ALASKA POLLUTANT DISCHARGE ELIMINATION SYSTEM
PERMIT FACT SHEET – PROPOSED FINAL

General Permit AKG320000 - Statewide Oil and Gas Pipelines

DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Wastewater Discharge Authorization Program

555 Cordova Street

Anchorage, AK 99501

Technical Contact: Bre Lambert, PE
Alaska Department of Environmental Conservation
Division of Water
Wastewater Discharge Authorization Program
555 Cordova St., 3rd Floor
Anchorage, AK 99501-2617
(907) 465-5171
Fax: (907) 269-3487
bre.lambert@alaska.gov
Gerry.Brown@alaska.gov

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

Statewide Oil and Gas Pipelines

The Alaska Department of Environmental Conservation (DEC or Department) is issuing APDES general permit AKG320000 – Statewide Oil and Gas Pipeline (Pipeline GP or Permit). The Pipeline GP authorizes and sets conditions on the discharge of pollutants from construction, operation, and maintenance activities for significant oil and gas pipelines discharged to waters of the United States (Waters of the U.S. or WOTUS) and discharged to state waters or disposed to lands of the State. In order to ensure protection of water quality and human health, the Pipeline GP places limits on the types and amount of pollutants that can be discharged or disposed from these activities and outlines best management practice requirements.

This fact sheet explains the nature of potential discharges to WOTUS and discharges to state waters or disposal to land from construction and operations and maintenance associated with oil and gas pipelines and explains the development of the permit including:

- 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.

Documents are Available

The permit, fact sheet, and related documents can be obtained by visiting or contacting DEC between 8:00 a.m. and 4:30 p.m. Monday through Friday. The permit, fact sheet, and other information are also located on the Department's Wastewater Discharge Authorization Program website: http://dec.alaska.gov/water/wastewater/.

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1.0 INTRODUCTION

The Alaska Department of Environmental Conservation (DEC or Department) is reissuing AKG320000 – Statewide Oil and Gas Pipelines General Permit (Pipeline GP or Permit). The Pipeline GP was initially issued by DEC, effective January 1, 2018, to authorize discharges to fresh waters and disposal to land resulting from the construction, operation, and maintenance of significant oil and gas pipelines. The reissued Pipeline GP represents the first reissuance by DEC.

The intent of reissuing the general permit is to continue providing a single permit to the oil and gas industry to help streamline the permitting of potential new large-scale gas pipelines as well as to provide continued permit coverage for existing oil and gas pipelines.

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 in 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 both the discharge of wastewater to freshwater including both Waters of the U.S. (WOTUS), state waters (non-WOTUS), and the disposal of wastewater into or onto land.

1.1.1 Wastewater Discharges to 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 individual APDES 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 the Department, are 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). Per 18 AAC 83.020, the Permit has a term of five years and those authorizations under the general permit may remain in force and effect via administrative

extension should the Department be unable to reissue the Permit prior to its expiration date per 18 AAC 83.155.

1.1.2 Wastewater Discharges into State Waters

The Wastewater Discharge Authorization Program (WDAP) authorizes disposal 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 is still without clear guidance of how the WOTUS determination will be made in certain circumstances. Previously, most waters and wetlands in the state were categorized as WOTUS. However, in the recent Superior Court decision in the case of Sackett v. Environmental Protection Agency (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."

The Departments understanding of the implications of this recent decision is that many waters and wetlands that were previously categorized as WOTUS could now be considered 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) apply 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 Pipeline GP; the lack of a definitive process for determining water classification under the Permit requires a flexible reporting scheme until there is more clarity on this subject.

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 7.1.1 provides a detailed discussion concerning plan review requirements for the Permit. 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 require an ability for the disposed water to infiltrate before flowing overland and becoming a potential discharge to waters of the state or WOTUS. Much like WOTUS, DEC anticipates few situations where land disposal is appropriate instead of authorizing to waters of the state. The burden of submitting 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. Alternatively, land disposals or discharges to waters of the state may also be authorized via plan review per AS 46.03.100(b).

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 forms prescribed by the state (e.g., Form 1 and Form 2C for APDES permits). Per 18 AAC 83.215, 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. 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.

1.3 Permit Coverage

Per 18 AAC 83, the Permit authorizes discharges to freshwaters that are WOTUS. Per 18 AAC 72, the Permit authorizes discharges to freshwaters that are state waters and disposal into or onto lands of the State. The Permit and Fact Sheet purposefully refer to "discharges" when the effluent is released to freshwaters and to "disposals" when the effluent is released to land (i.e. neither WOTUS nor state waters). Similarly, DEC refers to APDES permits as those authorized consistent with 18 AAC 83 (i.e. WOTUS) and State permits as those authorized consistent with 18 AAC 72 (i.e. state waters or land).

The Pipeline GP will be available to significant oil and gas transport pipelines and associated facilities. A significant pipeline means a main pipeline or a pipeline that has considerably long high-volume segments between branches or serves to deliver oil or gas to a community or service. Any pipeline that is being constructed using horizontal directional drilling (HDD) beneath a waterbody would also be considered significant. In contrast, a non-significant pipeline would be associated with short segments or downstream distribution networks. Note that there are other wastewater general permits available for discharges from non-significant pipelines.

Coverage under the Pipeline GP is not available for discharges into impaired waterbodies (as listed on the CWA Section 303(d) list) if the effluent contains the pollutant that causes, or contributes to, the impairment. Nor is coverage available for discharges to designated outstanding national resource waters, Tier III waterbodies. Currently, there are no designated Tier III waterbodies in Alaska.

The EPA retains the authority to permit discharges on the Indian Reservation of Metlakatla and in the Denali National Park and Preserve. Accordingly, if a significant pipeline is constructed within Denali Park boundaries, discharges and disposals would be regulated by EPA for that

portion of the project. The Pipeline GP would still be available for discharges or disposals outside the park boundary.

Permit coverage will include discharges or disposals associated with pipeline construction and operation and maintenance. Accordingly, the Pipeline GP includes the authorization of multiple wastewater discharges or disposals so that permittees of significant pipelines can obtain authorization under a singular general permit rather than authorizations under multiple general permits. In addition, the Pipeline GP provides the ability for multiple entities to be covered by one permit rather than multiple individual permits. The following wastewater discharges and disposals are authorized under the Permit:

DISCHARGE/DISPOSAL NUMBER	DISCHARGES DESCRIPTION
001 (Discharge Only)	Drilling Fluids and Drill Cuttings
002 (Discharge Only)	Domestic Wastewater
003	Gravel Pit Dewatering
004	Excavation Dewatering
005	Hydrostatic Test Water
006 (Discharge Only)	Stormwater
007 (Discharge Only)	Mobile Spill Response
008	Contained Water (Formerly Part of Hydrostatic)

2.0 BACKGROUND

Successful oil and gas production requires that hydrocarbon resources are transported for refining and brought to the market for sale. Alaskan hydrocarbon resources are delivered from production facilities to market by a series of in-state pipelines. The following section details general information of existing pipeline infrastructure within Alaska, the potential for future pipeline infrastructure, and the Permit history.

2.1 Existing Pipelines

2.1.1 Trans-Alaska Pipeline System (TAPS)

The TAPS was completed in 1977 and is a 48-inch diameter, crude oil pipeline that is approximately 800-miles long. TAPS begins from Pump Station (PS) 1 located in the Prudhoe Bay Unit on the North Slope and ends at the Valdez Marine Terminal (VMT) in Port Valdez, Alaska. Ancillary facilities consist of the VMT and eleven PSs. TAPS is currently covered by the Pipeline GP (See Section 2.3.1.2). The VMT is currently covered by an individual permit that authorizes the discharge of Treated Ballast Water, Domestic Wastewater, and Industrial Stormwater. The VMT will continue to be covered by the IP and DEC will reissue the VMT IP in the future.

2.1.2 Cook Inlet Pipeline (CIPL)

The CIPL previously consisted of 44 miles of onshore 12-inch and 20-inch pipelines and two dual 2.7-mile offshore lines, the Drift River Terminal (DRT), and the offshore Christy Lee platform. Harvest modified the CIPL to move crude oil from the west to east side of Cook Inlet via pipeline and allow for the direct transportation of gas from the Tyonek Platform to the west side of Cook Inlet. Twenty miles of the 20-inch pipeline was decommissioned

between the Trading Bay Production Facility and the DRT. The DRT, the Christy Lee 30-inch piping, and CIPL piping south of Krustan were also decommissioned.

After modifications, the CIPL consists of 2.5 miles of 12-inch pipeline between the Trading Bay Production Facility and Trading Bay Junction; 21.5 miles of 20-inch pipeline from the Trading Bay Junction to the Granite Point Tank Farm (GPTF); a 3.5-mile, 10-inch pipeline from GPTF to Kaloa Junction; 21 miles of 10-inch pipeline from Kaloa Junction across Cook Inlet; and a 4.5-mile, 10-inch pipeline connecting East Forelands to the Kenai Refinery Pipeline Meter. Harvest owns and operates the CIPL and has been obtaining authorization for Excavation Dewatering and Hydrostatic Test Water Discharges under the Pipeline GP.

2.1.3 Cook Inlet Gas Gathering System (CIGGS)

The CIGGS consists of 26 miles of 16-inch diameter pipeline extending from the Trading Bay Production Facility to Kaloa Junction; a 2.51-mile, dual 10-inch diameter submarine pipeline between Granite Point and East Foreland; a 4.5-mile 16-inch pipeline between East Foreland and the Kenai Refinery Pipeline meter; and a 4,500-foot, 16-inch pipeline between the Kenai Pipeline (KPL) Junction and the Agrium Plant. Harvest owns and operates the CIGGS and has been obtaining authorization for Excavation Dewatering and Hydrostatic Test Water Discharges under the Pipeline GP.

2.1.4 Tyonek Natural Gas Pipeline

The Tyonek Natural Gas Pipeline is located in Cook Inlet and consists of an 8-mile, 10-inch line that extends from KPL Junction to Halbouty Hill; a 22.5-mile, 16-inch pipeline that extends from Halbouty Station to Moose Point; dual 12.89-mile, 10-inch diameter submarine pipelines that extend from Moose Point to the offshore Tyonek Production Platform in Upper Cook Inlet; and a 7.5-mile, 10-inch line segment that connects the Tyonek Production Platform onshore to Ladd Landing on the west side of Upper Cook Inlet to allow gas from the Tyonek Production Platform and KPL Junction to enter the Beluga Pipeline section of Kenai Beluga Pipeline System.

2.1.5 Beluga Natural Gas Transmission Pipeline

The Beluga Power Plant Pipeline was built in 1984 and is owned and operated by ENSTAR Natural Gas Company. The Beluga Natural Gas Transmission Pipeline is a 20-inch diameter pipeline that supplies gas from the Beluga Power Plant to residential and commercial customers in Anchorage. In the past, ENSTAR has used the Excavation Dewatering GP and Hydrostatic GP for obtaining authorization for Excavation Dewatering and Hydrostatic Test Water Discharges, respectively. The Pipeline GP eliminated the need to seek coverage under multiple general permits.

2.1.6 Hilcorp Pipeline System

Hilcorp owns and/or operates pipelines and related facilities in the Kenai/Cook Inlet region including the Beluga River Unit (BRU) Produced Water Lines, Kenai Gas Field (KGF) Flowlines, Swanson River Unit (SRU) Flowlines, and the Seaview Gas Pipeline. The BRU produced water lines connect the BRU Wells to the BRU disposal well and are tied into numerous BRU pads. The KGF lines consist of 12-inch, 16-inch, 20-inch, and 24-inch gathering lines between KGF pads. The SRU pipeline is an 18.8-mile, 16-inch pipeline that transports natural gas from the Swanson River Field to the Kenai Pipeline Company Junction. There are also numerous 4-inch flowlines conveying gas to the SRU pads ranging in length

from 400-feet to 2,600-feet. The Seaview Gas Pipeline is a buried 10-inch diameter pipeline transporting gas from the Seaview Pad to the ENSTAR tie-in valve.

2.1.7 North Fork Pipeline

The North Fork Pipeline (NFP) is located on the east side of Cook Inlet and consists of two parallel, nine mile, 4-inch diameter lines extending from the North Fork Unit to its intersection with the South Peninsula Pipeline near Anchor Point. The NFP transport naturals gas produced from the North Fork Unit and is located on the east side of Cook Inlet. The NFP is owned by Gardes Holdings, Inc. and is operated by Glacier Oil and Gas Corporation (Glacier).

2.1.8 Mid-Alaska Pipeline (MAP) System

The MAP system is a 2.3-mile buried pipeline system located in North Pole consisting of multiple pipelines including a 14-inch pipelines that transfers crude oil from TAPS to the pigging facility adjacent to the old Flint Hills Refinery site and a 16-inch pipeline that transports Residuum (distillates not consumed during the refining process) from the North Pole Metering Station back to TAPS. Additionally, there are two 1,800-foot sections of 8-inch pipeline that connect from MAP's pigging station to the Petro Star metering station.

2.1.9 Other Existing Significant Pipelines

The North Slope region of Alaska has numerous existing pipeline systems and several proposed pipelines. The pipelines are 12-inch to 18-inch in diameter and transport crude oil, utilities, natural gas, and produced waters. Construction and operation and maintenance of the pipelines are covered under the North Slope GP. Except for TAPS, the issuance of the Pipeline GP will not require the North Slope pipeline owners/operators to seek coverage under the Pipeline GP. However, the Pipeline GP provides additional coverage for HDD applications not offered by the North Slope GP.

Existing pipelines located in Southcentral Alaska range from 6-inch to 12-inch in diameter and transport crude oil, fuel, and natural gas. Several pipelines located in Southcentral Alaska do not currently obtain coverage under a single general permit. Similar to those operated by ENSTAR, the Pipeline GP may eliminate the need to seek coverage under multiple general permits for those entities.

2.2 Potential Future Pipelines

2.2.1 Donlin Gold Pipeline

Donlin Gold LLC has proposed to construct a 14-inch diameter, 315-mile buried natural gas pipeline that begins at the Beluga Power Plant and terminates at the planned Donlin Gold Mine. Ancillary facilities may include one compressor station, a fiber optic communication line, and an electric transmission line from Beluga Power Plant to the compressor station (Donlin, 2013). DEC anticipates that Donlin Gold would apply for coverage under the Pipeline GP, pending project sanction.

2.2.2 Alaska Liquefied Natural Gas Pipeline

The Alaska Liquefied Natural Gas (AK LNG) Pipeline is a potential new 42-inch diameter and 800-mile long natural gas pipeline from the North Slope to Cook Inlet. The pipeline will begin at a Gas Treatment Plant located in Prudhoe Bay and terminate at a proposed Liquefaction Facility in Nikiski, Alaska. Ancillary facilities will include compressor stations,

meter stations, and various mainline block valves, and pig launchers and receivers (AK LNG Project, 2014). DEC anticipates that AK LNG would apply for coverage under the Pipeline GP pending project sanction.

2.2.3 Alaska Stand Alone Pipeline

The Alaska Stand Alone Pipeline (ASAP) is a potential in-state, buried gas pipeline designed to provide long-term, stable supply of natural gas from the North Slope to Fairbanks and Cook Inlet, as well as other communities where practicable. The proposed pipeline is a 36-inch diameter pipeline, 737-mile long, natural gas transmission mainline extending from the Gas Conditioning Facility on the North Slope to an existing ENSTAR pipeline system in the Matanuska-Susitna Borough (US Army Corp of Engineers, 2014). The ASAP project may include several laterals or takeoff points along the route. DEC anticipates that ASAP would apply for coverage under the Pipeline GP pending project sanction.

2.2.4 Potential Significant Pipelines

DEC anticipates there will be other significant oil and gas pipelines that may be constructed that are not currently identified. For example, the AK LNG pipeline may provide up to five take off points that will allow other entities to construct gas pipelines that serve Alaskan communities along the main pipeline route. Significant pipelines from main transmission pipelines may be able to seek coverage for discharges associated with the construction, maintenance, and operation activities.

2.3 Permit History

2.3.1 History of the Existing Statewide Oil and Gas Pipeline General Permit

The first issuance of the Pipeline GP became effective January 1, 2018 and authorized discharges to fresh waters and disposals to state land of wastewater from Drilling Fluids and Drill Cuttings (discharge only), Domestic Wastewater (discharge only), Gravel Pit Dewatering, Excavation Dewatering, Hydrostatic Test Water, Stormwater (discharge only), and Mobile Spill Response (discharge only).

During the effective period of the 2018 Pipeline GP, there were eight authorizations issued under the Pipeline GP, as summarized in the following sections.

2.3.1.1 AKG320001 – Harvest Alaska LLC (Harvest), CIPL Cross Inlet Extension Project

Harvest obtained coverage under the Pipeline GP in 2018 for Excavation Dewatering and Hydrostatic Test Water for the CIPL Cross Inlet Expansion Project. This project included new onshore and offshore pipelines, pipeline conversion of service, pipeline junctions, pumping station, shutdown valve stations, and work pads as well as modifications to existing mechanical, electrical, civil, cathodic protection, and structural infrastructure.

The authorization was terminated in 2019 after the CIPL Cross Inlet Expansion project was completed.

2.3.1.2 AKG320002 – Alyeska Pipeline Service Company (APSC), TAPS

APSC owns and operates TAPS. APSC conducts routine maintenance activities that require discharging Excavation Dewatering and Hydrostatic Test Water. Four PSs include personnel accommodations that require domestic wastewater treatment facilities. These discharges were previously covered under the EPA issued National Pollutant Discharge

Elimination System (NPDES) individual permit AK0050563 – Alyeska Pipeline Service Company (APSC IP). The APSC IP also authorized discharges for Hydrostatic Test Water, Excavation Dewatering, and Domestic Wastewater. APSC obtained coverage under the Pipeline GP for these discharges in 2018, superseding the APSC IP. Additionally, APSC has obtained coverage for Drilling Fluids and Drill Cuttings and Gravel Pit Dewatering under the Pipeline GP.

APSC maintains long-term coverage under the Pipeline GP.

2.3.1.3 AKG320003 – Harvest Pipeline Operations

Harvest, a subsidiary of Harvest Midstream, operates oil and gas transmission pipelines in Alaska. Hilcorp Alaska, LLC (Hilcorp), a subsidiary of Hilcorp Energy Company, is an oil and gas exploration and production (upstream) company. Once oil and gas leave the production facility, the product becomes owned by the midstream entity at the point at which the product is metered for sale. Even though both companies are privately owned by the same individual, Harvest and Hilcorp are now independent corporations with separate corporate structures (separate CEO, President, Vice Presidents, etc.).

Harvest owns the CIPL and manages other oil and gas pipelines in Cook Inlet including the Tyonek Gas Pipeline and CIGGS. Harvest initially obtained coverage under the Permit in September 2019 to authorize discharges needed to decommission the DRT but now uses the authorization to cover discharges from annual pipeline projects including Hydrostatic Test Water from pipeline cleaning and Excavation Dewatering.

Harvest maintains long-term coverage under the Pipeline GP.

2.3.1.4 AKG320004 – Hilcorp Pipeline System Operations

Hilcorp owns and/or operates pipelines and related facilities in the Kenai/Cook Inlet region including the BRU Produced Water Lines, KGF Flowlines, SRU Flowlines, and the Seaview Gas Pipeline. Hilcorp has obtained coverage under the Pipeline GP for Drilling Fluids and Drill Cuttings, Excavation Dewatering, and Hydrostatic Test Water.

Hilcorp maintains long-term coverage under the Pipeline GP.

2.3.1.5 AKG320005 – Copper Valley Electrical Association (CVEA), Thompson Pass Distribution Project

CVEA obtained coverage under the Pipeline GP in 2019 for Drilling Fluids and Drill Cuttings and Construction Stormwater for the Stuart Creek project. The project installed electrical distribution to service needs from TAPS pipeline milepost (PLMP) 753 to PLMP 780 and included HDD under multiple waterways.

The authorization was terminated in 2021 after the Stuart Creek project was completed.

2.3.1.6 AKG320006 – Glacier Pipeline Operations

Glacier operates pipelines and related oil and gas facilities in Alaska including the CIPL on the west side of Cook Inlet and the NFP on the east side of Cook Inlet. Glacier obtained coverage under the Pipeline GP in 2019 for Excavation Dewatering associated with pipeline maintenance activities.

Glacier maintains long-term coverage under the Pipeline GP.

2.3.1.7 AKG320007 –MAP, Petrostar Refinery Pipelines

MAP owns and operates the MAP Pipeline System in North Pole, Alaska. MAP obtained coverage under the Pipeline GP in 2020 for Excavation Dewatering associated with pipeline maintenance activities. At least one pipeline replacement construction project is anticipated under the reissued Permit.

MAP maintains long-term coverage under the Pipeline GP.

2.3.1.8 AKG320008 – Eklutna Construction and Maintenance, LLC (ECM), JP-8 Jet Fuel Pipeline

Eielson Air Force Base owns and operates the 8-inch Jet Fuel (JP-8) Pipeline between the Petro Star Refinery in North Pole, Alaska and the base. ECM was the contractor (construction/repair operator) for the 13.7-mile JP-8 Pipeline Repairs project and obtained coverage under the Pipeline GP in 2022 for Hydrostatic Test Water associated with the JP-8 Pipeline Repairs project.

This authorization was terminated when the JP-8 Pipeline Repairs project was completed.

2.3.2 History of NetDMR Reporting

The 2018 Pipeline GP attempted to implement the EPA NPDES Electronic Reporting Rule (eReporting Rule) per 40 Code of Federal Regulations (CFR) 127. However, significant components for the eReporting Rule were inconsistent with implementing the GP.

The Pipeline GP supports authorizations that may be either long-term or short-term in nature. Short-term discharges are Discharges 001 – Drilling Fluids and Drill Cuttings, 003 – Gravel Pit Dewatering, 004 – Excavation Dewatering, 005 – Hydrostatic Test Water, and 008 – Contained Water. Unlike other discharges covered by the Permit, these five discharges are generally for projects that are limited in scope and duration. In practice these short-term authorizations have generally been permitted and terminated in less than one calendar year, most often being active for only one summer construction season. Most companies maintain long-term authorizations under the Permit (See Section 2.3.1), with outfalls for short-term discharges added and removed from the authorization as needed. Alternatively, outfalls may be left active long-term but discharges may only occur once or twice a year (i.e. valve vault dewatering). Because of the short duration of these authorizations and the limited Discharge Monitoring Report (DMR) data generated, the effort to use the NetDMR system is not commensurate with the benefit received from electronic reporting. Further, due to the high number of outfalls that can be associated with Excavation Dewatering and Hydrostatic Test Water for a large pipeline project, the NetDMR system does not offer sufficient outfall numbers to cover what is needed for such a large project should one occur during the Permit term. Lastly, due to the recent court decision with respect to WOTUS, DEC anticipates that more discharge authorizations will be to state waters, which are not applicable to the eReporting Rule. Hence, reporting through NetDMR is eliminated for this general permit. Application forms for applicable authorizations under the Pipeline GP will contain a section to opt out of an automatic waiver from electronic reporting as seen in 40 CFR Part 127 (b)(2). There must be compelling extenuating circumstances to opt out of the e-Reporting waiver.

The new Electronic Data Management System (EDMS), once fully developed, is expected to support reporting of all authorized discharges, whether categorized as state or APDES. The Department anticipates that the new database system will provide more consistent prompting for submittals and permittees will have access to the database that allows 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. DEC anticipates that EDMS will 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.

2.3.3 Changes to the Reissued Permit

2.3.3.1 New Contained Water Discharge/Disposal Category

New to the reissued Permit, DEC is introducing a new discharge category as a catchall for various Contained Water scenarios. These discharges were previously authorized under the 2018 Pipeline GP as Hydrostatic Test Water discharge, which was the previous catchall for various Contained Water scenarios. Under the reissued Permit, Hydrostatic Test Water discharge will be implemented solely for hydrostatic testing of pipelines or tanks and pipeline cleaning activities, while Contained Water will include miscellaneous contained water that is outside the narrow description of Hydrostatic Test Water such as vaults, utilidors, basements, water tanks, water lines, sedimentation basins, or other infrastructure with contained water at oil and gas pipeline facilities (see Sections 3.5, 3.8, 6.1.5, and 6.1.7).

2.3.3.2 Domestic Wastewater

New contact recreation criteria for Escherichia bacteria (E. coli) were promulgated in the Alaska WQS during the 2018 Pipeline GP permit term. The reissued Permit includes ongoing monitoring at a monthly frequency to determine if there is reasonable potential to cause, or contribute to, an excursion of the E. coli criteria. Should any single E. coli result exceed 410 E. coli CFU/100 mL, additional sampling shall occur to demonstrate compliance with the water quality criteria that not more than 10% of samples in a 30-day period exceed 410 E. coli CFU/100 mL). This will be demonstrated by calculating the 90^{th} percentile of the samples is less than or equal to 410 E. coli CFU/100 ml during the quarterly monitoring period. Samples need not be collected over a single month to apply. (see Section 5.3.2 and 6.1.2).

2.3.3.3 Excavation Dewatering

Monitoring Parameters

The 2018 Pipeline GP required that total monthly volume be reported in the comment section of DMRs. The Department has included total monthly volume to the effluent limit table to clarify this requirement (see Section 6.1.4) in the new Annual Report (AR) form (i.e, a complication of monthly DMRs where discharge occurred).

Monitoring Frequency

The 2018 Pipeline GP required turbidity and settleable solids sampling once per week. However, due to numerous exceedances of the turbidity limit and the need for better control of turbidity and settleable solids prior to and during discharge, the reissued Pipeline GP is requiring daily monitoring for turbidity and settleable solids (see Section 6.1.4).

Because the turbidity criteria is based on a four-day average exposure, the Pipeline GP allows for evaluating compliance on a four-day average.

Linear Projects

The reissued Pipeline GP is implementing floating outfalls for linear construction projects. Floating outfalls is a term indicating that the exact location of an outfall can be field adjusted to meet site conditions. The permittee may submit the latitude and longitude on the AR to override the initial latitude/longitude estimate from aerial photography in the Notice of Intent (NOI) (see Section 6.1.4.1). Note that floating outfalls does not negate appropriate planning by the applicant for outfall locations but rather allows flexibility to field-locate discharge outfalls to better align with drainage patterns and avoid environmental issues. However, field-locating requires updating the location when reporting.

2.3.3.4 Land Disposals

The Department has included settleable solids monitoring for Excavation Dewatering with land disposals and has narrowed the scope of land disposals (see Section 7.2). Settleable solids monitoring will be required on a case-by-case basis per the required plan review. In the 2018 GP, land disposal authorizations did not require demonstration of whether the location was able to infiltrate into ground water so long there was no overland flow to WOTUS. Given the changes to WOTUS determinations, DEC will limit disposals to areas that can infiltrate completely into the ground (see Sections 3.4.2, 3.5.2, 3.8.2, and 7.2). DEC is also eliminating automatic land disposals (see Section 4.2.2.2).

2.3.3.5 Reporting Requirements

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 and, eventually, DEC will develop report forms in EDMS for direct entry by permittees. The seasonal nature of many pipeline projects and their typical short length is better aligned with annual reporting or reporting when a Notice of Termination (NOT) or Notice of Inactivation is submitted for projects less than one year in duration. To align with the intent of the reporting rule (i.e., 40 CFR 127.15(b)(2) and 127.24) the permittee must request a temporary waiver with a term is no greater than 5 years and 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 of each year following the monitoring period ending on December 31 of each year. The new EDMS system will be configured to receive annual reports with the ability to upload specific documents as necessary. During the term of the permit, DEC hopes to create online report forms that can transfer data to the Integrated Compliance Information System (ICIS). The forms will ultimately 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 rather than being burdened by frequently reporting that no discharges occurred. Additionally, although annual Best Management Practices (BMP) Plan and Quality Assurance Project Plan (QAPP) certifications are still required, they no longer require certification in the annual submittal to the Department and must be retained onsite (see Section 12.0).

