for this scenario. A mixing zone may be authorized based on submittal of toxicity information for the coagulant, dosing range, and discharge frequency; an intermittent discharge may not require a mixing zone if there is sufficient time between discharges to result in a four-day average less than the criteria so an excursion does not result. If the discharge can meet water quality criteria, an authorization can be granted based on the NOI and information for the coagulant. However, if it is more likely that the discharge will not meet criteria then a mixing zone can potentially be approved. To obtain mixing zone approval and authorization to discharge above criteria, the applicant must submit an application detailing effluent characteristics, a mixing zone application (Form 2M), and an antidegradation application (Form 2G). DEC will use this information to develop a Statement of Basis that provides limits based on the effluent characteristics, a mixing zone, and an antidegradation analysis and conduct a 30-day public notice of the Statement of Basis, as allowed per 18 AAC 83.120. After considering comments, DEC may issue the authorization with a project specific mixing zone and limits. Alternatively, the applicant may request an individual permit but DEC believes issuance of the authorization is more efficient while providing the same level of environmental protection.

pH: Limits for pH discussed in Section 5.3.2 apply.

SS: SS limits discussed in Section 5.3.3 apply.

Marine Turbidity: Per 18 AAC 79.020(b)(24)(a)(i), the most stringent marine turbidity criterion is based on aquaculture uses where turbidity may not exceed 25 NTUs. If a mixing zone is necessary, the dilution factor and size of the mixing zone will be based on the projected effluent turbidity and this criterion.

Chronic WET: Per 18 AAC 70.030, "an effluent discharged to a water may not impart chronic toxicity to aquatic organisms, expressed as 1.0 Toxic Unit – Chronic (TUc), at the point of discharge, or if the department authorizes a mixing zone in a permit, plan approval, or authorization, at or beyond the mixing zone boundary, based on the minimum effluent dilution achieved in the mixing zone."

Most Stringent Limits: After evaluating WQBELs for SS and comparing it so the equivalent TBEL, the Department determines the WQBEL for SS is more stringent than the TBEL developed using case-by-case BPJ.

6.0 LIMITATIONS AND MONITORING REQUIREMENTS

Pollutants in discharges must be controlled by meeting numeric limits, narrative limitations, developing and implementing BMPs. When applying effluent limits to commingled discharges, the more stringent effluent limits apply to the commingled discharge. In general, all discharges, whether alone or in combination, must not make the water unfit or unsafe; cause a film, sheen, or discoloration on the water surface or adjoining shoreline; cause leaching of toxic or deleterious substance, or cause a sludge, solid, or emulsion to be deposited beneath or upon the water surface, water column, on the bottom, or adjoining shoreline.

Per 18 AAC 83.455, APDES permits require monitoring to determine compliance with effluent limits. Monitoring frequencies for compliance with limits are based on the nature and effect of the pollutant, as well as a determination of the minimum sampling necessary to adequately monitor facility performance. Monitoring may also be required to gather data to evaluate future effluent limits or to monitor effluent impacts on receiving water quality. The Permittee is responsible for conducting monitoring and reporting the results to DEC as described in the Permit. The basis for effluent limit derivation is discussed in Section 5.0. The following sections (Sections 6.1-6.8) summarize the effluent limits and describe monitoring required for each discharge.

6.1 Limitations and Monitoring for Graywater (Discharge 002)

Graywater discharges from sleigh camps will be authorized on a short-term basis aligned with specific projects. Graywater discharges under the NSGP are expected to be associated with seasonal winter facilities that discharge over an area of operation that may include freshwater or marine receiving waters with or without an authorized mixing zone. Accordingly, both receiving waters were considered in the limit development. The Permit contains two sets of freshwater limits for FC bacteria and two sets of marine water limits for FC bacteria with and without a mixing zone. Graywater treatment systems under the NSGP may not be equipped to disinfect effluent prior to discharge. However, TRC limits are included for facilities that have introduced chlorine into the system (e.g., disinfection or potable water source). Limits and monitoring requirements for Graywater are provided in Table 5.

Table 5: Effluent Limits and Monitoring Requirements for Graywater (Discharge 002)

Parameter (Unit)	Effluent Limits		Monitoring Requirements		
	MDL	AML	Frequency	Location	Sample Type
Flow Volume[a] (gpd)	5000	Report	Daily	Effluent	Estimate or Measure

pH [b] (SU)	6.5 ≤ pH ≤ 8.5		1/week	Effluent	Grab
BOD_5 (mg/L)	2,305	826	1/month	Effluent	Composite [c] or Grab
TSS (mg/L)	820	296	1/month	Effluent	Composite [c] or Grab
TRC – Freshwater [d] (µg/L)	19	11	1/week	Effluent	Grab
TRC – Marine [d] (µg/L)	13	7.5	1/week	Effluent	Grab
FC Bacteria – Fresh [g] (FC#/100mL)[i]	40 [e]	20 [f]	1/month	Effluent	Grab
FC Bacteria – Fresh [h] (FC#/100mL)[i]	400 [e]	200 [f]	1/month	Effluent	Grab
FC Bacteria – Marine [g] (FC#/100mL)[i]	40 [e]	14 [f]	1/month	Effluent	Grab
FC Bacteria – Marine [h] (FC#/100mL)[i]	400 [e]	140 [f]	1/month	Effluent	Grab

Notes:

a) Record daily flow measurements or estimates in a daily log. Report daily maximum and total volume for each month.

b) The effluent limit for pH shall not be less than 6.5 or greater than 8.5. Report maximum and minimum for each month.

c) See Appendix C of the General Permit for composite sample definition.

d) Sampling for chlorine is not required if chlorine is not used as a disinfectant or introduced elsewhere in the system. The method detection limit for TRC is 100 µg/L (using approved EPA analytical methods) and will be used as the compliance level for TRC.

e) No more than 10% of the samples may exceed the MDL for FC bacteria. If less than 10 samples are collected, compliance can be determined by calculating 90th percentile of the sample set. If the calculated percentile is less than or equal to the MDL, the discharge is compliant.

f) Average results for FC bacteria must be reported as the geometric mean. When calculating the geometric mean, replace all results of zero (0), with a one (1). The geometric mean of "n" quantities is the "nth" root of the quantities. For example, the geometric mean of 10, 20, and 30 is $(10 \times 20 \times 30)^{1/3} = 18.2$.

g) Limits apply to discharges without an approved mixing zone.

h) Limits apply to discharges with an approved mixing zone (See Section 7.2 for details).

i) All bacterial limits are in the units of FC#/100 mL regardless of the method used. Permittee may use results in most probable number (mpn) or CFU as FC#/100 mL.

Authorization to discharge graywater requires complying with the most recent version of 18 AAC 72. Graywater discharges to open waters are prohibited and discharges to frozen conditions may occur for a period of not more than 30 days at a given location. BMP controls must be developed to ensure solids accumulation does not result in damage to vegetation. Other BMP controls which ensure kitchen oils from food preparation shall not be discharged, and phosphate free non-toxic detergents and soaps are used, as well as other specific controls shall also be included (Section 11.2.4.1).

6.2 Limitations and Monitoring for Gravel Pit Dewatering (Discharges 003)

Gravel pit dewatering discharges can be to freshwater or marine waters, although discharges to marine waters are rare. Accordingly, limits are provided for both freshwater and marine discharges. DEC will allow for 500 ft mixing zones for turbidity, where compliance with turbidity limits is based on measurements in the receiving water 500 ft downstream on the discharge site. Limits and monitoring requirements for Gravel Pit Dewatering are provided in Table 6.

Table 6: Effluent Limits and Monitoring Requirements for Gravel Pit Dewatering (Discharges 003)

Parameter (Units)	Effluent Limits	Monitoring Requirements		
		Frequency	Location	Sample Type
Flow Volume [a] (gpd)	Report	Daily	Effluent	Estimate or Measured
pH [b] (S.U.)	$6.5 \leq pH \leq 8.5$	1/week	Effluent	Grab
Freshwater Turbidity (NTU)	Report [d]	Daily	Upstream [c]	Grab
Freshwater Turbidity (NTU) With no Mixing Zone	Varies [d,e,f]	Daily	Effluent	Grab
Freshwater Turbidity (NTU) With Mixing Zone	Varies [d,e,f]	Daily	Down Stream	Grab
SS [g] (milliliter per liter (mL/L))	0.2	1/week	Effluent	Grab
Oil and Grease (oily sheen) [h]	No Discharge	Daily	Effluent	Visual
TAH[i] (µg/L)	Report	Event	Effluent	Grab
TAqH[i] (µg/L)	Report	Event	Effluent	Grab

Notes:

a) Record daily flow measurements or estimates in a daily log. Report daily maximum and total volume for each month.

b) The effluent limit for pH shall not be less than 6.5 or greater than 8.5. Report maximum and minimum for each month.

c) Receiving water monitoring must be performed prior to discharge as it provides a measurement of ambient conditions and the limits. If receiving water turbidity monitoring is not possible, record "NODI T" for "Environmental Monitoring Conditions – Monitoring Not Possible" on the DMR and provide a comment indicating the reason an observation was not made (e.g., tundra, ice, or or snow discharge).

d) Turbidity monitoring is not required for gravel pit water used to construct ice roads or pads or for dust suppression.

e) The permittee must meet water quality criteria at the point of discharge or at the boundary of a 500 ft mixing zone, if authorized. Freshwater discharges may not exceed 5 NTU above ambient conditions when the ambient turbidity is 50 NTU or less; and shall not have more than a 10% increase in turbidity when the ambient condition is greater than 50 NTU (not to exceed a maximum increase of 15 NTU); and shall not exceed 5 NTU above ambient conditions for all lake waters (See Attachment D). Report the receiving water value prior to discharge and maximum value for effluent. The permittee must develop BMP and QAPP to address determining compliance with water quality criteria based on receiving water turbidity.

f) Receiving water monitoring is required for freshwater discharges only and provides a measurement of ambient conditions prior to discharge. If receiving water turbidity monitoring for freshwater is not possible, the limit is not applicable (N/A). In these situations, the permittee records "NODI T" for "Environmental Conditions – Monitoring Not Possible" on the DMR and provide a comment as to why it is not applicable (e.g., tundra or snow).

g) As measured using volumetric Imhoff cone.

h) A visual observation for sheen must be conducted and recorded in a daily log when discharging.

i) Upon observation of an oily sheen, discharge must cease until hydrocarbons have been removed and effluent must be monitored for TAH and TAqH when discharge recommences (once per event).

Based on data collected during the previous permit term, discharges from gravel pits are anticipated to be intermittent and highly variable with the potential for high volumes and velocities at the point of discharge. Dewatering discharges to open waters must be controlled

using specific BMPs to meet applicable limits and prevent sedimentation and erosion, thermokarsting, and thermal erosion (Section 11.2.3). Certain enhanced BMP treatment methods (i.e., coagulants/flocculants, or advanced filtration systems) may require plan submittals. Compliance with the turbidity WQBEL will be based on comparing the average of the criterion with the average monitored turbidity, either at the point of discharge or at the mixing zone boundary, if authorized. In addition, BMPs and QAPPs must be able to address variable limits based on receiving water turbidity "in the field". Failure to establish criteria based on field conditions and subsequent violations of the MDL will be a point of emphasis during the next permit term. See specific BMP Section 11.2.4.2 and QAPP Section 11.4.

For discharges where an oily sheen has been observed, permittees must monitor for TAH and TAqH. Permittees conducting activities within 1,500-feet of a contaminated site must consult with DEC CSP. Information regarding known contaminated sites can be found at: http://dec.alaska.gov/spar/csp/.

6.3 Limitations and Monitoring for Excavation Dewatering (Discharges 004)

Excavation dewatering discharges can be to freshwater or marine waters, although marine discharges rare. Accordingly, limits are provided for both freshwater and marine discharges. DEC will allow for 500 ft mixing zones for turbidity, where compliance with turbidity limits is based on measurements in the receiving water 500 ft downstream on the discharge site. Limits and monitoring requirements for Excavation Dewatering are provided in Table 7.

Table 7: Effluent Limits and Monitoring Requirements for Excavation Dewatering (Discharges 004)pll

Parameter (Units)	Effluent Limits	Monitoring Requirements		
		Frequency	Location	Sample Type
Flow Volume [a] (gpd)	Report	Daily	Effluent	Estimate or Measured
pH [b] (S.U.)	6.5 ≤ pH ≤ 8.5	Daily	Effluent	Grab
Freshwater Turbidity (NTU)	Report	Daily	Upstream [c]	Grab
Turbidity (NTU) With no Mixing Zone	Varies [d] 25 [e]	Daily	Effluent	Grab
Turbidity (NTU) With Mixing Zone	Varies [d] Observation [e]	Daily	Down Stream	Grab
SS [f] (milliliter per liter (mL/L))	0.2 [f]	Daily	Effluent	Grab
Oil and Grease (oily sheen) [g]	No Discharge	Daily	Effluent	Visual
TAH [h] (µg/L)	Report	Event	Effluent	Grab
TAqH [h] (µg/L)	Report	Event	Effluent	Grab

Notes:
a) Record daily flow measurements or estimates in a daily log. Report daily maximum and total volume for each month.
b) The effluent limit for pH shall not be less than 6.5 or greater than 8.5. Report maximum and minimum for each month.

c) Receiving water monitoring must be performed prior to discharge as it provides a measurement of ambient conditions and the limits. If receiving water turbidity monitoring for freshwater is not possible, the limit is not applicable (N/A). In these situations, the permittee records "NODI T" for "Environmental Conditions – Monitoring Not Possible" on the DMR and provides a comment as to why it is not applicable (e.g., tundra or snow).
d) The permittee must meet water quality criteria at the point of discharge if there is no authorized mixing zone. If a mixing zone is authorized, the compliance point is 500 feet downstream. Freshwater discharges may not exceed 5 NTU above ambient conditions when the ambient turbidity is 50 NTU or less; and shall not have more than a 10% increase in turbidity when the ambient condition is greater than 50 NTU (not to exceed a maximum increase of 15 NTU); and shall not exceed 5 NTU above ambient conditions for all lake waters (See Attachment D). Report the receiving water value prior to discharge and maximum value for effluent. The permittee must develop BMP and QAPP to address determining compliance with water quality criteria based on receiving water turbidity.
e) Discharges to marine waters without an authorized mixing zone shall not exceed 25 NTU at the point of discharge. If a mixing zone is authorized in marine water, the plume must be observed 500 feet from discharge and if there is a distinguishable plume (i.e., cloudiness), the permittee must implement BMPs until the plume is no longer distinguishable.
f) As measured using volumetric Imhoff cone.
g) A visual observation for sheen must be conducted and recorded in a daily log when discharging.
h) Upon observation of an oily sheen, discharge must cease until hydrocarbons have been removed and effluent must be monitored for TAH and TAqH when discharge recommences (once per event).

Discharges from excavations are anticipated to be intermittent and highly variable with the potential for high volumes and velocities at the point of discharge. Dewatering discharges must be controlled using specific BMPs to meet applicable limits and prevent sedimentation and erosion, thermokarsting and thermal erosion (Section 11.2.3). Certain enhanced BMP treatment methods (i.e., coagulants/flocculants or advanced filtration systems) may require plan submittals. Compliance with the turbidity WQBEL will be based on comparing the average of the criterion with the average monitored turbidity, either at the point of discharge or at the mixing zone boundary, if authorized. In addition, BMPs and QAPPs must be able to address variable limits based on receiving water turbidity "in the field". Failure to establish criteria based on field conditions and subsequent violations of the MDL will be a point of emphasis during the next permit term. Where ambient receiving water turbidity sampling is not possible, the turbidity limit for freshwater is not applicable (e.g., discharges to a seasonal dry stream bed where effluent does not reach other connected waterbodies). See specific BMP Section 11.2.4.3 and QAPP Section 11.4.

For discharges where an oily sheen has been observed, permittees must monitor for TAH and TAqH. Permittees conducting activities within 1,500-feet of a contaminated site must consult with DEC CSP. Information regarding known contaminated sites can be found at: http://dec.alaska.gov/spar/csp/.

6.4 Limitations and Monitoring for Hydrostatic Test Water (Discharge 005)

DEC uses a tier-based approach to either limit, or monitor, petroleum hydrocarbons, TAH, and TAqH. Limits for TAH and TAqH are applied for existing infrastructure that has been exposed to hydrocarbons whereas infrastructure that has not been exposed to hydrocarbons must monitor for TAH and TAqH only if a sheen is observed. While hydrostatic test water may be discharged to marine or freshwater, there are differences in the limits. Limits and monitoring requirements for Hydrostatic Test Water are provided in Table 8.

Table 8: Effluent Limits and Monitoring Requirements for Hydrostatic Testing Water (Discharge 005)

Parameter (Units)	Effluent Limits	Monitoring Requirements		
		Frequency	Location	Sample Type
Flow Volume [a] (gpd)	Report	Daily	Effluent	Estimate or Measure
pH [b] (S.U.)	6.5 ≤ pH ≤ 8.5	Daily	Effluent	Grab
SS (mL/L)	0.2 [c]	Daily	Effluent	Grab
Oil and Grease (oily sheen) [d]	No Discharge	Daily	Effluent	Visual
TAH [e] (µg/L) Non-Exposed	Report	Event	Effluent	Composite [g] or Grab
TAqH [e] (µg/L) Non-Exposed	Report	Event	Effluent	Composite [g] or Grab
TAH [f] (µg/L) Exposed	10	Daily	Effluent	Composite [g] or Grab
TAqH [f] (µg/L) Exposed	15	Daily	Effluent	Composite [g] or Grab

Notes:

a) Record daily flow measurements, or estimates in a daily log. Report daily maximum and total volume for each month.

b) The effluent limit for pH shall not be less than 6.5 or greater than 8.5. Report maximum and minimum for each month.

c) As measured using a volumetric Imhoff cone. Report maximum daily for the month.

d) A visual observation for sheen must be conducted daily when discharging.

e) Upon observation of an oily sheen, discharges must cease until hydrocarbons have been removed. When hydrocarbon removal is achieved, pipelines which have not previously been exposed to hydrocarbons must monitor effluent for TAH and TAqH (once per event).

f) Effluent limits for TAH and TAqH apply to discharges from pipelines or other approved areas which have previously been exposed to hydrocarbons. Report maximum daily result for the month.

g) For discharge volumes less than or equal to 500,000 gpd, a grab sample may be used to analyze effluent once daily while discharging. For discharges greater than 500,000 gpd representative composite sample (See Appendix C of the General Permit- Definitions) is required daily while discharging. Procedures for composite sampling large intermittent volumes of wastewater shall also be outlined in the QAPP (Section 11.4). Report maximum result.

Daily monitoring for oily sheen is required for all hydrostatic test discharges. Discharges must not result in sedimentation or erosion around the discharge area or down current of the discharges. Specific BMP Plan requirements for sediment and erosion control are required. Chemical additions including, but not limited to, coagulants, surfactants, and biocides may be considered on a case-by-case basis via plan review under 18 AAC 72. See specific BMP Section 11.2.4.4 and QAPP Section 11.4.

6.4.1 Potential Requirements for Probable Scenarios

Scenario 1: New or existing non-hydrocarbon exposed pipe/tank, no source concerns, no chemical additives; rows 1-6 on Table 8 apply, also requires BMPs for erosion control and thermokarsting prevention.

Scenario 2: New pipe/tank with source water concerns or chemicals; rows 1-6 on Table 8 apply, also requires BMPs for erosion control and thermokarsting prevention, as well as plan approval for chemicals.

Scenario 3: Existing pipe/tank that has been hydrocarbon exposed, no chemical additives; rows 1-4, 7, 8 on Table 8 apply, also requires BMPs for erosion control and thermokarsting prevention.

