Department of Environmental Conservation Response to Comments

For

Alaska Pollutant Discharge Elimination System (APDES)

General Permit AKG315100 – Mobile Oil and Gas Exploration in State Waters in Cook Inlet

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Contents

1 Introduction 4
1.1 Summary of Facility / Permit 4
1.2 Opportunities for Public Participation 4
1.3 Final Permit 6
2 General Support and Opposition for the Permit 6
2.1 General Comments from Hearings 6
2.1.1 Comment Summary 6
2.1.2 Comment Summary 6
2.2 General Comments from Trustees et al 6
3 Comments on Zero Discharge 8
4 Comments on Ocean Discharge Criteria Evaluation 9
4.1 Insufficient Information 9
4.2 Volume Estimates 11
4.3 Sediment Toxicity 13
4.4 Cook Inlet Oceanography and Sediment Transport 14
4.5 Human Health and Fish Consumption 15
4.6 Coastal Waters 18
4.7 Excluded Areas 19
4.8 Misinformation 19
4.9 Accuracy 20
4.10 Waterbody Comparisons 21
4.11 Microalgae 21
4.12 Misrepresented Context 21
5 Comments on Mixing Zone 22
6 Comments on Zones of Deposit 26
7 Comments on Monitoring Requirements 27
7.1 Environmental Monitoring Plans 27
7.2 Quality Assurance Project Plans 29
7.3 Flow Estimates 30
7.4 Points of Compliance 30
7.5 Diesel Oil 31
7.6 WET Testing 31
7.7 Monitoring with Reduced Staff 32
7.8 Deck Drainage 32
8 Comments related to Compliance and Enforcement 33
8.1 Schedule of Submissions 33
8.2 Standard Conditions 33
8.3 Record Maintenance 33
8.4 Corrective Action 34

8.5 Self-reporting 34
8.6 Inspections 35
9 Comments on Effluent Limits 35
9.1 Waivers 35
9.2 Marine Sanitation Devices 36
10 Comments on Reporting Requirements 37
10.1 General Support 37
10.2 Report Submittals 37
10.3 End of Well Reports 38
10.4 Drilling Fluid Plans 38
10.5 Best Management Practices 39
10.6 Chemical Additive Reporting 39
11 Other Miscellaneous Comments 40
11.1 Rig Ownership 40
11.2 Site 40
11.3 Increased Activity in Cook Inlet 40
11.4 Cross References 41
12 Comments on the Public Process 41
12.1 Permit Development 41
12.2 Permit Fees 41
12.3 Concerns 42
12.4 Public Review of Documents 42
12.5 Public Review of Waivers 42
13 Comments Received During Applicant Review 43
13.1 Incorrect Permit Section References 43
13.2 Clarifications Requested by EPA 43
13.3 Amendments to the Reporting Requirements 44
13.4 Diesel Oil Testing 44

1 Introduction

1.1 Summary of Facility / Permit

The proposed Alaska Pollutant Discharge Elimination Permit (APDES) general permit AKG315100 – Mobile Exploration Facilities in State Waters in Cook Inlet (Exploration Permit or permit) covers discharge of pollutants from mobile oil and gas exploration facilities operating in Cook Inlet in state waters. These state waters include specified areas in coastal waters north of the southern end of Kalgin Island and the landward side of the three nautical mile demarcation in the territorial sea. Discharges are prohibited in water less than 10 meters depth or within 4,000 meters of sensitive areas as defined in permit section 1.4.5. Based on discharges applicable to mobile oil and gas exploration activities, the following wastewater discharges are proposed to be authorized under the permit within the area of coverage:

DISCHARGE NUMBER	DISCHARGES DISCRIPTION
001	Drilling Fluids and Drill Cuttings
002	Deck Drainage
003	Domestic Wastewater
004	Graywater
005	Desalination Unit Wastes
006	Blowout Preventer Fluid
007	Boiler Blowdown
008	Fire Control System Test Water
009	Non-Contact Cooling Water
010	Uncontaminated Ballast Water
011	Bilge Water
012	Excess Cement Slurry
013	Mud, Cuttings, and Cement at the Seafloor
019	Test Fluids