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

- Discharge 002 – Domestic Wastewater
- Discharge 006 – Stormwater

The following Discharges represent typical short-term discharges:

- Discharges 001 – Drilling Fluids and Drill Cuttings
- 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

Under the new WOTUS rule, two of the four existing Domestic Wastewater discharges are to non-adjacent wetlands that do not appear to meet the new definition of WOTUS. The other two are to wetlands areas that may or may not be WOTUS based on the U.S. Fish and Wildlife Service National Wetlands Inventory Mapper. Until guidance on making determinations under the new rule is issued, it is assumed that all Domestic Wastewater discharges are to state waters. Because stormwater is the only other discharge identified as typically long-term and only requires annual reporting, none of the discharges are proposed to be reported through netDMR at this time. Instead, applicants will automatically receive temporary waivers per 40 CFR 127.15(b)(2). 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 WASTEWATER CHARACTERIZATION

Authorized discharges or land disposals can be characterized using data from facilities that discharged under the Pipeline GP during the previous term. However, other discharge categories under the Pipeline GP may not have existing effluent data available or have limited effluent data. Accordingly, data from other related general permits (e.g. General Permit AKG332000 – Facilities Related to Oil and Gas Exploration, Production, and Development in the North Slope Borough (NSGP)) will be used to evaluate the potential pollutants of concern (POCs) as needed to supplement limited effluent data. Based on discharges applicable to oil and gas pipelines, the following sections characterize wastewater effluent, using data when available, and applicable, for the review period for from January 2018 through December 2022.

3.1 General Characteristics of Drilling Fluids and Drill Cuttings (Discharge 001)

Drilling fluids and drill cuttings coated with drilling fluids require an authorization to discharge into WOTUS under Section 402 of the CWA if the drilling fluids contain anything other than water. Drilling fluids are typically composed of a base fluid (e.g., freshwater, saltwater, synthetic fluid, etc.) and fine-grained materials used to enhance and control properties of the fluid mixture (e.g., clays, natural or synthetic polymers, salts, weighting agents, or other additives). Fluid mixtures are developed in consideration of the anticipated geology, purpose, and methods of a drilling program.

In uncomplicated geologic formations, drilling fluids are used to lubricate and cool the bit as well as sweep the drill cuttings out of the borehole. These fluids are typically ubiquitous and consist of clays or polymers that have little to no measurable aquatic toxicity. For more complicated geologic formations, elaborate drilling fluid formulations may be necessary to account for both the nature and the depth of the formation. These fluids could include weighting agents or other additives that have higher toxicity or metals concentrations (e.g., barite, lignosulfonates, etc.).

Regardless of specific formulations, drilling fluids have the potential to exceed freshwater quality criteria at the point of discharge (e.g., turbidity). In addition, additives may increase aquatic toxicity or pose risks to human health. These additives should be evaluated based on an understanding of the proposed drilling fluids formulation. Aquatic toxicity for drilling fluids can be measured using a Sediment Particulate Phase (SPP) Toxicity Test which also accounts for abrasive and smothering effects of particulates in a mixture at varying concentrations. Specifically, a SPP Analysis (using EPA Method 1619) measures for the 50 percent (%) lethal concentration (LC_{50}) of a fluid mixture over a 96-hour (hr) period (96hr LC_{50}). Typical results are conveyed in units of parts per million (ppm) or as a percent concentration. The higher the LC_{50} concentration the lower the toxicity.

The Department has evaluated drilling fluids and found that they can be used for a variety of reasons, including non-oil and gas and oil and gas activities. Common non-oil and gas drilling includes, but is not limited to, geotechnical borings for core sediment sample collection, directional drilling for installation of utility line crossings to avoid surface features, and borings for installation of pipeline infrastructure such as vertical support members or cathodic protection. Oil and gas activities include drilling wells for exploration, development, production, and injection wells. Although the permitting of drilling fluids in the Pipeline GP has some similar attributes related to oil and gas projects, requirements in the Pipeline GP are not directly applicable to ELGs in 40 CFR 435.

Typically, the non-oil and gas activities occur in the shallow subsurface regions less than 500 feet, encounter predictable uncomplicated geology, and use predictable low toxicity fluid systems. For this reason, the Department divides drilling fluid characterization into two categories: fluids used for shallow non-oil and gas activities (Type A Drilling Fluids), and fluids used for deeper oil and gas activities (Type B Drilling Fluids). The Department considers only Type B Drilling Fluids as applicable to oil and gas standards and regulations (e.g., 40 CFR 435). However, some of the tests that have evolved from the oil and gas industry may be used to characterize and classify non-oil and gas fluid systems.

The Pipeline GP considers only Type A Drilling Fluids for discharge. Type A Drilling Fluids are further characterized by SPP analysis results, complexity of fluid mixture, and other POCs such as metals. In the Pipeline GP, Type A Drilling Fluids do not include the use of brines while

conducting activities in freshwater due to potential concerns for total dissolved solids. Table 1 provides a breakdown of fluid subcategories used in the Permit.

Table 1: Subcategories for Type A Drilling Fluids

	Category Name 96hr LC50 SPP Value (ppm)	A1 >750,000	A2 >500,000	A3 >500,000
Characteristics	Number of Ingredients[1]	≤2	>2	>2
	Barite Allowed	○	○	●
	Base Fluid (Fresh Water (FW) / Sea Water (SW)/ Synthetic (S)	FW	FW	FW
Application Requirements	Estimate (E) / Analyze (A) SPP 96hr LC50	E[2]	E[2]	A
	Drilling Fluid Plan (DFP)	○	●	●
	Total Recoverable Metals Analysis [3]	○	○	●
	Chemical Inventory Report	○	●	●

NOTES:

1. Base Fluids listed above are not included as an ingredient.
2. If estimate does not meet SPP requirement, a follow-up SPP Analysis may be used to verify actual SPP.
3. Applicants using Barite must batch test stock for total recoverable metals using cadmium and mercury as surrogate parameters. Analysis should be conducted using EPA Method 200.7 for cadmium and EPA Method 245.5 or 7471 for mercury. To be considered Type A3 Drilling Fluid, results must be included in DFP indicating concentrations for Cadmium (Cd) ≤ 3 mg/kg, and for Mercury (Hg) ≤ 1mg/kg.

Key:

○ No

● Yes

Type A1 Drilling Fluids

Type A1 Drilling Fluids are expected to be used for most shallow borings and for shorter segments of HDD in uncomplicated geology. These are simple fresh water-based fluid mixtures which contain no more than two additives. For this subcategory, fluid mixtures selected for a project are disclosed in a NOI and have an individual and combined SPP Estimate of 750,000 ppm or greater. Ingredients containing metals such as barite are not included. The Department has grouped A1 fluids together based on the higher SPP concentration and simplicity of the fluid.

Type A2 Drilling Fluids

Type A2 Drilling Fluids are anticipated to be used for projects which may encounter a variety of conditions in the field while conducting HDD or geotechnical investigations. Some common additives for these types of activities include: bentonite (clay) and natural or modified polymers such as starches, cellulose (plant fiber), xanthan gum (corn sugar modified by bacteria) and guar gum (ground guar seeds). Type A2 Fluids are categorized by the Department as water-based fluid mixtures with an SPP estimate or analysis of 500,000 ppm or greater which may contain more than two additives. Because Type A2 fluid mixtures could include multiple additives, all anticipated products and mixtures are disclosed in a DFP which demonstrates the SPP value of the mixture of all additives at their maximum expected concentration is 500,000 ppm or greater.

Ingredients containing metals such as barite are not included. Type A2 Fluids are grouped together based on moderate to high SPP concentrations and moderate flexibility to change fluids based DFP and field conditions.

Type A3 Drilling Fluids

While it is unlikely that these fluids would be needed for shallower formations, they are included for when complex geology is encountered in HDD or shallow geotechnical investigations. Type A3 fluids may include weighting agents containing metals that require higher environmental controls during use. For the purposes of the Permit, the Department allows only barite in this category. Barite is characterized as a slurry of clay mineral with metals tightly adhered to the clay matrix. Dissolution of these metals is not expected to occur to an appreciable level in the fresh water. Instead, metals are retained on the clay particles that are swept up by stream currents and transported downstream. The Permit addresses metals in drilling fluids through source control strategies and BMPs.

Type A3 fluids also require additional DFP data which includes a metals analysis on stock barite where cadmium and mercury are surrogate parameters (see Table 1). Type A3 fluids also allow for mixtures with multiple additives. Therefore, each product and all anticipated mixtures must be disclosed in the DFP along with corresponding SPP analysis demonstrating a 96hr LC_{50} of 500,000 ppm or greater. Type A3 Fluids are grouped together based on activity characteristics and the use of ingredients, which may contain metals where concentrations, fate, and transport must be carefully considered in freshwater environments.

3.1.1 Effluent Characterization – Inadvertent Discharges to Fresh Waters (Discharge 001)

Data was reviewed from January 2018 through December 2022 and compared to existing limits, where applicable, for each HDD outfall authorized. A total of thirteen outfalls were authorized for the inadvertent discharge of drilling fluids and drill cuttings during the 2018 Pipeline GP term. A 500-foot mixing zone was authorized for six of the outfalls. Nine of the outfall authorizations were for Class A1 Drilling Fluids and four were for Class A2 Drilling Fluids. No inadvertent discharges to water were reported during the review period. However, there was one release to land but implementation of BMPs prevented the release from reaching surface water. The overall toxicity of all Class A1 and Class A2 fluids used during the review period was low, with the 96-hour LC_{50} exceeding 750,000 ppm for all drilling fluids used.

3.2 General Characteristics of Domestic Wastewater (Discharge 002)

Per 18 AAC 72, domestic wastewater is waterborne human waste generated from toilets and urinals (blackwater) and laundry, kitchen, sink, shower, or bath water (graywater). Domestic wastewater treatment typically includes primary treatment to remove settleable solids (grit), secondary biological treatment to remove organics that impart an oxygen demand, secondary settling to remove biological solids (microorganisms), and disinfection. In some instances where chlorine is used in the disinfection step, final treatment includes removal of chlorine (dechlorination) so the effluent does not exceed the chlorine water quality criteria. Small volumes of other easily biodegradable wastes (e.g. glycol) may be comingled with domestic wastewater prior to treatment upon obtaining written approval from the Department.

APSC currently has four PSs that are authorized under the Pipeline GP to discharge Domestic Wastewater. At the PSs, wastewater is treated using rotating biological contactors (RBCs), waste

activated sludge (WAS) biological treatment systems, or an Orenco AdvanTex (OAT) Wastewater Treatment Plant (WWTP) followed by either ultraviolet (UV) or chlorine disinfection followed by dechlorination (Chlor/Dechlor). Table 2 provides a summary of APSC treatment systems.

Table 2: Alyeska PS Treatment Systems:

Design Parameter	PS 3	PS 4	PS 5	PS 6
Secondary Biological Treatment Type	RBC	RBC	WAS	OAT
Disinfection Type	UV	UV	Chlor / Dechlor	UV
Design Capacity (gallons per day (gpd))	14,000	14,000	8,000	8,000
Operating Percent Capacity (%)	35%	80%	72%	35%
Population Served (Max / Ave)	148 / 105	120 / 75	50 / 40	44 / 20
Discharge Location	Tundra	Tundra	Wetland	Upland
Mixing Zone	N/A	500 feet	N/A	N/A

Per 18 AAC 72.050, minimum treatment (secondary treatment and disinfection) must be accomplished prior to discharging domestic wastewater. Secondary treatment is defined as effluent meeting limits for five-day biochemical oxygen demand (BOD_5), total suspended solids (TSS), and potential of hydrogen (pH). The maximum daily limit (MDL) for both BOD_5 and TSS is 60 milligrams per liter (mg/L) and the average monthly limit (AML) is 30 mg/L. The secondary treatment limits for pH is between 6.0 and 9.0 measured in Standard Units (SU). Disinfection means to reduce or eliminate pathogenic organisms to produce an effluent with the arithmetic mean that does not exceed 200 fecal coliform (FC)#/100 ml in a minimum on five effluent samples collected in 30 consecutive days and 400 FC#/100 ml in seven effluent samples collected on consecutive days. DEC evaluated effluent data from APSC PSs 3, 4, 5, and 6 to characterize Domestic Wastewater for the Pipeline GP since these facilities are currently covered by the Pipeline GP and represent the Domestic Wastewater discharges that are expected to be covered under the Permit.

3.2.1 Effluent Characterization

Data was reviewed and compared to existing numeric limits, where applicable, for each authorized pump station. Numeric effluent limits include pH, total residual chlorine (TRC), BOD_5, TSS, FC bacteria reported in the number of colonies/100 ml (FC#/100 ml), and E. Coli reported in the number of colonies/100 ml (E. Coli#/100 ml). Table 3 provides the Domestic Wastewater characterization of monitored parameters for Pump Stations 3, 4, 5, and 6.

Table 3: Characterization of Max Daily Observations from Domestic Wastewater DMRs (January 2018 to December 2022)

Parameter	Existing Limits		Observed Range (Low –High) Average [1]				
	AML	MDL	PS 3	PS 4	PS 5	PS 6	Combined
Flow (gpd)	–	–	(3,676-6,348) 4,936	(8,060-14,446) 11,144	(4,036-9,087) 5,783	(1,560-6,110) 2,598	(1,560-14,446) 6,279
pH [2]	6.5 ≤ pH ≥ 8.5		(7.54-8.48) 8.25	(6.73-8.38) 7.28	(6.54-8.16) 7.38	(6.50-7.80) 7.00	(6.50-8.48) 7.47
TRC (mg/L)	11	19 [3]	< 0.1	UV System	< 0.1	UV System	< 0.1
BOD_5 (mg/L)	30	60	(2.0-13.7) 3.8	(2.0-20.9) 3.5	(2.2-50.8) 12.3	(4.7-38.9) 16.7	(2.0-50.80) 9.45
TSS (mg/L)	30	60	(1.0-15.6) 1.16	(1.0-24.0) 3.7	(1.0-**104.0**) 11.8	(2.0-17.6) 8.0	(1.0-**104.0**) 7.2
FC [3] (#/100/ml)	20	40	(1.0-6.0) 1.3	(1.0-8.0) 1.2	(1.0-31.8) 2.42	(1.0-**207.2**) 2.4	(1.0-**207.2**) 2.0
E. Coli [3,5] (#/100/ml)	–	–	(1.0-4.1) 1.1	(1.0-20.1) 1.2	(1.0-57.8) 1.7	(1.0-648.8) 4.6	(1.0-648.8) 1.9

Notes:
1. Numbers in bold are maximum daily limit exceedances but not necessarily permit violations.
2. Median values are used instead of average values for pH.
3. TRC limits apply to PS 3 and PS 5. PS 4 and PS 6 have UV systems for disinfection.
4. The geometric mean is used instead of average values for pH.
5. Per WQS, not more than 10% of the samples in a 30-day period for E. coli may exceed a statical threshold value (STV) of 410 CFU/100ml.

During the Permit term, Domestic Wastewater limits were generally attainable, however there were rare exceedances of the MDL for TSS and FC bacteria, and one exceedance of the BOD_5 AML. The BOD_5 AML exceedance occurred when only one sample was taken during the month that was below the MDL and the AML exceedance may have been avoidable if additional sampling had occurred. The single TSS exceedance occurred due to excessive sludge accumulation and wasting. TRC, pH, BOD_5, TSS, and FC remain POCs needing limits.

New contact recreation criteria for E.coli were promulgated in the Alaska WQS during the 2018 Pipeline GP permit term. E. Coli bacteria are a pathogenic indicator species whose presence suggests the likelihood that other pathogenic bacteria and viruses are present. The most stringent water quality criteria per 18 AAC 70.020(b)(2)(B)(i) provides protection for water supply designated for contact recreation. The water quality criteria requires that in a 30-day period, the geometric mean may not exceed 126 E. Coli CFU/100 ml, and not more than 10% of the samples may exceed 410 E. Coli CFU/100 ml.

During the review period, one E. coli sample exceeded the STV of 410 CFU/100 ml, however this data point may or may not be representative of the discharge. The October 2019 E. coli result was 648.8 CFU/100 ml, an order of magnitude and 3.9 standard deviations higher than any other results for all pump stations indicating this result is not representative. E. coli and FC bacteria are highly correlated on a site-by-site basis (USGS 1993) and the corresponding FC result was low. Further, elevated TSS and turbidity concentrations may accompany high E. coli results because the bacteria tend to be found with particles and may also be linked to high BOD concentrations (USEPA 2021), however elevated concentrations were not observed for the corresponding monthly TSS, turbidity, and BOD samples indicating that E. coli

contamination may have occurred during or after sampling. Additionally, the 90th percentile of all E. coli data was 54.0 CFU/100 ml suggesting that the criterion was not exceeded. However, E. coli in the growth stage exposed to low-pressure UV light has been demonstrated to be resistant to UV disinfection (Metcalf and Eddy 2014).

While monitoring was conducted on a quarterly basis, insufficient data was obtained to determine if there is reasonable potential because the newly promulgated criteria allow for up to 10% of samples to exceed 410 E. coli CFU/100 ml in a 30-day period, however this was unknown at the time and therefore the opportunity was not available to collect additional samples to determine if the criteria could be met, assuming that the result is representative. Additional monitoring data is needed during the next permit term to assess if limits are needed for E. coli.

3.3 General Characteristics of Gravel Pit Dewatering (Discharge 003)

Gravel deposits are typically composed of weathered and eroded unconsolidated rocks fragments 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. Gravel pits can accumulate rain and snowmelt water during breakup that requires removal to extract the material. POCs associated with gravel pits are sediment and turbidity from disturbing the material source and hydrocarbons from the use of equipment. When possible, industry prefers to reuse the gravel pit water for other purposes such as dust suppression or ice roads and in some instances is the sole reason for gravel pit dewatering. When gravel pit water is applied to gravel, tundra, dry stream channels, or ice, turbidity is not considered a POC.

The most common methods for gravel pit dewatering for material mining are submersible pumps, wells, and well points. On the North Slope, gravel pit water is also used as a source for ice roads and pad development during the winter and for dust suppression for gravel roads in the thawed season. Although DEC does not anticipate that ice roads will be developed south of the North Slope, the use of gravel pit water for ice construction and road watering may apply anywhere in the area of coverage. Note that gravel pits that have been successfully rehabilitated to be considered habitat by the Alaska Department of Fish and Game do not require authorization for water use under the Pipeline GP; rehabilitated mine sites are considered receiving waters.

3.3.1 Effluent Characterization – Discharges to Fresh Water (Discharge 003)

During the review period, a total of 5 outfalls were authorized for gravel pit discharges to fresh waters. Two of these outfalls were used for ice pad construction. Discharges to streams occurred from two of these outfalls resulting in four data points for gravel pit dewatering discharges, three of which were for discharges to open waters. No mixing zones were authorized for Gravel Pit Dewatering. Data for Gravel Pit Dewatering was reviewed and compared to existing numeric limits, where applicable. Numeric effluent limits include pH, TSS, and turbidity above background. Table 4 provides Gravel Pit Dewatering characterization of monitored parameters.

Table 4. Characterization of Gravel Pit Dewatering Discharges to Water (January 2018 to December 2022)

Parameter	Units	Existing Limits	Reported Data (Low-High) Average
Flow	gpd	Report	(600,000 – 8,000,000) 4,100,000
Total Monthly Volume	gallons	Report	1,600,000 – 24,700,000 (9,021,000)
pH [1]	SU [3]	6.5 – 8.5	(6.9 – 8.5) 7.0
Settleable Solids	ml/L [4]	0.2	(0 – 0.2) 0.03
Turbidity Effluent	NTU [5]	Report	(1.6 – 10.9) 5.27
Ambient Turbidity	NTU	Report	(0.66 – 7.43) 3.45
Turbidity Above Background [2]	NTU	5 NTU above ambient	(-0.65 – 3.44) 1.81
Oil and Grease	Visual Monitor	No Sheen	No Sheen Observed
Total Aromatic Hydrocarbons (TAH)	µg/L [6]	Report	No Sampling Triggered
Total Aqueous Hydrocarbons (TAqH)	µg/L	Report	No Sampling Triggered

NOTES:
1. Median values are used instead of average values for pH.
2. Negative turbidity means the effluent turbidity was lower than the receiving water turbidity (i.e., cleaner).
3. Standard Units (SU)
4. Milliliter per liter (ml/L)
5. Nephelometric Turbidity Unit (NTU)
6. Micrograms per liter (µg/L)

Based on the data obtained for discharges from gravel pits, no limit exceedances occurred. Turbidity from direct discharges to open water was low, supporting the assumption that a turbidity limit exceedance is not likely, however due to low ambient turbidity the Department is issuing a 500-foot standard mixing zone for Gravel Pit Dewatering under the Permit to ensure compliance with the WQS (see Section 8.2). Turbidity, pH, and hydrocarbons remain the primary POC needing to have limits in the permit.

3.3.2 Effluent Characterization – Disposals to Land (Disposal 003)

A total of 5 outfalls were authorized for disposals to land during the review period, including outfalls authorized for both discharge to water and disposal to land as a contingency. No disposals to land were reported from Gravel Pit Dewatering from 2018 through 2022.

3.4 General Characteristics of Excavation Dewatering (Discharge 004)

Dewatering is the removal of water from construction excavations where precipitation, snowmelt, or infiltrating groundwater hinder the construction activity. Excavation Dewatering is primarily related to trench dewatering for pipeline integrity investigations, the installation of utilities, pipeline repair, and for construction. The most common methods for dewatering include submersible pumps, wells, and well points. Dewatering activities near gravel bed streams typically have higher rates of withdrawal due to increased permeability of the larger soil particles (i.e. sand and gravel) when compared to locations with less permeable soils (i.e. silts and clays). The main POCs for Excavation Dewatering discharges are sediment and turbidity. Coarse sediment can be effectively controlled using appropriate BMPs such as keeping pump intakes

above the bottom of the excavation, filtration, or settling basins. Alternatively, discharges to dry stream channels with vegetation or to snow in the winter has also proven effective because the vegetation or snow acts as a natural filter for finer-grained sediment. However, sensitive vegetation, such as tundra, must be protected from accumulation of coarse sediment that could cause an adverse impact. All discharges and disposals are required to implement BMPs to control sediment and must address sediment accumulation appropriate for each discharge/disposal location (e.g. tundra, dry stream channel, etc.).

Turbidity is typically associated with fine grained material and is more difficult to control than large solids that settle. Silts and clays are typically difficult to reduce unless coagulant aids are used with settling basins, filters bags, or treatment systems. If removal of silts and clays is not effective despite use of enhanced treatment, the discharge may still exceed turbidity criteria, which is based on the background turbidity in freshwater. For this reason, a mixing zone is advisable when discharges are to open waters.

When excavations occur next to underground sources of contamination, the discharges of Excavation Dewatering can include additional POCs depending on the nature of the contaminant. Typically, the contaminants are petroleum hydrocarbons. Though rare, solvents and metals could also be contaminants of concern. The hydrocarbons can be in the form of free product (sheen), dissolved TAH and TAqH, or partitioned onto fine grained sediment. Although excavations near existing DEC-identified contaminated sites have occurred during the review period, it has been infrequent and when applicable, permittees have implemented additional BMPs when required by DEC's Contaminated Sites Program (CSP).

3.4.1 Effluent Characterization – Discharges to Fresh Waters (Discharge 004)

During the review period, a total of 103 outfalls were authorized for discharges to fresh waters under the General Permit, but a 500-foot mixing zone was authorized for only one outfall. For this one discharge, the compliance point was at the boundary of the 500-foot mixing zone. All other discharges had to comply at the end of pipe. Although there were 103 authorized discharges, not all locations resulted in a discharge because authorizations were often sought as a contingency in case groundwater was encountered unexpectedly. Discharges occurred from 33 of these outfalls resulting in 46 data points. Data for Excavation Dewatering was reviewed and compared to existing numeric limits, where applicable. Numeric effluent limits include pH, total settleable solids, and turbidity above background. Table 5 provides the Excavation Dewatering characterization of monitored parameters during the review period for discharges to freshwater.

Table 5. Characterization of Excavation Dewatering Discharges to Water (January 2018 to December 2022)

Parameter	Units	Existing Limits	Reported Data [1] (Low-High) Average
Flow Volume	gpd	Report	(10-23,208,000) 1,511,479
Total Volume	gallons	Report	(10-365,259,000) 24,030,184
pH [2]	SU	6.5 – 8.5	**(5.9**-8.5) 7.3
Settleable Solids	ml/L	0.2	(<0.2-**5.2) 0.4**
Turbidity Effluent [3]	NTU	Report	(2.4-1,000) 138.1
Turbidity, Background	NTU	Report	(1.0-53.1) 17.5
Turbidity, Increase Above Background [4]	NTU	5 NTU above ambient	(-10.5-**705.7) 66.5**
Oil and Grease	Visual Monitor	No Sheen	No Sheen Observed
TAH	µg/L	Report	No Sampling Triggered
TAqH	µg/L	Report	No Sampling Triggered

NOTES:

1. Bold values represent an exceedance with existing limits.
2. Median values are used instead of average values for pH.
3. Effluent turbidity includes both discharges to water and discharges to areas considered waters without a surface water feature. Turbidity limits are based on background turbidity and only apply when there is a surface water feature, however the Department required effluent monitoring regardless of discharge location to characterize the discharge. Hence, high effluent turbidity values are not shown in bold. Effluent turbidity compared to background and is shown under Turbidity, Increase Above Background.
4. Negative turbidity means the effluent turbidity was lower than the receiving water turbidity (i.e. cleaner).

During the Permit term there were numerous exceedances of the turbidity and settleable solids limits, and rare excursions outside of the pH limits. The pH limits are generally attainable and the excursions indicate that the source water from the excavations was low, as can be expected in wetland locations where the discharges occurred. However, the exceedances of the settleable solids and turbidity limits appear to represent a lack of implementing appropriate treatment BMPs needed to meet limits. There are also turbidity exceedances that appear to be related to not establishing a target performance by sampling the receiving water prior to discharging. These exceedances appear to be derived from establishing a predetermination of BMPs, then discharging, then measuring the background turbidity. The permittee must know the receiving water turbidity and resulting criteria in order to select appropriate BMPs. For turbidity, several of the exceedances may have also been avoided by requesting mixing zones. While mixing zones were available for Excavation Dewatering discharges, only one mixing zone was authorized and none were requested for any of the outfalls with exceedances. DEC encourages permittees to apply for mixing zones where discharges are to surface waters and not dry stream channels or other locations considered WOTUS. In addition to the exceedances summarized above, there were two discharges that did not reach surface waters (i.e. dry stream channel or tundra) with very high effluent turbidity results from AKG320002 Outfalls 004AL and 004AM, both with results of 1,000 NTUs indicating the need for treatment BMPs to control sedimentation even when discharges are not to open waters.

Like turbidity, the exceedances of settleable solids appear to be the result of confusion or poor execution of BMPs and onsite monitoring. The permittees seem to confuse turbidity and settleable solids limits. Turbidity and settleable solids monitoring has been changed to daily to allow for more time to implement correction in a timely manner. Permittees should ensure

field personnel have experience with equipment used to measure turbidity and settleable solids in the field as sending these samples to a lab may not align with ensuring compliance. While turbidity may not be applicable to gravel uplands or wetlands without a free-water surface (FWS), the settleable solids limit always applies to prevent sediment accumulation. Rather than exceeding the settleable solids limit, BMPs should have been implemented to reduce settleable solids or the outfall relocated when excessive sediment accumulates (typically 1/8th inch or more).

Turbidity, settleable solids, pH, and hydrocarbons remain POCs with turbidity needing a mixing zone (see Section 8.2).

3.4.2 Effluent Characterization – Disposals to Land (Disposal 004)

A total of 132 outfalls were authorized for disposals to land during the review period, including outfalls authorized for both discharge to water and disposal to land as a contingency. Annual reports were reviewed for information regarding Excavation Dewatering disposals to land. A total of 39 disposals to land were reported in the annual reports.