Scenario 4: Existing pipe/tank that has been hydrocarbon exposed and involving chemical additives; rows 1-4, 7, 8 on Table 8 apply, also requires BMPs for erosion control and thermokarsting prevention, as well as plan approval for chemicals.

6.5 Limitations and Monitoring for Storm Water Discharge (Discharge 006)

6.5.1 Applicability of Storm Water Coverage

The operation of an oil and gas exploration, production or development facility or activity may include supporting ancillary facilities and activities. Examples of common support activities and facilities can be found in the characterization section for storm water discharges (Section 4.5). These include but are not limited to, equipment staging yards, material storage areas, excavated material disposal areas, borrow areas, equipment wash down areas, temporary camp areas, pump or compressor stations, and airstrips. Discharges of storm water, or allowable non-storm water, from these types of facilities may be eligible for coverage under the Permit if the following conditions are met:

- The support activity or ancillary facility is directly related to the operation of an oil and gas exploration, production or development facility or activity in the NSB;
- Storm water will not be discharged to a waterbody classified in State of Alaska Impaired Waterbody 303(d) List or Tier III Waters;
- The support activity or ancillary facility is not a commercial operation serving multiple, unrelated projects or entities (e.g., commercial gravel pit operation or public airport or an airstrip with more than 1000 departures per year);
- Based on the standard industrial code (SIC) for the industrial support facility additional storm water monitoring ELGs would not be triggered if the facility was covered under the MSGP.

The intent of limiting coverage in this manner is to keep the Permit manageable by avoiding triggers for additional monitoring requirements that would be necessary to align the NSGP with the MSGP. DEC does not anticipate that these excluded situations will be frequently encountered and if these excluded conditions are encountered, then coverage could still be obtained under the MSGP or an individual permit.

6.5.2 Storm Water Requirements

Compliance with storm water requirements under the NSGP relies on developing and implementing a SWPPP and conducting visual monitoring and observations during inspections. To prevent storm water runoff from coming into contact with sources of pollution, each facility must develop and institute a SWPPP (Section 11.3) that applies a series of materials management practices and existing structural and non-structural control

measures similar to those contained in a BMP Plan (Section 11.2) to prevent contamination in storm water discharges. An annual certification that the SWPPP has been reviewed and updated is required to be completed by January 31st each year and retained onsite (Section 11.5).

DEC purposefully excludes from storm water coverage facilities that by virtue of their Sector and operations would trigger benchmark monitoring. For example, under Sector S – Transportation if an airfield uses more than 100,000 gallons of glycol or 100 tons of urea annually it would be excluded because it would result in monitoring for COD, BOD_5, and ammonia. By excluding these situations, DEC has determined that it is unnecessary to establish specific numeric effluent limits or specific design or performance standards for storm water and allowable non-storm water discharges characterized in Section 4.5. Instead, the Permit prohibits the discharge of petroleum hydrocarbon, oil and grease as determined by the presence of an oily sheen (reportable quantity). To ensure there are no reportable quantities of oil or hazardous substances, biannual inspections must be performed (Section 11.3.3.2) by a qualified person as defined in Appendix C of the General Permit. The qualified person must be knowledgeable and possess the skills to assess conditions at the facility that could impact storm water quality and the effectiveness of pollution control measures used to maintain water quality objectives. Annual certification that biannual inspections have been completed must be retained onsite (Section 12.1).

6.6 Limitations and Monitoring for Mobile Spill Response (Discharge 007)

Discharges of mobile spill response wastewater requires treatment prior to discharge. Permittees must submit scrubber or treatment unit information to the Department that demonstrates adequate removal free-phase and dissolved-phase hydrocarbons. Once a treatment unit has been evaluated (Section 8.2), the system may be adopted in the BMP Plan along with other BMPs that ensure the system is properly operated and maintained to sustain treatment performance. Discharges from these units must be monitored for sheen daily and for the estimated total monthly volume of discharge. Limits and monitoring are included in Table 9.

Table 9: Effluent Limitations and Monitoring Requirements for Mobile Spill Response (Discharge 007)

Parameter (Unit)	Effluent Limits	Monitoring Requirements		
		Monitoring Frequency	Monitoring Location	Sample Type
Flow Volume [a] (gpd)	Report	Daily	Effluent	Estimate
Oil and Grease (oily sheen) [b]	No Discharge	Daily	Effluent	Visual

Notes:
a) The Permittee must record discharges greater than 25 gallons in daily operating logs. Report total estimated volume discharged per month.
b) A visual observation for sheen must be conducted daily when discharging.

6.7 Limitations and Monitoring for Contained Water (Discharge 008)

An NOI requesting the discharge of contained water may require analytical testing to confirm assumptions regarding the critical effluent characteristics. RPs require testing for barite metals and hydrocarbons. Secondary containment may be tested for dissolved hydrocarbons to inform treatment options. Sedimentation basins for marine dredge material require estimates on toxicity of coagulants or other chemicals added to enhance settling. The list of limitations below is potentially applicable to these expected contained water scenarios. However, DEC may establish other limits by developing a statement of basis, potentially including characterization, mixing zone authorization, unique limits, and an anti-degradation evaluation. Upon conducting a 30-day public notice per 18 AAC 83.120 and addressing comments received, DEC may issue an authorization covering discharges of contained water that were not originally considered when reissuing the permit.

Table 10 provides a generalized list of potential limits, triggers, or reporting requirements based on contained water sources. See definition of contained water in General Permit Appendix C for full listing of potential known sources.

Table 10: Effluent Limitations and Monitoring Requirements for Contained Water (Discharge 008)

Parameter (Units)	Effluent Limits (Report or Trigger)	Monitoring Requirements		
		Frequency	Location	Sample Type
Flow Volume [a] (gpd)	Report	Daily	Effluent	Estimate or Measure
pH [b] (S.U.)	$6.5 \leq pH \leq 8.5$	Daily	Effluent	Grab
SS (mL/L)	0.2 [c]	Daily	Effluent	Grab
Oil and Grease (oily sheen) [d]	No Discharge	Daily	Effluent	Visual
TAH (µg/L)	10 [e] (Or Report) [f]	Monthly (Or Sheen)	Effluent	Grab
TAqH (µg/L)	15 [e] (Or Report) [f]	Monthly (Or Sheen)	Effluent	Grab
Marine Turbidity (NTU)	25 [g,i]	Daily	Effluent	Grab
Total/Dissolved Barite Metals (µg/L)	Report	With NOI [h]	Effluent	Four – Grab Composite
Chronic WET (TU_c)	Report [i]	Once per Authorization	Effluent	Composite

Notes:

a) Record daily flow measurements, or estimates, in a daily log. Report daily maximum and total volume for each month.

b) The effluent limit for pH shall not be less than 6.5 or greater than 8.5. Report maximum and minimum.

c) As measured using a volumetric Imhoff cone. Report maximum for each month.

d) A visual observation for sheen must be conducted daily when discharging.

e) Effluent limits for TAH and TAqH apply to discharges which are known to have previously been exposed to hydrocarbons. Report maximum result.

f) If TAH and TAqH are not limited for the discharge, an observation of an oily sheen establishes a trigger to remove the sheen and monitor effluent for TAH and TAqH (once per trigger event).

g) Based on case-by-case conditions, the Department may require turbidity monitoring to demonstrate effectiveness of BMP's and inform future permit decisions.

h) A filtration BMP on the discharge from open RPs is mandatory. Prior to obtaining authorization to discharge from Open RPs, the applicant must submit dissolved and total recoverable barite metals with the NOI using a four-grab composite in the area surrounding the proposed pump intake. DEC may require additional monitoring of barite metals or hydrocarbons during discharge on a case-by-case basis.

i) For marine dredge projects per section 6.7.1.4, the turbidity limit may be applied at the point of discharge or at the MZ boundary as determined by the Statement of Basis. The authorized mixing zone, if required, will be based on turbidity per the Statement of Basis and could include chronic toxicity. If a mixing zone is authorized, compliance of turbidity will be based on observation of no distinguishable turbidity plume at the boundary of the mixing zone. Monitoring for Chronic WET may also be required as determined in the Statement of Basis.

6.7.1 Determination of Parameters, Limits, BMPs, and Statement of Basis

6.7.1.1 All Discharges

All discharges will be required to comply with rows 1-4 on Table 10 for flow monitoring, pH limits, SS limits, and oil and grease limit (visible sheen). A sheen observation may trigger TAH and TAqH for some discharges.

6.7.1.2 Hydrocarbon Contaminated Contained Water

Discharges known or suspected to have hydrocarbon contamination (e.g., contaminated SCAs) will be required to comply with rows 1-6 on Table 10, including limits for TAH and TAqH. Discharges from contaminated contained water (e.g., contaminated SCAs) will require treatment BMPs to remove sheen and dissolved hydrocarbons. Discharges from uncontaminated SCAs may be discharged as storm water and managed through BMP controls developed in the SWPPP (Sections 11.3). If an SCA is deemed contaminated by a spill of any volume or observation of a sheen, the water in the SCA is no longer considered a storm water discharge. In this instance, the permittee must notify DEC and submit a NOI for contained water coverage and monitor, limit, and report discharges as described above. A permittee may request removal of the authorization for Contained Water (Discharge 008) once the SCA is determined to be uncontaminated for four consecutive months.

6.7.1.3 Discharges from Open RPs

[Placeholder] To authorize discharges from open reserve pits in the Permit, DEC must complete a case-by-case BPJ analysis in this section at a minimum. DEC will update this section as a Permit Modification as described in the Permit Section 3.5.1 Permit Reopener Clause. Also see Response to Comments Section 2.1.

6.7.1.4 Marine Dredge Projects

If a project is sanctioned during the term of the permit for conducting marine port dredging projects, DEC proposes to issue an authorization after successfully implementing a 30-day public notice of a Statement of Basis per 18 AAC 83.120. While the discharge limits may not be well defined until an application is submitted, the POCs are known and include rows 1 – 4 on Table 10, marine turbidity (row 7), and potentially Chronic WET (row 9) if coagulants or other chemicals are used to enhance settling of fine-grained marine sediments. Because the discharge to marine waters will require a mixing zone and subsequent limit derivation, a Statement of Basis will need to be prepared to support the authorization. Similar to most discharges, an observation of sheen will trigger sheen removal and monitoring for TAH and TAqH.

6.7.1.5 Supporting BMP Reviews

The permittee may submit information about a treatment process or systems that removes dissolved hydrocarbons, turbidity, or other pollutants for adoption into the BMP Plan. Standard BMPs shall be developed to meet applicable limits and prevent sedimentation and erosion, thermokarsting and thermal erosion (Section 11.2.3).

6.7.1.6 Undefined BMPs Included in Authorization

In the case of an onshore marine dredge sedimentation basins, DEC will evaluate the potential need for unique BMPs in to support compliance with limitations. Like the limitations and mixing zone, the BMPs will be included in the Statement of Basis issued for a 30-day public notice period per 18 AAC 83.120. The BMPs will then be included in the authorization.

6.8 Plan Submittals to Support Certain Non-domestic Discharges and Land Disposals

6.8.1 Regulatory Basis

Regulatory authority to include land disposals in the Permit is based on 18 AAC 72 - Wastewater Disposal. Plan reviews conducted for land disposals can be used to establishing conditions as necessary to protect WQS for groundwater per statutory and regulatory authority. The following sections describe the plan review process for obtaining authorization for non-domestic land disposals under the Permit.

6.8.1.1 Plan Submittals to Support Non-Domestic Wastewater Discharges or Disposals (Discharges/Disposals 003, 004, 005, 007, and 008)

Under the permit, land disposals will be limited based on site-specific conditions as presented in a plan submitted to the Department for approval. Specifically, the authorization for land disposal requires the location to have soils that will allow for infiltration at the maximum discharge rate and not result in an overland flow outside of the infiltration area. On the Coastal Plain of the North Slope, there are limited, if any, locations where this may be achieved. However, the southern part of the North Slope, in the foothills, there may locations where this is a possible alternative. The applicant must submit information to the Department to make this determination based on the most current version of 18 AAC 72. Information submitted for non-domestic wastewater treatment methods must demonstrate reasonable assurance that compliance with Permit limitations for discharges or disposals are attainable. If the Department has specific concerns with unique situations or site-specific conditions such as chemical additions (e.g. flocculants, coagulants, biocides, or antifreeze) or source water characteristics, plan reviews may be required to provide reasonable assurance that addresses Department concerns.

Submittals for these discharges fall into two general categories, submittals to support unique situations and submittals to support a common situation that can be applied broadly as BMP tool. Plan submittals per 18 AAC 72 may only be used to support attainment of discharge limits for anticipated constituents rather than for POCs that were not previously considered during limit development and vetted through the public process. For example, it would be appropriate to review a treatment system that removes dissolved hydrocarbons from gravel pit dewatering, excavation dewatering, hydrostatic test, and contained water discharges because hydrocarbons were considered in limit development. However, as long as the proposed discharge does not cause, or contribute to, an excursion of a water quality criterion, the discharge can be approved under a Plan Review and be implemented alongside but separate from the permit authorization.

However, this is not the case if the water containing POCs that were not previously considered for disposal to land (See Section 7.2). Based on the applicable discharges and

POCs, such supporting plan reviews are anticipated to include, but not be limited to, the following:

- Treatment and cleaning chemical additions, processes, and systems that remove settleable solids and turbidity using an enhanced treatment system,
- Treatment processes and systems that remove free-phase and/or dissolved-phase petroleum hydrocarbons
- Source control and chemical use stipulations so not to cause, or contribute to, an excursion of a water quality criterion.

6.9 Limitations and Monitoring Requirements for Non-Domestic Wastewater Disposals (003, 004, 005, and 008)

The disposals covered under the Permit include Gravel Pit Dewatering, Excavation Dewatering, Hydrostatic Test Water, and Contained Water. The Permit does not cover land disposal of drilling fluids, domestic wastewater, storm water, or mobile spill response as these disposals are regulated differently. For this Permit only, land disposal is considered a location where water is placed and infiltrates into the ground and does not represent a surface water feature (e.g., wetland, dry stream channel, or uplands area that does not infiltrate to ground water) and that is located at least 1,500 feet from the nearest surface water feature. An example could be a gravel pit or a local depression with sand or gravel substrate. In addition, hydrostatic test water must not have source water of chemical additions that could affect the use of the groundwater. As discussed in Section 6.8.1.1, when there may be discretion DEC will narrow the application of land disposal in lieu of expanding discharges to state waters. Under the reissued NSGP, land disposal is primarily based on the ability of the disposal location to infiltrate to groundwater (i.e., sand or gravel) while intentionally reducing situations where a disposal area may not infiltrate fast enough for the volume of disposal such that overland flow to an existing waterbody or wetland is possible.

To obtain coverage for the applicable land disposals (Disposals 003, 004, 005, and 008), the applicant is responsible for ensuring the disposal does not result in a discharge to WOTUS or the state waters. The applicant must submit a plan for DEC review and approval. To protect public and private water systems, human health, and the environment, DEC establishes narrative effluent limits for the disposal of these nondomestic wastewaters into groundwater. The following conditions must be met for land disposals:

1. Subsurface has, or is expected to have, coarse material that allows for rapid infiltration;
2. Subsurface has, or is expected to have, the ability to accept the estimated volume without significant overland flow (i.e., not on a slope and preferably to an area where water may impound while percolating into soil);
3. Disposal location does not have a well, wetland, or waterbody within 1,500 feet.

Per 18 AAC 70.010(C), water quality criteria must be met in groundwater at and beyond the boundary of the treatment works. WQS sets water quality for groundwater appropriate for the use classification per 18 AAC 70.050(2). These use classifications are water supply for drinking, culinary, and food processing; agriculture including irrigation and stock watering; aquaculture; and industrial uses. Per 18 AAC 70.040, the procedure for applying groundwater criteria is to use the most stringent criteria among the various classifications; drinking water

use is the most stringent. Accordingly, disposals to land and groundwater must meet drinking water criteria per the toxics manual. Per the characterization of the waste streams for gravel pit dewatering, excavation dewatering, and hydrostatic test water, drinking water criteria is not expected to be exceeded at or beyond the treatment works so long as there is no presence of hydrocarbons in the wastewater.

Based on the effluent characterization of discharges potentially authorized for disposal to state groundwater the Department includes a settleable solids limit for excavation dewatering to prove BMPs for sedimentation control and to avoid siltation of the infiltration area. Table 11 provides the limits and monitoring for disposal of Gravel Pit Dewatering, Excavation Dewatering, Hydrostatic Test Water, and Contained Water (Disposals 003, 004, 005, and 008).

Table 11: Disposal Limitations and Monitoring Requirements

Parameter (Units)	Effluent Limits	Monitoring Requirements		
		Frequency	Location	Sample Type
Flow Volume [a] (gpd)	Report	Daily	Effluent	Estimate or Measured
Oil and Grease Visual	No Discharge	Daily	Effluent	Visual
Settleable Solids (m//L)[b]	0.2	Daily	Effluent	Grab

Notes:
a) Flow rates and volumes may be measured or estimated and must be reported in a daily log. Report daily maximum for each month and total monthly volumes for each disposal location to DEC
b) For Excavation Dewatering or Contained Water on case-by-case basis.

6.10 Additional Monitoring

6.10.1 Sufficiently Sensitive Methods

Monitoring for effluent limitations must use methods with method detection limits that are less than the effluent limitations or are sufficiently sensitive. Monitoring effluent or receiving water for the purpose of comparing to water quality criteria must use methods that are less than the applicable criteria or are sufficiently sensitive. Per 40 CFR 122.21(e)(3)(i), a method approved under 40 CFR 136 is sufficiently sensitive when:

(A) The method ML is at or below the level of the applicable water quality criterion for the measured parameter, or

(B) The method ML is above the applicable water quality criterion, but the amount of the pollutant or pollutant parameter in the discharge is high enough that the method detects and quantifies the level of the pollutant or pollutant parameter in the discharge (e.g., not applicable to effluent or receiving water monitored for characterization), or

(C) The method has the lowest ML of the analytical methods approved under 40 CFR 136 for the measured pollutant or pollutant parameter (e.g., the receiving water concentration or the criteria for a given pollutant or pollutant parameter is at or near the method with the lowest ML).

The determination of sufficiently sensitive methods discussed above for a single analyte is not applicable to TAH and TAqH due to the sum of multiple of analytes. Therefore, for TAH and TAqH, DEC will apply a typical multiplier of 3.2 to the categorical sum of the method

detection limits to "estimate" an ML for comparison with water quality criteria for TAH and TAqH. If the "estimated ML" is greater than the criteria, 10 µg/L and 15 µg/L respectively, DEC may request submittal of the analytical report to conduct a comprehensive review of those particular results.

6.10.2 Additional Monitoring by Permittee

The permittee also has the option of taking more frequent samples than required under the Permit. These additional samples must be used for averaging if they are conducted using the Department approved test methods (generally found in 18 AAC 70 and 40 CFR 136 [adopted by reference in 18 AAC 83.010]). The results of any additional monitoring must be included in the calculation and reporting of the data on DMRs as required by the Permit and Standard Conditions Part 3.2 and 3.3 (Appendix A of the General Permit).

6.10.3 Additional Monitoring Requested by DEC

DEC may require additional monitoring of effluent or receiving water for facility or site-specific purposes, including, but not limited to: obtaining data to support NOI or applications, demonstrating of water quality protection, obtaining data to evaluate ambient water quality, evaluating causes for elevated parameters in the effluent, and conducting chronic WET toxicity identification and reduction. If additional monitoring is required, DEC will provide the permittee or applicant the request in writing.

7.0 RECEIVING WATERS

The NSGP will authorize discharges to fresh waters of the state and U.S. located in the NSB and coastal marine waters of the U.S., offshore of the NSB and landward of the inner boundary baseline as defined in 18 AAC 83.990(77).