The Exploration Permit replaces the mobile exploration portion of the existing general permit AKG315000 – Oil and Gas Exploration, Development, and Production Facilities in Cook Inlet (2007 permit) that has been administratively extended (see Fact Sheet section 2.0). Exploration drilling does not typically include discharges of water flood produce water or well completion, treatment, and work over fluids. Therefore, the Exploration Permit does not include these discharges. Nor does the Exploration Permit authorize discharges from any fixed oil and gas facilities.

1.2 Opportunities for Public Participation

The Department of Environmental Conservation (DEC or Department) proposes to issue the exploration permit after considering all substantive public comments. To ensure public, agency, and tribal notification and opportunities for participation, the Department:

- Identified the permit on the annual Permit Issuance Plan posted online at: http://www.dec.state.ak.us/water/wwdp/index.htm
- Notified potentially affected tribes that the Department would be working on this permit via letter, fax and/or email
- Posted a preliminary draft of the permit on-line for a 10-day applicant review February 25, 2013 and notified tribes and other agencies

- Formally published public notice of the draft permit on March 22, 2013 in the Peninsula Clarion, Homer News, and Alaska Daily News and posted the public notice on the Department's public notice web page
- Held public meeting(s)/hearing(s) during the public comment period on the draft permit at these locations:
    - Public Hearing 1: Monday, April 29, 2013. Kenai Visitor and Cultural Center, 11471 Kenai Spur Highway, Kenai, Alaska
    - Public Hearing 2: Tuesday, April 30, 2013. Alaska Islands & Oceans Visitor Center, Homer, Alaska
    - Public Hearing 3: Thursday, May 2, 2013. University of Alaska Conference Services, 3700 Sharon Gagnon Lane, Anchorage, Alaska
- Posted the proposed final permit on-line for a 5-day applicant review
- Sent email notifications via the APDES Program List Serve when the preliminary draft, draft, and proposed final permits were available for review

The Department received comments from 31 interested parties on the draft state permit and supporting documents, including comments from the oral transcripts of the people who testified at the public hearings. The Department requested industry and agency comments on the preliminary draft documents from United States (US) Environmental Protection Agency (EPA), National Marine Fishery Services (NMFS), and US Fish and Wildlife Service (FWS). The Department also requested comments from the Alaska Department of Fish and Game (DFG).

Comments were received from the following organizations and private citizens: N. Martin, Alaska Oil and Gas Association (AOGA); S. Browne, Alaska Department of Natural Resources (DNR); R. Highland, Kachemak Bay Conservation Society (KBCS); S. Bostrom, Trustees for Alaska (Trustees et al) on behalf of Cook Inletkeeper, that was inclusive of Kachemak Bay Conservation Society, Port Graham Village Council, and Alaska Community Action on Toxics (collectively, "Inletkeeper"); Michael Munger, Cook Inlet Regional Citizens Advisory Council (RCAC); S. Hennigan, Petroleum Engineers, Inc.; N. Hillstrand, Pioneer Alaskan Fisheries Inc.; J. Lee, Coal Point Seafood; D. Martin, United Cook Inlet Drift Association; S. Amundson; D. Athons; D. Bachrach; C. Birkhimer; W. Bovich; S. Christiansen; D. Cornelius; B. Dolma; N. Faust; M. Gray; C. Lovegreen; M. Masteller; R. Mouw; S. Schmutzler; M. Raskin; M. Reveil; C. Rohrer; C. Ryan; W. Schlein; B. Shavelson; and L. Wright.

Comments from Trustees to DEC included references to comments submitted to EPA. As such, the Department has responded to those comments posed to EPA as appropriate with "(or DEC)" for clarification.