No numeric limits were established for Excavation Dewatering disposals to land; monitoring was required for volume and presence of a sheen during discharge as well as maintaining daily logs based on observations. Additionally, permittees were required to observe for evidence of unacceptable sedimentation and erosion and record these observations in daily logs. For Excavation Dewatering, permittees were required to submit an annual report documenting volumes, all disposal locations including showing when disposal locations were uplands, and the daily discharge logs.

Table 6 provides the Excavation Dewatering characterization of monitored parameters during the review period.

Table 6. Characterization of Excavation Dewatering Disposals to Land (January 2018 to December 2022)

Parameter	Units	Existing Limits	Reported Data
			(Low-High) Average
Total Monthly Volume [1]	gallons	Report in AR	(90 – 900,000) 113,741
Max Daily Discharge Rate	gpd	Report in AR	(90 – 100,000) 22,531
Oil and Grease Visual	Visual	No Discharge	None Observed

NOTES:

1. Total monthly volume of all Excavation Dewatering disposals to land, per permittee.

In the 2018 GP, land disposal authorizations did not require demonstration of whether the location was able to infiltrate into ground water so long there was no overland flow to WOTUS. Given the changes to WOTUS determinations, DEC will limit disposals to areas that can infiltrate completely into the ground. DEC has modified the approach for land disposal to minimizing the possibility of disposal discharging to waters due to inadequately vetting site conditions for complete infiltration. In essence, sites will be considered discharges to waters unless demonstrated otherwise though plan review.

3.5 General Characteristics of Hydrostatic Test Water (Discharge 005)

Before oil and gas is transported through a new or repaired pipeline, the pipeline needs to be hydrostatically tested in order to detect if there are leaks. If the pipeline is new, the primary POC is sediment, debris, or welding slag left behind during construction. 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 Permit limit violation or WQS violation. If the pipeline is in service, petroleum hydrocarbons are also a concern. Depending on the infrastructure being tested, the volume of the discharge may be a bigger issue than pollutants. If testing occurs during winter conditions, hydrostatic testing could include the use of antifreeze chemicals or could include heated water to prevent freezing. In addition, biocide may be used to prevent development or proliferation of bacteria. For pipeline cleaning activities, cleaning chemicals may also be used. Sediment, turbidity, TAH, and TAqH are considered typical POCs, whereas antifreeze agents, heated water, biocides, and cleaning chemicals are considered atypical. Common treatment and discharge methods include settling ponds, portable filtration systems with chemical injection for pH adjustments, and sediment and erosion control including but not limited to velocity reduction on splash pads, rubble mound infiltration into dry stream channels, and preferential discharge to locations that do not have an open water surface (e.g., wetlands, tundra, dry river channels, frozen conditions). Vegetation or snowpack naturally removes sediment prior to the discharge entering a receiving water. For existing infrastructure carbon filtration is the typical hydrocarbon treatment.

During the review period, the Hydrostatic Test Water discharge category was used as a catchall for various Contained Water scenarios including contained water associated with other oil or gas pipeline infrastructure including, but not limited to, valve vaults, basements, non-hydrocarbon pipelines, tanks, and utilidors upon demonstration the contained water was similar in characteristics as hydrostatic test water described for oil and gas pipelines. However, under the reissued Permit, Hydrostatic Test Water will be implemented solely for hydrostatic testing and cleaning 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). These other standards may stipulate certain source water conditions affecting effluent quality. Due to this, DEC is introducing a discharge category in the reissued Permit to account for other sources of Contained Water (Discharge 008).

A total of 46 outfalls were authorized during the review period for Hydrostatic Test Water. Thirty-four of these outfalls were authorized for both discharge to water and disposal to land as a contingency. Of the Hydrostatic Test Water discharges authorized, twelve were for conventional hydrostatic testing or pipeline cleaning activities while the rest of the outfalls were authorized for Contained Water. Thirty of the Contained Water outfalls were for valve vault dewatering, two were for utilidor dewatering, and two were for dewatering an underground pipeline corridor where a leading-edge flow meter is housed. Three of the twelve conventional hydrostatic tests were for existing infrastructure exposed to hydrocarbons and the remaining eight were for new infrastructure. No discharges occurred from conventional hydrostatic testing and two discharges occurred from pipeline cleaning activities. Only discharges categorized as conventional Hydrostatic Test Water are considered in the following sections.

3.5.1 Effluent Characterization – Discharges to Fresh Waters (Discharge 005)

During the review period, a total of three outfalls were authorized for discharges to fresh waters. Although there were three authorized discharges, not all locations resulted in a discharge because authorizations were often sought as a contingency in case there was overland flow to surface waters. Discharges occurred from one of these outfalls resulting in two data points from an existing hydrocarbon pipeline. Data for Hydrostatic Test Water was reviewed and compared to existing numeric limits, where applicable. Numeric effluent limits include pH, SS, and turbidity above background for all discharges. Additionally, for existing hydrocarbon infrastructure numeric effluent limits included TAH and total aqueous

hydrocarbons TAqH. While Contained Water was also authorized under Hydrostatic Test Water during the 2018 Permit term, the reissued Permit separates these discharges. Table 7 provides the characterization for conventional Hydrostatic Test Water only.

Table 7. Characterization of Hydrostatic Test Water Discharges to Water (January 2018 to December 2022)

Parameter	Units	Existing Limits	Reported Data [1] (Low-High) Average
Flow Volume	gpd	Report	(260 – 765,720) 345,113
pH [2]	SU	6.5 – 8.5	(**6.4** – 8.4) 7.3
Settleable Solids	ml/L	0.2	<0.2
Turbidity Effluent	NTU	Report	(3.0 – 14.8) 9.45
Turbidity, Background	NTU	Report	20.4 [4]
Turbidity, Increase Above Background [3]	NTU	5 NTU above ambient	-5.6 [4]
Oil and Grease	Visual Monitor	No Sheen	No Sheen Observed
TAH – New or Non-Hydrocarbon	µg/L	Report	No Sampling Triggered
TAqH – New or Non-Hydrocarbon	µg/L	Report	No Sampling Triggered
TAH – Existing Hydrocarbon	µg/L	10	(3.71 – 7.99) 5.85
TAqH – Existing Hydrocarbon	µg/L	15	(3.71 – 8.06) 5.89

NOTES:

1. Bold values represent an exceedance with existing limits.
2. Median values are used instead of average values for pH.
3. Negative turbidity means the effluent turbidity was lower than the receiving water turbidity (i.e. cleaner).
4. Only one discharge location had measurable background turbidity.

Hydrostatic Test Water was a catchall for all contained water in the 2018 Pipeline GP and under the reissued permit Hydrostatic Test Water is for only pipelines and tanks (see Sections 2.3.3.1 and 3.5). Although there were turbidity limits in the 2018 Pipeline GP, based on the data and understanding of pipelines and tanks, there is no reasonable potential for turbidity to cause, or contribute to, an excursion of the turbidity criteria and limits are not warranted. Sources that have reasonable potential for turbidity are now categorized under the Contained Water category.

For pipelines or other infrastructure that have not previously been exposed to hydrocarbons, the primary POC 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, petroleum hydrocarbons, oil and grease, and TAH/TAqH are typical POCs for existing infrastructure in contact with hydrocarbons.

3.5.2 Effluent Characterization – Disposals to Land (Disposal 005)

A total of 4 outfalls were authorized for disposals to land during the review period. Annual reports were reviewed for information regarding Hydrostatic Test Water disposals to land. Only one traditional Hydrostatic Test Water disposal occurred during the review period from an existing pipeline.

No numeric limits were established for Hydrostatic Test Water disposals to land; however monitoring was required for volume and presence of a sheen during discharge. Additionally, permittees were required to observe for evidence of sedimentation and erosion and record these observations in daily logs. For Hydrostatic Test Water, permittees were required to submit an annual report documenting all disposal locations, volumes, documentation showing the disposal locations were uplands, and the daily discharge logs. All disposals required daily logs.

Table 8 provides the Hydrostatic Test Water characterization of monitored parameters during the review period.

Table 8. Characterization of Hydrostatic Test Water Disposals to Land (January 2018 to December 2022)

Parameter	Units	Existing Limits	Reported Data
Total Monthly Volume	gallons	Report in AR	187,000
Max Daily Discharge Rate	gpd	Report in AR	36,000
Oil and Grease Visual	visual	No Discharge	None Observed

In the 2018 Pipeline GP, the definition of land disposals was intentionally broad and lenient. This led to situations where disposals likely resulted in surface water flows due to the volume applied to an area where infiltration was to occur, but the soil was not able to infiltrate the volume within the area being applied. While the disposal limits remain unchanged, the reissued Permit narrows the definition to be only for infiltration to groundwater without overwhelming the infiltration capacity of the site.

3.6 General Characteristics of Stormwater (Discharge 006)

Stormwater runoff originates from rain, snow, and snowmelt events that, if not appropriately managed, can come into contact with contaminates and transport sediment, debris, and chemical pollutants into receiving waters. The management techniques to prevent discharges with Stormwater pollutants depend on the type of facility and the risks associated with the industrial activities.

3.6.1 Construction

Construction activities that disturb lands can cause an increase in sediment which could elevate sediment loads and turbidity in a waterbody. A primary concern at construction sites is the erosion and transport process related to fine sediment because of rain splash, rills, and sheet flow. If the site is not managed properly, the disturbed soil can be washed off site during storm events. In addition to sediment, a number of other pollutants (e.g., metals, organic compounds, and nutrients) are preferentially absorbed or adsorbed onto mineral or organic particles found in fine sediment. Increased sediment in waterbodies can threaten multiple life cycles of anadromous and resident fish species. The typical POCs associated with Construction Stormwater is sediment, metals, organic compounds, and nutrients.

3.6.2 Operations

Industrial facilities may have Stormwater (rain, snow, and snowmelt) runoff that could come into contact with material that can cause Stormwater to become contaminated (contact Stormwater). In general, 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 Stormwater (non-allowable Stormwater discharges). In addition, there are specific types of discharges that are

allowed to be discharged along with Stormwater such as firefighting water (allowable non-Stormwater 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 Stormwater or allowable non-Stormwater discharges are addressed herein.

The quantities and types of Stormwater discharged are dependent on many variables, including the type of industrial activity that the facility is engaged in (sector of industry), pollutants of concern, and the type and intensity of the runoff event. DEC has identified the following six typical types of activities associated with pipeline construction and operation that have the potential to be major sources of pollutants in Stormwater:

- loading and unloading operations,
- outdoor storage,
- outdoor process activities,
- dust or particulate generation processes,
- illicit connections and non-Stormwater discharges, and
- waste management.

The typical POCs associated with Operational Stormwater is sediment, metals, and petroleum hydrocarbons but may also include other chemical parameters stored at a facility.

3.6.3 Characterization – Discharges to Fresh Waters (Discharge 006)

One authorization was issued for Construction Stormwater during the review period and was terminated upon project completion. The requirements for Stormwater remain unchanged.

3.7 General Characteristics of Mobile Spill Response (Discharge 007)

Mobile Spill Response covers discharges associated with treated snowmelt, rain, or other water that has come into contact with hydrocarbons such as motor oil, diesel, gasoline, transmission fluid, and hydraulic oil from small leaks that occur from motorized vehicles and equipment. Other sources include, but may not be limited to, drip pan water and shop melt water. 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 and the discharge must receive some degree of treatment that can demonstrate the capability to remove dissolved hydrocarbons.

Most often, small volumes of hydrocarbon impacted water is remediated by removing the sheen and placing the impacted water in a 55-gallon water-scrubbing unit containing oleophilic (hydrophobic) absorbents to remove the dissolved hydrocarbon. Currently, these types of systems have been demonstrated to be effective and used extensively on the North Slope. Discharging larger volumes is possible but the treatment system would require Department review to ensure removal of dissolved hydrocarbons is attained by the proposed treatment process or system. For smaller sources, a BMP procedure may suffice to demonstrate adequate treatment processes. Once approved, systems or processes can be adopted as a BMP tool**.**

3.7.1 Characterization – Discharges to Fresh Waters (Discharge 007)

No authorizations were issued for Mobile Spill Response under the 2018 Pipeline GP. Therefore, the requirements for Mobile Spill Response remain unchanged from the current permit.

3.8 General Characteristics of Contained Water (Discharge 008)

Contained Water is intentionally broad with respect to the types of discharges that may be permitted. Contained water quality ranges from relatively clean (e.g utilidors and vaults) to water that may include hydrocarbons and/or chemical additives. In the latter situation, the complexity in water quality may be addressed through plan review with supplemental requirements addressed in the approval. Primary sources of Contained Water under the Pipleine GP include valve vaults and utilidors. While the characteristics are generally similar to Hydrostatic Test Water, Contained Water for oil and gas pipelines also has unique considerations and therefore has been separated into its own discharge category. Sediment and turbidity are the primary POCs for all sources of Contained Water either from runoff or from the bottom of containments being exposed to the earth (i.e. valve vaults without concrete/solid bottoms). TAH and TAqH are not expected to be present unless the contained water has been contaminated or infrastructure is known to have prior exposure to hydrocarbons. During winter conditions, Contained Water could include the use of antifreeze chemicals or could include heated water to prevent freezing. Biocide may also be used to prevent development or proliferation of bacteria. Additionally, cleaning chemicals may be used. Sediment, turbidity, TAH, and TAqH are considered typical POCs; whereas antifreeze agents, heated water, and biocides are considered atypical.

A total of 46 outfalls were authorized during the review period for Contained Water (under Hydrostatic Test Water). Thirty-four of these outfalls were authorized for both discharge to water and disposal to land.

3.8.1 Effluent Characterization – Discharges to Fresh WOTUS (Discharge 008)

During the review period, a total of 34 outfalls were authorized for discharges to fresh waters. Although there were 34 authorized discharges, not all locations resulted in a discharge because authorizations were often sought as a contingency for overland flow to surface water. Discharges occurred from 20 of these outfalls resulting in 36 data points.

Data for Contained Water was reviewed and compared to existing numeric limits, where applicable. Numeric effluent limits include pH, SS, and turbidity above background for all discharges. Additionally, for existing hydrocarbon infrastructure, numeric effluent limits included TAH and total aqueous hydrocarbons TAqH. Table 9 provides the Contained Water characterization of monitored parameters.

Table 9. Characterization of Contained Water Discharges to Water (January 2018 to December 2022)

Parameter	Units	Existing Limits	Reported Data [1]
			(Low-High) Average
Flow Volume	gpd	Report	(169 – 4,000,000) 323,681
pH [2]	SU	6.5 – 8.5	(**6.3** – 8.5) 7.8
Settleable Solids	ml/L	0.2	<0.2
Turbidity Effluent	NTU	Report	(0.71 – 38.20) 8.24
Turbidity, Background	NTU	Report	(0.56 – 2.30) 1.43
Turbidity, Increase Above Background [3]	NTU	5 NTU above ambient	(-3.89 – **31.80**) 3.37
Oil and Grease	Visual Monitor	No Sheen	No Sheen Observed
TAH – New or Non-Hydrocarbon	µg/L	Report	No Sampling Triggered
TAqH – New or Non-Hydrocarbon	µg/L	Report	No Sampling Triggered
TAH – Existing Hydrocarbon	µg/L	10	No Sampling Triggered
TAqH – Existing Hydrocarbon	µg/L	15	No Sampling Triggered

NOTES:

1. Bold values represent an exceedance with existing limits.
2. Median values are used instead of average values for pH.
3. Negative turbidity means the effluent turbidity was lower than the receiving water turbidity (i.e. cleaner).

Monitoring results for Contained Water indicate limits are attainable with proper BMPs. One excursion outside of the pH range occurred and was likely due to a monitoring error rather than an actual excursion. Turbidity exceedances were also rare. Both excursions outside of their respective limits likely occurred due to infiltrated groundwater in a valve vault. Many valve vaults have exposed bottoms and because it is unlikely infiltrated groundwater had high turbidity, exceedances are unlikely to occur with the proper implementation of BMPs such as keeping the pump intake above the bottom of valve vaults.

During the last permit term, Contained Water sources were not exposed to hydrocarbons, however valve vaults and utilidors for pipelines have the potential to be exposed to hydrocarbons. For sources not known to have had previous exposure to hydrocarbons, the primary POCs are pH and turbidity. In some cases, Contained Water sources may have been previously exposed to hydrocarbons. Sediment, turbidity, petroleum hydrocarbons, oil and grease, and TAH/TAqH) are typical POCs for sources with hydrocarbons.

3.8.2 Effluent Characterization – Disposals to Land (Disposal 008)

A total of 43 outfalls were authorized for disposals to land during the review period, including outfalls authorized for both discharge to water and disposal to land as a contingency for overland flow to surface waters. Annual reports were reviewed for information regarding Excavation Dewatering disposals to land. A total of 97 disposals to land were reported for Contained Water in the annual reports.

No numeric limits were established for Contained Water (authorized under Hydrostatic Test Water) disposals to land, however monitoring was required for volume and presence of a sheen during discharge. Additionally, permittees were required to observe for evidence of sedimentation and erosion and record these observations in daily logs. For Contained Water, permittees were required to submit an annual report documenting all disposal locations,

volumes, documentation showing the disposal locations were uplands, and the daily discharge logs. All disposals required daily logs.

Table 10 provides the Contained Water characterization of monitored parameters during the review period.

Table 10. Characterization of Contained Water Disposals to Land (January 2018 to December 2022)

Parameter	Units	Existing Limits	Reported Data
			(Low-High) Average
Total Monthly Volume	gallons	Report in AR	(150 – 1,560,000) 44,223
Max Daily Discharge Rate	gpd	Report in AR	(150 – 285,000) 24,423
Oil and Grease Visual	visual	No Discharge	None Observed

In the 2018 Pipeline GP, the definition of land disposals was intentionally broad and lenient. Given the changes to WOTUS determinations, DEC will limit disposals to areas that can infiltrate completely into the ground. If there is a possibility of overland flow to surface water projects will be authorized as discharges to state waters or WOTUS. The disposal limits remain unchanged.

4.0 REPORTING AND COMPLIANCE HISTORY

4.1 Summary of Reporting Requirements

Historically, submittal of monthly DMRs was required from all permittees for active outfalls authorized for discharge to WOTUS, whether or not a discharge occurs in a given month. This requirement was emphasized in the Pipeline GP as well as individual authorizations. Annual reporting was required for Stormwater and land disposals. In addition, permittees were required to review and recertify BMP Plans, QAPP, and Stormwater Pollution Prevention Plans (SWPPPs) annually. During the review period, reporting via paper copy was used instead of NetDMR for all short-term discharges (see Section 2.3.2). Under the 2018 Pipeline GP, only Domestic Wastewater was reported using NetDMR because discharges were mostly continuous over the long term.

4.2 Compliance History

4.2.1 Effluent Limit Exceedances

During the review period, effluent limit exceedances were reported for Domestic Wastewater, Excavation Dewatering, Hydrostatic Test Water, and Contained Water discharges. No effluent limit exceedances were reported for the remaining discharge categories or for disposals to land covered under the Permit.

4.2.1.1 Domestic Wastewater

During the review period there was one limit exceedance for BOD_5, one exceedance for TSS, four exceedances for FC, and one observation of thermal erosion. Table 11 summarizes permit limit exceedances for Domestic Wastewater.

Table 11. Domestic Wastewater Effluent Limit Exceedances

Authorization	Parameter	Outfall ID	Criteria		Effluent	Comments
			AML	MDL		
AKG320002	BOD_5 (mg/l)	002C	30	60	35.1 (AML)	
	TSS (mg/l)	002C	30	60	104 (MDL)	Excessive sludge accumulation followed by excessive sludge wasting. Wasting was temporarily suspended and precautions put in place to ensure correct amount of sludge wasting.
	FC (#/100 ml)	002D	20	40	29.3 (AML) 156 (MDL) 207.2 (MDL) 32.6 (AML)	System upset suspected. UV system appears not to be cause because exceedances occurred after cleaning and bulb replacement. Third-party expert was hired to evaluate biological and clarifier unit.
	Thermal Erosion	002BW	BMPs to control thermal erosion		Thermal erosion observed	Thermal erosion appears to be caused by the relatively warm sewage effluent thawing some of the permafrost underlying the tundra. Effluent was directed to summer outfall 002BS and modifications were made such that 002BW could be terminated.

Throughout the review period, the effluent limit exceedances for Domestic Wastewater discharges were sporadic and occasional. However, there were numerous instances of high FC bacteria exceeding the 40 FC #/100ml during 2018, resulting in the need for additional sampling to demonstrate compliance with the MDL. Typically, a single sample in any given month above the MDL is an exceedance of the permit limitation, however, compliance with the FC bacteria MDL using multiple samples is allowed by demonstrating the calculated 90th percentile of the monthly samples is less than or equal to 40 FC #/100ml. This additional sampling often resulted in the 90th percentile being below the MDL and did not result in MDL exceedances. These instances were due to a suspected system upset and instances of high FC bacteria were isolated after 2018. During the permit term the permittee took steps to improve the domestic wastewater treatment systems with high FC bacteria including working with a consultant to ensure treatment systems are operated consistently with minimal upsets, instituting a biannual maintenance procedure for sewage sludge removal, and increasing the lime addition to keep the pH at an optimal level.

During the permit term, thermal erosion was also observed at one outfall. The permittee reported the erosion to the Department and ceased use of the winter outfall by routing all effluent to the summer outfall.

4.2.1.2 Excavation Dewatering (Discharge 004)

During the review period there were four effluent limit exceedances for turbidity above background, nine exceedances for settleable solids, and two exceedances of pH for

discharges from Excavation Dewatering. Table 12 summarizes these effluent limit exceedances.

Table 12. Excavation Dewatering Effluent Limit Exceedances

Parameter	Authorization	Outfall ID	Criteria [1]	Effluent [1]	Estimated Volume (gallons)	Comments
Turbidity (NTU's above ambient)	AKG320002	004AA	5	29.9	120,000	Additional BMPs were put in place.
				705.7	12,500,000	Two consecutive days. Additional BMPs were put in place.
				34.7		
	AKG320004	004K	5.3	65.9	10	Discharge stopped immediately and additional BMPs were implemented.
Settleable Solids (ml/l)	AKG320002	004AM	0.2	1.2	200	Improper pump placement and operator training was conducted.
	AKG320004	004Q		5	90,800	Three consecutive days to dry wetlands/gravel pads infiltrating to nearby groundwater.
				0.5		
				0.5		
		004AB		0.8	---	Technician believed limit was 2.0 ml/l and training was conducted. Discharges were to frozen wetlands/gravel pads.
		004AC		1.6	---	
				0.5	---	
				0.5	---	
	AKG320007	004D		5.23	612,000	BMPs were not implemented initially, and corrective actions were not taken because laboratory results were received after discharge ceased.
pH (SU)	AKG320002	004C	6.5 - 8.5	5.9	15,500	Ambient pH was not measured.
	AKG320004	004K		6.4	10	Ambient pH of 6.2 SU.

NOTES:

1. All criteria and effluent values are reported as NTUs above background. Background turbidity is not included, See Section 3.4.1 for information on background turbidity.

During the permit term, numerous limit exceedances occurred for Excavation Dewatering discharges. The exceedances for pH were rare and indicate the source water from the excavations is low as can be expected in wetland locations. However, the exceedances of the settleable solids and turbidity limits appear to represent a lack of implementing appropriate treatment BMPs needed to meet limits indicating the need for better control over BMPs and monitoring procedures.

4.2.1.3 Hydrostatic Test Water (Discharge 005)

During the review period, there was one excursion outside of pH range. Table 13 summarizes the Hydrostatic Test Water effluent limit exceedances.

Table 13. Hydrostatic Test Water Effluent Limit Exceedances

Parameter	Authorization	Outfall ID	Criteria	Effluent	Estimated Volume (gallons)	Comments
pH (SU)	AKG320003	005B	6.5 - 8.5	6.4	68,580	Surface water was used for pipeline cleaning and ambient pH was measured to be 5.5 and 5.7 SU.

During the review period only one excursion outside of the pH range was observed due to low pH of the source water used and was discharged to an area of low ambient pH, indicating hydrostatic test limits are attainable using current practices and BMPs.

4.2.1.4 Contained Water (Discharge 008)

During the review period, there was one excursion outside of pH range and two exceedances of turbidity for discharges of Contained Water (previously Hydrostatic Test Water) indicating limits are attainable using current practices and BMPs. Table 14 summarizes Contained Water effluent limit exceedances.

Table 14. Contained Water Effluent Limit Exceedances

Parameter	Authorization	Outfall ID	Criteria [1]	Effluent [1]	Estimated Volume (gallons)	Comments
Turbidity NTUs above ambient	AKG320002	005B	5	31.88	16,070	Permittee believes results were due to a sampling error.
				29.04	16,300	
pH (SU)	AKG320002	005B	6.5 - 8.5 SU	6.3 SU	15,500	Failure to allow pH meter to stabilize. Valve vaults consist of infiltrated groundwater and pH is typically closer to 8.0 SU.

NOTES:

1. All criteria and effluent values are reported as NTUs above background. Background turbidity is not included, See Section 3.8.1 for information on background turbidity.

During the permit term, limit exceedances for Contained Water discharges were rare. While the noncompliance notification indicated both turbidity exceedances were believed to be due to monitoring errors, the Department does not see this as likely given the two separate sampling events, both of which included measurement of the effluent turbidity and the background turbidity. It is unlikely that both sampling events biased the ambient turbidity low and the effluent turbidity high and the Department believes it was more likely due to a failure or lack of BMPs such as improper pump placement in the open bottomed valve vault.

4.2.2 Reporting Non-Compliances

Throughout the permit term there were various inconsistencies across the authorizations during the transfer to EDMS; some of the authorizations had narrative conditions entered as

schedules into ICIS while others did not, and not all of the facilities were inspected. Only two of the facilities were inspected under the 2018 Pipeline GP (AKG320002 and AKG320004) resulting in inconsistent reporting errors in ICIS. Combined, these inconsistencies resulted in both false positive and false negative reporting non-compliances throughout the permit term. Based on administrative issues identified at facilities that were inspected, the Department suspects some of these issues may have also occurred at facilities that were not inspected. The reporting during the previous term indicates significant confusion among permittees and DEC compliance. The implementation of all reporting through the Department's EDMS during the next permit term is expected to reduce confusion. Switching to reporting through EDMS is anticipated to improve reporting on both sides.

4.2.2.1 Discharges to Water

During the permit term there were several instances where required monitoring results were not reported. Under AKG320002 there was one occurrence of E. coli results not being reported for a Domestic Wastewater discharge, one occurrence where settleable solids not being reported for a Hydrostatic Test Water discharge, and two instances where results for all required monitoring parameters for Hydrostatic Test Water discharges were reported as unknown. Under AKG320004, there was one instance where pH results were not reported for an Excavation Dewatering discharge. There may be additional occurrences because not all facilities were inspected and only Domestic Wastewater was reported through NetDMR.

On at least one occasion, annual BMP Plan, QAPP and SWPPP certifications were submitted late under AKG320005. This authorization has been terminated, however due to schedule inconsistencies in ICIS and manual tracking after the transition to EDMS, it is possible other annual submittals were either received late or not logged in after they were received by email. The transition to annual reporting through EDMS is anticipated to eliminate these inconsistencies and allow for real-time tracking.

There were also instances of a lack of DMR reporting for some authorizations during months where no discharges occurred from outfalls active under the authorization. This issue should be remedied by implementing reporting through EDMS.

Deficiencies were also noted in the end of drilling reports required for Discharge 001. The information provided in the reports required by Permit Section 3.3 was often incomplete (i.e., missing total volumes of fluid created and added downhole at each location). While the information provided in the end of drilling reports was incomplete, no inadvertent discharges of drilling fluids and drill cuttings were reported during the 2018 Permit term.

As a result of the inspections that were conducted, administrative deficiencies were noted resulting in recommended changes, however no penalties were issued.

4.2.2.2 Land Disposals

For annual land disposal reports (Disposals 003, 004, and 005), there were numerous reporting deficiencies. Daily logs were submitted inconsistently; the annual, daily maximum flow for each month and total monthly volumes were not always provided; and documentation that the disposals were to uplands was not always included, all of which were required under the 2018 Pipeline GP.