7.1 Water Quality Standards

Section 301(b)(1)(C) of the CWA requires the development of limits in APDES permits necessary to meet Alaska WQS by July 1, 1977. Per AAC 83.435, DEC establishes the conditions in APDES permits to ensure compliance with the WQS. The WQS are composed of use classifications, numeric and/or narrative water quality criteria, and an antidegradation policy. The use classification system designates the beneficial uses that each waterbody is expected to achieve. The numeric and/or narrative water quality criteria are the criteria deemed necessary by the State to support the beneficial use classification of each waterbody. The antidegradation policy ensures that the beneficial uses and existing water quality are maintained.

Freshwater receiving waters are classified in the WQS at 18 AAC 70.070(a)(1) as Classes (1)(A), (B), and (C) for use in drinking, culinary and food processing, agriculture, aquaculture, and industrial water supply; contact and secondary recreation; and growth and propagation of fish, shellfish, other aquatic life, and wildlife. Marine waters are classified in the WQS at 18 AAC 70.020(a)(2) as Classes (2)(A), (B), (C), and (D) for use in aquaculture, seafood processing, and industrial water supply; contact and secondary recreation; growth and propagation of fish, shellfish, other aquatic life, and wildlife; and harvesting for consumption

of raw mollusks or other raw aquatic life. Per 18 AAC 70.050, freshwaters and marine waters in the State of Alaska are designated for all use classes unless the waterbody has been reclassified under 18 AAC 70.230 as listed under 18 AAC 70.230(e). Some waterbodies in Alaska can also have site–specific water quality criterion per 18 AAC 70.235, such as those listed under 18 AAC 70.236(b).

The Department acknowledges there may be reclassified waters within the coverage area as listed under 18 AAC 70.230(e), or waters which have site specific water quality criteria defined in 18 AAC 70.236(b). However, the limits and conditions for discharges contained in the NSGP are based on protecting all use classes by applying the most stringent criteria of all the use classes to waterbodies uniformly. Should an applicant seek coverage for discharges to reclassified waterbodies, the applicant may use the conservatively protective limits for all waterbodies contained in the Permit or submit an application for an individual permit based on reclassified uses defined in 18 AAC 70.230(e).

7.2 Mixing Zones

7.2.1 Graywater Mixing Zone Analysis

A study conducted by Michael Pollen (*Arctic Tundra as a Wastewater Discharge Receiving Environment,* Cold Regions Environmental Engineering Conference, 1983) (Pollen Study) analyzed the environmental effects of wastewater discharge to tundra. Four case studies were conducted that spanned one year's seasonal activities, one of which focused on graywater discharges to tundra. The studies were a combination of field and laboratory analyses that followed effluent from the point of discharge during the winter throughout the flow regime during and after breakup. Samples were taken at the point of origin and discharge to the environment and at points in the tundra until the pollutant concentrations were similar to ambient conditions outside the influence of the discharge. During the summer and spring thaws, dye studies were used to determine the direction of flow. Analyses were completed for alkalinity, conductivity, dissolved oxygen, pH, temperature, BOD_5, FC bacteria, suspended solids, and a nutrient series that included ammonia, nitrate, ortho-phosphate, and sulfate. Photographic records were kept documenting the conditions at each site during the study. Late winter examinations were made to examine effluent conditions during the winter season.

The graywater study conducted three surveys to examine discharges from a 200-bed housing complex for workers from various construction camps near Barrow. The first survey provided a spring thaw analysis, the second provided information about summer ambient conditions, and the third survey provided information about winter discharge conditions. There were three graywater discharges from the facility, each going to different receiving areas: Source 1 was discharged to a nearby gravel pit operation, while the other two sources (sources 2 and 3) were discharged to nearby areas on the tundra. The primary focus of the study was on the two graywater discharges to tundra.

Effluent data collected from two tundra discharges showed Source 2 BOD_5 concentrations averaged 210 mg/L and FC bacteria concentrations averaged 6,000 colonies/100 mL. Source 3 discharged effluent with BOD_5 concentrations averaging of 180 mg/L and FC bacteria concentrations averaging 20,000 colonies/100 mL. During the winter months, ice mounds from the two discharge locations eventually combined to form one large mound. Data collected during the spring thaw months indicated ambient meltwater rapidly combined with meltwater from the ice mound and spread evenly across the tundra. Samples collected 200

meters from each outfall showed BOD_5 concentrations had decreased to 9 mg/L (a reduction greater than 90%) and FC bacteria concentrations decreased to 33 colonies/100 mL. Summer survey data found ambient BOD_5 concentrations at the 200-m boundary were 10 mg/L and FC bacteria concentrations were 11 colonies/100 mL. The study noted that the pollutant reductions observed in the spring thaw were primarily the result of the effluent melting and comingling with ice melt from various ambient sources. Data further indicated effluent concentrations are similar to ambient conditions approximately 200 meters (m) from the discharge location following spring thaw season.

Some of the conclusions from the study include: (1) discharge directly to tundra in the winter season results in rapid freeze containment of the effluent; (2) during the spring thaw, the rapid breakup results in significant comingling with other waters (snowmelt, etc.) such that even untreated graywater meets ambient levels within several hundred meters from the point of discharge; and (3) thawing of the tundra in the vicinity of the outfalls was consistent with those in the area outside the influence of the discharge.

7.2.2 Mixing Zones for Gravel Pit and Excavation Dewatering Discharges

Gravel Pit Dewatering (Discharge 003): Gravel pits may require dewatering to gain access to the gravel due to precipitation or ground water infiltration. The Department has identified turbidity as a POC that has the potential to exceed water quality criterion at the point of discharge. A mixing zone may be authorized for gravel pit dewatering discharges to meet WQS for the duration of the discharge. While Gravel Pit Dewatering may require the discharge of large volumes of water, the effects of sedimentation, erosion, and thermokarsting in the receiving water can be mitigated by implementation of BMPs including, but not limited to, establishing multiple outfall locations or varying pump sizes, hose diameters, and diffusers.

Excavation Dewatering (Discharge 004): During construction or maintenance projects, excavations to access buried pipe or other adjunct facilities may require temporary dewatering due to precipitation events or groundwater infiltration. Excavation dewatering is preferentially discharged to locations that do not have an open water surface (e.g., wetlands, tundra, dry river channels, or frozen conditions). Vegetation or snowpack naturally removes sediment prior to the discharge entering a receiving water. In the event that such a location is unavailable or discharges to a waterbody are unavoidable, settling ponds are often used to remove settleable sediment prior to discharge. Still, settling ponds or other methods may not be able to achieve water quality criteria for turbidity prior to discharge. Accordingly, similar to Gravel Pit Dewatering (Discharge 003), a mixing zone may be authorized for Excavation Dewatering discharges to meet water quality criteria over the short duration of the discharge event.

The Department reviewed dewatering discharges from various activities and found that similar pretreatment practices and BMPs are used for excavation, gravel pit, and placer mine activities (i.e., settling ponds, coagulants, flocculants) and all are able to achieve similar effluent quality prior to discharge. Only one mixing zone was authorized for excavation dewatering during the review period. Therefore, in addition to DMR data from the review period, the Department uses historic data from Excavation Dewatering discharges from along the TAPS, extensive data from placer mining dewatering operations, and mixing zones authorized in other states to evaluate a mixing zone size.

Mixing Zone Size Determination: The Department conducted a review of 154 mixing zones for turbidity from placer mines operating between 1997 and 2012. For discharges up to 200 gallons per minute (gpm) to receiving waters of varying sizes and ambient turbidity conditions, 77 percent (%) of the receiving waters provided adequate dilution to support greater than 25 NTUs in the discharge, 42% supported greater than 50 NTUs, and 21% supported greater than 100 NTUs. The Department also evaluated worst-case discharges from all permittees during the review period and historic discharges from excavation dewatering completed by APSC along TAPS. Generally, the worst case is less than 100 NTUs, however there was one instance where the turbidity was 705.7 NTUs above background. While this does represent a "worst-case" scenario, the high turbidity indicates BMPs were not effective and needed to be revised. Hence, DEC considers this to not be representative of normal discharges.

Based on available DMR data from various authorizations, field reports, and institutional knowledge, the authorized 500-ft mixing appears to be an appropriate size that can consistently achieve turbidity water quality criteria when using settling ponds and other BMPs, even in perceived 'worst-case' scenarios. Lastly, a comparison was made with an authorized mixing zone associated with an HDD project in the State of Washington. This mixing authorization was 600 feet, which compares well with the 500-ft mixing zone size in the Permit.

7.2.3 Non-Specified Mixing Zones for Marine Dredge Settling Basins

Unlike other mixing zones authorized by the NSGP, there are no recent examples of mixing zones that would apply to the unique situation of discharging decant water from marine dredge material from onshore settling ponds back to the marine water. There are two anticipated POCs with this application: turbidity and chronic WET assuming coagulants and other chemicals will be used to enhance settling of fine-grained marine sediments. While turbidity estimates could be made based on detention time and stokes law to size the mixing zone, the use of coagulants may have an affect not only on turbidity but also low levels of chronic WET. Therefore, DEC proposes to have the applicant submit a mixing zone analysis with their NOI as well as projected maximum turbidity and chronic WET based on Safety Data Sheets (SDS). The applicant may submit information such as jar testing of the coagulants using marine sediment in support of the application at their discretion. Based on the applicant's submittal, DEC will develop a Statement of Basis for the mixing zone authorization, limit derivation for turbidity and chronic WET, as well as an Antidegradation Analysis. Because this information is not specifically identified in this Fact Sheet for public comment, a 30-day public notice of the Statement of Basis per 18 AAC 83.120 will need to be conducted prior to issuing an authorization. This process is not unique to the NSGP as other general permits issued by DEC has similar applications.

7.2.4 Mixing Zone Authorization

Per 18 AAC 70.240, as amended through November 13, 2022, DEC may authorize a mixing zone under a general permit upon receipt of a complete application. A NOI generally serves as the mixing zone application under a general permit; the authorization of a non-specified mixing zone such as for marine dredge water requires a more involved process as discussed in Section 7.2.3. The NOI provides information required by 18 AAC 70.240(a); including the information and available evidence necessary to demonstrate consistency with 18 AAC

70.240. The information in the NOI is used to inform the Department if the request for a mixing zone is consistent with the mixing zone evaluation conducted during permit development. If consistent, then a mixing zone authorization is approved. Hence, in the case of marine dredge discharges, the NOI is insufficient for the information required and the applicant must submit a mixing zone analysis, Form 2M or equivalent.

Graywater Mixing Zones: Based on the results of the Pollen Study, existing permit data, and inclusion of specific operational conditions for Graywater (Discharge 002), DEC has determined that a mixing zone will not cause environmental effects or damage to the ecosystem, per 18 AAC 70.240(c) and 18 AAC 70.240(d). Therefore, the Department establishes a circular mixing zone with a 200-meter radius (centered on the outfall) for the temporary excursion of WQBELs for FC bacteria and residues within the boundary of the mixing zone. The Permit applies a dilution factor of 10 for FC bacteria to water quality criteria [18 AAC 70.020 (b)(2)(A) and 18 AAC 70.020 (b)(14)(D), as amended November 13, 2022]. FC bacteria and residues do not have associated acute criteria and a smaller initial mixing zone for the application of acute criteria per 18 AAC 70.240(d)(8) is not required. The Permit does not authorize discharges of Graywater (002) directly to open marine waters or freshwater lakes or rivers. Further, the Permit imposes operation limitations to ensure water quality criteria are met at the boundary of the mixing zone. These limitations include a discharge loading limit at any one location to no more than 30 consecutive days and a discharge volume limit of 5,000 gallons per day.

Excavation and Gravel Pit Dewatering Mixing Zones: Based on the review of placer mining discharges and other similar discharges, DEC has determined that a 500-ft mixing zone is appropriate for excavation dewatering and gravel pit dewatering under the NSGP. The determination is also contingent on the understanding that permittees have available a range of BMP alternatives that may be utilized to ensure turbidity is met within the boundaries of the mixing zones. Hence, adherence to appropriate BMPs for site-specific conditions is inherent in the authorization process and the permittee must adopt the next level of BMP as necessary in the field to comply with the authorization.

Mixing Zone Evaluation Process: Attachment E of the Fact Sheet, Mixing Zone Analysis Checklist, outlines criteria that must be satisfied when the Department analyzes whether a mixing zone can be authorized. These criteria include: size, technology, existing uses of the waterbody, human consumption, spawning areas, human health, aquatic life, and endangered species. Consideration of these criteria are outlined in Section 7.2.5. In the case of marine dredge discharges, this information will be included in the Statement of Basis issued for a 30-day public notice per 18 AAC 83.120 and is not included herein.

7.2.5 Mixing Zone Criteria Analysis

7.2.5.1 Size

Per 18 AAC 70.240(k)(2), the Department has determined the mixing zone size for the discharge of graywater (as described above) is appropriately sized and as small as practicable based on extensive data collected from the Pollen Study, from data collected by permittees for other general permits including the 2017 NSGP. In evaluating 18 AAC 70.240(e); criteria protective of streams, rivers, or other flowing fresh waterbodies [18AAC 70.240(k)(3,4) and 18 AAC 70.240(l)] cannot generally be applied to frozen tundra and ice

and therefore do not apply. Based on the nature of the pollutant anticipated to exceed water quality criteria (FC bacteria and residues), no toxic effects, lethality to passing organisms, or risks of bioaccumulation or bioconcentration are expected to occur. Due to the remote nature of the facilities, near instantaneous freeze characteristics of the discharge and rapid melting and dilution of the ice mound during spring thaw, human health and aquatic life are protected (See Section 7.2.5.4 and Section 7.2.5.6).

Similarly, the Department has determined the mixing zone sizes for the discharge Gravel Pit Dewatering (Discharge 003) and Excavation Dewatering (Discharge 004) are appropriately sized based on extensive data collected from similar discharge activities in similar receiving waterbodies. Mixing zone applications require stream flow data consistent with 18 AAC 70.240(l) to ensure there is adequate dilution and sufficient assimilative capacity in the stream for discharges from these activities to meet water quality criteria at the boundary of the mixing zone. Based on the nature of pollutants anticipated to exceed water quality criteria within the boundary of the mixing zone (turbidity), no lethality to passing organisms is expected. Lastly, discharges do not contain concentrations of pollutants expected to be carcinogenic or pose a risk of bioaccumulation or bioconcentration. Aquatic life and human health are protected and the mixing zone is as small as practicable (See Section 7.2.5.4 and Section 7.2.5.6).

7.2.5.2 Treatment Technology

Per 18 AAC 70.240(c)(1), the Department must determine if "an effluent or substance will be treated to remove, reduce, and disperse pollutants, using methods the Department finds to be the most effective, technologically and economically feasible, and at a minimum consistent with statutory and regulatory treatment requirements" before authorizing a mixing zone.

The applicable "statutory and regulatory treatment requirements" are defined in 18 AAC 70.240(c)(1)(A) through (c)(1)(C) as:

- Any federal TBEL identified in 40 C.F.R. 122.29 and 40 C.F.R. 125.3, as revised as of July 1, 2005 and adopted by reference;
- Minimum treatment standards in 18 AAC 72.050; and
- Any treatment requirement imposed under another state statute or regulation that is more stringent than a requirement of this chapter.

The first part of the definition includes all applicable federal technology-based ELGs. The Department determined ELGs for graywater (domestic waste in ELGs) apply to Offshore and Coastal facilities per 40 CFR Part 435 Subpart A (Offshore Subcategory) and Subpart D (Coastal Subcategory), adopted by reference at 18 AAC 83.010(g)(3). The ELG limitations are satisfied by imposition of our residue criteria, which is more stringent than the ELG TBELs. DEC also adopted TBELs using case-by-case BPJ previously developed by EPA in the 2012 NSGP for BOD_5 and TSS in graywater discharges. Per Section 5.2.2.1, existing data was reevaluated and compared to the existing permit limits of the Graywater GP to ensure appropriate limits. When compared to existing limits in the Graywater GP, the

existing limits were retained because they are slightly more stringent yet still attainable with the treatment technology currently used by permittees.

For gravel pit dewatering, DEC considered the TBEL for pH referencing 40 CFR Part 436 Mineral Mining and Processing, Subpart C – Construction Sand and Gravel Subcategory. However, the WQBEL for pH was found to be more stringent. DEC also considered adopting a TBEL for SS for both gravel pits and excavation dewatering citing 40 CFR 440, Subpart M - Gold Placer Mining Category. Similar to pH, the WQBEL was determined to be more stringent than the TBEL. Hence, there are no TBELs for gravel pits or excavation dewatering in the Permit.

The second part of the definition refers to 18 AAC 72.050 minimum treatment for domestic wastewater. In relation to the NSGP issuance, provisions of this regulation mandate that graywater discharged to surface water must be treated to secondary standards, unless a waiver request is submitted by the applicant and subsequently granted by the Department under current requirements of 18 AAC 72.060. The waiver request must satisfactorily demonstrate the discharge will be protective of human health and environment. Under the Permit, facilities which do not meet secondary treatment standards must apply for this waiver and at a minimum, meet primary treatment [defined at 18 AAC 72.990 (66)], and comply with specific BMPs relating to the discharge. Authorization to discharge graywater will only be issued after the applicant has obtained necessary approvals and waivers per requirements in the most recent version of 18 AAC 72.

The third part of the definition includes any treatment required by state law that is more stringent than 18 AAC 70. Other regulations beyond 18 AAC 70 that may apply to this permitting action include 18 AAC 15 and 18 AAC 72. The paragraph above speaks directly to the more stringent treatment requirements contained in 18 AAC 72 for domestic wastewater discharges. In addition, neither the regulations in 18 AAC 15 nor another state legal requirement that the Department is aware of impose more stringent treatment requirements than 18 AAC 70 besides those in 18 AAC 72.

In accordance with 18 AAC 70.240(c)(1), the Department finds that available evidence reasonably demonstrates that the effluent will be treated to remove, reduce, and disperse pollutants, using methods found by the Department to be the most effective and technologically and economically feasible, consistent with the highest statutory and regulatory treatment requirements.

7.2.5.3 Existing Use

Per 18 AAC 70.240(c)(4), the mixing zone will not result in an inability to fully maintain and protect the existing uses of receiving waters covered by the permit. Operations typically occur during the winter months where graywater or gravel pit/excavation dewatering effluent will freeze at, or very near, the discharge location. Therefore, melting discharges will be accompanied by the thawing of surrounding snow and ice resulting in large amounts of available dilution and assimilative capacity in receiving waters. When compared to the graywater outfalls in the previous 2017 NSGP or Graywater GP issuances, the Permit does not include any changes that would contribute to the discharge of lower quality wastewater than previously authorized. For gravel pits/excavation dewatering in the thawed season, the preference is to discharge to non-flowing water (e.g., wetlands, dry stream channels, etc.) so

direct impacts to freshwater uses are minimized. When necessary, discharges to flowing water are limited by turbidity and there are BMP stipulations to prevent impacts from sedimentation, erosion, or thermokarsting including adding additional outfall locations. No impairments or habitat loss in specific waterbodies as a result of discharges from previous permit authorizations have been identified by the Department. DEC has determined that the existing uses and biological integrity of the waterbody will be maintained and fully protected under the terms of the permit, as required in 18 AAC 70.240(c)(2).