Additional comments were received from applicants during the five-day applicant review. Commenters include S. Widmer, Conoco Phillips Alaska Inc. (CPAI) and J. Rose, Blue Crest Energy. Throughout the development of the permit and related documents, DEC worked closely with EPA. During the five-day applicant review period, additional comments were also received from M. Lidgard with the EPA.

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

1.3 Final Permit

The final permit was adopted by the Department on February 6, 2015. There were minor changes from the draft state permit documents after public notice to correct typographical and grammatical errors and to clarify information, and some changes resulting from the outgrowth of comments. The changes resulting from comments received are identified in the response to comments and reflected in the Final Exploration Permit, Fact Sheet, and Ocean Discharge Criteria Evaluation (ODCE).

2 General Support and Opposition for the Permit

The Department received comments of both general support and opposition to the permit.

2.1 General Comments from Hearings

2.1.1 Comment Summary

At the Homer public hearing, Ms. Highland said "the general permit should be completely changed so that none of this pollution should be allowed in Cook Inlet, which ends up coming into Kachemak Bay, which also ends up going around the world because all the waters are connected."

Response:

The comment did not address a specific permit term or condition that illustrates the stated concern; therefore, no changes were made to the permit documents based on the comment.

2.1.2 Comment Summary

At the Anchorage public hearing, Ms. Martin commented "We appreciate and are encouraged by DEC's cooperation for timely permit issuance compatible with the high level of activity required to meet Cook Inlet natural gas supplies. We look forward to continuing this productive relationship into the future, helping to ensure that oil and gas operations do not adversely impact the environment in which we live and work."

Response:

The Department appreciates the comment.

2.2 General Comments from Trustees et al

Comment Summary

Trustees, et al commented that when there is insufficient information to find no unreasonable degradation, EPA (or DEC) can only issue a National Pollutant Discharge Elimination System (NPDES) permit (or APDES permit) if it determines the following: (1) the "discharge will not cause irreparable harm to the marine environment during the period in which monitoring is undertaken"; (2) "[t]here are no reasonable alternatives to the on-site disposal of these materials"; and (3) "[t]he discharge will be in compliance with all permit conditions established pursuant 40 CFR 125.123(d)." EPA (or DEC) is required to make all these findings before issuing the permit.

In this case, EPA (or DEC) cannot make the second and third findings. For the second finding, "[n]o reasonable alternatives" means there are either "[n]o land-based disposal sites, discharge point(s) within internal waters, or approved ocean dumping sites within a reasonable distance of the site of the proposed

discharge the use of which would not cause unwarranted economic impacts on the discharger," or even if there are land-based disposal sites, "[o]n-site disposal is environmentally preferable to other alternative means of disposal" when considering the "relative environmental harm of disposal on-site" and the "risk to the environment and human safety posed by the transportation of the pollutants." EPA (or DEC) and others have recognized that there are reasonable alternatives — including waste reinjection and onshore disposal or treatment — to the discharges authorized by the permit. Additionally, given the risk to the environment and human safety posed by the pollutants, EPA (or DEC) cannot find that on-site disposal is environmentally preferable to waste reinjection or another reasonable alternative.

EPA (or DEC) also cannot show that it meets the requirements of 40 CFR 125.123(c)(3), which provides that all permits authorizing the discharge of pollutants under 40 CFR 125.123(c) "[s]pecify a monitoring program, which is sufficient to assess the impact of the discharge on water, sediment, and biological quality including, where appropriate, analysis of the bioaccumulative and/or persistent impact on aquatic life of the discharge." EPA (or DEC) has failed to provide a monitoring program that is sufficient to assess the impacts of the discharges on water, sediment, and biological quality. The monitoring program and environmental study requirements are too open-ended and unclear to be sufficient to assess the impacts of the discharges on water, sediment, and biological quality. EPA (or DEC) provides several exemptions to the baseline monitoring studies that could effectively eliminate the need for any studies to determine the impacts of the discharges. Even to the extent that facilities do not obtain an exemption, the monitoring program does not provide any definite requirements for analyzing bioaccumulation or the persistent impacts of the discharge on aquatic life.