Additionally, the 2018 Permit required that the first page of daily logs self-identify automatic disposals allowed under 2018 Permit but none of the daily logs received

indicated whether or not any of the land disposals were automatic disposals. The Department was able to confirm that all land disposals reported under authorizations AKG320004, AKG320006, and AKG32007 obtained pre-authorization for all reported land disposals. It appears that some of the land disposals for Excavation Dewatering and Hydrostatic Test Water reported under AKG320002 were automatic, however based on the documentation received it is unclear. Additionally, most permittees requested authorization for either discharge to water or disposal to land, however, AKG320002 requested both for all outfalls that were pre-authorized. Further, some of the land disposals that were reported in annual land disposal reports were nearby to surface waters and/or outfalls for different discharge types that were authorized for discharge to water where it is possible a connection existed. It is also possible that smaller disposal volumes resulted in infiltration to groundwater.

It appears automatic disposal to land is confusing and not working as intended based on the general lack of use and the reporting, as well as the new WOTUS rule adding an additional layer of complexity. Therefore, the Department is taking a narrower approach to disposals and is eliminating automatic disposals. The Department is also no longer going to issue authorizations for both discharges to water and disposal to land. When wastewater may reach surface waters, it will be authorized and monitored as a discharge to water. While annual land disposal reports were not consistent, the Department recognizes that the requirements were scattered in the Permit and lacked clarity. The Department has narrowed the scope for land disposals and proposes to consolidate the annual report requirements in EDMS to help permittees comply with the Permit.

4.3 Proposed Changes to Reporting Requirements

4.3.1 EDMS

Reporting through EDMS is the preferred reporting method for the Permit. However, alternative reporting methods may be considered on a case-by-case basis.

4.3.2 WOTUS Rule

A review of the existing Domestic Wastewater discharges reveals that most, if not all, discharge locations are mostly likely to waters of state because of the recent changes in the definition of WOTUS, (see Section 1.1.2). Additionally, the majority of Gravel Pit Dewatering, Excavation Dewatering, Hydrostatic Test Water, and Contained Water discharges were to wetlands, dry water features where no surface water is present (e.g. dry stream channel), or other surface waters that appear to be waters of the state based on the new WOTUS rule. Hence, discharges to state waters are anticipated to represent the majority of discharges authorized under the Pipeline GP.

4.3.3 Effects on Reporting and Proposed Plan

In order to ensure consistency in reporting, reporting for all discharges will be via EDMS. At this time, the EDMS ARs for the Permit are not linked to the ICIS database due to limitations on the number of outfalls available and the ability to easily fluctuate between WOTUS and state waters. For APDES discharges that are reported via EDMS, the Department will provide discharge information to the EPA upon request.

5.0 EFFLUENT LIMIT DEVELOPMENT

5.1 Basis for Permit Effluent Limits

18 AAC 83.015 prohibits the discharge of pollutants to WOTUS unless first obtaining a permit implemented by the APDES 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 WOTUS that require the discharger to (1) meet standards reflecting levels of technological capability, (2) comply with WQS, and (3) comply with other state requirements that may be more stringent.

In establishing permit limits, DEC first determines which technology-based effluent limitations (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. DEC then evaluates the effluent quality (See Section 3.0) expected to result from these technological controls to determine if the discharge could result in, or contribute to, exceedances of the water quality criteria in the receiving water. If the expected water quality of the effluent could reasonably be exceeded or contribute to an exceedance of applicable water quality criteria, a water quality based effluent limitation (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 Technology-Based Effluent Limits Evaluation

TBEL's include specific TBELs promulgated for industrial categories (ELGs) or TBELs that have been developed using case-by-case BPJ. The following sections discuss applicable TBELs evaluated during effluent limit development and ultimately compared to any WQBEL for the discharges for selecting the most stringent effluent limit (see Section 5.4).

5.2.1 Technology-Based Effluent Limits Using Effluent Limit Guidelines

National ELGs are developed by EPA 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 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 ELG's to the type of industrial facilities covered by the Pipeline GP and compared them to applicable ELGs. As a result of the review, DEC determined there is only one applicable TBEL based on ELGs in 40 CFR 436 for Gravel Pit Dewatering.

Gravel Pit Dewatering (Discharge 003): Effluent limits based on BPT for Gravel Pit Dewatering are published in 40 CFR 436 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.

5.2.2 Developing TBELs Using Case-by-Case Best Professional Judgment

Per Section 402 of the CWA, developing a case-by-case TBEL using 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 and waste characteristics are used to justify TBELs using case-by-case BPJ because the analysis has already been performed.

The treatment technologies used to remove sediment from Gravel Pit Dewatering, Excavation Dewatering, and Hydrostatic Test activities are 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 settleable solids with a limit of 0.2 mL/L. DEC is considering this TBEL for Gravel Pit Dewatering, Excavation Dewatering, and Hydrostatic Test Water discharges and carries these TBELs forward in this fact sheet to be compared to WQBELs.

Similarly, secondary treatment and disinfection TBELs for Domestic Wastewater based on minimum treatment requirements per 18 AAC 72.050 include effluent limits for BOD_5, TSS, pH, and the reduction or elimination of pathogenic organisms. These TBELs are the MDL for both BOD_5 and TSS of 60 mg/L and the AML of 30 mg/L; pH between 6.0 and 9.0 SU; and the reduction or elimination of pathogenic organisms to produce an effluent with an arithmetic mean that does not exceed 200 FC#/100 ml in a minimum of five effluent samples collected in 30 consecutive days and 400 FC#/100 ml in seven effluent samples collected on consecutive days. DEC is considering these TBELs for Domestic Wastewater discharges and carries these TBELs forward in this fact sheet to be compared to WQBELs.

5.3 Water Quality-Based Effluent Limits Evaluation

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. Per 18 AAC 83.435(a)(1) permits require development of WQBELs that "achieve water quality standards established under CWA Section 303, including State narrative criteria for water quality." For discharges applicable to the CWA via 18 AAC 83 (i.e. WOTUS), the water quality standard must be approved first by the EPA. However, when permitting discharges to State Waters, EPA approval is not necessary. DEC considers these nuisances when evaluating WQBELs for hybrid general permits.

Because there are no TBELs developed to compare to WQBELs for Drilling Fluids and Drilling Cuttings, Domestic Wastewater, and Mobile Spill Response, all WQBELs are automatically adopted as the most stringent limit for these discharges. For discharges where comparisons are available between TBEL's and WQBEL's, the most stringent limit is adopted per titled subsections for each Excavation Dewatering, Hydrostatic Test Water, and Contained Water in Section 5.4.

5.3.1 Drilling Fluids and Drilling Cuttings (Discharge 001)

While the Department determined that ELG-based TBELs do not apply to Type A Drilling Fluids and Drill Cuttings, there are numeric and narrative water quality criteria applicable as WQBELs for Drilling Fluids and Drill Cuttings (Discharge 001). Based on review of the

characteristics of the discharge of inadvertent releases of drilling fluids, the Department believes there is reasonable potential for turbidity to exceed, or contribute to an exceedance, of water quality criteria in the receiving water at the point of emergence of the release. No other parameters of concern are believed to have reasonable potential. However, the Department has established a prohibition of petroleum hydrocarbon discharges (oily sheen) and narrative limitations on residues to ensure water quality standards and existing uses are protected.

Turbidity: Per 18 AAC 70.020(b)(12)(B)(i), water quality criteria for turbidity in fresh water may not exceed 5 NTU above natural conditions when the natural turbidity is 50 NTU or less. The turbidity limitation may not have more than a 10% increase in turbidity when the natural turbidity is greater than 50 NTU and it is not to exceed a maximum increase of 15 NTU. Turbidity shall not exceed 5 NTU over natural conditions for all lake waters. These turbidity criteria are based on a four-day exposure period.

If an inadvertent release occurs, turbidity limits will apply either at the point of emergency or at the boundary of a chronic mixing zone if authorized. Because the turbidity criteria is in reference to the receiving water turbidity, the Permit will require daily turbidity monitoring of the effluent, upstream and at the point of emergence or 500 feet downstream of the discharge point that corresponds to the boundary of the mixing zone if authorized. If a release occurs during winter when observations of the receiving water is impacted due to ice cover, DEC may require coring through the ice to ensure compliance with permit limits. In addition, the permittee may use a four-day average for receiving water and effluent in order to demonstrate an excursion above the criterion has not occurred.

Petroleum Hydrocarbons, Oils, and Grease: The use of oil in Type A Drilling Fluids is prohibited. However, equipment may be present near drilling activities that could introduce petroleum products into the fluids. Per 18 AAC 70.020(b)(5)(A)(ii), petroleum hydrocarbons, oil, and grease may not cause a visible sheen upon the surface of the water. In the event of an inadvertent release of drilling fluids, the permittee must monitor for presence of a sheen at the mud pit using EPA Method 1617 and by observation of the water surface if possible (e.g., during periods of no ice cover). If the inadvertent release occurs during ice cover, the permittee may be required to monitor freshwater conditions below the ice to ensure compliance with the Permit. An observation of sheen automatically triggers corrective action to remove the sheen whenever and wherever it is observed.

Residues: Residues include floating solids, debris, sludge, deposits, foam, or other objectionable conditions. Per 18 AAC 70.020(b)(8), a discharge "may not, alone or in combination with other substances, cause a film, sheen, or discoloration on the surface of the water or adjoining shorelines; cause leaching of toxic or 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." During an inadvertent release of drilling fluids, the permittee must observe the receiving water for objectionable conditions attributable to residues. Residues will be applied as a standard narrative permit condition in the Pipeline GP for all discharges.

5.3.2 Domestic Wastewater (Discharge 002)

The limits imposed for Domestic Wastewater are derived from WQS and 18 AAC 72 – Domestic Wastewater Disposal (See Section 6.1.2). The appropriate water quality criteria to be considered in the reasonable potential analysis (RPA) for the discharge of domestic

wastewater to freshwater includes pH and FC bacteria per 18 AAC 70.020(b) and TRC per *Alaska Water Quality Criteria Manual for Toxic and Other Deleterious Organic and Inorganic Substances* (*Toxics Manual*). Because there are no mixing zone authorizations proposed for Domestic Wastewater, the RPA was conducted at the point of discharge to the receiving water. The Department has concluded that there is reasonable potential for these three parameters to cause or contribute to an excursion of their respective water quality criteria at to the point of discharge. Accordingly, these parameters will have limits based on their respective water quality criteria at the point of discharge. 18 AAC 72.050 also requires secondary treatment as the minimum treatment for the discharge of domestic wastewater from a treatment works to water. Secondary treatment applicable to discharges under the Pipeline GP is defined by 18 AAC 72.990(59)(A) and (C) and includes limits for 5-day biochemical oxygen demand (BOD_5) and TSS. Accordingly, BOD_5 and TSS also have limits. Lastly, because of promulgation of new criteria for E. Coli bacteria continued monitoring will be required to obtain adequate data to determine reasonable potential.

pH: Based on the use classification for water supply used for aquaculture per 18 AAC 70.020 (6)(A), pH must be no less than 6.5 SU and no greater than 8.5 SU.

FC Bacteria: FC bacteria are a non-pathogenic indicator species whose presence suggests the likelihood that pathogenic bacteria are present. The most stringent water quality criteria per 18 AAC 70.020(b)(2)(A)(i) provides protection for water supply designated for drinking, culinary, and food processing. The water quality criteria requires that in a 30-day period, the geometric mean may not exceed 20 FC#/100 ml, and not more than 10% of the samples may exceed 40 FC#/100 ml. The 40 FC#/100 ml is applied as a MDL while the 20 FC#/100ml is applied as an AML using a geometric mean.

TRC: The water quality criteria for TRC is listed under the *Toxics Manual* for the protection of aquatic life in freshwater as an acute concentration of 0.019 mg/L and a chronic concentration of 0.011 mg/L. The method detection limit for this parameter is 0.1 mg/L (100 µg/L) and will be used as the compliance level for this parameter.

Escherichia coli (E. Bacteria): Due to inadequate data during the review period, ongoing E. coli monitoring will be required during the Permit term to assess if there is reasonable potential for E. coli. Monitoring includes a trigger of 410 CFU/100 ml, where additional sampling will be required should any monthly result exceed the trigger to demonstrate compliance with the STV of 410 CFU/100 ml using the same approach as FC bacteria by demonstrating the calculated 90th percentile of the samples is less than or equal to 410 E. coli #/100ml for the monitoring period (see Section 11.5).

5.3.3 Gravel Pit Dewatering (Discharge 003)

Based on review of the characteristics of the discharge of gravel pit water, the Department believes there is reasonable potential for pH, turbidity, and settleable solids to exceed, or contribute to an exceedance, of water quality criteria in the receiving water and establishes WQBELs accordingly. No other parameters of concern are believed to have reasonable potential based on available information. However, the Department has established a prohibition of petroleum hydrocarbon discharges (oily sheen) and limitations on residues to ensure water quality standards and existing uses are protected. In addition, if an oily sheen is observed, then monitoring for TAH and TAqH is required to characterize the effluent and evaluate reasonable potential in subsequent permit reissuances. In addition, although turbidity did not show 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.

If a gravel pit being dewatered is within 1,500 feet of an existing DEC-identified[1] contaminated site or encountering previously unknown underground sources of contamination, to the permittee must coordinate with the CSP and comply with their requirements in addition to limitations imposed by the Permit. Because the CSP may impose requirements to comply with 18 AAC 70 and 18 AAC 72 for discharges and disposals, overlapping authority and duplication of regulatory oversight may be avoided with coordination between CSP and WDAP.

pH: Limits for pH discussed in Section 5.3.2 apply. pH must be no less than 6.5 SU and no greater than 8.5 SU.

Turbidity: Limits described in Section 5.3.1 for turbidity apply. Because the turbidity criteria is in reference to the receiving water turbidity, the Permit will require weekly turbidity monitoring of the receiving water and the effluent to demonstrate compliance with the turbidity limit at the point of discharge. If a mixing zone is authorized for turbidity, permittees must demonstrate compliance with the turbidity limit by monitoring the upstream receiving water turbidity, the effluent, and the receiving water 500 feet downstream of the discharge point that corresponds to the boundary of the mixing zone.

Note that if the discharge is to an area that is considered WOTUS or state waters but does not have a direct connection to an open waterbody such as a dry stream channel, tundra, or snow, then it may not be possible to measure turbidity in the receiving water to demonstrate compliance with the water quality criteria. In these situations where it is not possible to demonstrate compliance with the turbidity criteria, the turbidity limit is not applicable so long as there is no direct connection to a waterbody. In this case, turbidity monitoring of the effluent is not required. However, the permittee would still need to apply BMPs to prevent accumulation of sediment of sufficient depth to adversely impact sensitive vegetation (i.e., tundra). BMPs are also required to prevent sedimentation, erosion, and thermokarsting at the point of discharge and beyond.

Settleable Solids: Per 18 AAC 70.020(b)(9)(A)(i), there can be no measurable increase in concentrations of settleable solids above natural conditions, as measured by the volumetric Imhoff cone. The concentration of 0.2 ml/L is established as the smallest measurable increase using the Imhoff cone (i.e., the minimum reporting limit per EPA Standard Method 2540 F). Unlike turbidity, the limit of SS applies whether or not a receiving water sample is practicable in order to control accumulation of sediment (e.g., prevent excessive accumulation of sediment).

Petroleum Hydrocarbon, Oil and Grease: Per 18 AAC 70.020(b)(5)(A)(iii), discharges may not cause a film, sheen or other discoloration on the surface or floor of the waterbody or

[1] A contaminated site or groundwater plume with an "Active" or "Cleanup Complete-Institutional Controls" status identified by DEC Contaminated Sites Program. Contaminated sites information can be obtained at https://dec.alaska.gov/applications/spar/publicmvc/csp/search/.

adjoining shorelines. Surface waters must be virtually free from floating oils. 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 Permit establishes a monitoring requirement for TAH and TAqH whenever a sheen is observed.

5.3.4 Excavation Dewatering (Discharge 004)

Excavation Dewatering WQBELs are the same as those of Gravel Pit Dewatering. Based on the characterization section for Excavation Dewatering (Section 3.4) 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 approach for Excavation Dewatering within 1,500 feet of a known DEC-identified contaminated site is the same as for Gravel Pit Dewatering.

In addition to the WQBELs established, the Department is implementing additional requirements for Excavation Dewatering based on the compliance history and effluent characterization. In the 2018 Pipeline GP, the Department reduced the monitoring frequency for turbidity and settleable solids from daily to weekly based on a long history of compliance and assumed the weekly frequency would not result in violations of the WQS. However, this has proven to not be the case (see Section 3.4.1). Therefore, the Department is reverting to daily monitoring for turbidity and settleable solids. The Department recognizes that the turbidity criteria can be confusing; nevertheless it is part of the WQS and the criteria is there to protect waterbodies in Alaska. Further, based on the background monitoring results, turbidity is generally low in freshwater, which results in more stringent limits as well as a need to ensure adequate treatment BMPs to ensure compliance. In order to assist with interpreting the turbidity criteria, the Department has included a graph illustrating the criteria based on ambient water quality (ATTACHMENT B: Figure 1.). The initial step of Excavation Dewatering projects should be selection of the discharge/disposal location with preference given to uplands areas or wetlands without a FWS, which would most likely be considered land or waters or the state. Examples include, but are not limited to, dry stream channels, tundra, and non-FWS wetlands. While DEC does not make determinations on WOTUS, the recent court decision indicates wetlands with a FWS connected to a navigable stream will likely be WOTUS. Location and classification of receiving water will be an evolving issue during the Permit term. Regardless, selection of the discharge location often dictates monitoring requirements.

When discharging directly to a fresh waterbody, monitoring of the background turbidity should occur prior to discharge each day to establish the applicable criteria and determine appropriate treatment BMPs. The turbidity criterion is a chronic criterion based on a four-day exposure. Therefore, if a turbidity limit is exceeded, the permittee shall reevaluate treatment BMPs and submit daily monitoring reports with the noncompliance report such that the

Department can determine if a water quality violation occurred based on the average effluent and average criterion established using the receiving water turbidity.

The Department is also emphasizing a BMP revision requirement if the settleable solids limit is exceeded to control sediment for discharges to any location as exceeding the limit for settleable solids indicates a need to reassess BMPs (Section 11.3).

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. 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 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-foot 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: Per 18 AAC 70.020(b)(5)(A)(iii), 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. 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 Permit establishes a monitoring requirement for TAH and TAqH whenever a sheen is observed.

5.3.5 Hydrostatic Test Water (Discharge 005)

General Considerations: Hydrostatic test water characteristics for new pipelines or tanks 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. 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 source water requirements there is an overarching reasonable potential for pH and settleable solids to exceed, or contribute to an exceedance, of water quality criteria in the receiving water. The permit establishes WQBELs for these parameters accordingly. Although presence of hydrocarbons is not anticipated for new pipes, evaluating TAH and TAqH upon

observation of a sheen is a practicable approach to determine 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. 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. 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 and with appropriate stipulations included in the plan review. 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 how thorough existing pipelines or tanks are cleaned 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 excursions, 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 settleable solids (see Section 5.4);
- 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.

Settleable Solids: Settleable solids limits discussed in Section 5.3.3 apply.

Petroleum Hydrocarbon, Oil and Grease: As previously discussed, a discharge of a petroleum sheen is prohibited. Visual observations for sheen must be conducted daily during daylight when discharging. For Hydrostatic Test Water discharges from existing hydrocarbon-carrying pipelines, additional limits for TAH and TAqH are imposed. For hydrostatic testing of new hydrocarbon pipelines or pipelines that do not carry hydrocarbons (new or existing), the presence of a sheen triggers TAH and TAqH monitoring. The NOI process requires the applicant to disclose the nature of the pipeline being tested and the water source to ensure coverage under the Permit is appropriate and whether TAH and TAqH limits apply as follows:

TAH: Per 18 AAC 70.020(b)(5)(A)(iii) the petroleum hydrocarbon water quality criteria for the freshwater aquaculture water supply use 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 benzene, toluene, ethylbenzene, and total xylenes (sum of m, p, and o xylene).

TAqH: Per 18 AAC 70.020(b)(5)(A)(iii) the petroleum hydrocarbon water quality criterion for the freshwater aquaculture water supply use 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.

5.3.6 Stormwater (Discharge 006)

For Stormwater, WQS are met by implementing and maintaining appropriate stormwater BMPs. In general, the stormwater controls planned, developed, implemented, maintained, and updated by the permittee that are consistent with the provisions of Permit Sections 3.5 and 3.6 are considered to meet the stringent requirements of the Permit to ensure that the discharges do not cause or contribute to an excursion above any WQS (18 AAC 70).

5.3.7 Mobile Spill Response (Discharge 007)

Mobile Spill Response discharges must be treated using an approved treatment process or system (scrubber) capable of removing free-phase and dissolved-phase hydrocarbons. Once a process or treatment system has been approved (See Section 7.1.1.2), it can be adopted into the BMP Toolkit for subsequent and broad use under the Permit. Based on the characteristics of treated Mobile Spill Response fluids, DEC has determined that an appropriately designed and operated scrubber or treatment system, or properly implemented procedure, would not have reasonable potential to discharge dissolved petroleum hydrocarbons. Therefore, per 18

AAC 70.020(b)(5)(B)(i), DEC establishes a prohibition of discharging petroleum hydrocarbons (oily sheen, film, or discoloration) and if an oily sheen is observed, the permittee must immediately stop the discharge and take corrective actions to repair or maintain the equipment as part of the BMP Plan for the discharge.

5.3.8 Contained Water (Discharge 008)

Contained Water (Discharge 008) represents 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, contaminated secondary containment areas, 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 these discharges are not subject to the same industry codes, standards, and guidance as Hydrostatic Test Water and to maintain consistency with the NSGP. Previously, Hydrostatic Test Water was the conglomerate catchall category, but now Contained Water has replaced Hydrostatic Test Water as the catchall as it is better suited to handle a wide variety of situations where discharge has the potential to contain pollutants or possibly no pollutants (e.g., valve vaults or water tanks).

The evaluation of Contained Water discharge characteristics resulted in the determination that there is likely a reasonable potential for pH and turbidity to cause, or contribute to, an excursion of water quality criteria in the receiving water and the permit establishes WQBELs for these parameters accordingly. If chemical additions are needed for Contained Water for cleaning or other purposes, or if the source water includes previously unidentified constituents, BMPs must be developed based on a plan review conducted under 18 AAC 72 comparable to the chemical additions for new pipelines or tanks. Similar to hydrostatic testing for new infrastructure, the Department has established a prohibition of petroleum hydrocarbon discharges (oily sheen) and limitations on residues to ensure water quality standards and existing uses are protected. In addition, if an oily sheen is observed, then monitoring for TAH and TAqH is required to characterize the effluent and evaluate reasonable potential in subsequent permit reissuances.

The NOI process requires the applicant to disclose the nature of the contained water, the source of the contained water and any contaminants it may have been exposed to in order to ensure coverage under the Permit is appropriate. The use of source water with potential pollutants (e.g. settleable solids) or the addition of chemicals may require analytical testing and plan review.

The specific requirements are discussed below for each parameter.

pH: Limits for pH discussed in Section 5.3.2 apply.

Turbidity: Turbidity limits discussed in Section 5.3.3 apply.

Petroleum Hydrocarbon, Oil and Grease: As previously discussed, a discharge of a petroleum sheen is prohibited. Visual observations for sheen must be conducted daily during daylight when discharging. If a sheen is observed, then TAH and TAqH limits apply as follows:

TAH: Per 18 AAC 70.020(b)(5)(A)(iii) the petroleum hydrocarbon water quality criteria for the freshwater aquaculture water supply use 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 benzene, toluene, ethylbenzene, and total xylenes (sum of m, p, and o xylene).

TAqH: Per 18 AAC 70.020(b)(5)(A)(iii) the petroleum hydrocarbon water quality criterion for the freshwater aquaculture water supply use 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.

5.4 Most Stringent Limit Determination

For Gravel Pit Dewatering, Excavation Dewatering, Hydrostatic Test Water, and Contained Water the TBEL of 0.2 ml/l for settleable solids is more stringent than the WQBEL of no measurable increase above background conditions because the smallest measurable increase using the Imhoff cone is 0.2 ml/l, therefore the Department adopts the TBEL for sediment based on case-by-case BPJ (Section 5.2.2) for these discharges. For Gravel Pit Dewatering, the WQBEL for pH is more stringent and is retained. All other limits were developed using WQBELs.

6.0 APDES LIMITATIONS AND MONITORING REQUIREMENTS

6.1 Discharge Limitations and Monitoring Requirements

Pollutants in discharges must be controlled by meeting numeric limits, narrative limitations, developing and implementing BMPs, or combinations thereof. When applying effluent limitations to commingled discharges, the more stringent effluent limitations apply.

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. For each discharge, the following sections summarize the effluent limits, the monitoring requirements, and the BMPs that are intended to help maintain compliance. Stormwater requirements are discussed separately in Section 6.5 and land disposal requirements can be found in Section 7.2.

6.1.1 Drilling Fluids and Drilling Cuttings (Discharge 001)

In the event of an inadvertent release of drilling fluids and drill cuttings, the permittee must monitor the volume of drilling fluid lost and conduct a Static Sheen Test (EPA Method 1617) daily on the circulating drilling fluid system while the release occurs. In addition, the permittee must monitor turbidity and oil and grease visual sheen in the receiving water daily while there is a fluid loss. Lastly, BMPs must be developed and implemented to control the amount of drilling fluids discharged to the receiving water in order to comply with water quality criteria at the point of emergence or at the boundary of a 500-foot mixing zone if authorized. Table 15 provides the effluent limits and monitoring requirements for inadvertent releases of drilling fluids and drill cuttings.

Table 15: Effluent Limits and Monitoring Requirements for Drilling Fluids and Cuttings (Discharge 001)

Parameter (Units)	Effluent Limits	Monitoring Requirements		
		Frequency	Location	Sample Type
Flow Volume [1] (gpd)	Report	Daily	Effluent	24-hour Estimate
Ambient Turbidity (NTU)	Report	Daily	Upgradient [2]	Grab
Turbidity (NTU) No Mixing Zone	5 NTU above ambient [3, 5]	Daily	Point of Emergence	Grab
Turbidity (NTU) Mixing Zone	5 NTU above ambient [4, 5]	Daily	Downstream	Grab
Oil and Grease Visual [6]	No Discharge	Daily	Fluid System	Grab
Oil and Grease Visual	No Discharge	Daily	Receiving Water	Observation

Notes:

1. Monitor volume of drilling fluids lost during an inadvertent release daily while fluid loss occurs. Report maximum daily volume loss on the AR. Report total volume lost in the end of drilling report.
2. Upstream monitoring provides ambient turbidity measurement for compliance calculations.
3. If a mixing zone is not authorized, effluent turbidity may not exceed 5 NTU above ambient conditions at the point of emergence when the ambient turbidity is 50 NTU or less. When the ambient condition is greater than 50 NTU, turbidity shall not exceed more than a 10% increase up to a maximum increase of 15 NTU. Turbidity shall not exceed 5 NTU over natural conditions for all lake waters (See ATTACHMENT B: Figure 1). Report the receiving water value prior to discharge to compare to the maximum value for effluent. The permittee must develop BMP and QAPP to address determining compliance with water quality criteria based on receiving water turbidity.
4. If a mixing zone is authorized, turbidity may not exceed 5 NTU above ambient conditions, 500 feet downstream of the discharge when the ambient turbidity is 50 NTU or less. When the ambient condition is greater than 50 NTU, turbidity shall not exceed more than a 10% increase up to a maximum increase of 15 NTU. Turbidity shall not exceed 5 NTU over natural conditions for lake waters.
5. Compliance with turbidity limits may be demonstrated using a four-day average. The calculation method for applying a four-day averaging of turbidity must be provided in the QAPP per Section 11.5.2.2
6. Static Sheen Test per EPA Method 1617.