7.2.5.4 Human Health

The only human health parameter anticipated to be over the criterion is FC bacteria for graywater discharges. Per 18 AAC 70.240(c)(4)(B,C), (d)(1), and (d)(6), the FC bacteria are not considered pollutants that would bioaccumulate, bioconcentrate, or persist above natural levels in sediments, water, or biota, nor is the pollutant expected to occur at levels that would otherwise will create a public health hazard through encroachment on a water supply or contact recreation uses so long as appropriate BMPs are implemented as required by the Permit. The authorized mixing zone is consistent with 18 AAC 70.240(d)(1). Consistent with Per 18 AAC 70.240(c)(4) and (d)(6), BMPs, numeric, and narrative limits imposed by the Permit ensure subject pollutants will not produce objectionable color, taste, or odor in aquatic resources harvested for human consumption, nor will the discharge preclude, or limit established processing activities or commercial, sport, personal use, or subsistence fish and shellfish harvesting. Based on a review of the Pollen Study and the information provided herein, the Department concludes that the discharge complies with this criterion.

7.2.5.5 Spawning Areas

The NOI, or application, for a mixing zone requires determining if the discharge is near spawning area. Per 18 AAC 70.240(e) and 18 AAC 70.240(f), a mixing zone will not be authorized in an area of anadromous fish spawning or resident fish spawning reds for Arctic grayling, northern pike, lake trout, brook trout, sheefish, burbot, landlocked coho, king, and sockeye salmon, anadromous or resident rainbow trout, arctic char (Dolly Varden), whitefish, and cutthroat trout. The Permit does not authorize the discharge of effluent to open marine waters or to open waters of a freshwater lake or river, therefore no discharge to spawning areas will be authorized.

7.2.5.6 Aquatic Life and Wildlife

Per 18 AAC.240(c)(4)(A,B,C,D,E,G), 18 AAC.240(d)(5), 18 AAC.240(d)(7) the pollutants for which a mixing zone may be authorized, except for marine dredge projects, includes FC in graywater and turbidity for gravel pit/excavation dewatering. Neither of these parameters are expected to result in concentrations outside of the mixing zone that are undesirable, present a nuisance to aquatic life, permanent or irreparable displacement of indigenous organisms, a reduction in fish or shellfish population levels, or pose a risk to aquatic life and wildlife. The mixing zones are determined using critical effluent and receiving water conditions and are as small as practicable. Department concludes authorized mixing zones are protective of aquatic life and wildlife.

7.2.5.7 Endangered Species

Per 18 AAC 70.240(c)(4)(F), The Department may not authorize a mixing zone that will cause an adverse effect on threatened or endangered species. Due to the nature of discharge, limitations, and controls imposed by the Permit, authorized mixing zones are unlikely to cause adverse effects to threatened or endangered species (Section 13.1). The NOI requires the permittee to inform the Department if any threatened or endangered species may be within the area of discharge or of any determinations or restrictions imposed by U.S. National Marine Fisheries Service (NFMS) and the U.S. Fish and Wildlife Service (FWS) at the project area. In the event threatened or endangered species are in the vicinity, the Department retains the ability to consult with the NFMS and the FWS and include additional site-specific requirements in the authorization (i.e. time-area restrictions) or to deny the mixing zone.

8.0 PLAN SUBMITTAL REQUIREMENTS (18 AAC 72)

Authorizations under the Permit for domestic and nondomestic discharges to land, state waters, or WOTUS may require plan submittals per the most recent amendment of 18 AAC 72. Submittals are often necessary to ensure that treatment systems are adequate for attaining limits as authorized by the Permit and complying with WQS. The level of detail necessary in plan submittals is variable based on the specific circumstances. Detailed plans sealed by an Alaskan professional engineer may be required for complex treatment schemes but simple treatment (e.g., carbon filtration) may only require vendor information and process flow diagrams (PFDs). In addition, plan review approvals may include requirements in addition to permit requirements order to implement a project (e.g., BMP plan updates) or project specific monitoring requirements to help ensure compliance with WQS. While plan reviews and permits are intended to be implemented in unison, only the permit is applicable to public comment; design drawings signed and sealed by an engineer and reviewed by DEC is an approval process between qualified professionals.

8.1 Plan Reviews for Graywater Discharges (Discharge 002)

As discussed in Section 4.1.2, discharges of graywater from mobile sleigh camps will be required to submit NOIs for each separate project, or season if there are multiple projects in a winter season. Once the project or season is completed, the permittee must submit any outstanding compliance reporting with a NOT. This change is intended to improve communication between the applicant and DEC on the configuration of the sleigh camp and which treatment systems are being used. If there are no changes to the configuration or treatment systems, the applicant will be required to certify this in the NOI and submit the current plan approval with the NOI. If there are changes to the treatment system since the last authorization that rises to a level requiring plan review and approval, the applicant will be required to submit updated engineering plans with the NOI. Because there is an associated plan review, the applicant should submit the NOI and plans well in advance of the project to ensure this process is completed to meet the project schedule.

As a general recommendation, drinking water should be from a reliable source (e.g., NSB Service Area 10) and comply with current drinking water standards as determined by DEC Drinking Water Program. The revised NOI process includes identification of drinking water sources that may be used during the project. DEC WDAP may coordinate with DEC Drinking Water Program as needed.

Finally, the Permit may contain effluent limits for BOD_5 and TSS which do not meet secondary treatment standards outlined in the most recent amendment of 18 AAC 72. In this case, applicants requesting Graywater (Discharge 002) may be required to submit information supporting a request to waive minimum treatment standards per 18 AAC 72.050 and approval to discharge graywater per 18 AAC 72.060.

8.2 Plan Reviews for Non-Domestic Wastewater Discharges (003-005, 007, and 008)

Non-domestic discharges may require plan submittals and review (conducted under 18 AAC 72) to help ensure Permit compliance for SS, turbidity, petroleum hydrocarbons, metals, and chronic WET resulting from chemical additives. These submittals may include information to support unique treatment methods or to support a common treatment method that can be applied broadly as a BMP tool. Information should support attainment of discharge limits, or water quality criteria, identified in Section 6.0, and avoid introduction of new pollutants that cannot be reasonably permitted through a combination of permit authorizations and plan approvals. For example, it would be appropriate to review a treatment system that removes dissolved hydrocarbons from gravel pit dewatering, excavation dewatering, hydrostatic test, mobile spill response units, and contaminated SCA discharges because hydrocarbons were considered in limit development. However, as long as the proposed discharge does not cause, or contribute to, an excursion of a water quality criterion, the discharge can be approved under a Plan Review and be implemented alongside, but separate from, the permit authorization. If the proposed treatment cannot result in meeting water quality criteria and a mixing zone is necessary, an authorization may be issued after public notice of a Statement of Basis per 18 AAC 83.120 that addresses effluent characteristics, resulting limits, mixing zone, and Antidegradation Policy. Based on the applicable discharges and POCs discussed in this Fact Sheet, supporting plan reviews are anticipated to include, but not be limited to, the following:

- Chemical treatments (i.e., coagulants and flocculants) and processes or systems that remove SS and turbidity using an enhanced treatment mechanism;
- Treatment processes and systems that remove free-phase and/or dissolved-phase petroleum hydrocarbons; and
- Source control and chemical use stipulation so as not to cause, or contribute to, an excursion of a water quality criterion.

9.0 ANTIBACKSLIDING

Per 18 AAC 83.480, a reissued permit requires that "…effluent limitations, standards, or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit..." 18 AAC 83.480(c) also states that a permit may not be reissued "to contain an effluent limitation that is less stringent than required by ELGs in effect at the time the permit is renewed or reissued."

Effluent limitations may be relaxed as allowed under 18 AAC 83.480, CWA §402(o) and CWA §303(d)(4). 18 AAC 83.480(b) allows relaxed limitations in renewed, reissued, or modified permits when there have been material and substantial alterations or additions to the permitted facility that justify the relaxation or if the Department determines that technical mistakes were made.

CWA §303(d)(4)(A) states that, for waterbodies where the water quality does not meet applicable WQS, effluent limitations may be revised under two conditions: the revised effluent limitation must ensure the attainment of the WQS (based on the waterbody TMDL or the waste load allocation) or the designated use which is not being attained is removed in accordance with the WQS regulations.

CWA §303(d)(4)(B) states that, for waterbodies where the water quality meets or exceeds the level necessary to support the waterbody's designated uses, WQBELs may be revised as long as the revision is consistent with the State's antidegradation policy. Even if the requirements of CWA §303(d)(4) or 18 AAC 83.480(b) are satisfied, 18 AAC 83.480(c) prohibits relaxed limits that would result in violations of WQS or ELGs.

State regulation 18 AAC 83.480(b) only applies to effluent limitations established on the basis of

CWA Section 402(a)(1)(B), and modification of such limitations based on effluent guidelines that were issued under CWA Section 304(b)g. Accordingly, 18 AAC 83.480(b) applies to the relaxation of previously established case-by-case TBELs developed using BPJ. To determine if backsliding is allowable under 18 AAC 83.480(b), the regulation provides five regulatory criteria (18 AAC 83.480[b][1-5]) that must be evaluated and satisfied.

Although discharge categories have been reorganized between hydrostatic test water, contaminated SCAs, and contained water none of the resulting limitations have been relaxed. Instead, some of the implementation strategies have been improved to help ensure protection of the North Slope environment and human health. No backsliding has occurred during reissuance of the NSGP.

10.0 ANTIDEGRADATION

Antidegradation is implicit in CWA Section 101(a) goals, explicitly referenced in CWA Section 303(d)(4)(B) and implemented through 40 CFR 131.12. Section 303(d)(4) of the CWA states that, for waterbodies where the water quality meets or exceeds the level necessary to support the waterbody's designated uses, WQBELs may be revised as long as the revision is consistent with the State Antidegradation Policy and Implementation Methods. Alaska's current Antidegradation Policy and Implementation Methods are presented in 18 AAC 70.015 Antidegradation Policy (Policy) and in 18 AAC 70.016 Antidegradation Implementation Methods for Discharges Authorized Under the Federal CWA (Implementation Methods). For these state regulations to apply under the CWA, they must be previously approved by EPA per CWA Section 303(c)(3). The Policy and Implementation Methods have been amended through April 6, 2018; are consistent with the CWA and 40 CFR 131.12; and were approved by EPA on July 26, 2018.

This section of the fact sheet analyzes and provides rationale for the Department decision to reissue the Permit with respect to the Antidegradation Policy and Implementation Method.

10.1 Receiving Water Status, Tier Determination, and Analysis Requirements

Per the Implementation Methods, the Department determines a Tier 1 or Tier 2 classification and protection level on a parameter-by-parameter basis for the waterbody. The Implementation Methods also describe a Tier 3 protection level applying to designated waters, although at this time no Tier 3 waters have been designated in Alaska.

The NSGP authorizes discharges to fresh state waters and WOTUS. However, coverage under the NSGP is not available for discharges into impaired waterbodies (Categories 4 or 5 in the 2022 Integrated Report) if the effluent contains the pollutant that causes, or contributes to, the impairment. Therefore, no parameters have been identified where only the Tier 1 protection level applies. Accordingly, this antidegradation analysis applies the Tier 2 protection level on a parameter-by-parameter basis consistent with 18 AAC 70.016(c)(1) and 18 AAC 70.015(a)(2), that states if the quality of water exceeds levels necessary to support propagation of fish, shellfish, wildlife, and recreation in and on the water, that quality must be maintained and protected, unless the Department authorizes a reduction in water quality. Prior to authorizing a reduction of water quality, the Department must first analyze and confirm the findings under 18 AAC 70.015(a)(2)(A-D) are met. Because Tier 1 protection applies to all state waters and WOTUS in the state, the analysis must be conducted with implementation procedures in 18 AAC 70.016(b)(5)(A-C) for Tier 1 protection. For Tier 2 protection, the analysis must also comply with 18 AAC 70.016(c)(7)(A-F). These analyses and associated finding are summarized below.

10.2 Tier 1 Analysis of Existing Use Protection

18 AAC 70.016(b)(5)

(A) existing uses and the water quality necessary for protection of existing uses have been identified based on available evidence, including water quality and use related data, information submitted by the applicant, and water quality and use related data and information received during public comment;

The Department has reviewed water quality data on a parameter-by-parameter basis, environmental monitoring studies, and information on existing uses within the coverage area. The Department finds the information reviewed as sufficient and credible to identify existing uses and water quality necessary for Tier 1 protection.

(B) existing uses will be maintained and protected; and

Per 18 AAC 70.020 and 18 AAC 70.050 all fresh and marine waters are protected for all uses. Therefore, the most stringent water quality criteria found in 18 AAC 70.020 and in the Alaska Water Quality Criteria Manual for Toxic and Other Deleterious Organic and Inorganic Substances, 2008 (Toxicity Manual) apply and were evaluated to ensure existing uses and the water quality necessary for protection of existing uses of the receiving waterbody are fully maintained and protected. Water quality criteria are developed to be protective of existing uses. The Permit limits and conditions ensure water quality criteria are not violated in the receiving waterbodies. The Permit includes limits for each wastewater stream that are based on meeting water quality criteria at the point of discharge or at the boundary of an authorized mixing zone. Given water quality criteria is met at the end of the pipe or, if approved, the boundary of the chronic mixing zones for all parameters, regardless of monitoring frequency reductions, the existing uses of the waterbody as a whole are being maintained and protected.

(C) the discharge will not cause water quality to be lowered further where the department finds that the parameter already exceeds applicable criteria in 18 AAC 70.020(b), 18 AAC 70.030, or 18 AAC 70.236(b).

As discussed in (B), the Permit has been developed to ensure discharges shall not cause or contribute to an instream excursion of water quality criteria. As previously stated, the Permit

does not authorize discharges into impaired waterbodies (Categories 4 or 5 in the 2022 Integrated Report) if the effluent contains the pollutant that causes, or contributes to, the impairment. Therefore, no parameters were identified as already exceeding the applicable criteria in 18 AAC 70.020(b) or 18 AAC 70.030.

The Department concludes the terms and conditions of the Permit will be adequate to fully protect and maintain the existing uses of the water and that the Tier 1 findings required under 18 AAC 70.016(b)(5) are met.

10.3 Tier 2 Analysis for Lowering Water Quality

10.3.1 Scope of Tier 2 Analysis

Per 18 AAC 70.016(c)(2), an antidegradation analysis is only required for those waterbodies needing Tier 2 protection and which have any new or existing discharges that are being expanded based on permitted increases in loading, concentration, or other changes in effluent characteristics that could result in comparative lower water quality or pose new adverse environmental impacts. Per 18 AAC 70.016(c)(2)(A), the analysis will only be conducted for the portion of the discharge that represents a new discharge or an increase from the existing authorized discharge. Additionally, per 18 AAC 70.016(c)(3), DEC is not required to conduct an antidegradation analysis for a discharge that is not new or not expanding.

Per 18 AAC 70.990(75), "new or expanded" with respect to discharges means discharges that are regulated for the first time or discharges that are expanded such that they could result in an increase in pollutant load or concentration or other changes in discharge characteristics that could lower water quality or have other adverse environmental impacts. The determination of expanding can take on different contexts depending on whether the permit is an individual permit or a general permit. Individual permits are specific to a single facility such that a new or expanded discharge is relatively easy to define. Whereas, because general permits cover multiple discharge categories for an undefined number of facilities, determining what constitutes a new or expanded discharge is more complicated.

In the context of the NSGP, there are no increases in permitted loads or concentrations to existing, previously regulated discharges. The initial issuance of the Permit was developed to cover construction, maintenance, and operation of facilities related to oil and gas exploration, development, and production within the NSB.

All of the limitations have stayed the same or have decreased in the Permit. Although a new discharge category, contained water, now replaces the previous category of contaminated SCA water, there are no expanded discharges. Several contained water categories previously regulated under hydrostatic test water have been moved into the new contained water category along with contaminated SCAs. These discharges have been reorganized based on an analysis of how the hydrostatic test water was being utilized by permittees and to allow for refinement in monitoring and reporting requirements specific to traditional hydrostatic test water and contained water (See Section 6.4 and Section 6.7). Hence, these discharges are not new nor has the permitted concentration or loadings expanded. Therefore, the Tier 1 Antidegradation Analysis satisfies the requirements of 18 AAC 70.015 and 70.016.

The Department finds that requirements of this part of the antidegradation analysis have been met.

11.0 OTHER PERMIT CONDITIONS

11.1 Standard Permit Conditions

Appendix A of the General Permit contains standard regulatory language that must be included in all APDES permits. These requirements are based on the regulations and cannot be challenged in the context of an individual APDES permit action. The standard regulatory language covers requirements such as monitoring, recording, reporting requirements, compliance responsibilities, signatory authority, and other general requirements.

11.2 Best Management Practices Plan

A BMP Plan is a collection of controls and housekeeping measures which are intended to minimize or prevent the generation and the potential release of pollutants from a facility to the waters of the U.S. through normal operations and ancillary activities. Pursuant to CWA Section 402(a)(1), development and implementation of BMPs may be included as a condition in APDES permits. CWA Section 402(a)(1) authorizes DEC to include miscellaneous requirements that are deemed necessary to carry out the provision of the CWA in permits on a case-by-case basis. The Permit requires a BMP Plan for Discharges 002-005 and 007-008. The BMP Plan must be developed to control or abate the discharge of pollutants per 18 AAC 83.475. A BMP Plan must include certain generic controls as well as specific tools for controlling pollutants from each of the following unique waste streams: Graywater (Discharge 002), Gravel Pit Dewatering (Discharge 003), Excavation Dewatering (Discharge 004), Hydrostatic Test Water (Discharge 005), Mobile Spill Response (Discharge 007), and Secondary Containment (Discharge 008). Note that storm water BMPs are covered by the Storm Water Pollution Prevention Plan requirements in Section 11.3.

11.2.1 Implementation and Maintenance of the BMP Plan

A permittee must develop a BMP Plan which achieves the objectives outlined in Section 11.2. The BMP Plan must be developed prior to obtaining an authorization; the applicant must certify in the NOI that a BMP Plan has been developed and ready for implementation. Subsequent revisions to the BMP Plan may be required as part of the Plan Review process. The BMP Plan for industrial activities shall be located at the permitted facility and made available for Department review upon request. A qualified person must amend the BMP Plan whenever there is a change in the facility or in the operation of the facility that materially increases the generation of pollutants, their release, or potential release to receiving waters. Changes to the BMP Plan shall be consistent with the objectives and specific requirements as described in Section 3.2 of the Permit. Permittees must conduct an annual review and a certification statement and retain these records at the facility and provide copies to DEC upon request. If the BMPs are necessary to ensure compliance with limits or WQSs, DEC may request submittal of specific BMPs to ensure adequate consideration of concerns.

11.2.2 Standard BMP Plan Components

The BMP Plan should be developed consistent with the general guidance contained in *Guidance Manual for Developing Best Management Practices* (EPA 833-B-93-004, October 1993) or any subsequent revision. The BMP Plan must include, at a minimum, the following items:

- Statement of BMP policy. The BMP Plan must include a statement of management commitment to provide the necessary financial, staff, equipment, and training resources to develop and implement the BMP Plan on a continuing basis.
- Current copies of the NSGP, the signed and certified NOI submitted to DEC, authorization letters issued by the Department, Plan Approvals under 18 AAC 72, and previous years of annual BMP Plan certification letters.
- Description, location, and sequence of activities, BMP control measures, any stabilization measures, final constructed site plans, drawings, and maps.
- A log of BMP Plan modifications which documents maintenance and repairs of control measures, including date(s) of regular maintenance, date(s) of discovery of areas in need of repair/maintenance, and date(s) that the control measure(s) returned to full function (Section 3.2.7 of the General Permit);
- Description of any corrective action taken at the facility, including the event that caused the need for corrective action (include an NCN if reporting was required) and dates when problems were discovered and modifications occurred (Permit Section 3.2.7);
- Structure, functions, and procedures of the BMP Committee. The BMP Plan must establish a BMP Committee chosen by the permittee responsible for developing, implementing, and maintaining the BMP Plan.
- A description of potential pollutant sources and their associated discharge numbers.
- An identification and assessment of risks associated with accidental pollutant releases.
- Standard Operating Procedures that include but are not limited to:
    - Good Housekeeping.
    - Security.
    - Materials compatibility.
    - Record keeping and reporting.
    - Operation and maintenance plans for wastewater treatment systems and BMP controls. Elements should include preventative maintenance and repair procedures that are developed in accordance with good engineering practices.
    - Use of local containment devices such as liners, dikes, and drip pans where chemicals are being unpackaged and where wastes are being stored and transferred.
    - Apply chemical cleaning compounds and disinfectants in accordance with manufacturer instructions and suggested application rates.
    - Employee training and records of employee training date(s), etc.
    - Inspections and regular evaluation of BMP controls including evaluation of planned facility modifications to ensure that BMP Plan is considered and adjusted accordingly.