Daily observations must be recorded in operating logs kept onsite and made available upon request by DEC. Effluent limitation monitoring results shall be reported in the iin EDMS and submitted per Section 12.2.1. In addition, an End of Drilling Report must be submitted per Section 12.2.2.

6.1.2 Domestic Wastewater (Discharge 002)

Domestic wastewater discharges are typically continuous and monitored downstream of the last treatment unit prior to discharge. Wastewater must be disinfected to meet bacteria limits. If TRC is used, the effluent must be dechlorinated and monitored for TRC weekly. E. coli bacteria must be monitored quarterly to provide information for future DEC decisions. Table 16 summarizes the limits and monitoring requirements for Domestic Wastewater (Discharge 002).

Table 16: Effluent Limits and Monitoring Requirements for Domestic Wastewater (Discharge 002)

Parameter (Units)	Effluent Limits		Monitoring Requirements		
	AML	MDL	Frequency	Location	Sample Type
Flow Rate (gpd)	Report	Report	Daily	Effluent	Measure
pH [1] (SU)	6.5 ≤ pH ≤ 8.5		Weekly	Effluent	Grab
TRC [2] (µg/L)	11	19	Weekly	Effluent	Grab
BOD_5 (mg/L)	30	60	Monthly	Effluent	Grab
TSS (mg/L)	30	60	Monthly	Effluent	Grab
FC Bacteria [3, 4, 5] (FC #/100ml)	20	40	Monthly	Effluent	Grab
E. coli (CFU/100ml) [3, 6]	Report		Quarterly	Effluent	Grab

Notes:

1. The effluent limit for pH shall be no less than 6.5 or greater than 8.5. Report maximum and minimum for each month.
2. Monitoring for chlorine is not required if chlorine is not used as a disinfectant or introduced elsewhere in the treatment process. The TRC limit is measured immediately prior to discharge. 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.
3. All effluent FC bacteria and E. Coli bacteria average results must be reported as the geometric mean. When calculating the geometric mean, replace all results of zero, 0, with a one. The geometric mean of "n" quantities is the "n^{th}" root of the quantities. For example, the geometric mean of FC bacteria results of 10, 20, and 30 is $(10 \times 20 \times 30)^{1/3} = 18.2$.
4. Compliance with FC bacteria MDL using multiple samples is by demonstrating the calculated 90^{th} percentile of the samples is less than or equal to 40 FC #/100ml (See Section 11.5).
5. All bacterial limits are in the units of FC#/100 mL regardless of the method used. The permittee may use results in most probable number or CFU as FC#/100 mL.
6. Should any single E. Coli result exceed 410 E. coli CFU/100 mL, additional sampling shall occur to demonstrate compliance with the water quality criteria that not more than 10% of samples in 30-day period exceed 410 E. coli CFU/100 mL. This will be demonstrated by calculating the 90^{th} percentile of the samples is less than or equal to 410 E. coli CFU/100 ml during the quarterly monitoring period. Samples need not be collected over a single month to apply. (See Section 11.5).

Applicable Domestic Wastewater discharge flow rates will be determined based on design flow rates evaluated during plan review by the Department (See Section 7.1.1.1). The permittee must report effluent limits on an AR and submit them to DEC per Section 12.2.1. If multiple FC bacteria sample results are needed to comply with either the AML or MDL, the permittee should provide the individual FC bacteria sample results in the comment section of the AR and/or a cover letter. Compliance with the MDL for FC bacteria may be determined using a calculated 90th percentile of a dataset using spreadsheet equation (e.g., "=percentile.inc[array, k]") or hand calculation method. The same method applies for additional E. coli sampling to demonstrate compliance (Table 16, Note 4). The method must be included in the QAPP and the calculations must be uploaded into EDMS when submitting the AR.

6.1.3 Gravel Pit Dewatering (Discharge 003)

Gravel Pit Dewatering is anticipated to be a highly variable discharge with respect to the potential for high volumes at high velocities. Gravel Pit Dewatering discharges to freshwater must be controlled using BMPs to prevent sedimentation, erosion, or thermokarsting at the point of discharge and beyond. As discussed in the effluent limit development (Section 5.0), if discharges are to areas where receiving water turbidity sampling is not possible (e.g., dry

stream channels, snow, frozen tundra), the turbidity limit is not applicable. In this case, turbidity monitoring of the effluent is not required. DEC may authorize a 500-foot mixing zone for turbidity, where compliance with turbidity limits is based on measurements in the receiving water 500 feet downstream on the discharge site. Table 17 summarizes the limits and monitoring requirement for Gravel Pit Dewatering (Discharge 003).

Table 17: Effluent Limits and Monitoring Requirements for Gravel Pit Dewatering (Discharge 003)

Parameter (Units)	Effluent Limits	Monitoring Requirements		
		Frequency	Location	Sample Type
Flow Volume [1] (gpd)	Report	Daily	Effluent	Estimate or Measured
pH [2] (SU)	$6.5 \leq pH \leq 8.5$	Weekly	Effluent	Grab
SS [3] (mL/L)	0.2	Weekly	Effluent	Grab
Ambient Turbidity (NTU)	Report	Weekly	Upgradient [4]	Grab
Turbidity (NTU) No Mixing Zone	5 NTU above ambient [5, 6, 7]	Weekly	Effluent	Grab
Turbidity (NTU) Mixing Zone	5 NTU above ambient [5, 6, 7]	Weekly	Downgradient	Grab
Oil and Grease Visual [8]	No Discharge	Daily	Effluent	Visual
TAH [9] (µg/L)	Report	Once per event	Effluent	Grab
TAqH [9] (µg/L)	Report	Once per event	Effluent	Grab

Notes:

1. Record daily flow measurements, or estimates, in daily log. Report daily maximum for the month and total monthly volumes in the AR.
2. The effluent limit for pH shall be no less than 6.5 or greater than 8.5. Report maximum and minimum for each month.
3. As measured using Imhoff Cone.
4. 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, the limit is not applicable (N/A). In these situations, record "NODI T" for "Environmental Conditions – Monitoring Not Possible" in the AR and provide a comment indicating the reason an observation was not made (e.g., tundra, ice, or snow discharge).
5. Turbidity monitoring is not required for gravel pit water used to construct ice roads or pads or for dust suppression.
6. The permittee must meet water quality criteria at the point of discharge or at the boundary of a 500 ft mixing zone, if authorized Turbidity 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 B: Figure 1). 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.
7. Compliance with turbidity limits may be demonstrated using a four-day average. The calculation method for applying a four-day averaging of turbidity must be provided in the QAPP per Section 11.5.2.2.
8. Observed daily during daylight while discharging. Maintain daily log and provide to DEC upon request.
9. An observation of a sheen triggers monitoring for TAH and TAqH. The permittee must notify DEC and collect one sample per event when an observation of a sheen has occurred or when required.

Intermittent discharges from Gravel Pit Dewatering must be estimated or measured to determine daily flow volumes and be recorded in operating logs along with daily observations for sheen. Daily logs must be kept onsite and made available upon request by DEC. Effluent

limitations and monitoring results shall be reported on an AR and submitted per Section 12.2.1.

6.1.4 Excavation Dewatering (Discharge 004)

Like discharges from gravel pits, discharges from Excavation Dewatering are anticipated to be intermittent and highly variable with respect to the potential for high volumes and high velocity discharges with possible elevated turbidity and settleable solids. Because limits are based on the background turbidity present at the time of discharge, upgradient background monitoring must be done before commencing a discharge with an applicable turbidity limit. In addition, the pre-discharge background turbidity and resulting criteria should be used to inform what level of treatment BMPs should be used to achieve compliance. Accordingly, turbidity monitoring of the receiving water is required prior to implementing a treatment BMP and initiating discharges. Excavation discharges to freshwater must be controlled using treatment BMPs to prevent sedimentation, erosion, or thermokarsting at the point of discharge and beyond. The use of standardized sedimentation ponds and other enhanced BMPs may be implemented to control sediment and meet turbidity limits. BMPs can be used at will based on fluctuating conditions in the field. As with Gravel Pit Dewatering, if discharges are to areas where receiving water turbidity sampling is not possible, the turbidity limit is not applicable. However, effluent monitoring for settleable solids is always required. DEC may authorize a 500-foot mixing zone for turbidity, where compliance with turbidity limits is based on measurements in the receiving water 500 feet downstream of the discharge site.

The 2018 GP required permittees to report the total monthly volume in the comment section of the ARs. This seemed to create confusion and many permittees did not report the total monthly volume. During the Permit term, the Department added total monthly volume to the Excavation Dewatering ARs after which total monthly volume was reported. The Department is adding total monthly volume as a report only requirement to the Excavation Dewatering effluent limits to clarify this requirement.

Table 18 summarizes the limits and monitoring requirement for Excavation Dewatering (Discharge 004).

Table 18: Effluent Limits and Monitoring Requirements for Excavation Dewatering (Discharge 004)

Parameter (Units)	Effluent Limits	Monitoring Requirements		
		Frequency	Location	Sample Type
Flow Volume [1] (gpd)	Report	Daily	Effluent	Estimate or Measured
pH [2] (SU)	$6.5 \leq pH \leq 8.5$	Weekly	Effluent	Grab
SS [3] (mL/L)	0.2	Daily	Effluent	Grab
Ambient Turbidity (NTU)	Report	Daily	Upgradient [4]	Grab
Turbidity (NTU) No Mixing Zone	5 NTU above ambient [5, 6]	Daily	Effluent	Grab
Turbidity (NTU) Mixing Zone	5 NTU above ambient [5, 6]	Daily	Downgradient	Grab
Oil and Grease Visual [7]	No Discharge	Daily	Effluent	Visual
TAH [8] (µg/L)	Report	Once per event	Effluent	Grab
TAqH [8] (µg/L)	Report	Once per event	Effluent	Grab

Notes:

1. Record daily flow measurements, or estimates, in daily log. Report daily maximum and total monthly volumes in the AR. Total monthly volumes may be obtained by using a flow totalizer or estimated using pump flow rates and duration.
2. The effluent limit for pH shall be no less than 6.5 or greater than 8.5. Report maximum and minimum for each month.
3. As measured using Imhoff Cone.
4. 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, the limit is N/A. In these situations, record "NODI T" for "Environmental Conditions – Monitoring Not Possible" in the AR and provide a comment indicating the reason an observation was not made (e.g., tundra, ice, or snow discharge).
5. The permittee must meet water quality criteria at the point of discharge or at the boundary of a 500 ft mixing zone, if authorized. Turbidity 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 B: Figure 1). Report the receiving water value prior to discharge to compare to the maximum value for effluent. The permittee must develop BMP and QAPP to address determining compliance with water quality criteria based on receiving water turbidity.
6. Compliance with turbidity limits may be demonstrated using a four-day average. The calculation method for applying a four-day averaging of turbidity must be provided in the QAPP per Section 11.5.2.2.
7. Observed daily during daylight while discharging. Maintain daily log and provide to DEC upon request.
8. An observation of a sheen triggers monitoring for TAH and TAqH. The permittee must notify DEC and collect one sample per event when an observation of a sheen has occurred or when required due to coordination with CSP.

Intermittent discharges from Excavation Dewatering must be estimated or measured to determine daily flow volumes in gpd and be recorded in operating logs along with daily observations for sheen. The permittee must also provide monthly total volumes derived using a flow totalizer or estimated summation of pump flow rates multiplied by duration (e.g. ∑ flow (gallons per minute (gpm)) x time (minutes)). Daily logs must be kept onsite and made available upon request by DEC. Effluent limits and monitoring results shall be reported on an AR and submitted per Section 12.2.1. Discharges that require special consideration due to

site-specific concerns (e.g., flocculants or coagulants) may also require a plan submittal and site-specific conditions listed in plan approval.

6.1.4.1 Linear Projects

There are two general types of Excavation Dewatering projects, those at generally singular locations and linear construction projects spanning miles (e.g., cathodic protection installation, new pipeline construction, etc.). Although many of the requirements are similar for all Excavation Dewatering projects, the Department recognizes that the mobility and temporary nature of linear construction projects requiring Excavation Dewatering result in unique authorization needs and timelines when compared to Excavation Dewatering projects at a single location. Therefore, application/reporting processes have been developed in the Permit to accommodate these uniquely different scenarios (see Section 11.6).

Excavation Dewatering discharge projects are considered linear if excavations will occur at regular intervals for one mile or more. In the NOI, the permittee shall identify each segment of the project using "milepost" terminology on a site map including all DEC-identified contaminated sites within 1,500 feet of any point of the segment and the number of outfalls anticipated to be needed for each segment. The Department shall review the proposed area for outfalls and authorize outfalls within each segment that can be used as needed in the field within the area identified in the NOI and site plan. The permittee will field locate each outfall using Global Positioning System (GPS) coordinates and record the latitude and longitude to the nearest 15 seconds. The permittee must also retain an up to date site map onsite including the location of each outfall after it has been placed. An outfall cannot be relocated or used again after a discharge has occurred. However, the outfall may be relocated in order to avoid sediment accumulations over a small area around the outfall location. Site maps and logs must be updated within seven days of placing an outfall. All outfall locations and site maps must be reported on the AR.

6.1.5 Hydrostatic Test Water (Discharge 005)

Limitations for Hydrostatic Test Water (Discharge 005) are established on a tiered approach whereby hydrocarbon monitoring is triggered by observation of a sheen and limits are imposed when the contained water is known, or is likely, to have hydrocarbons present (e.g., existing oil pipelines or tanks). If the discharge volume is expected to be high (e.g., large pipeline construction), composite sampling requirements, and BMPs for sedimentation, erosion, and thermokarsting control are required.

Table 19 lists the effluent limits for Hydrostatic Test Water.

Table 19: Effluent Limits and Monitoring Requirements for Hydrostatic Testing Water (Discharge 005)

Parameter (Units)	Effluent Limits	Monitoring Requirements		
		Frequency	Location	Sample Type
Flow Volumes [1] (gpd)	Report	Daily	Effluent	Estimate or Measured
pH [2] (SU)	$6.5 \leq pH \leq 8.5$	Daily	Effluent	Grab
SS [3] (mL/L)	0.2	Per Discharge	Effluent	Grab
Oil and Grease Visual [4]	No Discharge	Daily	Effluent	Visual
TAH [5] (µg/L) New or Non-hydrocarbon	Report	Once per event	Effluent	Grab
TAqH [5] (µg/L) New or Non-hydrocarbon	Report	Once per event	Effluent	Grab
TAH [6] (µg/L) Existing Hydrocarbon	10	Per Discharge	Effluent	Grab or Composite
TAqH [6] (µg/L) Existing Hydrocarbon	15	Per Discharge	Effluent	Grab or Composite

Notes:

1. Record daily flow measurements, or estimates, in daily log. Report daily maximum for the month and total monthly volumes in AR.
2. The effluent limit for pH shall be no less than 6.5 or greater than 8.5. Report maximum and minimum for each month.
3. As measured using Imhoff Cone.
4. Observed daily during daylight while discharging. Maintain daily log and provide to DEC upon request.
5. Water from new oil and gas or non-oil and gas infrastructure is not anticipated to have dissolved hydrocarbons. However, an observation of a sheen triggers monitoring for TAH and TAqH. Permittee must collect one representative sample per event when an observation of a sheen has occurred and notify DEC.
6. Existing infrastructure that has known to been in contact with petroleum is anticipated to have dissolved hydrocarbons. Permittee may collect a single representative grab sample for volumes less than or equal to 500,000 gallons per day. Permittees discharging greater than 500,000 gallons must collect a composite sample of 8 grab samples collected at equal intervals during the discharge event as described in Section 11.5.2.3.

Discharges of Hydrostatic Test Water must be estimated or measured to determine daily flow volumes and be recorded in operating logs along with daily observations for sheen. Daily logs must be kept onsite and made available upon request by DEC. Effluent limits and monitoring results shall be reported on the AR and submitted per Section 12.2.1.

6.1.6 Mobile Spill Response (Discharge 007)

Mobile Spill Response water requires treatment prior to discharge. The applicant must submit treatment processes or system information that demonstrates adequate removal of dissolved hydrocarbons to the Department. The system may be approved and adopted in the BMP Toolkit along with other BMPs that ensure the system is properly operated and maintained to sustain treatment performance. Once the system has been approved and adopted, the permittee must monitor for sheen and report an estimated volume of Mobile Spill Response (Discharge 007) discharges annually. Table 20 provides the effluent limits and monitoring requirements for Mobile Spill Response.

Table 20: Effluent Limitations and Monitoring Requirements for Mobile Spill Response (Discharge 007)

Parameter (Units)	Effluent Limits	Monitoring Requirements		
		Frequency	Location	Sample Type
Flow Volume [1] (gpd)	Report	Daily	Effluent	Estimate
Oil and Grease Visual [2]	No Discharge	Daily	Effluent	Visual

Notes:

1. The permittee must track discharges greater than 25 gallons and report total volumes discharged in the AR.
2. A visual observation for sheen must be conducted daily during daylight while discharging.

The discharge of Mobile Spill Response is intended to be for collection and treatment of small volumes of snow, ice, or other impacted water. The permittee must monitor discharges for sheens and estimate and record discharge volumes and record in an operation log located at the discharge location. However, the permittee need only estimate and report on individual discharge volumes greater than 25 gallons. The permittee must provide the operating log to DEC upon request Effluent limits and monitoring results shall be reported on a monthly in the AR and submitted per Section 12.2.1.

6.1.7 Contained Water (Discharge 008)

Similar to Hydrostatic Test Water, limitations for Contained Water (Discharge 008) are established on a tiered approach whereby hydrocarbon monitoring is triggered by observation of a sheen and limits are imposed when the contained water is known, or is likely, to have hydrocarbons present (e.g., SCA water that cannot be discharged as Stormwater). An NOI requesting the discharge for Contained Water may require analytical testing to confirm the assumption on the critical effluent characteristics. The list of limitations below is potentially applicable to these preconceived contained waters. However, DEC may establish other limits by developing a Statement of Basis potentially including characterization, mixing zone authorization, unique limits, and an antidegradation evaluation. Upon conducting a 30-day public notice and addressing comments received, DEC may issue an authorization covering discharges of Contained Water that were not originally considered while reissuing the Permit. BMPs for sedimentation, erosion, and thermokarsting control are required.

Table 21 provides a generalized list of potential limits currently envisioned based on known Contained Water sources. See the definition of Contained Water for a full listing of potential known sources. the effluent limits for Contained Water.

Table 21: Effluent Limits and Monitoring Requirements for Contained Water (Discharge 008)

Parameter (Units)	Effluent Limits	Monitoring Requirements		
		Frequency	Location	Sample Type
Flow Volumes [1] (gpd)	Report	Daily	Effluent	Estimate or Measured
pH [2] (SU)	6.5 ≤ pH ≤ 8.5	Daily	Effluent	Grab
Turbidity (NTU) [3]	Report	Daily	Upgradient [3]	Grab
Turbidity (NTU) [4]	5 NTU above ambient [4]	Daily	Effluent	Grab
Oil and Grease Visual [5]	No Discharge	Daily	Effluent	Visual
TAH [6] (µg/L) New or Non-hydrocarbon	Report	Once per event	Effluent	Grab
TAqH [6] (µg/L) New or Non-hydrocarbon	Report	Once per event	Effluent	Grab
TAH [7] (µg/L) Existing Hydrocarbon	10	Per Discharge	Effluent	Grab or Composite
TAqH [7] (µg/L) Existing Hydrocarbon	15	Per Discharge	Effluent	Grab or Composite

Notes:

1. Record daily flow measurements, or estimates, in daily log. Report daily maximum and total monthly volumes in the AR.
2. The effluent limit for pH be no less than 6.5 or greater than 8.5. Report maximum and minimum for each month.
3. 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, the limit is N/A. In these situations, record "NODI T" for "Environmental Conditions – Monitoring Not Possible" in the AR and provide a comment indicating the reason an observation was not made (e.g., tundra, ice, or snow discharge). DEC may also include SS based on plan review (section 5.3.8).
4. The permittee must meet water quality criteria at the point of discharge. Turbidity 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 B. Figure 1).
5. Observed daily during daylight while discharging. Maintain daily log and provide to DEC upon request.
6. Contained Water from sources other than SCAs is not anticipated to have dissolved hydrocarbons. However, an observation of a sheen triggers monitoring for TAH and TAqH. The permittee must collect one representative sample per event when an observation of a sheen has occurred and notify DEC.
7. Contaminated SCA's or infrastructure that has been in contact with petroleum and cannot be discharged as Stormwater is anticipated to have dissolved hydrocarbons. The permittee may collect a single representative grab sample for volumes less than or equal to 500,000 gallons. Permittees discharging greater than 500,000 gallons per day must collect a composite sample of 8 grab samples collected at equal intervals during the discharge event per Section 11.5.2.3.

Discharges of Contained Water must be estimated or measured to determine daily flow volumes and be recorded in operating logs along with daily observations for sheen. Daily logs must be kept onsite and made available upon request by DEC. Effluent limits and monitoring results shall be reported monthly in the AR and submitted per Section 12.2.1.

6.2 Monitoring Frequency Reductions

DEC has the authority to consider reduced reporting and monitoring frequencies in reissued permits when the permitted facilities have a record of good compliance and pollutant discharges

at levels below permit requirements during the previous Permit term. DEC references EPA Interim Guidance for Performance-Based Reduction of NPDES Permit Monitoring Frequencies (Frequency Reduction Guide) to evaluate monitoring frequency reductions based on reporting and compliance during periods of review. The Frequency Reduction Guide uses statistically appropriate decision based on the observed ratio between long-term averages of the data to the AML. The Frequency Reduction Guide also provides other factors for consideration when reducing monitoring frequency including the size and type of facility, future data analyses needs, and other issues pertinent to each permit. Reductions in monitoring frequency for Hydrostatic Test Water and Contained Water were considered based on the Frequency Reduction Guide.

The data reviewed in Section 3.0 are considered monitoring reductions for short-term discharges on a case-by-case basis, using the factors presented in the Frequency Reduction Guide. Monitoring requirements are not considered effluent limitations under Section 403(o) of the CWA, and therefore anti-backsliding prohibitions are not applicable to reductions in monitoring frequencies.

6.2.1 Hydrostatic Test Water

Under the 2018 Pipeline GP, there were no limit exceedances for settleable solids for Hydrostatic Test Water discharges. All settleable solids samples were below the smallest measurable increase of 0.2 ml/L using the Imhoff cone (i.e., the minimum reporting limit per EPA Standard Method 2540 F). The source of sediment solids is from the source water used for each test and construction debris and testing once per discharge will provide sufficient characterization and compliance data. These factors, taken into consideration that all settleable solids results were below the smallest measurable increase, indicate that the monitoring frequency for settleable solids may be reduced. The Department therefore reduces the monitoring requirements for Hydrostatic Test Water (Discharge 005) from daily to once per discharge.

6.3 Additional Monitoring

Samples must be collected per a QAPP and analyzed using approved test methods as found in 40 CFR 136 adopted by reference in 18 AAC 83.010(f). A permittee has the option of taking more frequent samples than required under the Permit for evaluating monthly averages or pre-discharge effluent quality to help avoid a permit violation. However, samples collected prior to discharge may not be used for compliance sampling unless it can be adequately demonstrated to the Department that samples are representative of a sample that would otherwise be collected while discharging, and that samples are collected and analyzed using sufficient sensitive methods to comply with 40 CFR 136. 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 Whole Effluent Toxicity (WET) identification and reduction. If additional monitoring is required, DEC will provide the permittee or applicant the request in writing.

6.4 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 minimum level (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 results.

6.5 Stormwater (Discharge 006)

Stormwater authorizations are issued based on two different scenarios, construction, and operation. Although many of the requirements are similar, the Department recognizes that the mobility and temporary nature of construction projects (linear and fixed) result in unique authorization needs and timelines when compared to operation of permanent and stationary facilities. Therefore, application processes have been developed in the Permit to accommodate these uniquely different scenarios, (See construction versus operation and maintenance (Section 11.6).

6.5.1 Applicability

The Pipeline GP provides construction Stormwater coverage consistent with the most recent version of the Construction General Permit (CGP) and operational Stormwater coverage consistent with the most recent version of the Multi Sector General Permit (MSGP). Accordingly, allowable Stormwater discharges include:

- Stormwater discharges designated by DEC as needing a Stormwater permit under 40 CFR 122.26(a)(1)(v), 122.26(b)(14), or 122.26(b)(15)(ii).
- Stormwater discharges from support facilities or activities whether on-site, adjacent to, or off-site, provided it meets the other criteria set out in Section 6.5.1.1.

6.5.1.1 Limitations on Stormwater Coverage

The construction or operation of a significant pipeline may include supporting ancillary facilities and activities. Examples of common support activities and facilities for a significant pipeline include, but are not limited to, concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, borrow areas, road construction, equipment wash-down areas, temporary camp areas, pump or compressor stations, and airstrips. Stormwater discharges from these construction activities

and operation facilities may be eligible for coverage under the Permit if following conditions are met:

- The support activity or ancillary facility is directly related to the pipeline construction or operation;
- Stormwater will not be discharged to a waterbody classified on 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 construction projects or entities (e.g., commercial gravel pit operation or airport or an airstrip with more than 1000 departures per year); and
- Based on the standard industrial code (SIC) for the industrial support facility additional Stormwater monitoring ELGs would not be triggered due to level of activity (i.e., commercial flights) or volume of chemicals (i.e., ammonia) as if the facility was covered under the MSGP.

The intent of limiting coverage in this manner is to keep the Pipeline GP manageable by avoiding additional monitoring requirements that would be necessary to align the Pipeline GP with the MSGP or CGP. The Pipeline GP requires only visual monitoring of Stormwater discharges. 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 CGP or MSGP.

6.5.1.2 Oil and Gas Exemption

The following provision exempts the oil and gas industry, including associated construction activities, from federal NPDES Stormwater permits:

"The 1987 Water Quality Act added section 402(l)(2) to the Clean Water Act (CWA) specifying that Environmental Protection Agency (EPA) and States shall not require NPDES permits for uncontaminated Stormwater discharges from oil and gas exploration, production, processing or treatment operations, or transmission facilities." Section 323 of the Energy Policy Act of 2005 added a new provision to the 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." See 33 U.S.C. 1362(24) (EPA, 2014).

The above referenced oil and gas industry exemption for Stormwater coverage signifies that the oil and gas industry (including associated construction activities) is not subject to federal NPDES Stormwater permits in certain instances. Facilities that have had a discharge of Stormwater 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 Stormwater that contributes to a violation of a water quality standard [40 CFR 122.26(c)(1)(iii)]), are required to immediately obtain an APDES permit for Stormwater for the entire operating life of the facility. To avoid potential project delays in the event of discharging a reportable quantity during construction, DEC encourages applicants to seek coverage for this discharge.

6.5.1.3 Construction Stormwater

Construction Stormwater coverage and development and implementation of a SWPPP is required if the accumulative disturbed land area of earthwork activity is one acre or more. This coverage applies to both large spread construction of new pipelines and excavations to expose existing pipelines for inspection or repairs. For infrastructure under construction that will ultimately become a long-term operational facility (e.g., gas treatment plant and compressor stations), there will be a transition from Construction Stormwater coverage to Operational Stormwater coverage when the facility is completely constructed, the site has met stabilization thresholds, and is determined to ready for commissioning for operation. DEC anticipates applying discretion in determining when Construction Stormwater should be terminated so long as the requirements for terminating have been met for a specific facility, pipeline section, or spread. This consideration appears to be necessary to ensure there is no gap in coverage until operation coverage is permissible.

6.5.1.4 Operational Stormwater

Once a facility has been commissioned and operation commences, the permittee may apply for long-term Stormwater coverage and implement an operational SWPPP. The operational SWPPP may be similar to the construction SWPPP but the emphasis is less on sediment and erosion control and more on ensuring Stormwater does not come into contact with sources of contamination. Because completed facilities will likely operate for long periods of time, the term of the authorizations for Operational Stormwater will match the term of the Pipeline GP with the ability to administratively extend the coverage beyond the expiration date of the Permit.

6.5.1.5 Overlaps in Stormwater Coverage

One goal of providing both Construction and Operational Stormwater coverage is to help ensure there are no regulatory gaps. However, it is likely there will be some unavoidable overlapping of coverage during the transition of large spread construction to operations. DEC envisions being flexible in these situations since the difference between construction and operational SWPPP requirements are subtle and the objective of protecting waterbodies should be maintained. The permittee will be required to communicate during NOI revisions and end of construction season reporting to assist DEC in keeping track during these transition periods.

6.5.2 Stormwater Discharges

The Permit provides holistic coverage for allowable non-contact Stormwater discharges related to significant pipeline construction activities and operation facilities in a manner consistent with the CGP and MSGP. The following sections describe allowable non-Stormwater and non-allowable Stormwater discharges.

6.5.2.1 Allowable Non-Stormwater Discharges

The Permit conditionally allows certain non-Stormwater discharges associated with construction or operation activity for significant pipelines to be discharged as Stormwater, provided that the non-Stormwater component is in compliance with the SWPPP requirements in Section 11.4 and Sections 3.5 and 3.6 of the Permit. These discharges are not authorized if they are contaminated with pollutants (e.g., petroleum sheen) or do not

meet other water quality criteria. Listed below are non-Stormwater discharges authorized under the Permit if not contaminated (See Permit Definition of Contaminated Stormwater):

- Discharges from fire-fighting activities;
- Fire hydrant flushing;
- Waters used to wash vehicles where detergents are not used;
- Water used for dust control;
- Potable water including uncontaminated water line flushing;
- Routine external building or pipeline wash down that does not use detergents;
- 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;
- Uncontaminated condensate from air conditioners, coolers, and other compressors and from the outside storage of refrigerated gases or liquids;
- Uncontaminated, non-turbid discharges of ground water or spring water;
- Irrigation drainage and landscape watering;
- Foundation or footing drains where flows are not contaminated with process materials such as solvents or contaminated groundwater; and
- Other uncontaminated discharges meeting water quality criteria that the Department approves on a case-by-case basis.

6.5.2.2 Non-Allowable Stormwater Discharges

- Discharges that exceed water quality criteria (e.g., contaminated secondary containment water). If such a determination is made, the permittee must evaluate options for modifying the project and/or Stormwater control measures so that Stormwater discharges meet water quality criteria. If that is not possible, DEC may require the permittee to obtain an individual permit or authorization under an alternative general permit.
- Stormwater discharges associated with construction activity that are covered under an individual permit, discharges required to be authorized under an alternative general permit, and discharges from sites where any APDES permit has been or is in the process of being denied, terminated, or revoked are not authorized for coverage under the Permit.
- Stormwater discharges that are comingled with contaminated non-Stormwater sources or other unapproved non-Stormwater.
- Stormwater discharges to the land or ground water from a nondomestic wastewater treatment works using permanent Stormwater management controls are not required to obtain APDES coverage under the Permit.

6.5.3 Coverage

6.5.3.1 Construction Stormwater Permitting Scenarios

Authorization for Construction Stormwater coverage under the Pipeline GP may be either for one permittee or co-permittees, depending on the contractual mechanisms between the owner and general contractors (GC). Three possible scenarios exist that may affect implementation of the project and the SWPPP discussed in Section 11.4.1.1.

The permittee scenarios include:

1. Owner is sole permittee. The property owner designs, develops and implements SWPPPs and maintains onsite representation to oversee day-to-day operations of the GC that affect implementation of the SWPPP.
2. The GC is sole permittee: The owner hires a GC in either a design/build capacity or as part of the conventional owner-engineer-GC contractual mechanism. In the design-build scenario, the GC has both the control over design and specifications as well as over day-to-day construction activities. In the owner-engineer-GC scenario, the GC is contractually required to apply for coverage and implement the SWPPP along with day-to-day construction activities, but the owner-engineer retain control over the project design and specifications.
3. Owner and GC are co-permittees: This scenario is the same as the owner-engineer-GC scenario except the owner and GC both apply for Stormwater coverage and implement the SWPPP jointly. The owner-engineer retains control over any changes to the site plans, while the GC is responsible for day-to-day construction activities.

These three permitting scenarios are applicable to only Construction Stormwater coverage. Although all three scenarios are possible, DEC believes that sole owner or sole GC scenarios are the most likely situations. See Section 11.4.1 and Permit Appendix C Definitions for more information.

6.5.3.2 Significant Pipeline Spread Construction Activities

During the initial construction of a significant pipeline, construction activities and supporting pipeline facilities are considered to be a part of a common plan of development. During the initial construction of a significant pipeline, supporting industrial facilities associated with the construction or operation of the pipeline may be eligible for Construction Stormwater coverage under the under the Permit (see Section 6.5.1.3). Stormwater coverage is available for allowable Stormwater and allowable non-Stormwater discharges (Section 6.5.2) which are part of the common plan of pipeline development up to the time of operation.

Pollutants that could be discharged in Stormwater are controlled through development and implementation of a SWPPP using appropriate BMPs from the BMP Toolkit (see Section 11.3.3) to minimize discharge of pollutants, including sediment, in Stormwater both during and after construction activities to help ensure protection of surface water quality during precipitation events. Appropriate controls are selected and implemented from the BMP Toolkit based on site suitability and implementation of generally accepted engineering design criteria and manufacturer specifications. Selection and implementation of BMPs could also be affected by seasonal or climate conditions. Developing a SWPPP (see Section 11.4.2), identification of potential pollutant sources, and selection of BMPs (Section 11.4.2.2), are critical components for ensuring Stormwater does not come into contact with contaminants that are discharged to receiving waters.

6.5.3.3 Pipeline Maintenance Activities

Once operation of the pipeline facilities commences, all earthwork activities to support operations (e.g., regular pipeline maintenance or facility improvements) that impact one acre or more, cumulatively, will require Construction Stormwater coverage under the Permit. However, the NOI and authorization procedures will not be as burdensome as large

spread pipeline construction and can be implemented on an as needed basis. Regardless of size, permittees should implement their BMPs Toolkit using the appropriate site-specific sediment and erosion controls and other BMP controls to prohibit contact with potential sources of contamination and minimize the potential for pollutants to be discharged with Stormwater.

6.5.4 Operational Stormwater Coverage

Once the constructed pipeline commences operation, industrial facilities that are permanent and integral to the operation of the pipeline may be eligible for long-term Stormwater coverage as an operating facility. Upon commissioning of the facility and before commencement of operations, permittees should apply for Stormwater coverage (consistent with the MSGP) under the Pipeline GP (Permit Section 3.6). Similar to Construction Stormwater, the permittee is required to develop and implement a SWPPP for fixed operating facilities. Because of the permanent nature of these facilities, the term of operation Stormwater coverage matches the five-year term of the Pipeline GP.

7.0 PLAN SUBMITAL AND LAND DISPOSAL REQUIREMENTS PER 18 AAC 72

7.1 Regulatory Basis

Requirements in 18 AAC 72 - Wastewater Disposal provide the regulatory authority to include land disposals in the Permit and the ability to conduct plan reviews that may help ensure Permit limitations and that WQS are attained for APDES discharges authorized by the Permit (See Section 7.1.1). Because discharges authorized under the APDES Program must follow public process procedures in 18 AAC 83 and 18 AAC 15, the plan reviews cannot establish different or new limits for discharges this would circumvent these procedures. However, the same is not true for land disposals. Plan reviews conducted for land disposals can be used to establish conditions as necessary to protect WQS per statutory and regulatory authority. The following sections describe the plan reviews for obtaining authorization for domestic and nondomestic discharges or land disposals under the Permit.

7.1.1 Plan Submittals to Support Domestic and Nondomestic Discharges and Disposals per 18 AAC 72

Authorizations under the Permit for domestic and nondomestic discharges to waters of the U.S and disposals into or onto lands of the State may require plan submittals per the most recent version of 18 AAC 72. Submittals are often necessary to provide reasonable assurance that treatment systems are able to achieve limits as authorized by the Permit and comply with WQS. Submittals may be necessary to address unique situations or site-specific conditions that affect authorizations under the Permit. Treatment and cleaning chemicals, processes, or systems may also require submittals to the Department prior to adoption into the BMP Toolkit. Lastly, DEC anticipates plan submittals are likely to be required for domestic wastewater treatment systems (e.g., modularized packaged treatment systems) for construction camps associated with a large pipeline project prior to receiving authorization under the Permit. When an associated plan review is required, the applicant should submit the NOI well in advance of the project to ensure this process is completed in time to meet the project schedule.

7.1.1.1 Plan Submittals to Support Domestic Wastewater Discharges (Discharge 002)

First time applicants or existing permittees who are constructing a domestic wastewater system (graywater, black water or commingled black and graywater) or conducting major renovations to their domestic wastewater system may be required to submit plans to the Department to evaluate attainment of limits, compliance with WQS, and applicability for coverage under the Permit.

DEC anticipates that construction of a large pipeline will require authorization of many domestic wastewater treatment systems over the course of the project that will vary in size, ramping up at the beginning and winding down at the end. To facilitate streamlined and flexible permitting, DEC recommends that permittees consider modularized treatment systems that can be approved as a prototypical design and easily relocated during the project to meet fluctuating camp capacities. Alternatively, evaluating non-prototypical designs that are individual and unique will likely require considerably more coordination in advance of the project.

If domestic wastewater is commingled with nondomestic wastewater (e.g., drinking water filter backwash) there may be POCs that were not addressed in the Permit. This commingling could result in the discharge not being applicable for coverage under the Permit because the POCs were not considered in the Permit during the public process. For this reason, WDAP encourages applicants to coordinate Domestic Wastewater submittals that include drinking water backwash with drinking water plan reviews concurrently. In these situations, the wastewater plan review may help determine whether coverage under the Permit is applicable given the nondomestic waste stream. Alternatively, this early coordination for plan review may lead to development of an individual permit as discussed in Section 1.2.

7.1.1.2 Plan Submittals to Support Nondomestic Wastewater Discharges (Discharges 003, 004, 005, 007, and 008)

In general, a plan review will not be required for nondomestic discharges covered in this Permit. However, 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 nondomestic 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 a 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 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; and
- Source control and chemical use stipulations so not to cause, or contribute to, an excursion of a water quality criterion.

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

The land 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, Stormwater, 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). 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 with chemical additions that could affect the use of the groundwater. As discussed in Section 1.1.2, when there may be discretion, DEC will narrow the application of land disposal in favor of expanding discharges to waters. Under the reissued Pipeline GP, land disposal is primarily based on the ability of the disposal location to infiltrate to groundwater (i.e., soil composed of largely 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.

In order 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 communicate with DEC to discuss plan review objectives and scope of the review prior to submitting 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); and
3. Disposal will not result in an adverse effect to nearby sensitive receptors (e.g., water wells, wetlands, or waterbodies) or known contaminated groundwater.

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. In this case, 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 Excavation Dewatering 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 22 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 22: Limitations and Monitoring Requirements for Land Disposal

Parameter (Units)	Effluent Limits	Monitoring Requirements		
		Frequency	Location	Sample Type
Flow Volume [1] (gpd)	Report	Daily	Effluent	Estimate or Measured
Oil and Grease Visual [2]	No Discharge	Daily	Effluent	Visual
Settleable Solids [3, 4] (mL/L)	0.2	Weekly	Effluent	Grab

Notes:

1. Flow 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 per Section 12.2.1
2. Visual observations for sheen must be conducted daily during daylight when discharging.
3. As measured using Imhoff Cone.
4. For Excavation Dewatering on case-by-case basis per the authorization letter.

The limits and monitoring requirements in Table 22 are based on typical activities and may not account for unique situations, such as situations where chemical additions may be involved. In this or similar situations, a plan submittal may be required to ensure applicability for obtaining coverage for disposal under the Permit is met or that public and private water systems, human health, and the environment are adequately protected. For example, if the disposal involves reliance on the infiltration capacity of the soil to dispose of a significant volume of wastewater, the applicant may be required to demonstrate that adequate infiltration capacity exists in the seepage pit, french-drain, or other subsurface disposal system. Land disposals that require special consideration due to site-specific concerns or chemical additions (e.g., flocculants, coagulants, biocides, or antifreeze) may also require a plan submittal and site-specific conditions listed in an approval. The Department may also allow plan reviews in certain situations to support adoption of treatment/cleaning chemicals, processes, and systems into the BMP Toolkit. Once approved and adopted, these BMPs help ensure compliance with the Permit (See Section 7.1.1.2). The following sections describe some of the atypical activities that may trigger additional nondomestic submittals to obtain permit coverage or additional BMPs, monitoring, or reporting requirements.

7.2.1 Unique Considerations for Gravel Pit and Excavation Dewatering (Disposals 003 and 004)

BMP and Monitoring Requirements: Land disposals shall be free of an oil sheen and disposed water shall not have a film or discoloration. The permittee must develop and implement a site-specific BMP Plan that addresses sedimentation, erosion, thermokarsting, maintaining infiltration, or limiting flows to ensure the disposal does not enter WOTUS. as that would require an NOI submittal for coverage as a discharge. In addition, the permittee must monitor for flow and sheen and report at least annually to DEC (See Section 12.1).

Trigger Conditions: If the disposal area is within 1,500 feet of a known DEC-identified contaminated site, the applicant must also coordinate with CSP prior to land disposal regarding only the parameters of concern in the available site characterization report. At this time, DEC WDAP does not require baseline testing for contaminants of emerging concern (e.g., Perfluorooctane sulfonic acid/ Perfluorooctanoic acid (PFOS/PFOA). However, if there is a reasonable expectation that an emerging chemical may be present due to documented use of the chemical at that location (i.e., testing of aqueous film forming foam (AFFF)), CSP may require baseline sampling. Note that there currently are no approved criteria for PFOS/PFOA for discharges that the DEC may use to establish limits. However, disposals to groundwater may transcend multiple DEC programs and there is currently no clear consensus of how to manage this situation. The preference of DEC WDAP is to put the contaminated water back into the plume in a manner that does not spread the contamination further. Regardless, the presence of PFOS/PFOA at a facility may require additional coordination with various DEC programs.

Although the use of sedimentation ponds does not require Department approval, the use of flocculants or coagulants in settling ponds that were not previously approved for use in the BMP Toolkit would require an NOD and submittal of the proposed treatment process for approval. Other unique situations include, but are not limited to, disposal adjacent to public or private water wells, leach fields, or other infrastructure that should be protected to ensure protection of public health and the environment.

7.2.2 Unique Considerations for Hydrostatic Test Water and Contained Water (Disposals 005 and 008)

BMP and Monitoring Requirements: Land disposals shall be free of an oil sheen and disposed water shall not have a film or a discoloration. The permittee must develop and implement a site-specific BMP Plan that addresses sedimentation, erosion, thermokarsting, maintaining infiltration, or limiting flows to ensure the disposal does not enter WOTUS that would require an NOI submittal for coverage as a discharge. In addition, the permittee must monitor for flow and sheen and report at least annually to DEC (See Section 12.1).

Trigger Conditions: If the disposal area is within 1,500 feet of a known DEC-identified contaminated site, the applicant must also coordinate CSP regarding only the parameters of concern in the available site characterization report. At this time, DEC WDAP does not require baseline testing for contaminants of emerging concern (e.g., PFOS/PFOA). If the use of antifreeze or other treatment/cleaning chemicals is proposed, the applicant may be required to submit plans prior to receiving authorization under the Permit. Other unique situations include, but are not limited to, disposal adjacent to public or private water wells, leach fields, or other infrastructure that should be protected to ensure protection of public health and the environment.

8.0 DISCHARGES TO RECEIVING WATERS

The Pipeline GP will authorize discharges to fresh WOTUS located in the State of Alaska as defined in 18 AAC 83.990(77).

8.1 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 limitations 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 water body is expected to achieve. The numeric and/or narrative water quality criteria are the criteria deemed necessary by the State to support the beneficial use classification of each waterbody. The antidegradation policy ensures that the beneficial uses and existing water quality are maintained.

The freshwater receiving waters are classified in the WQS at 18 AAC 70.020(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. Per 18 AAC 70.050, freshwater in the State of Alaska is 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 that several freshwater streams in the state have been reclassified as listed under 18 AAC 70.230(e) or have site specific water quality criteria defined in 18 AAC 70.236(b). However, the limits and conditions for discharges contained in the Pipeline GP are based on protecting all freshwater and groundwater 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 Pipeline GP or submit an application for an individual permit based on reclassified uses defined in 18 AAC 70.230(e).

8.2 Mixing Zones

The 2018 Pipeline GP included authorization of a 500-foot mixing zone for certain discharges. Three discharges have been identified to likely exceed water quality criteria for turbidity and residues at the point of discharge: Drilling Fluids and Drill Cuttings (Discharge 001), Gravel Pit Dewatering (Discharge 003), and Excavation Dewatering (Discharge 004). The following sections discuss the authorization of mixing zones to freshwater streams with sufficient dilution capacity to meet water quality criteria at the boundary of the mixing zone.

Drilling Fluids and Drill Cuttings (Discharge 001): HDD is a process that allows for a trenchless pathway under a sensitive or otherwise difficult to cross physical feature such as a stream, wetland, or road. While HDD is considered to be less intrusive than traditional open-cut trenching (where habitats sustain direct soil disturbance), an inadvertent release of drilling fluids to a waterbody is possible and would be considered a discharge applicable to the Permit. Inadvertent releases arise when drilling fluids are forced through the subsurface substrate to the surface and a discharge of drilling fluids and drill cuttings (native soils) daylights. Typically, these releases occur in shallow, highly permeable substrate during the entrance and exit phases

of drilling where overburden pressure may be insufficient to withstand the pressure of circulating fluids.

If an inadvertent release occurs in a stream, the resulting discharge is anticipated to exceed or contribute to an exceedance of water quality criteria for turbidity and residues. Therefore, a mixing zone appears to be necessary as a contingency to inadvertent releases from HDD at streams crossings. If a mixing zone is not requested or cannot be authorized for a specific location, then water quality criteria must be met at the point of emergence of the fluids in the streambed. In the event of an inadvertent release, implementation of BMPs is expected to control or reduce the fluid loss to comply with Permit conditions.

Gravel Pit Dewatering (Discharge 003): During construction or operation of a pipeline, gravel pits may require dewatering to gain access to the gravel due to precipitation or ground water infiltration. The Department has identified turbidity and residues as POC's which have the potential to exceed water quality criteria at the point of discharge. Similar to HDD, 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 ground water infiltration. Excavation Dewatering is preferentially discharged to locations that do not have an open water surface (e.g., wetlands, tundra, dry river channels, frozen conditions) but are considered WOTUS or other state waters that are not WOTUS. 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 and residues prior to discharge. Accordingly, similar to Drilling Fluids and Drill Cuttings (Discharge 001) and 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.

Mixing Zone Size Determination: 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 APSC under AK0050563, extensive data from placer mining dewatering operations, and mixing zones authorized in other states to evaluate a mixing zone size.

The Department conducted a review of 154 mixing zones for turbidity from placer mines operating between 1997 and 2012. For discharges up to 200 gpm to receiving waters of varying sizes and ambient turbidity conditions, 77 % of the receiving waters provided adequate dilution to support greater than 25 NTUs in the discharge, 42% supported greater than 50 NTU's, 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 NTU's, however there was one instance where the turbidity was 705.7 NTU's 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 the 2018 Permit term, field reports, and institutional knowledge, the authorized 500-foot mixing zone 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-foot mixing zone size in the Permit.

Mixing Zone Application and Review Process: The Permit is intended to cover various locations throughout the state and may include WOTUS and state waters; exact locations of potential discharges are not known until applications are received. Therefore, the Department uses empirical data from other statewide permits with mixing zones to inform application procedures. The application process requires an NOI, where an applicant provides any requested receiving water and discharge data in the mixing zone section of the form. The NOI is not a mixing zone application, per se. 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 may be approved. Mixing zones may also be approved for linear projects with floating outfalls (Section 6.1.4.1) for a specific receiving water only.

The mixing zone section of the NOI form requires identification of any site-specific anadromous fish spawning or resident fish spawning redds for 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. This information must demonstrate mixing zones requested do not overlap with any of these spawning habitats [18 AAC 70.240(e)(1) or could have adverse impacts on these rearing and spawning habitats [18 AAC 70.240(e)(2)]. This demonstration may be achieved by consulting a variety of resources such as the *Catalog of Waters Important for the Spawning, Rearing or Migration of Anadromous Fishes* and its associated *Atlas* or by requesting a site-specific determination through Alaska Department of Fish and Game (DF&G).

Mixing zone requests require information that demonstrates compliance can be consistently achieved at the boundary of the mixing zone, regardless of seasonal or annual fluctuations. Mixing zone authorization requires an applicant to demonstrate that a waterbody has sufficient assimilative capacity to meet water quality criteria at the boundary of a 500-foot mixing zone. Supporting data includes an estimate of ambient turbidity at the time of discharge, discharge flow rate, discharge volume, stream depth, width, and slope at the discharge location, and the low stream flow estimate using the seven-day low stream flow data based on a 10-year return period (7Q10) per 18 AAC 70.240(l)(2). If a discharge occurs seasonally, the 7Q10 can be estimated for the appropriate seasonal period. Low stream flow data could be obtained from applicant field investigations, gauge stations, or other method.

Mixing zones may only be authorized by the Department after a review of all information demonstrates conditions for obtaining a mixing zone have been met. In locations where there is inadequate dilution for the discharge to meet water quality criteria or the waterbody is listed as

impaired for sediment or turbidity in *Alaska's Final 2022 Integrated Water Quality Monitoring and Assessment Report, September 15, 2022 (2022 Integrated Report*), or the most recent version, a mixing zone may not be authorized under the Pipeline GP.

Appendix C, Mixing Zone Analysis Checklist, outlines criteria per mixing zone regulations that must be considered when the Department reviews an application for mixing zones. These criteria include the size of the mixing zone, treatment technology, and existing uses of the waterbody, human consumption, spawning areas, human health, aquatic life, and endangered species. The following summarizes the Department's regulatory mixing zone analysis:

8.2.1 Size

Per 18 AAC 70.240(k), the Department has determined the mixing zone sizes for the discharge of Drilling Fluids and Drill Cuttings (Discharge 001), Gravel Pit Dewatering (Discharge 003), and Excavation Dewatering (Discharge 004) (as described above) are appropriately sized based on extensive data collected from similar discharge activities in similar receiving waterbodies. Mixing zone applications accept stream flow data consistent with 18 AAC 70.240(l) to calculate dilution capacity and to determine that a stream has sufficient assimilative capacity for discharges from these activities to meet water quality criteria at the boundary of the mixing zone (Section 8.2). Based on the nature of pollutants anticipated to exceed water quality criteria within the boundary of the mixing zone (turbidity and residues), no lethality to passing organisms is expected. Lastly, inadvertent releases of any drilling fluids discharged 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 8.2.4 and 8.2.6).

8.2.2 Treatment Technology

Per 18 AAC 70.240(c)(1) as amended through August 14, 2006, the Department must determine if "an effluent or substance 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," before authorizing a mixing zone.

Applicable "highest statutory and regulatory requirements" are defined by three parts in 18 AAC 70.240(c)(1)(A), (B), and (C), which are:

- Any federal TBEL identified in 40 CFR 125.3 and 40 CFR 122.29, as amended through July 1, 2005, adopted by reference at 18 AAC 83.010;
- Minimum treatment standards in 18 AAC 72.050; and
- Any treatment requirement imposed under another state law that is more stringent than the requirement of this chapter.

The first part of the definition includes all applicable federal technology-based ELGs. There are no applicable ELGs for Drilling Fluids and Drill Cuttings or Excavation Dewatering as discussed in Section 5.2.1. Gravel Pit Dewatering does have applicable ELG's for pH based on BPT per 40 CFR 436 Subpart C – Construction Sand and Gravel Subcategory (Section 5.2.1). However, the Permit adopts the WQBEL for pH, which is more stringent. DEC also considered adopting a TBEL for SS for both Gravel Pit 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 Pit or Excavation Dewatering in the Permit.

The second part of the definition per 18 AAC 72.050 refers to the minimum treatment requirements for Domestic Wastewater. Although discharges of Domestic Wastewater authorized under the Permit will receive minimum treatment, this part of the definition does not apply because the Permit does not include mixing zones for Domestic Wastewater.

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, 18 AAC 72 and 18 AAC 83. The Permit imposes conditions, restrictions, and BMP requirements which are consistent with these regulations. 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. Domestic and nondomestic wastewater treatment systems must comply with the most recent version of 18 AAC 72, including chemical or mechanical treatment mechanisms (e.g., flocculants, coagulants, and filtration systems) used for Excavation Dewatering and Gravel Pit Dewatering to ensure methods are appropriate and effective as pollutant controls.

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.

8.2.3 Existing Use

Per 18 AAC 70.240(c)(2), the mixing zones have been appropriately sized to fully maintain and protect existing receiving water uses. In order to ensure the discharge neither partially nor completely eliminates existing uses of the waterbody as a fishery, the individual authorizations may impose time-area prohibitions of discharges at a time or location that could preclude or limit established processing activities or commercial, sport, personal use, or subsistence fish or shellfish harvesting. The applicant is required to inform the Department of any time-area restrictions imposed by other agencies (i.e., DF&G) during the NOI process. Discharge and receiving water monitoring upgradient and at the boundary of the mixing zone is required to ensure the biological integrity of waterbody is maintained and fully protected under the terms of the Permit per 18 AAC 70.240 (c)(2) and (3).

8.2.4 Human Consumption

Per 18 AAC 70.240(d)(6), the pollutants discharged cannot produce objectionable color, taste, or odor in aquatic resources harvested for human consumption; nor can the discharge preclude, or limit established processing activities or commercial, sport, personal use, or subsistence fish and shellfish harvesting per 18 AAC 72.240 (c)(4)(C). Discharges from Excavation Dewatering, Gravel Pit Dewatering, and inadvertent releases from Drilling Fluids and Drill Cuttings do not contain pollutants that are expected to produce objectionable color, taste, or odor in aquatic resources. See Section 8.2.3 for time-area prohibitions and Section 8.2.5 for spawning area prohibitions to protect fishery uses.

8.2.5 Spawning Areas

Per 18 AAC 70.240(e)(1) and (2), a mixing zone will not be authorized in lakes, streams, rivers, or other flowing freshwaters in spawning area of any of the five species of Pacific salmon found in the state or be allowed to adversely affect the present and future capability of an area to support spawning of these species. Per 18 AAC 70.240(f), a mixing zone will not be authorized in a spawning area for the following resident fish: Arctic Grayling; northern pike; lake trout; brook trout; sheefish; burbot; landlocked coho salmon, chinook salmon, or sockeye salmon; anadromous or resident rainbow trout, Arctic char, Dolly Varden, whitefish, or cutthroat trout.

Applicants must identify and document resident and anadromous fish water bodies relative to any mixing zone location requests and provide information about any juvenile or spawning habitat within those areas, as well as fish passage, migratory corridors, timing restrictions imposed by other agencies, and other receiving water characteristics. DF&G involvement is recommended to ensure accuracy of the mixing zone application information provided. All mixing zones are protective of the fish and other aquatic life in the receiving water. A mixing zone may not be authorized in a known spawning area for anadromous fish or resident fish spawning redds.

8.2.6 Human Health

Per 18 AAC 70.240(d)(1), the mixing zones must not result in pollutants discharged at levels that will bioaccumulate, bioconcentrate, or persist above natural levels in sediments, water, or biota, or at levels that otherwise will create a public health hazard through encroachment on a water supply or contact recreation uses.

Per 18 AAC 70.240(d)(2) pollutants discharged must not present an unacceptable risk to human health from carcinogenic, mutagenic, teratogenic, or other effects as determined using a risk assessment method approved by the Department and consistent with 18 AAC 70.025, which indicates the lifetime incremental cancer risk level is 1 in 100,000 for exposed individuals. There are no cancer-causing pollutants being discharged at concentrations that present unacceptable risks.