11.2.3 Common BMP Requirements

In addition to the standard BMP Plan components listed in Section 11.2.2, DEC will require the following general tools be included in the BMP Plan for all applicable discharges.

Contaminated Sites. DEC strongly suggests that Permittees review the Contaminated Sites Database to determine if contamination may be encountered when conducting underground activities in a new area. Division of Spill Prevention and Response, CSP website at: http://dec.alaska.gov/spar/csp/. If within 1,500 feet of a hydrocarbon contaminated site, the permittee must contact CSP. If recommended by CSP, the permittee may be required to develop BMP controls to help ensure compliance with Permit limits, or water quality criteria, for situations where hydrocarbon contaminated water is encountered.

Currently, DEC WDAP does not require baseline testing for contaminants of emerging concern (e.g., PFOS/PFOA). However, other DEC programs may request testing if there is a reasonable expectation that contaminants of emerging concern may be present at the site.

Petroleum Hydrocarbons, Oils and Grease. Petroleum hydrocarbons, oils and grease sheen, may be present in graywater, gravel pits, excavations, hydrostatic test water, or contaminated SCAs. The Permittee shall have BMP controls that will be implemented if a sheen is observed to prevent these pollutants from entering waters of the state or WOTUS.

Sediment, Erosion, and Thermokarsting Controls. All discharges shall use BMPs for erosion and sediment control. BMP controls should incorporate the use of sedimentation ponds or basins, diffusers or other energy dissipation devices at the point of discharge to prevent sedimentation and erosion. The BMP controls should also include methods which prevent sediment accumulation that could adversely impact sensitive vegetation areas. DEC strongly suggests that erosion and sediment controls be utilized for all discharges. Wastewater discharge temperature must be managed at the point of discharge prevent thermokarsting of tundra and permafrost as well. Refer to the following manuals for guidance: *Alaska Storm Water Guide.* https://dec.alaska.gov/water/wastewater/stormwater/guidance/.

11.2.4 Discharge Specific BMP Controls

DEC has determined that certain individual waste streams may have unique challenges that must be addressed with discharge specific BMP controls. BMP Plans must establish specific BMPs or other measures to achieve the objectives under Sections 11.2.4.1-11.2.4.6 for each discharge described below.

11.2.4.1 Specific Graywater BMP Controls (Discharge 002)

Permittees shall develop tools or methods which ensure: discharges do not contain floating solids, foam or garbage; the use of phosphate free and non-toxic soaps and detergents; minimal use of chlorine and other disinfections products; chemical cleaning compounds and disinfectants used will minimize the addition of nitrogen and phosphorous-based chemicals; chemical cleaning compounds and disinfectants are applied in accordance with manufacturer's instructions; surface discharge point is relocated as necessary and at a minimum frequency of once per 30-days; access to the surface discharge area is prevented through signage, remote location and/or fencing; kitchen oils are not introduced to the graywater system and provide alternate waste receptacles or holding tanks for these materials; use of nontoxic degreasers; all toxic or hazardous material, unused soaps, detergents, or pharmaceuticals have alternate waste receptacles or holding tanks and are prohibited from entering into the graywater system.

11.2.4.2 Specific Gravel Pit Dewatering BMP Controls (Discharge 003)

Gravel Pit Dewatering (Discharge 003) requires specific BMP controls which further addresses downstream sedimentation or erosion in the receiving water as the result of large volume discharges. This may include a variety of velocity dissipation devices, settling basins, or splitting a large volume across multiple discharge locations (may require multiple outfalls), etc. Because gravel pit water may be discharged directly to a waterbody or repurposed for ice roads and ice pad construction or dust suppression, BMPs controls should be specific to each activity authorized under the Permit. BMPs must include establishing practices for proper placement of pump intakes to reduce the turbidity and settleable solids in the discharge. For guidance on BMP controls for gravel pits, refer to *Alaska DEC's User Manual, Best Management Practices for Gravel/Rock Aggregate Extraction Projects* and *North Slope Gravel Pit Performance Guidelines.*

New to this reissuance, the permittee may also develop BMPs that allow for ceasing discharges to result in compliance with a chronic criterion based on a duration of four days when discharging to surface water. Hence, a discharge that exceeds turbidity limits over a three-day period may be averaged over a four-day period if the discharge is ceased on the fourth day allowing for an instream recovery. To demonstrate compliance with WQS, the BMP and QAPP must address how the monitoring and averaging is to be used to demonstrate compliance with the chronic criterion. Although cessation of discharging on the fourth day will result in recovery of the stream, the data collected during the previous three days will determine if the discharge complies with WQS. The permittee may also demonstrate compliance with the turbidity limit by not ceasing discharge on the fourth day if the resulting averages demonstrate an instream excursion has not occurred over that duration.

Historically, monitoring for turbidity has not been consistent with respect to comparing turbidity to criteria based on instream conditions at the time of discharge. Therefore, the BMPs and QAPP must include procedures for sampling receiving water prior to discharge so that a target limit is established for comparison to the compliance monitoring. Attachment D includes a graph for in-field determination of the turbidity limit based on the instream turbidity. DEC expects the permittee to adhere to the effluent limit monitoring requirements using the graph or other methods in the field including use of a hand-held turbidity meter.

11.2.4.3 Specific Excavation Dewatering BMP Controls (Discharge 004)

The use of coagulants in sedimentation basins will require BMPs derived from a plan review of the proposed chemical and dosing ranges. BMPs may include, but are not limited to, chemical dosing procedures and managing the water in a manner that does not violate limits for turbidity at the point of discharge (no mixing zone) or at the boundary of an approved mixing zone. Although discharges to upland locations is desired, direct discharges to flowing water with a mixing zone is allowed. New to this reissuance, the permittee may also develop BMPs that allow for ceasing discharges to result in compliance with a chronic criterion based on a duration of four days when discharging to surface water. Hence, a discharge that exceeds turbidity limits over a three-day period may be averaged over a four-day period if the discharge is ceased on the fourth day allowing for an instream recovery. To demonstrate compliance with WQS, the BMP and QAPP must address how the monitoring and averaging is to be used to demonstrate compliance with the chronic criterion. Although

cessation of discharging on the fourth day will result in recovery of the stream, the data collected during the previous three days will determine if the discharge complies with WQS. The permittee may also demonstrate compliance with the turbidity limit by not ceasing discharge on the fourth day if the resulting averages demonstrate an instream excursion has not occurred over that duration.

Historically, monitoring for turbidity has not been consistent with respect to comparing turbidity to criteria based on instream conditions at the time of discharge. Therefore, the BMPs and QAPP must include procedures for sampling receiving water prior to discharge so that a target limit is established for comparison to the compliance monitoring. Attachment D includes a graph for in-field determination of the turbidity limit based on the instream turbidity. DEC expects the permittee to adhere to the effluent limit monitoring requirements using the graph or other methods in the field including use of a hand-held turbidity meter.

11.2.4.4 Specific Hydrostatic Test Water BMP Controls (Discharge 005)

Permittees are required develop BMP Plans which prevent sedimentation, erosion, and thermokarsting control at point of discharge or downstream of the discharge. The BMP Plan must also include tools which address hydrocarbon removal in the event a sheen is observed in the hydrostatic test water. This requirement is particularly important for discharge authorizations that include limits for TAH and TAqH due to a higher potential for hydrocarbon presence in the discharge. A treatment BMP using activated carbon or other absorption media may be approved via plan review.

Unique hydrotesting requirements based on industry codes, standards, and guidance may require plan reviews and implementation of BMPs. For example, specific controls may be required based on plan reviews for facilities where the test source water uses chemical adjustments (e.g., pH) or use heated water to prevent freezing in the pipelines during a test. These controls could include measures for neutralizing pH or to ensure water quality criteria for temperature is met at the point of discharge and prevent thermokarsting of tundra and permafrost.

11.2.4.5 Specific Mobile Spill Response BMP Controls (Discharge 007)

The BMP Plan must include operation and maintenance procedures for treatment systems that remove free-phase and dissolved-phase hydrocarbons to ensure the treatment capacity of the system is maintained. The BMP Plan must also address procedures which must be implemented to bring the discharge into compliance with the Permit upon observation of a sheen.

11.2.4.6 Specific Contained Water BMP Controls (Discharge 008)

BMPs for discharges of contained water may be required on a case-by-case basis. Because of the intentionally broad category for contained water, the review and approval of BMPs may be simple or complex depending on the complexity of the characteristics of the specific contained water being considered. As discussed previously, the BMPs for more complex characteristics may require a submittal of plans used under 18 AAC 72, which may result in changes to existing BMP plans or as a separate component required specifically through the

plan approval process. The following specific BMPs are an outgrowth of the discussions in Section 4.7.3 for anticipated contained water sources.

Contaminated SCAs: Contaminated SCAs will require development of treatment BMPs to remove dissolved and free phase hydrocarbons. If the applicant requests approval to discharge water from a contaminated SCA, the treatment BMP Plan must be submitted with the NOI.

Open RPs: [Placeholder] To authorize discharges from open reserve pits in the Permit, DEC must complete a case-by-case BPJ analysis in this section at a minimum. DEC will update this section as a Permit Modification as described in the Permit Section 3.5.1 Permit Reopener Clause. Also see Response to Comments Section 2.1.

Approval to discharge water contained in open RPs is predicated on submittal of recent water quality data for barite metals as well as draft BMP language that addresses preventing disturbance and resuspension of fine-grained material potentially containing absorbed metals. At a minimum, the pump intake must be installed to prevent upsweep of solids (e.g., low intake velocity) and location away from known or suspected zones of deposits (e.g., site plan). DEC encourages the use of cartridge filtration as a treatment BMP in addition to pump intake considerations. The BMPs require modification if the turbidity trigger is exceeded as well as monitoring of barite metals to demonstrate compliance with WQS.

Sedimentation Basins for Marine Dredging: The complexity associated with discharges from sedimentation basins treating marine dredge material will require a plan review, and possibly, development of a Statement of Basis and a public notice. Similar to sedimentation basins for excavation dewatering to freshwater, BMPs such as coagulant dosing and water management to ensure adequate settling of fines to ensure limit compliance is anticipated. Other BMPs may be required based on specific plans reviewed by DEC under 18 AAC 72 showing the size, number, aspect ratios, and detention time of the sedimentation basins.

11.3 Storm Water Pollution Prevention Plan

Coverage for Storm Water (Discharge 006) requires that the applicant develop and implement a SWPPP, which assesses site specific conditions, sources of sediment and other pollutants, and establishes BMP controls to prevent, or minimize to the extent practicable, pollutants from contaminating industrial storm water and allowable non-storm water discharges for each identified facility. The SWPPP must identify BMPs or controls that will best suit the facility and activities and meet pollution control objectives.

11.3.1 SWPPP Development and Implementation

The SWPPP must be developed by a qualified person and be ready to be implemented prior to obtaining authorization; submittal of a NOI for the first authorization requires certification that the SWPPP is ready for use (See Section 11.5). Subsequent NOIs for revisions of an existing authorization must include a written certification statement that the SWPPP has been reviewed and updated, if necessary, and is ready to implement (Section 11.5). While SWPPPs are developed to address site-specific control measures for an individual facility, the permittee may develop a SWPPP for multiple facilities in a proximal area, so long as the implementation of the SWPPP is not impracticable due to distance separating the facilities and the SWPPP has adequate details for each individual facility (e.g., site maps showing snow storage areas, SCAs, open or closed RPs, other potential contaminant sources, local drainage

patterns, etc.). Any revisions to a multi-facility SWPPP must be distributed to each facility prior to implementation.

The SWPPP must be updated as necessary to reflect any revisions to the facility that affect the storm water controls implemented at the site (Section 11.3.3.3) including revisions that address applicable federal, state, tribal, or local requirements. The adaptation of the SWPPP for facility changes resulting from other program requirements is intended to account for overlapping or similar requirements, while complying with the Permit. The permittee must review the SWPPP annually, make revisions if necessary, and certify the revised SWPPP. The current SWPPP must be maintained at the facility site as described in Section 11.3.3.1.

11.3.2 SWPPP Contents

A SWPPP shall be consistent with EPAs document, *Developing Your Storm Water Pollution Prevention Plan – A Guide for Industrial Operators (March 2021, EPA 833-B-09-002)* or any subsequent revision of the guidance document. For additional guidance, permittees may also consult the *Alaska Storm Water Guide (December 2011*) or the 2020 MSGP. While these guidance documents are helpful, forms from other permits must not be used to satisfy reporting requirements of the NSGP.

11.3.2.1 The SWPPP must include a narrative that provides descriptions of the following items:

- Measures to cleanup reportable quantity releases (contaminated storm water is storm water associated with a discharge of a reportable quantity for which notification is or was required per 40 CFR 117.21, 40 CFR 302.6, or 40 CFR 110.6 or any storm water that contributes to a violation of a WQS [40 CFR 122.26(c)(1)(iii)]);
- Vehicle and equipment storage, cleaning, and maintenance areas;
- Snow handling procedures and erosion controls; and
- Any provisions necessary to meet the BMP Plan requirements of the Permit.
- Description, location, and sequence of activities, control measures, and stabilization measures;
- Documentation of maintenance and repairs of control measures, including date(s) of regular maintenance, date(s) of discovery of areas in need of repair/maintenance, and date(s) that the control measure(s) returned to full function;
- Manufacture Information (i.e. Material Data Sheet, manufacturer and/or supplier test results, or installation instructions);
- Description of any corrective action taken at the facility, including the event that caused the need for corrective action and dates when problems were discovered and modifications occurred;
- Records of employee training, including the date(s) training was received; and
- Copies of biannual inspection reports, NCNs, annual SWPPP certifications, monitoring reports, and annual reports.

11.3.3 SWPPP Implementation and Administrative Requirements

11.3.3.1 SWPPP Documentation and Availability

Copies of the NSGP, the signed and certified NOI submitted to DEC, authorization letters, and a log of SWPPP modifications must be included with the SWPPP. This permit condition stresses the importance understanding interrelated permit requirements and responsibilities. A Permittee must make a copy of the SWPPP and documentation available to DEC upon request for review or copying during any CEP on-site inspection per 18 AAC 83.405(j)(2). Electronic storage of documents can be used so long as they are accessible when a DEC inspector conducts an onsite inspection. A copy of the SWPPP must be kept at the facility at all times. The SWPPP must identify any alternative off-site location for available access if there is a seasonal shut down for a facility. The SWPPP must be returned to the facility once the shutdown is over.

11.3.3.2 Inspection Requirements

Requirements for reporting results of storm water monitoring inspections are specified at 40 CFR §122.44(i)(4). Specifically, the Permit requires:

- Bi-annual inspection of the facility site. One inspection should be conducted prior to breakup to assess whether there are any areas which may contribute to storm water discharges associated with the industrial facility or activity and could be addressed with BMPs to minimize contact with contamination sources. The second inspection should be conducted after the breakup period is over to assess whether there are any areas which contributed to storm water discharge associated with the industrial facility or activity that were unanticipated and unaddressed by the SWPPP. Based on findings during the inspections, the SWPPP should be modified to include the necessary practices to minimize future contact or contamination.
- Inspection reports and compliance certification must be maintained for a period of three years.
- Certifications that the bi-annual inspections have been conducted must be retained onsite. Certifications must be signed in accordance with established signatory authority (40 CFR §122.22). For inactive sites where annual inspections are impracticable, or otherwise unwarranted, a certification is required once every three years stating the facility is in compliance with the Permit or alternative requirements.

11.3.3.3 SWPPP Modifications

The permittee must update the SWPPP and site maps with any relevant new information, within seven calendar days of a response to any following triggering conditions:

- Changes in facility or operation of facility which materially increases the generation of pollutants or their release or potential release to surface water;
- Changes to control measures, good housekeeping measures, or other activities that render the exiting SWPPP obsolete;
- Changes made in response to corrective actions, or maintenance procedures; or
- An inspection or investigation reveal changes are necessary to comply with the Permit.

The permittee must revise its SWPPP to reflect the new maintenance procedures and include documentation of the corrective action to return to full compliance. The permittee must maintain a log showing the dates of all SWPPP modifications, including name of the person authorizing each change and a brief summary.

11.4 Quality Assurance Project Plan

The Permittee is required to develop a QAPP for discharges 002-005 and 007-008 where monitoring is required (See Permit Section 3.1).

11.4.1 Standard QAPP Requirements

The plan shall be retained onsite and made available to the Department upon request. The QAPP shall consist of standard operating procedures the permittee must follow for collecting (See Appendix C of the General Permit for composite sample definition) handling, storing, and shipping samples; laboratory analysis; and data reporting, which ensure that monitoring data submitted are accurate and to explain data anomalies if they occur.

The QAPP should be completed and ready to implement before any discharges take place. In the NOI (Section 11.5), the applicant must indicate the QAPP will have been developed and be available for implementation. The authorization effective date may be determined based on a future date when completion has been accomplished. The date of the QAPP must be prior to the effective date of the authorization. In addition, the QAPP must be reviewed, revised if necessary, and certified annually thereafter per Section 12.1.

11.4.2 Discharge-Specific QAPP Requirements

The following highlight some of the unique QAPP requirements discussed in previous sections. This is not intended to be a complete list and the permittee is ultimately responsible for developing the QAPP to comply with the Permit.

Gray Water FC bacteria limits based on water quality criteria without a mixing zone.

- The QAPP must include how to calculate the 90th percentile of multiple sample results to demonstrate compliance with the water quality criterion.

Gravel Pit and Excavation Dewatering turbidity limit determination and verification of WQS compliance:

- Permittee must monitor background turbidity daily for limit at the mixing zone boundary or end of pipe.
- QAPP must include protocol for calculating four-day averaging when limits are exceeded during subsequent days but no excursion occurred over four-day duration. Hence, the averaging includes background turbidity and resulting criteria as well as the turbidity at the boundary of the mixing zone or end of pipe.

Hydrostatic Composite sampling:

- For discharges of hydrostatic test water greater than 500,000 gpd, the QAPP must address the method of collecting a composite sample for permit compliance.

Unique Contained Water per Authorization:

- Depending on the application, a permittee may be required to modify their QAPP upon obtaining an authorization after a 30-day public notice period. The authorization will include specific QAPP modifications needed.