As discussed in Section 8.2.4, pollutants discharged will not produce objectionable color, taste, or odor in aquatic resources harvested for human consumption. Furthermore, due to the time-area restriction around fishery lease areas, the pollutants discharged will not preclude or limit established processing activities of commercial, sport, personal-use, or subsistence fish and shellfish harvesting. An analysis of the wastewater characteristics of inadvertent releases from Drilling Fluids and Drill Cuttings, Gravel Pit Dewatering, and Excavation Dewatering indicate no direct or indirect human health concerns from discharges and established BMP controls, limitations, and monitoring are protective of human health.

8.2.7 Aquatic Life and Wildlife

Per 18 AAC 70.240(c)(4)(A, D, E, and F), pollutants for which the mixing zones will be authorized will not result in an acute or chronic toxic effect in the water column, sediments, or biota outside the boundaries of the mixing zone; result in a reduction in fish or shellfish population levels; result in permanent or irreparable displacement of indigenous organisms; or form a barrier to migratory species or fish passage. In addition, the mixing zone must not result in undesirable or nuisance aquatic life per 18 AAC 70.240(d)(5).

The temporary exceedance in turbidity and residues will not result in lethality to aquatic life or wildlife or result in an acute toxic effect at the end of the pipe. Therefore, no acute mixing zones are necessary. The mixing zones are determined using critical effluent and receiving water conditions and are as small as practicable. Receiving waters which do not have sufficient assimilative capacity and are unable to meet water quality criteria at the boundary of the mixing zone will not be authorized. Discharges from Drilling Fluids and Drill Cuttings, Gravel Pit Dewatering, and Excavation Dewatering will not include pollutants that pose risk to aquatic life and wildlife outside the boundary of the chronic mixing zone. The Department concludes authorized chronic mixing zones are protective of aquatic life and wildlife.

8.2.8 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 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.

9.0 ANTIBACKSLIDING

18 AAC 83.480(a) states that, “except as provided in (b) of the section, when a permit is renewed or reissued, interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit, unless the circumstances on which the previous permit was based have materially and substantially changed since the permit was issued, and the change in circumstances would constitute cause for permit modification or revocation and reissuance under 18 AAC 83.135.”

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.

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). Accordingly, 18 AAC 83.480(b) applies to the relaxation previously established case-by-case TBELs developed using BPJ. To determine if the provisions of 18 AAC 83.480(b) can be applied, the regulation provides five regulatory criteria that DEC must evaluate (18 AAC 83.480[b][1-5]). This permitting action does not propose the relaxation of any case-by-case TBELs developed by BPJ; therefore, there is not a need to conduct an analysis under this regulation.

Although the Permit includes less frequent monitoring for certain parameters under Hydrostatic Test Water and Contained Water discharges, the Department finds the reissued Permit effluent limitations, standards, and conditions are at least as stringent as the 2018 Pipeline GP. Changes to monitoring frequencies does not result in more pollutants entering the receiving water nor modifies TBELs.

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 Pipeline GP authorized discharges to fresh state waters, however coverage under the Pipeline GP 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 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), if applicable. 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, 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 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, 2022* (*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 Pipeline GP, 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 for existing significant pipeline infrastructure, as well as potential new significant pipeline infrastructure (See Sections 2.1 and 2.2)

All of the limitations have stayed the same or have decreased in the Permit. Although a new discharge category has been added for Contained Water, the 2018 Pipeline GP authorized these discharges under the definition of Hydrostatic Test Water. The discharges have been separated 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 Sections 3.5 and 3.8). Hence, the discharge is not new nor has the permitted concentration expanded, regardless of monitoring frequency reductions. Therefore, the Tier 1 Antidegradation Analysis satisfies the requirements of 18 AAC 70.015 and 0.016.

11.0 OTHER PERMIT CONDITIONS

11.1 Standard Permit Provisions

Appendix A of the 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 Drilling Fluid Plans

The Permit requires the development and implementation of a DFP. The basis for the DFP requirement is Sections 308 and 403(c) of the CWA. The DFP requirement is also based upon the Pollution Prevention Act (PPA) and its policy of prevention, reduction, recycling, and treatment of wastes (PPA Section 6602(b)) through measures that include process modification, materials substitution, and improvement of management (PPA Section 6607(b)(3)).

A goal of the DFP is to ensure that personnel on-site are knowledgeable about the information needed and the methods required to formulate the drilling fluids/chemical additive systems to

minimize addition of toxic substances and meet the toxicity requirements of the Permit. The DFP must list the names and titles of the personnel responsible for implementing the DFP and a copy must be available on-site at the HDD or geotechnical facility at all times.

The permittee must develop and implement a written procedural plan for the formulation and control of drilling fluid/chemical additive systems for the drilling fluid system that will comply with the 500,000 ppm SPP threshold based on estimated or measured values. The DFP must specify drilling fluid type, provide a list including commercial product names, descriptions of the products, and the maximum proposed discharge concentrations for each product and chemical additive and the resulting worst-case cumulative discharge SPP. The DFP also requires clearly stated procedures for situations where additives not originally planned for or included in the toxicity estimations are proposed for use later, and whether any new additive may be used and discharged. The criteria for making changes to the additive make up of a drilling fluid system must be specified in the DFP. The DFP is to be submitted to Department 15 days prior to discharge.

11.3 Best Management Practices Toolkit

BMPs are measures that are intended to prevent or minimize the generation and potential for the release of pollutants from pipeline and ancillary facilities to the WOTUS through normal operations. Pursuant to CWA Section 402(a)(1), development and implementation of BMP Plans 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. BMPs are required to control or abate the discharge of pollutants in accordance with 18 AAC 83.475. There are three types of BMP Plans required by the Permit, one for short-term construction activities, one for long-term facility operations, and one for each of the waste streams authorized under the permit.

DEC strongly encourages the owner/operator to implement BMPs for all activities, regardless of project size, duration, and season.

11.3.1 BMP General Requirements

BMP Plans for construction activities shall be located at each location where a wastewater discharge will occur. BMP Plans for operation activities shall be located at the facility.

The permittee must develop a BMP Plan which achieves the objectives and the specific requirements to prevent or minimize the generation and release of pollutants to the lands and WOTUS.

The permittee must amend BMP Plans whenever there is a change in activities, facility, or facility operation that materially increases the generation of pollutants or their release, or potential release, to receiving waters. Changes to the BMP Plan shall be consistent with the objectives and specific requirement as described in Permit Section 3.4.2. Construction, Environmental, and Facility Managers that are responsible for implementing the BMP Plan must review all changes.

11.3.2 Standard BMP Toolkit 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 3.4.2 of the General Permit);
- Description of any corrective action taken at the facility, including the event that caused the need for corrective action (include a noncompliance notification if reporting was required) and dates when problems were discovered and modifications occurred (Permit Section 3.4.2);
- 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.

11.3.3 BMP Toolkit Approach

DEC anticipates there are BMPs that may be applicable a broad range of similar situations for numerous discharges. Some of these BMPs may include use of chemicals or treatment systems, although treatment systems may need approval prior to use. However, once approved these BMPs can be used without additional approvals so long as site-specific conditions are consistent. The following describes anticipated, typical situations where the toolkit approach can be applied. Other tools may be considered based on unanticipated situations.

Mixing Zones: Mixing zones may be authorized for turbidity for Drilling Fluids and Drilling Cuttings, Gravel Pit Dewatering, and Excavation Dewatering. In order to ensure compliance with the 500-foot mixing zone for turbidity, the permittee shall prepare a BMP Plan that discusses BMPs that will be implemented to help ensure compliance with water quality criteria at the boundary of the mixing zones.

Hydrocarbon Contamination: The permittee must review the CSP Database to determine if there are any active, DEC-identified contaminated sites that may be encountered within 1,500 feet of an excavation or gravel pit that require a dewatering authorization under the Permit. If Excavation or Gravel Pit Dewatering occur within 1,500 feet of a contaminated site or within 1,500 feet of a contaminated groundwater plume, the permittee must contact the CSP. If recommended by the CSP, the permittee may be required to implement additional BMPs to help ensure compliance with Permit limits for situations where contaminated water is encountered. Water contaminated with hydrocarbons may also be present in Hydrostatic Test Water. The permittee shall have BMPs that can be implemented for situations where hydrocarbon contamination is encountered.

For the purposes of obtaining authorization under this Permit, the permittee need only consult the CSP regarding only the parameters of concern in the available site characterization report. At this time, 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. Additionally, if a site is listed on the CSP database for emerging parameters of concern (i.e. sulfolane, PFOS/PFOA, etc) that water quality criteria have not been established for, water management BMPs may still be required (i.e. returning the water to the existing plume) to avoid exacerbating emerging issues, however specific treatment levels will not be established.

Sedimentation, Erosion, and Thermokarsting Control: All discharges and disposals must have BMPs for erosion and sediment control and prevention of thermokarsting, if applicable. BMP Plans should discuss installing energy dissipation devices at the point of discharge/disposal as well as controlling sediment accumulation that could adversely impact sensitive vegetation areas (i.e., less than 1/8 inch on tundra). The BMP Plan must describe methods that ensure vegetation, whether sensitive or not, is protected from adverse impacts from sediment accumulations associated with the discharge. Accordingly, the Permit emphasizes that sediment and erosion control BMPs be used broadly. For discharges and disposals, BMPs for sediment control must include a trigger for sediment accumulation (i.e. when to move to another outfall location). For guidance, see: *Alaska Stormwater Guide.* http://dec.alaska.gov/water/wnpspc/stormwater/Guidance.htm and *Upland Erosion Control, Revegetation, and Maintenances Plan, May 2013.*

11.3.4 Specific BMPs

BMP Plans must meet the general requirement as listed in Section 11.3.1. However, DEC has determined that some waste stream discharges will require specific BMPs unique to those discharges. The discharges affected by additional specific BMPs include Drilling Fluids and Drilling Cuttings (Discharge 001), Gravel Pit Dewatering (Discharge/Disposal 003), Excavation Dewatering (Discharge/Disposal 004), Hydrostatic Test Water (Discharge/Disposal 005), Stormwater (Discharge 006), Mobile Spill Response (Discharge 007), and Contained Water (Discharge/Disposal 008).

Drilling Fluids and Drilling Cuttings (Discharge 001): BMP Plans will be required for HDD. BMPs must be developed and implemented to control the amount of drilling fluids discharged to the receiving water in order to comply with the 500-foot mixing zone. The plan shall discuss the possible impacts, monitoring, and mitigation procedures associated with inadvertent fluid releases that may occur during the season that HDD activities are proposed. For example, if the HDD activity is during the winter, the BMP Plan must address compliance monitoring under ice in the event of an inadvertent release. The Federal Energy Regulatory Commission (FERC) Wetland & Waterbody Construction & Mitigation Procedures, May 2013, and the Inadvertent Release of Drilling Mud Plan as the BMP Plan may be used for additional guidance or adapted for use as the BMP Plan. Furthermore, at the discretion of the permittee the BMP Plan may be combined with the DFP so long as there is a clear distinction in the combined document that separates these two dissimilar plans required by the Permit.

Gravel Pit Dewatering (Discharge/Disposal 003): Gravel Pit Dewatering discharges conducted for the purpose of gravel extraction have specific BMP Plan requirements. Gravel Pit Dewatering discharges to freshwater must be controlled using BMPs to prevent downstream sedimentation, erosion, or thermokarsts in the receiving water in addition to ensure compliance with Permit limits and applicable water quality criteria 500-foot mixing zone if authorized (See BMP Toolkits Section 11.3.3). If large volumes of water are discharged such that adverse sediment, erosion, or thermokarst issues are observed, or the permittee is unable to comply with a single 500-foot mixing zone, then multiple discharge locations may be requested in order to comply with the Permit. Because gravel pit water may be discharged directly to a waterbody or repurposed for ice roads and ice pad construction or dust suppression, BMP controls should be specific to each activity authorized under the Permit. For guidance on BMPs 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.*

For disposal of gravel pit water to upland areas, the permittee must develop and implement BMPs for sediment, erosion, and thermokarst control and procedures to ensure the disposal does not exceed the capacity of the disposal location that lead to a discharge to WOTUS. If a discharge occurs, the permittee must have APDES an APDES authorization.

Excavation Dewatering (Discharge/Disposal 004): Excavation Dewater discharges and disposals require the same specific BMPs as Gravel Pit Dewatering. BMPs must prevent sediment, erosion, and thermokarst issues and ensure compliance with Permit limits and water quality criteria at the boundary of the 500-foot mixing zone. Upland disposals must have BMPs for sediment, erosion, and thermokarst control and procedures to prevent discharges. BMPs must address sediment accumulation appropriate for each discharge/disposal location (e.g. tundra, dry stream channel, etc.). In addition, if a turbidity limit is exceeded for

discharges to water or a settleable solids limit exceeded for land disposals or discharges to dry areas considered WOTUS or state, the permittee must review and make revisions to existing BMPs.

Hydrostatic Test Water (Discharge/Disposal 005): Permittees are required to develop specific BMPs for sediment, erosion, and thermokarsting control for both surface water discharges and upland disposals. The BMP Plan must also include BMPs hydrocarbon removal based on the observation of a sheen (See BMP Toolkit Section 11.3.3). This requirement is particularly important for authorizations that include limits for TAH and TAqH due to the likelihood of hydrocarbons being present 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.

Stormwater (Discharge 006): The permittee is required to identify and control pollutant sources associated with the construction of pipelines and ancillary facilities that disturb one acre or more. For specific requirements, refer to the following manuals for guidance: *Alaska Stormwater Guide.* http://dec.alaska.gov/water/wnpspc/stormwater/Guidance.html.

For erosion and sediment control, the following manuals may provide additional information: *Federal Energy Regulatory Commission (FERC) Upland Erosion Control, Revegetation, and Maintenance Plan (May 2013).* If developed to meet the requirements specific for Alaska, the FERC plan may be accepted as equivalent to the SWPPP required by the Permit.

DEC recommends that BMPs be utilized for any construction activity (e.g., maintenance excavations), regardless of size and discharge volumes to prevent exceedance of water quality criteria or adverse sediment and erosion impacts. Per Fact Sheet Section 5.3.6, water-quality-based monitoring is not necessary when the permittee applies and maintains appropriate stormwater BMPs.

Mobile Spill Response (Discharge 007): Permittees are required to develop specific BMPs for discharges. Per Section 11.3.4, treatment systems that remove free-phase and dissolved-phase hydrocarbons must have operation and maintenance procedures to ensure the treatment capacity of the system is maintained. The BMP must also address procedures to be implemented if an observation of a sheen occurs that can bring the discharge into compliance with the Permit.

Contained Water (Discharge/Disposal 008): Permittees are required develop specific BMPs for sediment, erosion, and thermokarsting control for both surface water discharges and upland disposals. The BMP Plan must also include BMPs for hydrocarbon removal based on the observation of a sheen (See BMP Toolkit Section 11.3.3). This requirement is particularly important for authorizations that include limits for TAH and TAqH due to the likelihood of hydrocarbons being present in the discharge.

11.4 Stormwater Pollution Prevention Plan Development and Implementation

Coverage for Stormwater (Discharge 006) requires that the applicant develop and implement a SWPPP, which assesses site specific conditions, sources of sediment and other pollutants, and establishes BMPs to prevent, or minimize to the extent practicable, pollutants from being discharged in Stormwater. The SWPPP must identify controls from the BMP Toolkit that will best suit the activities and meet pollution control objectives.

The SWPPP must be developed by a qualified person and submitted to the Department. The Department does not approve the SWPPP but requires a submittal to support the administrative record for obtaining coverage under the Permit. The SWPPP must be updated as necessary to reflect any revisions to the project or to applicable federal, state, tribal, or local requirements that affect the Stormwater controls implemented at the site. The ability to reference other programs in the SWPPP is intended to reduce confusion between overlapping and similar requirements, while still providing for both local and state regulatory coverage of the construction or facility site. The permittee is not required to submit subsequent revisions of the SWPPP but must submit certifications that the SWPPP has been modified. The current SWPPP must be maintained at the project site as described in Section 11.4.4. The permittee must provide a copy of the applicable portions of the SWPPP or site-specific training to each subcontractor who engages in earthwork activities in a timely manner prior to commencing with an earthwork activity.

The Permit allows for the use of equivalent plans to meet the SWPPP requirements. A pipeline construction site and ancillary pipeline facilities may replace the SWPPP with an equivalent federal, state, tribe, or local Stormwater control plan if it is as stringent as the SWPPP requirements in the Permit and has been adapted for unique Alaskan requirements. For example, an amended version of the 2013 *FERC Upland Sediment and Erosion Control Plan* may be determined by the Department to be equivalent.

11.4.1 SWPPP Roles and Responsibilities

11.4.1.1 Permittee Scenarios

The SWPPP must identify the permittee or co-permittees for the project and those functions that the permittee(s) has operational control over. Operational control includes modifications to the design or specifications (typically the owner) for the project(s) or day-to-day control over construction activities (typically the contractor). For the Pipeline GP, the owner or GC can be the permittee or they could be co-permittees depending on construction contractual mechanisms and the responsibilities that affect implementation of the project and the implementation of the SWPPP. The SWPPP must clearly discuss the roles and responsibilities of the various parties to ensure compliance with the Stormwater requirements of the Permit.

GC as Sole Permittee. There are two potential construction scenarios that could lead to the GC being the sole permittee; conventional owner-engineer-contractor scenario and a design build scenario. In the design-build scenario, the owner hires a GC to design and build the pipeline and, as such, the GC has both operational control over the design and specifications as well as over the day-to-day activities. In the conventional scenario, the owner hires a single GC and the GC has operational control over the day-to-day activities and is the sole permittee. The GC is the sole permittee responsible for developing and implementing the SWPPP and modifying the SWPPP if modifications to the design and

specifications affect the SWPPP. The owner maintains operational control over the design and specifications of the pipeline.

Owner as Sole Permittee. In this quasi-conventional scenario, the owner has operational control over construction plans and specifications and hires a GC that must comply with the project design and specifications as well as the owner-developed SWPPP that complies with the Stormwater requirements and other applicable conditions of the Permit. The project may be part of a large plan of development or small plan of development. The owner as permittee must notify the GC in a timely manner if changes in the project design and specifications trigger modifications to the SWPPP. The sole owner-permittee must also provide an onsite -qualified representative to interface effectively with the GC to ensure compliance with the SWPPP. The GC must manage subcontractors to comply with the SWPPP. The Pipeline GP does not allow subcontractors to develop implement a separate SWPPP for the project.

Owner and GC as Co-Permittees. This scenario considers a potential situation where a large plan of development is constructed by multiple GCs hired by the owner (e.g., four segments of a long pipeline). The owner retains operational control over the design and specifications of a large plan of development and the various GC's maintain day-to-day operational control over activities, but each is a permittee. Hence, the owner is the permittee for the entire plan of development and is co-permittee with the GC. The GC is the permittee responsible for activities on their segment. For the Pipeline GP, the co-permittees must collaborate on a common SWPPP for the portion of the affected project or, possibly, adopt an equivalent sediment and erosion control plan for the entire plan of development that meets permit requirements (See Section 11.4.1). The SWPPP must clearly define the responsibilities of each co-permittee and the responsible parties that implement components of the SWPPP. If project design and specifications changes require modifications to the SWPPP, the owner must collaborate with the affected GC's on modifying the SWPPP.

Signature and Certification. The SWPPP must be signed and certified in accordance with the signatory requirements in the Standard Permit Conditions section of the Permit (Appendix A).

11.4.1.2 Preparers, Leads, Inspectors, and Treatment System Operators

Based on the specific permittee scenario, the SWPPP must identify the key individuals, or teams, who are responsible for various aspects of developing and implementing the SWPPP. Each key field person identified must have access to the most current copy of the SWPPP as well as other documents or information that must be kept with the SWPPP. Typical key personnel that develop and implement SWPPPs include preparers, Stormwater leads, inspectors, and occasionally treatment system operators.

Preparers must have at a minimum an understanding of the Permit requirements and progressive training and experience commensurate with the size and complexity of the project to ensure the SWPPP can be readily implementable by the Stormwater lead without excessive field modifications. The Stormwater lead may be responsible for every activity related to Stormwater at small construction sites or oversee a team of people for large construction projects. For large construction projects, a team may be required and would include inspectors and treatment system operators in addition to the preparer and lead. The

Stormwater lead directs individuals and teams as well as schedules training based on relevant expertise needed for the Construction Stormwater management activities.

The recommended experience and training for responsible parties involved with developing and implementing a SWPPP increases incrementally based on the size of the project. Once a project is 20 acres or greater, such as a large plan of development (LPD), the SWPPP Preparer should be an Alaskan Certified Erosion and Sediment Control Lead (AK-CECSL) and visit the site prior to writing the SWPPP or soon after the start of the project to revise the SWPPP based on site conditions. The recommended experience or training required for the preparer, lead, inspector, and treatment system operations based on project size are described in Table 23.

Table 23: Recommended Experience or Required Training for Specific Roles based on Project Size.

Stormwater Role	Total Project Disturbed Acreage		
	1 to < 5 acres	5 acres to <20 Acres	> 20 Acres (LPD)
Stormwater Lead	AK-CESCL training recommended.	AK-CECSL certification	
SWPPP Preparer	Familiarity with the Permit requirements.	SWPPP preparation course recommended.	AK-CECSL certification and site familiarity.
Stormwater Inspector	Familiarity with the Permit and SWPPP.	AK-CECSL certification	
Treatment System Operators	AK-CECSL certification and have general experience and knowledge of Stormwater control measures. Have operational experience with the specific treatment equipment used on-site.		

Note: The following training and certifications may substitute for AK-CESCL training and certification: CPESC, CESSWI, or CPSWQ by EnviroCert International, Inc. (ECI, http://envirocertintl.org) or CISEC by CISEC, Inc. (http://cisecinc.org).

11.4.2 SWPPP Contents

A SWPPP shall be developed in accordance with EPA Guidance document, *Developing Your Stormwater Pollution Prevention Plan – A Guide for Industrial Operators (March 2021, EPA 833-B-09-002)* or any subsequent revision of the guidance document. The Department has also developed the *Alaska Stormwater Guide (December 2011),* to aid in the development of SWPPPs used in Alaska.

11.4.2.1 Site-specific Conditions

Typical site-specific conditions of the project include (1) the amount, frequency, duration, and seasonal occurrence of rainfall; (2) site conditions such as soils, topography, drainage patterns, and vegetation; and (3) receiving waters, such as impaired waters or waters listed in the DF&G Anadromous Waters Catalog. This provision helps ensure the permittees understand the areas impacted by construction within their project and lead to properly selecting and designing control measures necessary to meet permit requirements.

The SWPPP must also describe the nature of the construction activity, including, but not limited to:

- The function of the project (e.g., large spread winter construction);

- A general location map able to identify the location of the activity and the waters of the U. S. within one mile of the project, including a north arrow and bar scale;
- Site maps that clearly delineate the area that will be disturbed and important environmental features (e.g., wetlands, spawning areas, water intakes, etc.), including a north arrow and bar scale;
- Identification of all potential sources of pollutants that may reasonably affect the quality of Stormwater discharges from the construction site. This includes description of related industrial activities such as pipe coating facilities or temporary concrete batch plants;
- The intended significant activities, presented sequentially, that disturb soil over major portions of the site (e.g., grubbing, excavation, grading); and
- Estimates of the total area of the site that is expected to be disturbed by excavation, grading, or other activities including off-site borrow/fill areas. It may be preferable to separately describe portions of the site as they are disturbed at different stages of the construction process.

11.4.2.2 Control Measures

Based on site-specific information and identification of sources of pollution, the SWPPP must indicate and describe the control measures to be implemented including:

- The type of sediment and erosion control measure from the BMP Toolkit, location, duration (temporary or permanent), and construction sequence (specific dates are not necessary); and
- When available and appropriate, the manufacturer's specifications for installation and maintenance of the appropriate control measures.

11.4.2.3 Treatment Systems and Chemicals

Treatment system design using enhanced settling or filtration techniques requires consideration of appropriate, nontoxic chemicals and dosing rates; pH control, chemical mixing and flocculation that produces satisfactory floc; the type of physical removal process (i.e., sedimentation or filtration); the process flow (e.g., batch or continuous); and other concepts. Because there are numerous variations of possible treatment system and chemical use, DEC must review and approve the treatment system and/or the use of chemicals for sediment removal. The review is to ensure the proposed chemicals and dosing rates are appropriate, effective, as well as nontoxic. The combination of the treatment physical separation process is reviewed to help ensure the discharge will attain imposed effluent limits. Lastly, as a condition of approval DEC may require performance monitoring, operation and maintenance procedures (e.g., solids handling and disposal or equipment maintenance), and operator training or certification requirements. If appropriate (i.e., not dependent on site-specific conditions), the treatment system and/or chemical use may be approved for broad use as a BMP in the BMP Toolkit.

11.4.2.4 Good Housekeeping Procedures

The SWPPP must describe procedures that prevent the discharge of pollutants from earth moving activities and ancillary activities associated with the project. These procedures are generally associated with storage and handling of materials such as construction waste,

fuels and solvents, and other potential Stormwater contaminants. Typically, good housekeeping procedures are developed for:

- Washing of Equipment and Vehicles and Wheel Wash-Down,
- Fueling and Maintenance Areas,
- Staging and Material Storage Areas,
- Washout of Applicators/Containers used for Paint, Concrete, and Other Materials,
- Fertilizer or Pesticide Use, and
- Storage, Handling, and Disposal of Construction Waste.

11.4.2.5 Spill Prevention and Response Procedures

In the event that good housekeeping procedures do not prevent a release, specific spill prevention and response procedures must be included in the SWPPP for material storage and handling including, but not limited to:

- Labeling containers (e.g., "Used Oil," "Spent Solvents," "Fertilizers and Pesticides," etc.)
- Expeditiously stopping, containing, and cleaning up spills, leaks, and other contaminant releases.
- Notification of appropriate facility personnel, emergency response agencies, and regulatory agencies where a leak, spill, or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity.

11.4.2.6 Stabilization and Seasonal Shutdowns:

The SWPPP must also include a description of temporary and permanent stabilization practices for the site, including a schedule of when the practices will be implemented. Lastly, the SWPPP must document shutdown and startup activities for projects that are not completed during the winter or summer construction season. The SWPPP must document (1) the anticipated dates of fall freeze-up and spring thaw, (2) activities leading up to and at fall freeze-up, (3) activities leading up to and at spring thaw, and (4) activities to reestablish control measures prior to and immediately after spring thaw and fall freeze up.

11.4.3 SWPPP Implementation and Administrative Requirements

11.4.3.1 SWPPP Modifications.

The permittee must update and include a revised SWPPP and site maps within seven calendar days in response to any following triggering conditions:

- Changes to construction 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.

11.4.4 SWPPP Documentation and Availability.

A notice of Permit authorization and SWPPP must be posted conspicuously near the main entrance of the site or at local public building such as the town hall or public library if posting at the entrance is infeasible. For linear projects, the notice must be posted at a publicly accessible location near the active part of the construction project (e.g., where a pipeline project crosses a public road). The Permit notice must include the following information:

- A copy of the completed Notice of Intent as submitted to DEC;
- Current contact person and phone number for scheduling times to view the SWPPP, and
- The current location of the SWPPP.

A copy of the SWPPP must be kept at the facility or the construction site from the date of project initiation to the date of final stabilization. A permittee with day-to-day operational control over the plan's implementation must keep a copy of the plan readily available whenever on site (a centrally located construction trailer or truck accessible by all on-site personnel is sufficient). If an on-site location is unavailable to store the SWPPP when no personnel are present, notice of the plan's location must be posted at the main entrance sign at the construction site. Regardless, a copy of the SWPPP must be readily available for inspection during normal business hours.