11.5 Notice of Intent Procedures

An applicant seeking coverage under the permit must submit a NOI to DEC per 18 AAC 83.210(b). Per Section 2.2.3.3, DEC believes the intermittent or infrequent discharges associated with certain authorizations has in the past led to reporting problems. Therefore, short-term authorizations which are project based, will be issued as separate authorizations on an as-needed basis and terminated as soon as practicable afterwards (e.g., Graywater, Excavation Dewatering, and Hydrostatic Test Water). Meanwhile, storm water will be issued as a long-term authorization. The other discharges, gravel pit dewatering, mobile spill response, and contained water may be issued either as a short-term or long-term authorization depending on project or facility considerations. The Permit includes separate NOIs for long-term facility operations (commonly storm water and gravel pit dewatering for ice construction or dust suppression) and single event or short-term projects (commonly graywater from sleigh camps, hydrostatic test water, excavation dewatering, and contained water). The following information will be required for each NOI:

1. **Applicant information**. The NOI requires the applicant to provide the owner's or Permittee's name, mailing address, contact name, and telephone number.
2. **Discharges**. The permit requires the applicant to clearly identify the types of discharges being requested.
3. **Location of discharge**. The NOI requires the applicant to provide accurate descriptions for location of operations and discharges. The following summarizes the approach per discharge:
    a. **Graywater (Discharge 002)**: Authorizations will be short-term, specific to a project. Area of discharge as described in the vicinity map, along with estimated routes of travel.
    b. **Gravel Pit Dewatering (Discharge 003):**
        i. To open waterbodies – coordinate of the gravel pit (approximate centroid) and each discharge point to the receiving water.
        ii. Ice roads/pads and dust control – provide coordinate of mine site and show area of coverage with road systems in vicinity maps. Two opposite corner coordinate points for the vicinity map designate the area of coverage.
    c. **Excavation Dewatering and Hydrostatic Test Water (Discharges 004 and 005):** These are short-term authorizations for a construction or maintenance projects that must be terminated upon project completion. Provide coordinate of proposed discharge locations, vicinity maps, and site plans that clearly depict the project components.
    d. **Storm Water (Discharge 006):** Storm water requires vicinity maps and detailed site plans be provided in the SWPPP. Detailed site plans must include potential sources of contamination and interrelated discharges (e.g., contaminated SCAs or discharges from open or closed RPs). A SWPPP does not have to be submitted with the NOI but must be certified prior to use. Subsequent NOIs for revisions of an existing authorization must include a written certification statement that the SWPPP has been reviewed and updated, if necessary, and is ready to implement.

e. **Mobile Spill Response (Discharge 007):** Mobile spill response may be discharged over an area of operation. Provide vicinity map with road systems similar to Section 11.5, item (3)(b)(ii).

f. **Contained Water (Discharge 008):** [Placeholder] To authorize discharges from open reserve pits in the Permit, DEC must complete a case-by-case BPJ analysis in this section at a minimum. DEC will update this section as a Permit Modification as described in the Permit Section 3.5.1 Permit Reopener Clause. Also see Response to Comments Section 2.1.

4. **Vicinity map**. The NOI requires the applicant to submit a vicinity map of proposed location of operations and discharges.

5. **Detailed Site Plans**. Detailed site plans that show the discharge point, relative infrastructure (e.g., SCAs, pipelines, excavation areas, RPs, sedimentation ponds etc.) must be submitted as described in item 3. Specifically for open RPs, the detailed site plan must include proposed pump intake locations, discharge locations, and known or suspected areas of retained drilling fluids in reference to the discharge.

6. **Commencement Date of discharge**. The applicant must provide the initial date and expected duration of operations. However, the date that discharges may commence is based upon receiving written authorization from the Department.

7. **BMP Plan, QAPP, and SWPPP**. The permittee must indicate in the NOI that a BMP Plan, QAPP, or a SWPPP will have been developed and be ready for implementation upon discharge. Subsequent revisions and corresponding certificates are to be retained onsite with the affected plan and be provided to DEC upon request.

8. **Miscellaneous Reports**. The applicant may submit copies of plans, surveys, and other reports required by other state and federal agencies to support the NOI. For open RPs, the applicant must submit analytical data supporting the request to discharge.

9. **Plan Approval**. The Permit requires the applicant to demonstrate to the Department that graywater treatment systems are compliant with the most current version of 18 AAC 72 prior to discharging to waters or land of the state, as well as waters of the U.S. Applicants may be required to submit plans, waivers to minimum treatment, or previous Department graywater approvals with the NOI. Other plan reviews may be required on a case-by-case basis.

11.5.1 Deadlines for Submitting NOI

NOI submittals fall under four categories: new applicants, existing permittees with automatic reissuance, NOIs to revise an existing authorization (after first issuance or reapplication), and NOIs to obtain administrative extension prior to Permit expiration. All existing permittees under AKG332000 will automatically become authorized upon permit reissuance. Applicants for an extension under the permit and new or revised applications that are not required to submit plans for review or request to waive minimum treatment requirements for graywater must submit within 30 days prior to discharge.

Applicants that have previously received approvals or waivers required by 18 AAC 72, must submit an NOI to DEC at least 30 days prior to discharge and include copies of those previous approvals with a certification that no changes to the treatment system have been made. If not,

DEC may require resubmittal of treatment system plans. Applicants that need new plan reviews or waivers required by 18 AAC 72, must submit an NOI at least 45 days prior to discharge and include the necessary submittals per the most current version of 18 AAC 72 as coordinated with DEC. Note that incomplete or unacceptable submittals may require additional time to issue an authorization.

11.5.2 Existing Permittee Automatic Reissuance

During the previous reissuance, all applicants had to reapply due to rejoining various authorizations under the NSGP (i.e., Graywater). Since the only significant change is regrouping sources under "Contained Water", there are only a few existing administratively extended authorizations affected (i.e., contaminated SCAs). When automatically reissuing these affected authorizations, DEC will address any changes without the applicant reapplying.

11.5.3 Date of Authorized Discharge

Per 18 AAC 83.210(f) a general permit must specify the date(s) when it authorized a Permittee to begin discharging. Commencement of discharges from an activity may occur any time after issuance date of a written authorization from DEC. The written authorization will identify a general authorization number for the facility, list the authorized discharges, and specify any additional conditions necessary to comply with the Permit.

11.6 Notice of Transfers

18 AAC 83.150 allows Permit coverage for a facility to be transferred from an existing owner/operator to a new owner/operator for an existing facility or location designated in the original NOI. Discharge authorizations for a particular facility may not be transferred to another facility at the same site, nor will the transfer apply to the same facility at a new location. The transfer requires signatures from both the existing permittee and the new permittee. A notice of transfer form can be obtained from EDMS.

11.7 Notice of Termination

DEC may terminate coverage under an APDES permit for the reasons described in 18 AAC 83.140 using the procedures provided in 18 AAC 83.130. If a Permittee desires to expediate termination of coverage for an individual outfall or the entire permit authorization, the permittee must submit a Notice of Termination (NOT) form to DEC within 30 days following cessation of discharge. The notice must include any final reports, if not already submitted, required by the Permit. Termination is complete upon written confirmation from the Department.

11.8 Permit Expiration

The Permit will expire five years from the effective date.

12.0 RECORDING AND REPORTING REQUIREMENTS

Per 18 AAC 83.455(b), reporting provisions allow flexibility in determining the frequency of reporting, which may differ based on the discharge. Currently, DEC is transitioning to an e-reporting system (EDMS) that is consistent with 40 CFR 127. Reporting will be annual using this new system for all discharges whether to WOTUS, waters of the state, or disposal state land. DEC may reevaluate the reporting process during the Permit term based on new information.

12.1 Annual Reports

DEC proposes to use EDMS for submitting discharge data on an annual basis, or upon submittal of a NOT for short-term discharges. Annual Report submittals must be made by January 31st each year. Other documents that require review and certification annually (e.g., BMPs, QAPP, SWPPP, etc.) are not to be submitted with the Annual Report due in January 31 of each year. Instead, the permittee must acknowledge in the annual report that these actions are the responsibility of the permittee, with the documents retained on site and made available to DEC upon request.

13.0 OTHER LEGAL REQUIREMENTS

13.1 Endangered Species Act

Per Section 7 of the Endangered Species Act (ESA), federal agencies are required to consult with the NMFS and FWS if their actions could beneficially or adversely affect any threatened or endangered species. As a state agency, DEC is not required to consult under Section 7 regarding wastewater discharge permitting actions. However, this does not absolve the Department from complying with Section 9 and10 of the ESA. DEC has reviewed previous determinations for discharges from oil and gas facilities within the area of coverage for oil and gas facilities, and previously conducted evaluations and consultation with services to assert there is not likely to be an adverse effect on endangered species due to oil and gas discharges authorized under the Permit within the area of coverage that specifically excludes prohibited areas discussed in Section 3.2. For the discharges that are not explicitly restricted anywhere in state waters of the North Slope, the applicant must submit evidence and certify in their NOI that they have coordinated appropriately with the service and comply with requirements of the ESA prior to DEC issuing an authorization. This requirement ensures compliance with the ESA.

DEC, as a state agency, voluntarily contacted FWS and NMFS to obtain listings of endangered species and critical habitat. Within the permit coverage area (Section 3.2), the following species are listed as threatened or endangered and may potentially be affected by discharges authorized under the Permit.

- Polar Bear *(Ursus maritimus)*: Threatened; Wherever found
- Bowhead whale (*Balaena mysticetus*): Endangered
- Fin whale (*Balaenoptera physalus*): Endangered
- Humpback whale (*Megaptera novaeangliae*): Endangered
- Spectacled Eider *(Somateria fishceri)*: Threatened; Wherever found
- Steller's Eider *(Polysticta stelleri)*: Threatened; Wherever Found

The following critical habitats are also listed which may potentially be affected by discharges authorized under the Permit include the following:

- Polar Bear critical habitat (See Attachment A – Figure A. 2).
- Spectacled Eider marine critical habitat in Ledyard Bay (See Attachment A–Figure A. 3).

Steller's eider: The Alaskan breeding populations of Steller's eider were listed as threatened under the ESA on June 11, 1997 in the Federal Register (62 FR 31748). Designated critical habitat for the Steller's eider includes five units located along the Bering Sea and north side of the Alaskan Peninsula but none in the permit Area of Coverage.

Spectacled eider: The Alaskan breeding populations of Spectacled eider were listed as threatened under the ESA on June 9, 1993 (58 FR 27474)). On February 6, 2001, the FWS designated critical habitat for spectacled eider (66 FR 9146) in Ledyard Bay in the Chukchi Sea but none in the Beaufort Sea.

Polar bear: On May 15, 2008, the FWS published a Final Rule in the Federal Register listing the polar bear as a threatened species under the federal ESA (73 FR 28212-28303). The FWS based its listing on the loss of sea ice, which it says threatens and will likely continue to threaten polar bear habitat. On December 7, 2010, the FWS designated critical habitat for the polar bear 50 CFR Part 17. In 2013, the decision was challenged, and in 2016, the decision was upheld.

Bowhead whale: Bowhead whales are listed as endangered under the ESA and are considered depleted under the Marine Mammal Protection Act. NMFS, in 2002, issued a determination within the Federal Register deciding against designating critical habitat for bowheads. NMFS determined that (1) the population decline was due to overexploitation by commercial whaling, and habitat issues were not a factor in the decline; (2) the population is abundant and increasing; (3) there is no indication that habitat degradation is having any negative impact on the increasing population; and (4) existing laws and practices adequately protect the species and its habitat (67 FR 55767, August 30, 2002).

Fin whale: The fin whale population was decimated by commercial whaling in the 1800s and early 1900s. It was listed as endangered under the Endangered Species Conservation Act, the predecessor to the ESA, in 1970. When the ESA was passed in 1973, the fin whale was listed as endangered throughout its range. It is also designated as depleted under the Marine Mammal Protection Act.

Humpback whale: Commercial whaling in the 1800s and early 1900s significantly reduced the global humpback whale population. In 1946, commercial whaling of humpbacks was regulation by the International Convention for the Regulation of Whaling. Then, the International Whaling Commission ended commercial whaling of humpbacks in 1966. In 1970, the humpback whale was listed as endangered under the Endangered Species Conservation Act, the predecessor the ESA. When the ESA was passed in 1973, the humpback whale was listed as endangered throughout its range. In the same year it was designated as depleted under the Marine Mammal Protection Act. The Chukchi Sea is the northernmost area for humpbacks during their summer feeding, although, in 2007, humpbacks were seen in the Beaufort Sea east of Barrow, which would suggest a northward expansion of their feeding grounds.

Bearded seal: With the loss of sea ice due to climate change, concern has arisen over the survival of ice seals. The NMFS was petitioned to list ribbon seals under the ESA. In 2008, upon finding that the petition for ribbon seals had merit, NMFS decided to initiate status reviews for the ribbon seal and the other three species of ice seal, the spotted seal, the ringed seal, and the bearded seal. In December 2010 NMFS proposed to list the bearded seal as a threatened species under the ESA, but that decision has not been finalized.

Ringed seal: With the loss of sea ice due to climate change, concern has arisen over the survival of ice seals. The NMFS was petitioned to list ribbon seals under the ESA. In 2008, upon finding that the petition for ribbon seals had merit, NMFS decided to initiate status reviews for the ribbon seal and the other three species of ice seal, the spotted seal, the ringed

seal, and the bearded seal. In December 2010 NMFS proposed to list the ringed seal as a threatened species under the ESA, but that decision has not been finalized.

13.2 Essential Fish Habitat (EFH)

Essential fish habitat (EFH) includes the waters and substrate (sediments, etc.) necessary for fish from commercially-fished species to spawn, breed, feed, or grow to maturity. The Magnuson-Stevens Fishery Management and Conservation Act (January 21, 1999) set forth a number of new mandates for the NMFS, regional fishery management councils, and other federal agencies to identify and protect important anadromous fish habitat. DEC, as a state agency, voluntarily contacts NMFS to obtain EFH designations.

The EFH regulations define an adverse effect as any impact that reduces the quality and/or quantity of EFH and may include direct (e.g. contamination or physical disruption), indirect (e.g. loss of prey, reduction in species' fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

13.3 Refuges, Critical Habitat Areas, Sanctuaries, and State Ranges

These are legislatively designated areas (LDAs) which contain anadromous waters, fish crossings, indigenous fish, mammals, and birds in the State of Alaska that might be adversely affected by certain activities. Currently, there are no state designated refuges, critical habitat areas, sanctuaries, or state ranges located within the permit coverage area (Section 3.1). Listings within the state can be found at ADF&Gs website: https://www.adfg.alaska.gov/index.cfm?adfg=conservationareas.locator