Copies of the Pipeline GP, the signed and certified NOI submitted to DEC, authorization letter, and a log of SWPPP modifications must be included with the SWPPP. The Permit condition stresses the importance understanding interrelated permit requirements and responsibilities. In addition, the following documents must be kept with the SWPPP:

- Description, location, and sequence of earthwork activities, control measures, and stabilization measures;
- Date(s) when earthwork activities occur, construction activities, begin and temporarily or permanently cease, and when stabilization are initiated on a portion of the site;
- 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 Safety Data Sheet, manufacturer and/or supplier test results, or installation instructions);
- Description of any corrective action taken, 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 inspection reports, non-compliance, certifications, monitoring reports, or end of construction season reports.

A permittee must make a copy of the SWPPP and documentation available to DEC upon request, for review or copying, during any on-site inspection per 18 AAC 83.405. Electronic storage of documents can be used so long as they are accessible when a DEC inspector conducts an onsite inspection. The SWPPP must identify any alternative off-site location for available access if there is a seasonal shut down for a multi-season project. The SWPPP must be returned to the site once the shutdown is over.

The permittee must provide a copy of the SWPPP to each subcontractor on-site. DEC may require that the most current version be sent to DEC so that any confidential business

information claimed can be vetted before being provided to the public per 18 AAC 83.165. The format (e.g., electronic or hard copy) used to provide DEC with the most current version of the SWPPP is at the discretion of the permittee.

11.4.5 Inspections and Monitoring

Monitoring Stormwater discharges by conducting analytical samples is not required under the Permit due to the limitations in coverage per Section 6.5.1.1 (e.g., discharges to impaired or Tier III waters and no triggering conditions). Stormwater compliance under the Pipeline GP relies on visual observations of Stormwater discharges.

Visual monitoring must be performed by a qualified person, either personnel employed by the permittee or a third-party hired by the permittee. The qualified person must be knowledgeable and possess the skills to assess conditions at the construction site that could impact Stormwater quality and the effectiveness of sedimentation and erosion control measures used to maintain water quality objectives.

11.4.5.1 Construction Stormwater Inspections, Corrective Actions, and Reports

Consistent with the CGP, the Permit requires the permittee to document in the SWPPP the procedures that will be followed for conducting site inspections and, where necessary, taking corrective actions. The following the minimum documentation requirements for inspection to be included in SWPPPs:

- Person(s) or positions responsible for conducting site inspections (See Section 11.4.1.2);
- Inspections schedules, frequency and timing;
- Checklists or forms to be used; and
- When and how corrective actions will be triggered and addressed.

Inspections: The permittee must inspect designated areas on a schedule, frequency, and timing based on the mean annual precipitation (map) for location per Table 24:

Table 24: Inspection Schedules

map (inches)	Period (Days)	Frequency/Timing
≤ 40	14	Once within period and 24 hours after storm or snowmelt event
> 40	7	Once per period but twice per period if there is precipitation each of the seven days[1]
Note [1]: Pre-storm walk-throughs count as one inspection.		

For linear construction projects (e.g., pipeline construction) inspections may be performed and applied to other representative locations and controls. The qualified personnel may inspect controls along the construction site for 0.25 mile above and below each access point where a roadway, undisturbed right-of-way, or other similar feature intersects the construction site and allows access to the areas above and below that point. The conditions of the controls along each inspected 0.25-mile segment may be considered as representative of the condition of controls along that reach extending from the end of the 0.25-mile segment to either the end of the next 0.25-mile inspected segment or to the end of the project, whichever occurs first. This allowance provides flexibility for inspections

for LPDs and may limit additional disturbance to soils that may increase the erosion potential resulting from vehicles compromising stabilized areas.

Corrective Actions: The permittee must review and revise the selection, redesign, reinstall, and implement other corrective actions to control measures when the following conditions have been discovered or reported by other entities and substantiated:

- Spills or unauthorized discharges;
- Control measures not designed, installed, or maintained correctly;
- Control measures are observed to not meet permit requirements or water quality criteria; or
- Sediment or residues (See Definitions) have accumulated at locations that could lead to impacts to control measures, Stormwater conveyance infrastructure (e.g., Stormwater inlets and outlets), or equipment tracking on roads or paved areas.

Whenever corrective actions impact other parties, the permittee must notify them within three days. For conditions that can be readily corrected (e.g., removing tracked sediment on roadways), the permittee must take corrective actions as soon as practicable within 24 hours of discovery. For revising selection, redesigning, or repairing control measures, the permittee must complete the corrective action within seven days. If the corrective action has a nexus with other similar control measures or conditions on the project, the permittee must make corrections to subsequently affective controls or conditions prior to the next storm or snowmelt event, or as soon as practicable afterwards. Normally schedule inspections must continue from the time the need for corrective actions have been identified until completed. Lastly, the permittee must maintain a log of corrective actions that includes the date the problem was discovered or reported, the corrective action(s) taken or the basis for why one was not taken, the date the corrective action was completed, and whether the corrective action resulted in a revision to the SWPPP.

Inspection Reports: The permittee is required to retain with the SWPPP a record of each inspection for at least three years from the date that permit coverage expires or is terminated. The report must also identify any actions taken per the inspection requirements and identify any triggering conditions that requires corrective action.

11.4.6 SWPPPs for Operation Facilities

Most permit requirements for SWPPPs for operating facilities are similar to SWPPPs for construction activities. Operation SWPPPs are dissimilar to construction SWPPPs in the following areas:

- Operation SWPPPs focus primarily on control of pollutant source that are uniquely associated with facility operations and a lesser emphasis on sediment and erosion control;
- Due to the stationary, long-term nature of operating facilities, operation SWPPPs tend to be static and do not change substantially overtime and changes tend to be related to changes in operation that introduce new pollutant sources or allowable non-Stormwater discharges;
- Because the need to modify SWPPPs is infrequent, the Permit requires annual review of the SWPPPs to ensure minor changes or modifications to controls are adopted and certification the review and revision has been conducted;

- Semiannual Stormwater inspections of the facility are required with one conducted prior to breakup to assess whether there are any areas which may contribute pollutants to the Stormwater discharge and the second inspection conducted after the breakup;
- Semiannual inspections must be retained for five years and reported to the Department annually with the SWPPP certification; and
- While operation SWPPPs are developed to address facility specific control measures, the permittee may develop a holistic SWPPP for multiple similar facilities so long as the SWPPP has adequate facility specific details (e.g., site maps, snow storage areas, etc.), implementation of the SWPPP is not impracticable due to distance separating the facilities, and any revisions to the holistic SWPPP are distributed to each site in a timely manner.

11.5 Quality Assurance Project Plan

The permittee is required to develop a QAPP for all authorized discharges and submit certification that a QAPP has been developed to DEC with the initial NOI/NOD for first time applicants. The QAPP should be completed and ready to implement before any discharges take place.

11.5.1 Standard QAPP Requirements

The QAPP includes procedures to ensure that the monitoring data submitted are accurate and to explain data anomalies if they occur. The QAPP must outline standard operating procedures the permittee must follow for collecting, handling, storing, and shipping samples; laboratory analysis; and data reporting.

The QAPP shall be retained at each facility The permittee must update the QAPP as necessary and make a current copy available to DEC upon request. The permittee must indicate if modifications were made to the QAPP and regardless of modification, certify in writing that the QAPP has been reviewed and revised, annually. The statement must be completed on or before January 31st of each year of operation under this Permit after the initial QAPP certification. The certification must be retained with the QAPP onsite and made available to the Department upon request.

11.5.2 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.

11.5.2.1 Domestic Wastewater (Discharge 002)

The QAPP must include methods of calculating the 90th percentile of FC and E. coli bacteria samples to comply with the MDL for Domestic Wastewater discharges.

11.5.2.2 Drilling Fluids and Drill Cuttings, Gravel Pit, and Excavation Dewatering (Discharges 001, 003 & 004)

The QAPP must include protocol for calculating four-day averaging when turbidity 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. When using the four-day averaging procedure, the calculations must be uploaded in EDMS with the AR.

11.5.2.3 Hydrostatic Test Water (Discharge 005) 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.

11.6 Notice of Intent Procedures and Management of Authorizations

An applicant seeking coverage to discharge under the Permit must submit an NOI to DEC per18 AAC 83.210(b). For disposals, an applicant must submit an NOD per AS 46.03.100(d) and 18 AAC 72. As stated previously, the Permit is a hybrid of developed by the Department under the authority of WDAP representing both 18 AAC 83 and 18 AAC 72. Rather than developing separate forms for an NOI and an NOD, the forms are also hybrid. The form allows distinction between requests for a discharge (i.e., NOI) or for a disposal (i.e., NOD). As discussed previously, the applicable disposal activities for which an authorization may be requested exclude the waste categories Drilling Fluids and Drill Cuttings, Domestic Wastewater, Stormwater, and Mobile Spill Response. The applicable discharge activities include all categories described in the Permit. However, only the discharge categories Drilling Fluids and Drill Cuttings, Gravel Pit Dewatering, and Excavation Dewatering are applicable for obtaining mixing zone authorizations. The NOI/NOD forms provided in Permit Attachment 1, and available in EDMS, may be used to obtain authorization to Discharge/Dispose wastewater under the Permit, respectively.

Per Section 2.3.3.5, 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. Excavation Dewatering and Hydrostatic Test Water). Meanwhile, Stormwater and Domestic Wastewater 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 Stormwater and Gravel Pit Dewatering for ice construction or dust suppression) and single event or short-term projects (commonly Hydrostatic Test Water, Excavation Dewatering, and Contained Water).

The NOI requirements differ based on construction and maintenance activities or operation activities. The following information will be required for each NOI/NOD:

1. **Certification**: The NOI/NOD must be signed and certified per 18 AAC 83.385.
2. **Permit Information**: The NOI/NOD requires the applicant to specify whether the application is for a new authorization, revision to an existing authorization, or an NOI/NOD to request administrative extension prior to expiration of the Permit.
3. **Pipeline Information**: The applicant must identify if the authorization is for pipeline construction or operation and maintenance activities and provide starting and ending milepost designations and corresponding latitudes and longitudes for the authorization.
4. **Applicant information**: The applicant must provide the owner's or permittee's name, mailing address, contact name, and telephone number of the responsible party (permittee), an on-site contact, billing contact, and an authorized person to negotiate fees per 18 AAC 72.959. Note that Co-permittee scenarios only apply to Stormwater coverage for construction (NOI/NOD Section 8: Discharge 006 – Stormwater/ Construction).

5. **Discharge/Disposal Summary**: Because the NOI/NOD may encompass many different discharges and disposal (e.g., large plan of development scenario), the applicant must provide a summary of all requested discharges, including mixing zones, and disposals that must match the individual attachments in Section 8 – Outfall Details and NOI Section 9 – Mixing Zone Requests.

   a. **Discharges/Disposals**: The permit requires the applicant to identify the types of discharges and disposals.

   b. **Detailed Discharge/Disposal Information**: Each discharge or disposal requested must be supported with information necessary for authorization. This information includes, but may not be limited to, vicinity maps, detailed site plans, latitude and longitude coordinates to the nearest 15 seconds, waterbody names and descriptions, and other information associated specifically for the individual discharge or disposal being requested. The specific information may include a mixing zone request.

   c. **Location of Discharge**: The NOI/NOD requires the applicant to provide accurate descriptions for location of operations and discharges (i.e. where the discharge hose will be placed). The following summarizes discharge specific requirements:

      i. **Gravel Pit Dewatering (Discharge 003)**:

         1. To open waterbodies – coordinate of the gravel pit (approximate centroid) and each discharge point to the receiving water.

         2. 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.

      ii. **Excavation Dewatering, Hydrostatic Test Water, and Contained Water (Discharges 004, 005, and 008)**: These are one-time authorizations for construction or maintenance projects that are terminated upon project completion. However, they can be long term authorizations on a case-by-case basis. Provide coordinate of proposed discharge/disposal locations, vicinity maps, and site plans that clearly depict the project components.

         1. **Excavation Dewatering – Linear Projects**:

            The applicant must provide maps for segments not to exceed one-mile identifying all receiving waters, wetlands, contaminated sites, and other sensitive environmental areas and clearly delineate where discharges may occur and areas that will be avoided.

      iii. **Operational and Construction Stormwater (Discharge 006)**: Operational Stormwater does not require the SWPPP to be submitted with the NOI. However, a vicinity map showing the extent of the facilities covered must be submitted with the NOI. Construction Stormwater requires submitting the SWPPP with the NOI for Department review and comment.

      iv. **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 11.6(a)(ii).

6. **Vicinity Maps and Site Plans Map**: The NOI/NOD requires the application to submit a vicinity map that shows the general area of coverage for the requested discharge or disposal.
7. **Detailed Site Plans**: Detailed site plans that show the discharge point, relative infrastructure (e.g., excavation areas, etc.) must be submitted as described in item 5c.
8. **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.
9. **BMP Plan**: A BMP Plan must be prepared and certified before discharge occurs. The certification must be retained with the BMP Plan onsite and made available to the Department upon request .
10. **QAPP**: First time applicants and existing permittees required to reapply under the Permit, a QAPP must be prepared and certified before discharge occurs. The certification must be retained with the QAPP onsite and made available to the Department upon request.
11. **Miscellaneous Reports**: The NOI/NOD may require copies of plans, surveys, and environmental mapping components.
    a. Plan Approval for first time applicants: 18 AAC 72.050 requires the applicant to demonstrate to the Department that a Domestic Wastewater discharge meets minimum treatment standards prior to discharging to WOTUS Plan approval is required before constructing, installing, or modifying any part of a domestic wastewater collection, treatment, or disposal system per 18 AAC 72.200. In addition, a permittee that constructs, alters, installs, modifies, or operates a non-domestic wastewater treatment works or disposal may require unique requirements per specific discharge attachments.
    b. Supporting Plans: The applicant must provide various plans necessary to support authorization of discharges and disposals. These plans include, but may not be limited to, DFPs, BMP Plans, SWPPPs, and related plans from other agencies that support the NOI but is not required.
    c. Previous plan approvals or new plan submittals to comply with 18 AAC 72: Domestic Wastewater discharges may require plan submittals or previous DEC approvals to get authorization under the Permit. In addition, certain nondomestic treatment process or systems may require plans submittals prior to adopting into the BMP Toolkit. Applicants must submit according to the most recent version of 18 AAC 72 at the time they submit an NOI.
12. **Mixing Zones for Discharges**: If the applicant is requesting a 500-foot mixing zone for turbidity and residues for Drilling Fluids and Drill Cuttings (001), Gravel Pit Dewatering (003), or Excavation Dewatering (004), the applicant must complete a mixing zone form for each discharge. In order to approve the request, the applicant must provide stream flow information and environmental mapping information to DEC. The applicant may be required to consult with DF&G if habitat concerns arise.

11.6.1 Deadlines for Submitting NOI/NOD

Deadlines for submitting NOI/NODs is not an absolute requirement; DEC will work with applicants to meet their timelines. However, DEC also cannot guarantee that we can meet all priorities if there are no expectations for first-in, first-out processes. As a guideline, a new

applicant must submit an NOI/NOD to DEC 90 days prior to discharge for the first year of operation. The 90-day notice will allow for adequate time for DEC to review the NOI/NOD and plan approvals. NOI/NODs for revisions or renewals in subsequent years of operation must be submitted 30 days prior to discharge. Similarly, plan reviews must be submitted 45 days prior to the discharge or disposal. If a disposal or discharge is needed for emergency maintenance repairs, DEC will expedite the authorization but cannot waive the NOI requirement.

11.6.2 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 assign the activity an APDES general authorization number for the site(s) specified on the NOI.

11.6.3 Revisions to Authorizations and Termination of Outfalls

DEC anticipates that authorizations will require revisions during the term of the Permit. These revisions will most likely be needed to inactivate discharge/disposal outfalls that are no longer needed so to eliminate the need for ongoing reporting when there is no discharge or disposal and to add new discharge/disposal outfalls as projects emerge. DEC has modified the standard NOI Form to include the ability to inactivate individual discharge/disposal outfalls without terminating the entire authorization. Specific outfalls in existing authorizations may be inactivated by submitting an NOI/NOD for revising the authorization in EDMS. The NOT also allows for termination of the authorization (all outfalls) if applicable and appropriate. An existing authorization may be terminated by submitting a certified NOT Form in EDMS and certifying that the requirements for termination have been met. To terminate an authorization, all monitoring data must be provided in EDMS and there must not be an ongoing enforcement action or 3rd party litigation

The new NOI/NOD process is tied to the AR in EDMS. Before inactivating an outfall, or terminating an entire authorization, the permittee will be required to input the date in the AR form in EDMS to minimize last minute reporting mistakes and to align with similar general permits (e.g., AKG332000, AKG002000, and AKG003000). When issuing revised authorization approval notices, DEC will list the terminated outfalls and authorization of any new outfalls added. Accordingly, DEC may request reporting as part of the authorization revision process.

11.6.4 Renewal of Authorizations Prior to Permit Expiration

The Permit will expire five years from the effective date of the Permit. Based on a comparison between regulatory requirements for APDES and State issued general permits, permittees that desire to have administratively extended coverage beyond the expiration date of the Permit must submit an NOI/NOD for renewal no later than 30 days prior to Permit expiration.

Because Statewide Pipeline GP is a hybrid general permit, DEC compared the requirements for extended coverage to derive an appropriate submittal deadline. Per 18 AAC 83.155(c)(1), conditions of an expired APDES permit continues in for until the effective date of a reissued (renewed) permit if the permittee has submitted a complete and timely NOI per 18 AAC 83.110. Per 18 AAC 83.110(a), any person required to obtain coverage under a general permit must submit an NOI per 18 AAC 83.210(b). 18 AAC 83.210(b) states that a

timely submittal of an NOI in compliance with the Permit fulfills the discharger's duty to apply and 18 AAC 83.210(e) and (f) indicates the Permit must specify the deadline for submitting a complete and timeline NOI.

Per 18 AAC 15.110(a), for general permits issued under authority of AS 46.03.100 and 18 AAC 72.900 the conditions of the Permit continue to be fully effective and enforceable until the effective date of the renewed permit if a timely application has been submitted per 18 AAC 15.100(d). 18 AAC 15.100(d) states an application for renewal must be received 30 days prior to expiration. Based on this comparison of regulatory requirements for a hybrid permit, 30 days appears to be appropriate.

11.7 Transfers

18 AAC 83.150 allows permit coverage for a facility to be transferred from an existing owner to a new owner. The permit authorizes a transfer only from an existing 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. In these situations, the new applicant would have to apply for coverage under the Permit. The transfer requires signatures from both the existing permittee and the new permittee. A notice of transfer form can be obtained from EDMS.

11.8 Updating Responsible Parties, Delegated Authorities, and Billing Contacts

One of the common issues surrounding NOI/NOD, reporting, and billing for authorizations is failure to update contacts. Without effective processes Responsible Parties cannot sign NOI/NODs, delegated authorities cannot submit reports, and invoices go unpaid unless these contacts are maintained. DEC is attempting to make updating contacts more streamlined in EDMS and available for self-updating by the permittee. DEC will inform applicants of these processes as part of the post issuance conference on the effective Pipeline GP.

11.9 Notice of Termination of Authorizations

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 terminate coverage, the Permit requires the permittee to provide a NOT to DEC within 30 days following cessation of the discharges. The permittee must fulfill all permit requirements, provide adequate reasons for termination, and certify that there are no pending state, federal, or third-party suits to the best of their knowledge. The notice may include any final reports required by the Permit.

As a matter of managing revisions to existing authorizations (e.g., large plan of pipeline development or seasonal projects), the applicant can request to terminate individual outfalls without terminating the existing authorization. The same requirements apply as described previously.

11.10 Permit Expiration

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

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 to 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.

12.2 APDES Reporting Requirements and e-Reporting Waivers

Per 18 AAC 83.455(b), the Department may establish requirements for reporting of monitoring results, including the frequency, on a case-by-case basis depending on the nature and effect of the discharge. The minimum frequency is annual reporting. During the 2018 Permit term, DEC transitioned to an electronic reporting (e-reporting) system in accordance with 40 CFR 127 that will be in effect during the term of the Permit. However, for the purposes of this Permit, reporting will be only in EDMS while automatically issuing a waiver to NetDMR as discussed in Section 2.3.3.5.

12.2.1 Transitioning to Annual Reports from Discharge Monitoring Reports

During the Permit term, DEC anticipates there will be an adjustment period for permittees required to submit to EDMS annually by January 31st of the following year. More frequent reporting may be required as part of the authorization revision process. DEC requires that monitoring data must be provided when the applicant submits inactivation of outfalls so there are less missed entries come January 31st of each year. This requirement also aligns with requirements for similar general permits (e.g., AKG332000, AKG 002000, and AKG003000). While DEC is on schedule to reissue the Pipeline GP this fall, there may a month or two where at the end of the calendar year that are reported per the 2018 Pipeline GP so that the first EDMS AR would be due on January 31, 2026. Hence, DEC envisions reporting in EDMS no later than the next operation maintenance season for pipelines and plans to be flexible on reporting requirements during this transition. The overall goal is to have full transition by the end of 2025.

The Department notes that DMRs and ARs are the same, however, AR is used throughout the Permit documents to highlight the annual reporting frequency

12.2.2 End of Drilling Reports

In addition to submitting ARs, the permittee must submit an end of drilling report that provides a summary of the implementation of the drilling fluids plan, actions taken during the drilling program to reduce or eliminate the loss of drilling fluids, summary of communications between DEC and other agencies having jurisdiction over the potential impacts of the discharge and any mitigations measures required to protect habitat, water quality, and uses of the waterbody. The End of Drilling Report is submitted at least annually per Section 12.2.2.

13.0 OTHER LEGAL REQUIREMENTS

13.1 Endangered Species Act

The Endangered Species Act requires federal agencies to consult with the FWS to ensure that any action they authorize is not likely to jeopardize the continued existence and recovery of any species listed as threatened or endangered or result in the destruction or adverse modification of critical habitat. DEC, as a state agency, voluntarily contacts this federal agency to obtain listings of endangered species and critical habitat.

The Department reviews the listing periodically for updates. Species of concern that inhabit or that have inhabited these waters at least at one time and that are listed as either threatened or endangered as of April 2012 is listed at the bullet below.

An endangered species is defined as a species that is in danger of extinction throughout all or a significant portion of its range. A threatened species is defined as a species that is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

The following are threatened and endangered species of wildlife and one plant that occur or that are believed to occur in Alaska and are potentially affected by discharges from the proposed discharge categories in this general permit.

- Polar Bear *(Ursus maritimus)*: Threatened; Wherever found
- Wood Bison *(Bison bison athabasque):* Threatened; Wherever found
- Eskimo Curlew *(Numenius borealis)*: Endangered; Wherever found
- Northern Sea Otter *(Enhydra lutris kenyoni)*: Threatened; Kenai Peninsula; Aleutians; Kodiak Island
- Spectacled Eider *(Somateria fishceri)*: Threatened; Wherever found
- Steller's Eider *(Polysticta stelleri)*: Threatened; Wherever Found
- Short-tailed albatross *(Phoebastria(=Diomedea) albatrus)*: Endangered; Wherever found
- Aleutian Shield Fern (*Polystichum aleuticum)*: Endangered; Wherever found

13.2 Essential Fish Habitat

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 National Marine Fisheries Service regional fishery management councils, and other federal agencies to identify and protect important anadromous fish habitat. DEC, as a state agency, voluntarily contacts these federal agencies to obtain EFH designations.

The EFH regulations define an adverse effect as any impact which 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.

The Statewide Pipeline GP does not include areas involving marine EFH areas, therefore no consideration is given in the Permit.

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

Areas containing anadromous waters, fish crossings, indigenous fish, mammals, and birds in the State of Alaska that might be adversely affected by projects associated with this GP are too numerous to be listed here, but can be accessed via DF&Gs website at: http://www.adfg.alaska.gov/index.cfm?adfg=conservationareas.locator

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ATTACHMENT A: MIXING ZONE ANALYSIS CHECKLIST

Mixing Zone Authorization Checklist
based on Alaska Water Quality Standards (2006)

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	Mixing Zone Approved Y/N
Size	Is the mixing zone as small as practicable? - Permit writer conducts analysis and documents analysis in Fact Sheet at:	Answer: Yes • Technical Support Document for Water Quality Based Toxics Control •Water Quality Standards Handbook • DEC's RPA Guidance • EPA Permit Writers' Manual •Fact Sheet 8.2.1	18 AAC 70.240 (k)	Y

Criteria	Description	Answer & Resources	Regulation	Mixing Zone Approved Y/N
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 8.2 Mixing Zone Analysis.	Answer: Yes Fact Sheet, Section 8.2.2	18 AAC 70.240 (c)(1)	Y
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	Fact Sheet 8.2 Mixing Zone Application and Review Process	18 AAC 70.240(l)	
Existing use	Does the mixing zone…			
	(1) partially or completely eliminate an existing use of the water body outside the mixing zone? **If yes, mixing zone prohibited.**	Answer: No Fact Sheet Section 8.2.3	18 AAC 70.240(c)(2)	Y
	(2) impair overall biological integrity of the water body? **If yes, mixing zone prohibited.**	Answer: No Fact Sheet Sections 8.2.1 and 8.2.3	18 AAC 70.240(c)(3)	Y
	(3) provide for adequate flushing of the water body to ensure full protection of uses of the water body outside the proposed mixing zone? **If no, then mixing zone prohibited.**	Answer: Yes Fact Sheet Section 8.2.3	18 AAC 70.240(b)(1)	Y

Criteria	Description	Answer & Resources	Regulation	Mixing Zone Approved Y/N
	(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 Sections 8.2.3, 8.2.7, and 8.2.8	18 AAC 70.240(m)	Y
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 8.2.4	18 AAC 70.240(d)(6	Y
	(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 8.2.4	18 AAC 70.240(c)(4)(C)	Y
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 8.2.5	18 AAC 70.240 (e) and (f)	Y

Criteria	Description	Answer & Resources	Regulation	Mixing Zone Approved Y/N
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 Sections 8.2.1 and 8.2.6	18 AAC 70.240 (d)(1)	Y
	(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 8.2.6	18 AAC 70.240 (d)(2)	Y
	(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 8.2.6	18 AAC 70.240(c)(4)(B)	Y
	(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 8.2.1, 8.2.6, and 8.2.7	18 AAC 70.240 (c)(4)(A)	Y
	(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 8.2.6	18 AAC 70.240(c)(4)(B)	Y
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 8.2.5	18 AAC 70.240(e) and (f)	Y
	(2) form a barrier to migratory species? **If yes, mixing zone prohibited.**	Answer: No Fact Sheet Section 8.2.5	18 AAC 70.240(c)(4)(G)	Y

Criteria	Description	Answer & Resources	Regulation	Mixing Zone Approved Y/N
	(3) fail to provide a zone of passage? **If yes, mixing zone prohibited.**	Answer: No Fact Sheet Section 8.2.5	18 AAC 70.240(c)(4)(G)	Y
	(4) result in undesirable or nuisance aquatic life? **If yes, mixing zone prohibited.**	Answer: No Fact Sheet Section 8.2.7	18 AAC 70.240(d)(5)	Y
	(5) result in permanent or irreparable displacement of indigenous organisms? **If yes, mixing zone prohibited.**	Answer: No Fact Sheet Section 8.2.7	18 AAC 70.240(c)(4)(E)	Y
	(6) result in a reduction in fish or shellfish population levels? **If yes, mixing zone prohibited.**	Answer: No Fact Sheet Section 8.2.7	18 AAC 70.240(c)(4)(D)	Y
	(7) prevent lethality to passing organisms by reducing the size of the acute zone? **If yes, mixing zone prohibited.**	Answer: No Fact Sheet Sections 8.2.1 and 8.2.7	18 AAC 70.240(d)(7)	Y
	(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 Sections 8.2.1 and 8.2.7	18 AAC 70.240(c)(4)(A)	Y

Criteria	Description	Answer & Resources	Regulation	Mixing Zone Approved Y/N
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 USFWS 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 8.2.8 and Fact Sheet Section 13	Program Description, 6.4.1 #5 18 AAC 70.240(c)(4)(F)	Y

ATTACHMENT B: Figure 1. Turbidity Criteria