14.0 REFERENCES

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ATTACHMENT A – FIGURES

Figure A. 1: Permit Coverage Area

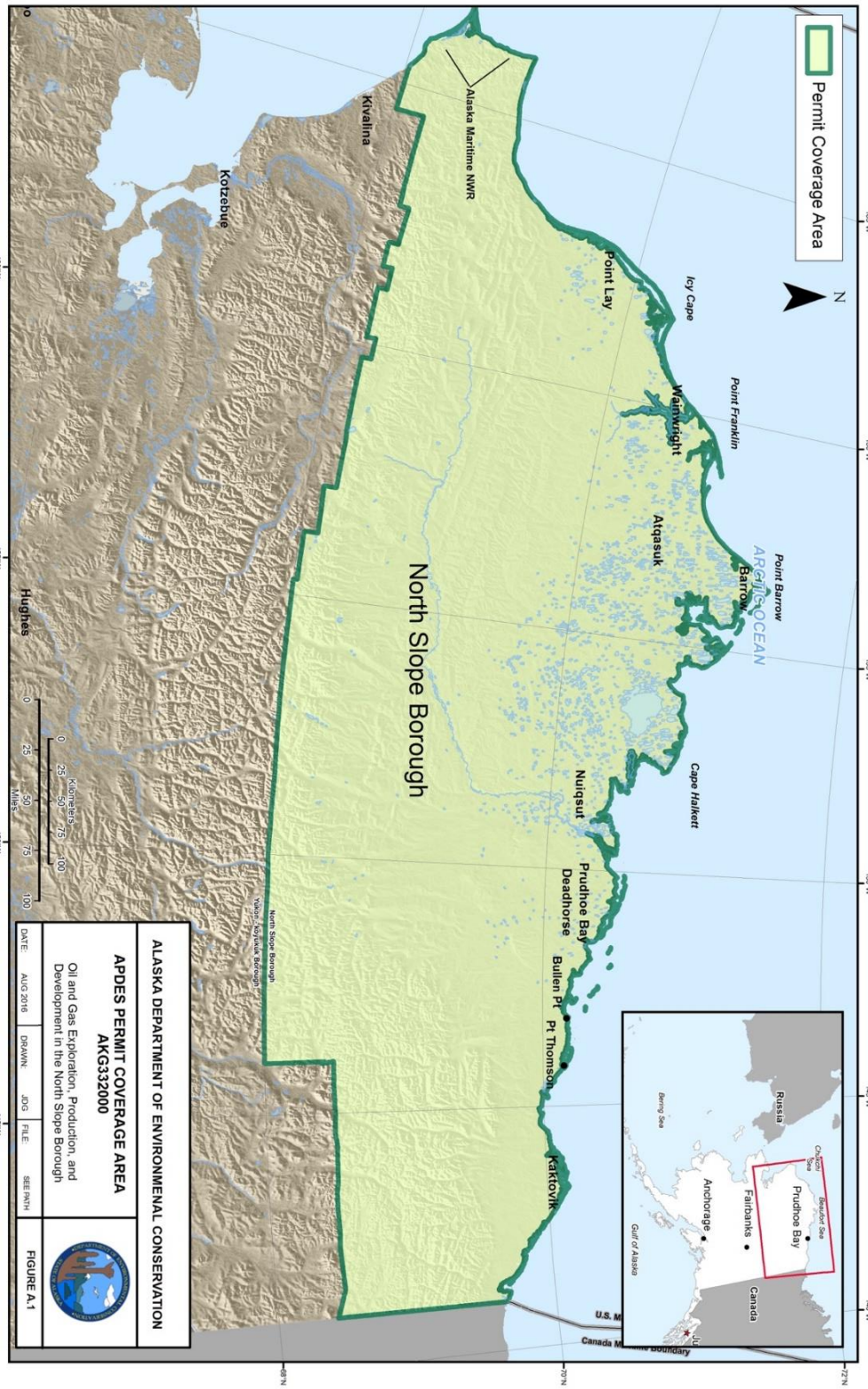


Figure A. 2: Polar Bear Critical Habitat

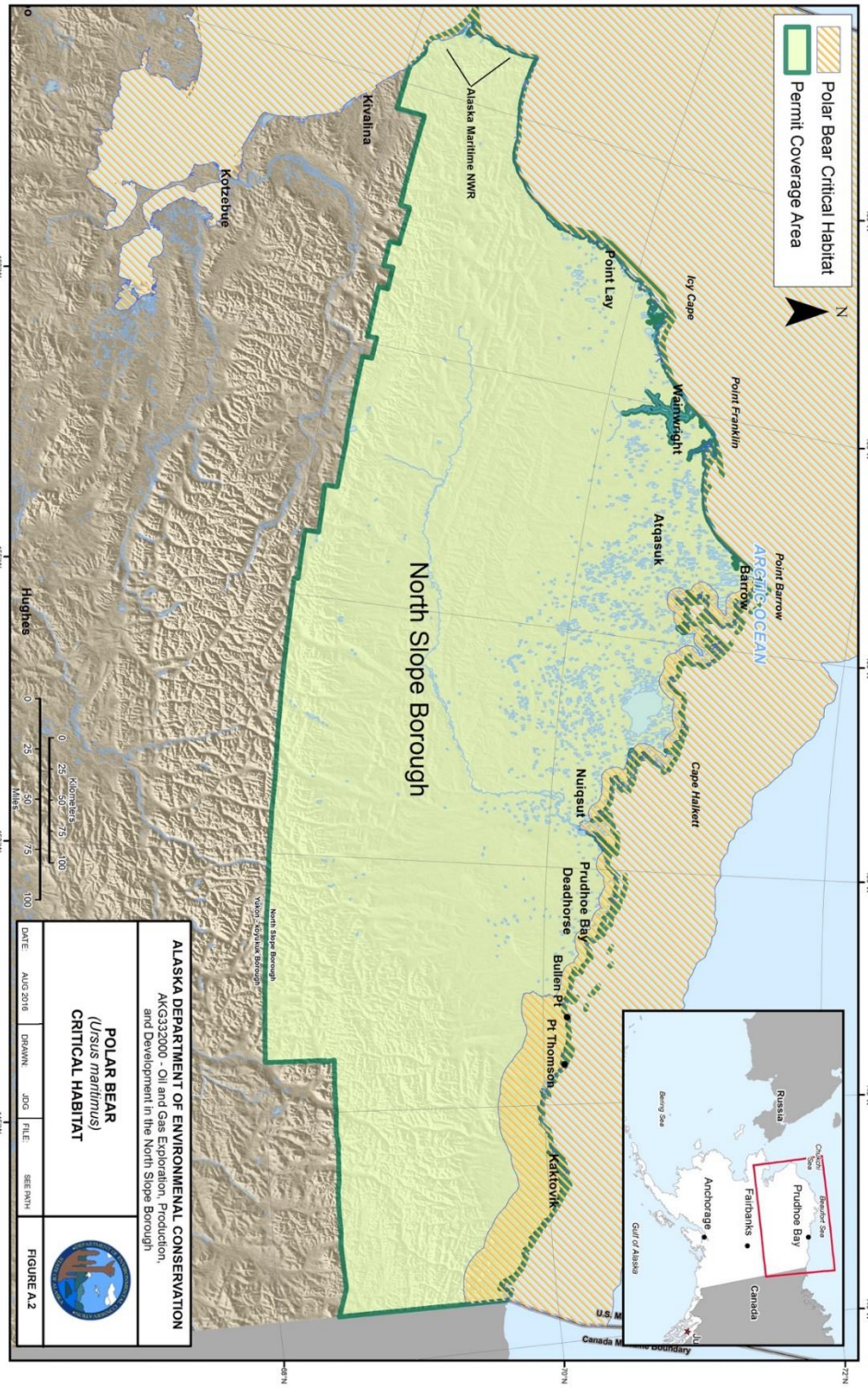
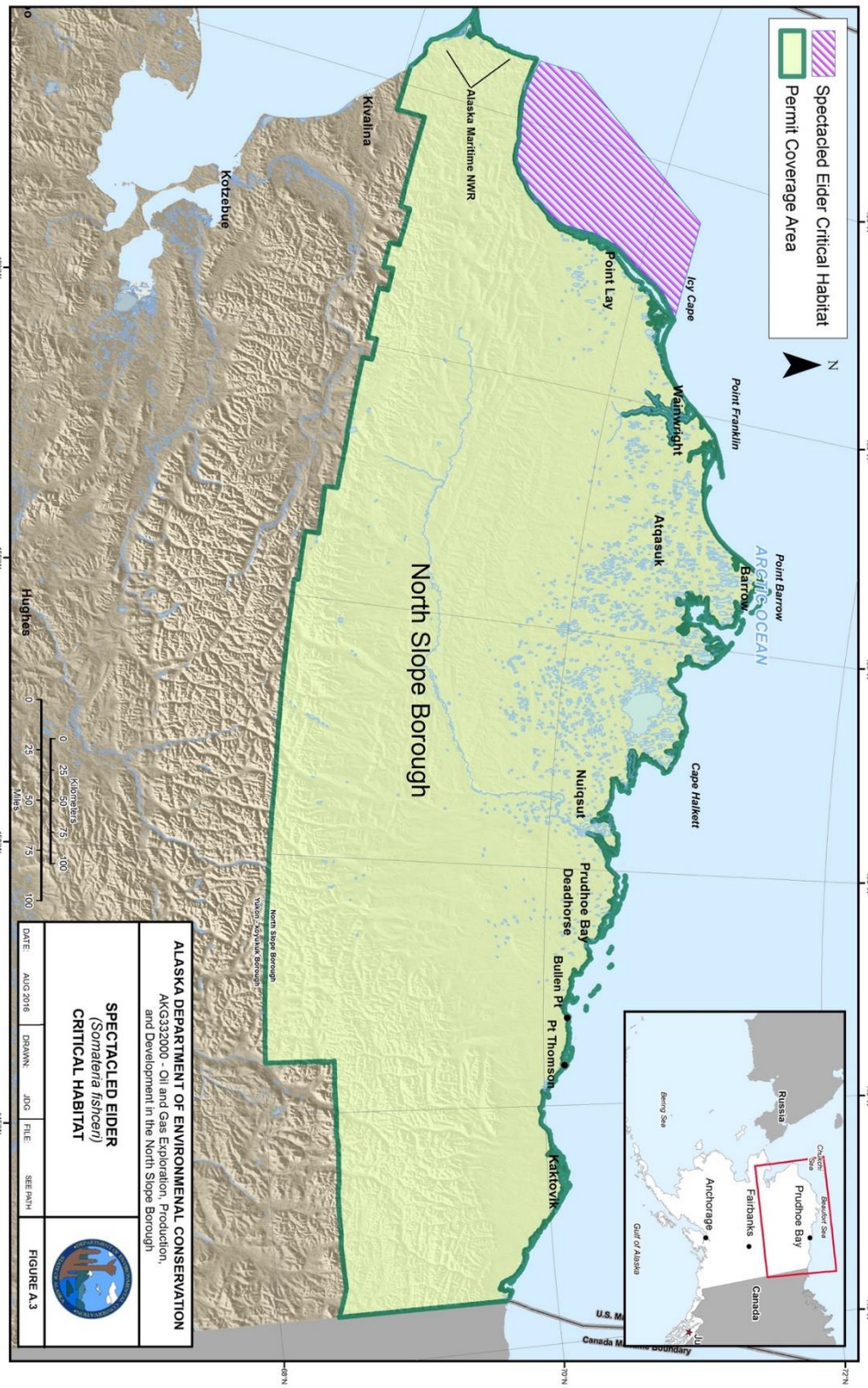


Figure A. 3: Spectacled Eider Marine Critical Habitat



ATTACHMENT B – EXISTING PERMIT AUTHORIZATIONS TABLE

Table B. 1 Existing Authorizations Under AKG332000

Permit #	Permittee	Facility Name	Status	Authorized Discharges
AKG332002	Nabors Alaska Drilling, Inc.	E1S Facility		006
AKG332003	Nabors Alaska Drilling, Inc.	Frontier Pad Facility		006
AKG332004	Nabors Alaska Drilling, Inc.	NOC Facility		006
AKG332005	Nabors Alaska Drilling, Inc.	Pool Yard Facility		006
AKG332006	ASRC Energy Services	AES Fleet Operations		006
AKG332007	Armstrong Energy LLC	Horseshoe Prospect	Terminated	006
AKG332008	ConocoPhillips Alaska, Inc.	Kuparuk River Unit		003 Water, Ice, Dust, 006
AKG332009	Schlumberger Oilfield Services	North Slope Well Services (East) Facility		006
AKG332010	Schlumberger Oilfield Services	North Slope Gun Shop Facility		006
AKG332011	Schlumberger Oilfield Services	North Slope Mixing Facility		006
AKG332012	Schlumberger Oilfield Services	North Slope Completions Shop Facility		006
AKG332013	Schlumberger Oilfield Services	North Slope Wireline (West) Facility	Terminated	006
AKG332014	Colville Airport Services Facility	Deadhorse Terminal Facility		006, 008
AKG332015	ENI US Operating Company, Inc.	Nikaitchuq Development		003 Water, Ice, Dust, 006
AKG332016	ENI US Operating Company, Inc.	Oooguruk Development Project		003 Ice, Dust, 006
AKG332017	Hilcorp North Slope, LLC	Prudhoe Bay Unit		003 Water, Ice, Dust, 006
AKG332018	CCI Industrial Services (formerly Peak Oilfield Services, Inc.)	Deadhorse Facilities		006
AKG332019	CCI Industrial Services LLC	Deadhorse HTS and TBC Shops		006
AKG332020	Brice Environmental Services Corp.	Mobile Camp 1		002 with Mixing Zone
AKG332021	Hilcorp Alaksa LLC	Endicott		006
AKG332022	ENI US Operating Company, Inc.	Smith Bay Exploration Project	Terminated	006
AKG332023	Olgoonik Constuction Services	Cat Camp 2		002 with Mixing Zone
AKG332024	Hilcorp Alaska LLC	NorthStar Unit		006
AKG332025	ConocoPhillips Alaska, Inc.	Colville River Unit		003 Water, Ice, 006, 007
AKG332026	Accumulate Energy Alaska, Inc.	Icewine Exploration Program	Terminated	003 Water, Ice, Dust, 006
AKG332027	ConocoPhillips Alaska, Inc.	Greater Mooses Tooth Unit		006
AKG332028	Baker Hughes Oilfield Operations	North Slope Joint Facility		006
AKG332029	SAExploration Inc.	Sleigh Camp 1		002 with Mixing Zone, 007
AKG332030	Hilcorp Alaska, LLC	Point Thomson Unit		006
AKG332031	Hilcorp Alaska, LLC	Deadhorse Facilities		006

AKG332032	Alaska Clean Seas	Annex and Spill Response Center		006
AKG332033	Hilcorp Alaska LLC	Milne Point Unit		003 Water, Ice, Dust, 006
AKG332034	SAExploration Inc.	Sleigh Camp 4	Terminated	002 with Mixing Zone, 007
AKG332035	SAExploration Inc.	Sleigh Camp 5	Terminated	002 with Mixing Zone, 007
AKG332036	Little Red Services, Inc.	North Slope Operations Deadhorse Pad		006
AKG332037	SAExploration Inc.	Sleigh Camp 2		002 with Mixing Zone, 007
AKG332038	Savant Alaska LLC	Badami Unit Facilities		003 Dust, 006
AKG332039	ConocoPhillips Alaska, Inc.	GMTU - 2017 Short-Term Activities	Terminated	005
AKG332040 Reserved	Arctic Star Alaska, Inc.	Arctic Star Facility Prudhoe Bay	Terminated	006, 008
AKG332041	Colville Inc.	Colville Aviation FBO		006
AKG332042	Colville Inc.	Colville Tank Farm		006, 008
AKG332043	Arctic Pipe Inspection, Inc.	Deadhorse Facility		006
AKG332044	Brooks Range Petroleum Company	Mustang Development		003 Ice, Dust, 006
AKG332045	Savant Alaska LLC	Shell Shaviovik Pit		003 Ice
AKG332046	Olgoonik Oilfield Services LLC	Sleigh Camp 1		002 with Mixing Zone
AKG332047 Reserved	SAExploration inc.	Sleigh Camp 3	Never Established	N/A
AKG332048	Hilcorp Alaska LLC	Moose Pad Hydrostatic Testing	Terminated	006
AKG332049	ConocoPhillips Alaska, Inc.	Greater Mooses Tooth Unit	Terminated	006
AKG332050	Oil Search Alaska, LLC	Development & Drilling Program		003 Ice, 006
AKG332051	Great Bear Petroleum	Winx #1 Exploration Program	Terminated	003 Ice
AKG332052	Delta Leasing	Delta Leasing Fleet Operations	Terminated	006
AKG332053	ASRC Exploration, LLC	Placer #3 Well Testing	Terminated	006
AKG332054	Chevron Environmental Management Company	Kalubik Creek No. 1	Terminated	004
AKG332055	Accumulate Energy Alaska	Franklin Bluffs Pad Temporary Storage Cell	Terminated	006
AKG332056	ConocoPhillips Alaska, Inc.	2020 GMT2/MT7 Year 1 Pipeline Hydrostatic Test	Terminated	005
AKG332057	ASRC Energy Services, LLC	AES Deadhorse Airport Pad		006
AKG332058	Wellbore Integrity Solutions, LLC	Deadhorse Facility		006
AKG332059	Worley	Deadhorse Facility		006
AKG332060	ConocoPhillips Alaska, Inc.	2021 GMT2/MT7 Year 2 Pipeline Hydrostatic Test	Terminated	005
AKG332061	Harvest Alaska, LLC	Endicott Pipeline	Terminated	004
AKG332062	Nanuq, Inc.	ASRC Minesite	Terminated	003
AKG332063	Cruz Construction Inc.	Sleigh Camp		002 with Mixing Zone

The General Permit for Excavation Dewatering (AKG002000) currently covers:

- AKG002262 – Accumulate Energy Alaska Hickory #1
- AKG002310 – Pikka Development Project Ugnuravik River
- AKG002314 – Lagniappe
- AKG002315 – ASRC Gravel Pit
- AKG002303 – Harrison Bay CPAI Willow Development

ATTACHMENT C – NORTH SLOPE RESERVE PITS

[Placeholder] To authorize discharges from open reserve pits in the Permit, DEC must complete a case-by-case BPJ analysis in this section at a minimum. DEC will update this attachment as a Permit Modification as described in the Permit Section 3.5.1 Permit Reopener Clause. Also see Response to Comments Section 2.1.

Table C. 1: List of Open (Not Closed) Reserve Pits on North Slope

Company	Pad Name	Reserve Pits	Closure Status	Closure Authority	Latitude	Longitude
Hilcorp Alaska	Gathering Center 1	Uncertain Location(s)	Under URPRA[2]	N/A	70.30740942	-148.7259253
	Gathering Center 2	Uncertain Location(s)	Under URPRA[2]	N/A	70.3101427	-148.8576503
	Gathering Center 3	Uncertain Location(s)	Under URPRA[2]	N/A	70.2833824	-148.6837124
	A Pad WOA	West; South; NE	Under URPRA[2]	N/A	70.265236	-148.7510029
	B Pad WOA	NW; NE; SE	Under URPRA[2]	N/A	70.26859188	-148.6733696
	C Pad WOA	NW; SW; NE; SE	Under URPRA[2]	N/A	70.29622602	-148.6678524
	D Pad WOA	NW; NE; SE	Under URPRA[2]	N/A	70.29454944	-148.7522484
	F Pad WOA	West; East	Under URPRA[2]	N/A	70.33469757	-148.7671514
	H Pad WOA	West; East[1]	Under URPRA[2]	N/A	70.29715537	-148.8393691
	J Pad WOA	West; NE; SE	Under URPRA[2]	N/A	70.32716675	-148.8394009
	M Pad WOA	NW; NE; SW	Under URPRA[2]	N/A	70.33604648	-148.9596485
	Q Pad WOA	North	Under URPRA[2]	N/A	70.31344668	-148.8386353
	R Pad WOA	North; SW; SE	Under URPRA[2]	N/A	70.34531818	-148.9081397
	S Pad WOA	South; East	Under URPRA[2]	N/A	70.35361537	-149.0343370
	U Pad WOA	West; East	Under URPRA[2]	N/A	70.30101268	-148.9343854
	X Pad WOA	North; South	Under URPRA[2]	N/A	70.24191996	-148.6561975
	Y Pad WOA	North; South	Under URPRA[2]	N/A	70.26822599	-148.8227629
	Lisburne Gas Injection (LGI)	East	Conditionally Closed[3]	RCRA Strategic Plan 2018	70.339667	-148.4638600

Table Notes:

1: East Reserve Pit was originally two adjacent pits that were breached together

2: Unexcavated Reserve Pit Risk Assessment. Agreement to finish Reserve Pit clean up and closure at the end of pad life because of an inability to safely excavate contamination from near piping.

3: Conditionally Closed with remaining waste to be removed at end of pad life

Table C. 2: List of Closed Reserve Pits on North Slope

Company	Pad Name	Reserve Pits	Closure Date	Closure Authority	Latitude	Longitude
ConocoPhillips Alaska[1,5]	Drill Site 1A	East; West	4/5/2002	18 AAC 60.440 (j)	70.331515	-149.676744
	Drill Site 1B	North; South	11/3/2004	18 AAC 60.440 (j)	70.328068	-149.599953
	Drill Site 1C	NW; SW; East[2]	11/3/2004	18 AAC 60.440 (j)	70.324756	-149.500848
	Drill Site 1D	West	3/30/2004	18 AAC 60.440 (j)	70.29943	-149.513095
	Drill Site 1E	West; Center; East	7/11/2001	18 AAC 60.440 (j)	70.301516	-149.598436
	Drill Site 1F	NW; SW; NE; SE	4/17/2003	18 AAC 60.440 (j)	70.297498	-149.681389
	Drill Site 1G	NW; SW; NE; SE	5/31/2001	18 AAC 60.440 (j)	70.35987	-149.675472
	Drill Site 1H	West; East	4/17/2003	18 AAC 60.440 (j)	70.356884	-149.601566
	Drill Site 1L	NW; SW; NE; SE	3/30/2004	18 AAC 60.440 (j)	70.271086	-149.678793
	Drill Site 1Q	NW; SW; NE; SE	4/17/2003	18 AAC 60.440 (j)	70.368591	-149.774872
	Drill Site 1R	NW; SW; NE; SE	4/17/2003	18 AAC 60.440 (j)	70.386982	-149.680627
	Drill Site 1Y	NW; SW; NE; SE	5/31/2001	18 AAC 60.440 (j)	70.342286	-149.749265
	Drill Site 2A	NW; SW; NE; SE	4/5/2002	18 AAC 60.440 (j)	70.302525	-150.015702
	Drill Site 2B	NW; SW; NE; SE	4/5/2002	18 AAC 60.440 (j)	70.288116	-149.937317
	Drill Site 2C	NW; SW; NE; SE	7/11/2001	18 AAC 60.440 (j)	70.29776	-149.850589
	Drill Site 2D	NW; SW; NE; SE	4/17/2003	18 AAC 60.440 (j)	70.285006	-149.764992
	Drill Site 2E	North; South	7/11/2001	18 AAC 60.440 (j)	70.258717	-149.761574
	Drill Site 2F	NW; SW; NE; SE	4/17/2003	18 AAC 60.440 (j)	70.271788	-149.860895
	Drill Site 2G	NW; SW; NE; SE	5/31/2001	18 AAC 60.440 (j)	70.257166	-149.932025
	Drill Site 2H	NW; SW; NE; SE	4/5/2002	18 AAC 60.440 (j)	70.271146	-150.017658
	Drill Site 2T	North[2]; South	7/11/2001	18 AAC 60.440 (j)	70.329901	-150.012076
	Drill Site 2U	NW; SW; NE; SE	4/5/2002	18 AAC 60.440 (j)	70.345758	-149.925706
	Drill Site 2V	NW; SW; NE; SE	7/11/2001	18 AAC 60.440 (j)	70.319161	-149.933876
	Drill Site 2W	NW; SW; NE; SE	4/5/2002	18 AAC 60.440 (j)	70.355313	-149.850064
	Drill Site 2X	NW; SW; NE; SE	7/11/2001	18 AAC 60.440 (j)	70.3308	-149.851366
	Drill Site 2Z	NW; SW; NE; SE	7/11/2001	18 AAC 60.440 (j)	70.319121	-149.764962
	Drill Site 3A	North; South	4/5/2002	18 AAC 60.440 (j)	70.403041	-149.940086
	Drill Site 3B	NW; SW; NE; SE	7/11/2001	18 AAC 60.440 (j)	70.388024	-149.853791
	Drill Site 3C	NW; SW; NE; SE	7/11/2001	18 AAC 60.440 (j)	70.398794	-149.771675
	Drill Site 3F	West; East	4/5/2002	18 AAC 60.440 (j)	70.372543	-149.934198

	Drill Site 3H	North; South	7/11/2001	18 AAC 60.440 (j)	70.411922	-150.014051
	Drill Site 3I	West; East	7/11/2001	18 AAC 60.440 (j)	70.430695	-149.939301
	Drill Site 3J	North; South	9/14/2001	18 AAC 60.440 (j)	70.418124	-149.843895
	Drill Site 3K	North; South	5/31/2001	18 AAC 60.440 (j)	70.433114	-149.765066
	Drill Site 3M	North; South	5/31/2001	18 AAC 60.440 (j)	70.455849	-149.952247
	Drill Site 3N	West; East	5/31/2001	18 AAC 60.440 (j)	70.44827	-149.854626
	Drill Site 3Q	West; East	9/14/2001	18 AAC 60.440 (j)	70.481159	-149.871116
Hilcorp Alaska	Milne Point B Pad	NW; NE; SE	11/10/2014	18 AAC 60.440 (j)	70.47332534	-149.4102028
	Milne Point C Pad	NW; SW; NE; SE	11/10/2014	18 AAC 60.440 (j)	70.49106988	-149.524191
	Milne Point D Pad	NW; NE; SE	12/28/2010	18 AAC 60.440 (j)	70.48525125	-149.4294986
	E Pad WOA[3]	North; South	12/31/2008	18 AAC 60.440 (j)	70.34021754	-148.665267
	Lisburne L5	West; East	12/31/2008	18 AAC 60.440 (j)	70.33288178	-148.2373136
	T Pad WOA	West; East	12/31/2008	18 AAC 60.440 (j)	70.35287265	-148.7928915
	W Pad WOA[3]	N. Center; S. Center	1/10/2008	18 AAC 60.440 (j)	70.29720628	-149.0926231
	G Pad WOA	NE; SW	12/27/2007	18 AAC 60.440 (j)	70.32358155	-148.7168689
	K Pad WOA[3]	West; East	12/27/2007	18 AAC 60.440 (j)	70.33919904	-148.6094897
	N Pad WOA[3]	South; North; Center	12/27/2007	18 AAC 60.440 (j)	70.31894509	-148.9103586
	Lisburne L2	West; East	12/7/2005	18 AAC 60.440 (j)	70.30396987	-148.4362887
	Lisburne L3	West; East	12/7/2005	18 AAC 60.440 (j)	70.29975662	-148.3155895
	Z Pad WOA[3]	West; East	12/7/2005	18 AAC 60.440 (j)	70.29769779	-149.1964904
	Drill Site 15[4]	NW; SE	11/3/2004	18 AAC 60.440 (j)	70.29611406	-148.5727132
	Drill Site 2[3]	N; E; SW; S	11/3/2004	18 AAC 60.440 (j)	70.26925541	-148.4757138
	Drill Site 5[4]	West; East	11/3/2004	18 AAC 60.440 (j)	70.26472265	-148.3978572
	Drill Site 7[4]	West; East; Center	11/3/2004	18 AAC 60.440 (j)	70.26595689	-148.5749892
	Lisburne L1	West; East	11/3/2004	18 AAC 60.440 (j)	70.33517543	-148.4699515
	NGI		11/3/2004	18 AAC 60.440 (j)	70.32670528	-148.4805623
	Drill Site 12[6]	W; E; W. Center; E. Center	3/3/2004	18 AAC 60.440 (j)	70.21703539	-148.4065284
	Drill Site 13[6]	S; E; NE; NW; SE; SW	3/3/2004	18 AAC 60.440 (j)	70.21974687	-148.4898264
	Drill Site 14[6]	N; W; W. Center; E. Center	3/3/2004	18 AAC 60.440 (j)	70.23922215	-148.5847958
	Drill Site 18[3]	West; East	3/3/2004	18 AAC 60.440 (j)	70.29649906	-148.4478029
	Drill Site 4	NW; SW; NE; SE	3/3/2004	18 AAC 60.440 (j)	70.26789286	-148.2808752
	Drill Site 6[3]	West; East; Center	3/3/2004	18 AAC 60.440 (j)	70.24464508	-148.4992356
	WGI	Center;	3/3/2004	18 AAC 60.440 (j)	70.32818797	-148.4994025

	Milne Point E Pad	North; South	4/5/2002	18 AAC 60.440 (j)	70.45558895	-149.4361841
	T Pad WOA	West; East	9/14/2001	18 AAC 60.440 (j)	70.35287265	-148.7928915
	Drill Site 1[3]	West; East; Center	7/11/2001	18 AAC 60.440 (j)	70.24262992	-148.3956009
	Drill Site 11[3]	West; East	7/11/2001	18 AAC 60.440 (j)	70.26890043	-148.3206532
	Drill Site 16	West; East; Center	7/11/2001	18 AAC 60.440 (j)	70.20929686	-148.2269848
	Drill Site 17	West; East	7/11/2001	18 AAC 60.440 (j)	70.20606655	-148.3165714
	Drill Site 9	SW; SW Center; NW; NW Center	7/11/2001	18 AAC 60.440 (j)	70.24281286	-148.241185
	Lisburne L4	West; East	7/11/2001	18 AAC 60.440 (j)	70.29223216	-148.2119751
	Drill Site 3[6]	West; East; Center	3/18/1993	N/A	70.23375104	-148.2729864
	Lisburne Gas Injection (LGI)	West	N/A	RCRA Strategic Plan 2018	70.33966700	-148.4638600

Table Notes:

1: All ConocoPhillips Reserve Pits sampled for compliance with water quality regulations during 2017 NSGP

2: Capped or Completely Removed Reserve Pit

3: Reviewed and approved for discharge by DEC Division of Water for Discharge 2/25/2019

4: Reviewed and approved for discharge by DEC Division of Water for Discharge 8/22/2018

5: All ConocoPhillips Reserve Pits Reviewed and approved for discharge by DEC Division of Water for Discharge 1/29/2020

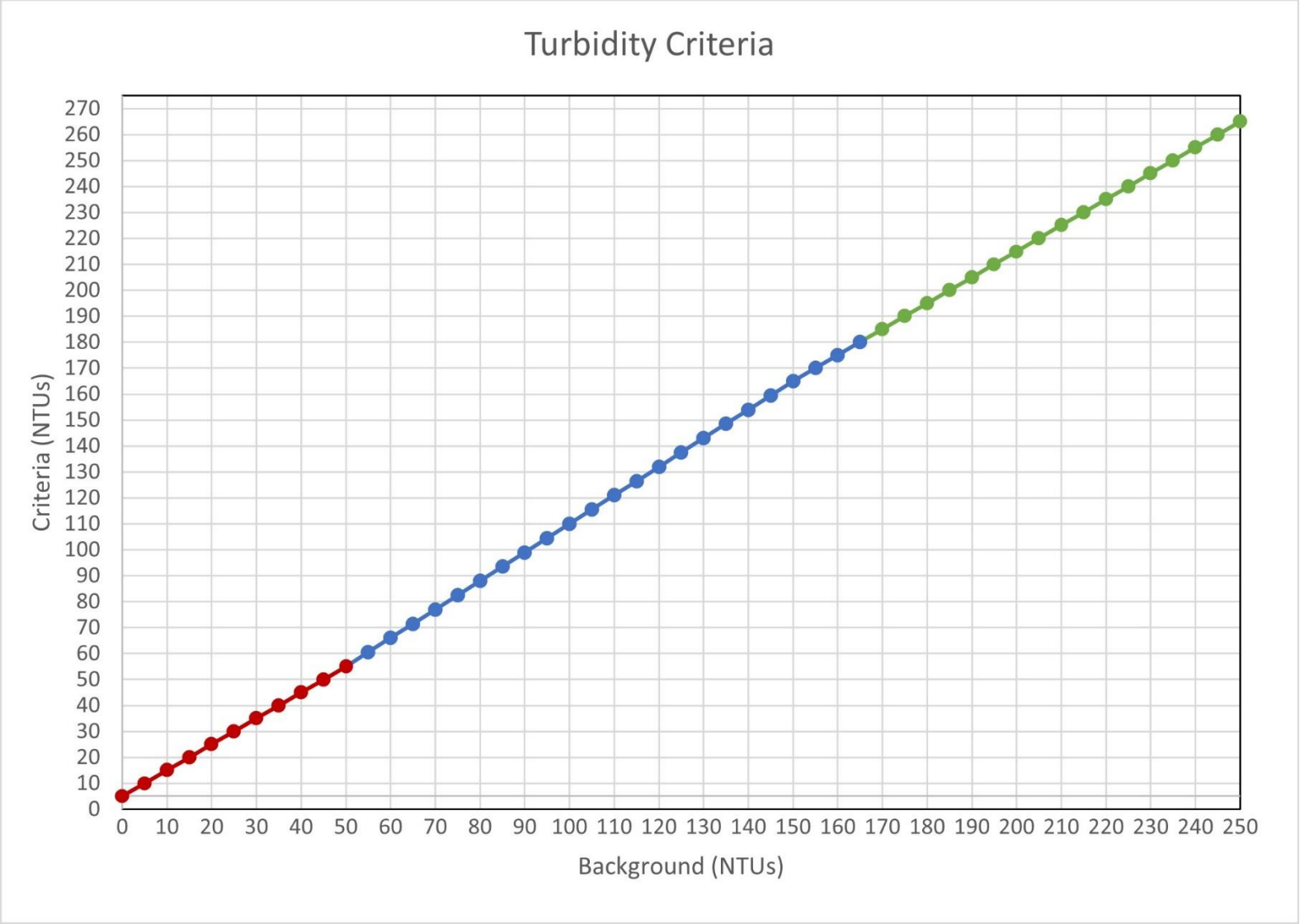
6: Reviewed and approved for discharge by DEC Division of Water for Discharge 5/26/2020

Table C. 3: Recent Reserve Pit Sample Data

Metal	Barium (Ba)	Copper (Cu)	Manganese (Mg)	Comment
BTV (µg/L)	140	1.7	170	BTV from Surface Water Background Report
WQC (µg/L)	2,000	9	50	Criteria are based on 100 mg/L hardness
Sample ID	**Ba (µg/L)**	**Cu (µg/L)**	**Mg (µg/L)**	**Comment**
A - 33	310	< 2	14	No Issue
A - 34	180	2.3	< 2	No Issue
A - 35-1	330	< 2	< 2	Likely valid despite the Duplicate result.
A - 35-2	320	**9.5**	< 2	Invalid. Dissolved Cu Greater than Total (2.1)
B - 31	**1,100**	< 2	< 2	High Ba but low metals otherwise. No Issue.
B - 32	320	< 2	3	No Issue
C - 27	**790**	< 2	5.5	High Ba but low metals otherwise. No Issue.
C - 28	170	**73**	2.7	Invalid. Dissolved Cu Greater than Total (< 2)
C - 29 - 1	340	< 2	< 2	No Issue
C - 29 - 2	340	< 2	< 2	No Issue
C-30	110	< 2	< 2	No Issue
DS - 7 - E	**910**	< 2	**85**	Mg confirmed representative. High Ba also.
DS - 7 - W	**1,200**	< 2	**220**	Mg corrected from 100. High Ba also.
D - 24	120	< 2	< 2	No Issue
D - 25	400	2.5	< 2	No Issue
D - 26	270	< 2	< 2	No Issue
F - 22	320	< 2	< 2	No Issue
F - 23	320	< 2	< 2	No Issue
H - 19	400	3.7	< 2	No Issue
H - 20	360	2.2	< 2	No Issue
H - 21	290	2.4	< 2	No Issue
J - 16	500	2.3	< 2	No Issue
J - 17	200	< 2	< 2	No Issue
J - 18	280	2.8	< 2	No Issue

M - 13	350	2.3	< 2	No Issue
M - 14 - 1	340	< 2	< 2	No Issue
M - 14 - 2	330	< 2	< 2	No Issue
M - 15	380	< 2	< 2	No Issue
Q - 12	390	< 2	< 2	No Issue
S - 7	120	2.3	< 2	No Issue
S - 8	570	< 2	< 2	No Issue
R - 9	**780**	< 2	< 2	High Ba but low metals otherwise. No Issue.
R - 10 - 1	130	3.4	< 2	No Issue
R - 10 - 2	130	3.5	< 2	No Issue
R - 11	300	< 2	< 2	No Issue
X - 3	580	< 2	< 2	No Issue
X - 4	430	< 2	< 2	No Issue
Y - 1	170	< 2	< 2	No Issue
Y - 2	340	2.3	< 2	No Issue

ATTACHMENT D – FRESHWATER TURBIDITY CRITERIA



ATTACHMENT E - MIXING ZONE ANALYSIS CHECKLIST

Mixing Zone Authorization Checklist
based on Alaska Water Quality Standards (2003)

The purpose of the Mixing Zone Checklist is to guide the permit writer through the mixing zone regulatory requirements to determine if all the mixing zone criteria at 18 AAC 70.240 through 18 AAC 70.270 are satisfied, as well as provide justification to authorize a mixing zone in an APDES permit. In order to authorize a mixing zone, all criteria must be met. The permit writer must document all conclusions in the permit Fact Sheet, however, if the permit writer determines that one criterion cannot be met, then a mixing zone is prohibited, and the permit writer need not include in the Fact Sheet the conclusions for when other criteria were met.

Criteria	Description	Answer & Resources	Regulation
Size	Is the mixing zone as small as practicable? - Permit writer conducts analysis and documents analysis in Fact Sheet at: ►Section 7.2 - Mixing Zone.	Yes, mixing zone as small as practicable. Technical Support Document for Water Quality Based Toxics Control Fact Sheet, Section 7.2.1 Fact Sheet, Section 7.2.2 Fact Sheet, Section 7.2.3 DEC's RPA Guidance EPA Permit Writers' Manual Water Quality Standards Handbook	18 AAC 70.240(k)
Technology	Were the most effective technological and economical methods used to disperse, treat, remove, and reduce pollutants? **If yes**, describe methods used in Fact Sheet at Section 7.2.5 Mixing Zone Analysis.	Answer: Yes Fact Sheet, Section 7.2.5.2	18 AAC 70.240 (c)(1)
Low Flow Design	**For river, streams, and other flowing fresh waters.** - Determine low flow calculations or documentation for the applicable parameters. Justify in Fact Sheet	N/A	18 AAC 70.240(c)(1)
Existing use	Does the mixing zone…		
	(1) partially or completely eliminate an existing use of the waterbody outside the mixing zone?	Answer: No Fact Sheet Section 7.2.5.3	18 AAC 70.240(c)(2)

Criteria	Description	Answer & Resources	Regulation
	If yes, mixing zone prohibited.		
	(2) impair overall biological integrity of the waterbody? **If yes, mixing zone prohibited.**	Answer: No Fact Sheet Section 7.2.5.1 Fact Sheet Section 7.2.5.3	18 AAC 70.240(c)(3)
	(3) provide for adequate flushing of the waterbody to ensure full protection of uses of the waterbody outside the proposed mixing zone? **If no, then mixing zone prohibited.**	Answer: Yes Fact Sheet Section 7.2.5.3	18 AAC 70.240(b)(1)
	(4) cause an environmental effect or damage to the ecosystem that the department considers to be so adverse that a mixing zone is not appropriate? **If yes, then mixing zone prohibited.**	Answer: No Fact Sheet Section 7.2.2	18 AAC 70.240(m)
Human consumption	Does the mixing zone…		
	(1) produce objectionable color, taste, or odor in aquatic resources harvested for human consumption? **If yes, mixing zone may be reduced in size or prohibited.**	Answer: No Fact Sheet Section 7.2.5.4	18 AAC 70.240(d)(6)
	(2) preclude or limit established processing activities of commercial, sport, personal use, or subsistence shellfish harvesting? **If yes, mixing zone may be reduced in size or prohibited.**	Answer: No Fact Sheet Section 7.2.5.4	18 AAC 70.240(c)(4)(C)
Spawning Areas	Does the mixing zone…		
	(1) discharge in a spawning area for anadromous fish or Arctic grayling, northern pike, rainbow trout, lake trout, brook trout, cutthroat trout, whitefish, sheefish, Arctic char (Dolly Varden), burbot, and landlocked coho, king, and sockeye salmon? **If yes, mixing zone prohibited.**	Answer: No Fact Sheet Section 7.2.5.5	18 AAC 70.240(e,f)

Criteria	Description	Answer & Resources	Regulation
Human Health	Does the mixing zone…		
	(1) contain bioaccumulating, bioconcentrating, or persistent chemical above natural or significantly adverse levels? **If yes, mixing zone prohibited.**	Answer: No Fact Sheet Section 7.2.5.4	18 AAC 70.240 (d)(1,2)
	(2) contain chemicals expected to cause carcinogenic, mutagenic, tetragenic, or otherwise harmful effects to human health? **If yes, mixing zone prohibited.**	Answer: No Fact Sheet Section 7.2.5.4	
	(3) Create a public health hazard through encroachment on water supply or through contact recreation? **If yes, mixing zone prohibited.**	Answer: No Fact Sheet Section 7.2.5.4	18 AAC 70.240(c)(4)(C)
	(4) meet human health and aquatic life quality criteria at the boundary of the mixing zone? **If no, mixing zone prohibited.**	Answer: Yes Fact Sheet Section 7.2.5.4	18 AAC 70.240(c)(4)(A)
	(5) occur in a location where the department determines that a public health hazard reasonably could be expected? **If yes, mixing zone prohibited.**	Answer: No Fact Sheet Section 7.2.5.4	18 AAC 70.240(c)(4)(B)
Aquatic Life	Does the mixing zone…		
	(1) create a significant adverse effect to anadromous, resident, or shellfish spawning or rearing? **If yes, mixing zone prohibited.**	Answer: No Fact Sheet Section 7.2.5.6	18 AAC 70.240(e,f)
	(2) form a barrier to migratory species? **If yes, mixing zone prohibited.**	Answer: No Fact Sheet Section 7.2.5.6	18 AAC 70.240(c)(4)(G)
	(3) fail to provide a zone of passage? **If yes, mixing zone prohibited.**	Answer: No Fact Sheet Section 7.2.5.6	
	(4) result in undesirable or nuisance aquatic life? **If yes, mixing zone prohibited.**	Answer: No Fact Sheet Section 7.2.5.6	18 AAC 70.240(d)(5)
	(5) result in permanent or irreparable displacement of indigenous organisms? **If yes, mixing zone prohibited.**	Answer: No Fact Sheet Section 7.2.5.6	18 AAC 70.240(c)(4)(E)
	(6) result in a reduction in fish or shellfish population levels? **If yes, mixing zone prohibited.**	Answer: No Fact Sheet Section 7.2.5.6	18 AAC 70.240(c)(4)(D)

Criteria	Description	Answer & Resources	Regulation
	(7) prevent lethality to passing organisms by reducing the size of the acute zone? **If yes, mixing zone prohibited.**	Answer: No Fact Sheet Section 7.2.5.1 Fact Sheet Section 7.2.5.6	18 AAC 70.240(d)(7)
	(8) cause a toxic effect in the water column, sediments, or biota outside the boundaries of the mixing zone? **If yes, mixing zone prohibited.**	Answer: No Fact Sheet Section 7.2.5.6	18 AAC 70.240(c)(4)(A)
Endangered Species	Are there threatened or endangered species (T/E spp) at the location of the mixing zone? If yes, are there likely to be adverse effects to T/E spp based on comments received from FWS or NOAA. If yes, will conservation measures be included in the permit to avoid adverse effects? **If yes, explain conservation measures in Fact Sheet. If no, mixing zone prohibited.**	Answer: Yes Fact Sheet Section 7.2.5.7 Fact Sheet Section 13.1	Program Description, 6.4.1 #5 18 AAC 70.240(c)(4)(F)

ATTACHMENT F – NORTH SLOPE MINE SITES

Table F. 1: North Slope Active Mine Sites

DROPS outfall ID	Mine site Name/ Lease Unit/ Description
MSE	Mine Site E
MSF	Mine Site F (Kuparuk Site)
DIM	Duck Island Mine Site
ASR	ASRC Mine Site
P23	Put 23 Mine Site
381	MP 381 Mine Site
MPM	Milne Point Mine Site
SHV	Shaviovik Gravel Pit
MIL	Miluveach/K210 Mine site/Mustang
214	Mine site K214

Table F. 2: North Slope Rehabilitated Mine Sites

Kupcake Prospect - Sag C
Sag Mine Site C (Vern Lake)
State C-1 Pit
Badami Reservoir
Badami Gravel Pit
Kuparuk Mine Site D
Kuparuk Mine Site B
Kuparuk Deadarm Sites
ADOT Mine Site