Response:

On several accounts, the comment was not specific enough for the Department to provide a response. The following response addresses the comments that the Department found to be specific and significant (see responses 2.1.1 regarding specificity, 4.1 concerning insufficient data, and 4.8 regarding misinformation for additional details). Overall, DEC evaluates unreasonable degradation to the marine environment located seaward of the baseline of the territorial sea according to 40 CFR 125.120, Subpart M adopted by reference in state regulations at 18 AAC 83.010(c)(8). Per the state-adopted federal regulatory criteria, DEC disagrees with the commenter that there is insufficient information to determine whether the discharges will cause unreasonable degradation. The Department believes it has reviewed sufficient information to support the ODCE discussion and determination. In addition to the information reviewed from extensive data gathering efforts required by previous permits, the Department reviewed significant studies and reports to assist in developing the Exploration Permit and related ODCE. In addition to the over 350 reports reviewed during permit development, the following studies/reports listed below are of central importance to the finding of no unreasonable degradation and will be referred to in the remainder of the response to comments document:

- The Dames and Moore Continental Outer Stratigraphic Test (COST Study) Well report (1976)
- The Osprey Environmental Assessment Report (2008)
- The Produced Water Discharge Fate and Transport in Cook Inlet, 2008-2009 report (ICIEMAP, 2010)
- The USGS Water Quality Assessment of the Cook Inlet Basin, Alaska (1999)
- The Alaska Department of Health and Social Services' Fish Consumption Advice for Alaskans: A Risk Management Strategy to Optimize the Public's Health (2014)

The Final ODCE has been updated to provide clarifications and additional information to further bolster the Department's finding of no unreasonable degradation. The Department maintains adequate information exists for DEC to make the no unreasonable degradation finding and that the ODCE and Exploration Permit Fact Sheet are based on the best available data that reasonably demonstrate and ultimately support the finding of no unreasonable degradation.

Further, the Exploration Permit requires compliance with Alaska State Water Quality Standards (WQS). Per 40 CFR 125.122(b), "discharges in compliance with …WQS shall be presumed to not cause unreasonable degradation of the marine environment." Accordingly, the Department has determined that issuance of the permit will not result in unreasonable degradation because the permit requires compliance with WQS. As a result of the State's determination of no unreasonable degradation based on permit mandated compliance with Alaska WQS, further Department analysis under 40 CFR 125.123(c) is not warranted.

The responses to additional comments received can be found below, grouped by topic where appropriate. Please refer to responses to comments 4.3 (sediment toxicity), 4.4 (sediment transport), 4.5 (human health and fish consumption), 7.1 (Environmental Monitoring Plans), and Exploration Permit Appendix A – Standard Conditions for additional details.

3 Comments on Zero Discharge

The Department received numerous comments in support of zero discharge requirements for Mobile Oil and Gas Exploration Facilities in State Waters in Cook Inlet. Comments indicated the following:

a) The zero discharge policies that apply elsewhere in the country should apply to Cook Inlet Oil and Gas Facilities. If other coastal areas can require these standards and industry meets them, the same standard should be applied here. EPA needs to hold accountable the old as well as the new O&G companies exploring and developing Cook Inlet. It is essential that measures be taken to stop this toxic contamination of Cook Inlet.
b) It is time to stop the dumping of toxic drilling waste in Cook Inlet. Please move to zero discharge.

Response:

In general, commenters did not address a specific permit term or condition that illustrates the stated concern; however, the Department provides the following response.

Per Clean Water Act (CWA) Section 304(a), EPA develops Effluent Limitation Guidelines (ELGs) that NPDES permitting authorities adopt. DEC adopts ELGs by reference, including 40 CFR 435 – Oil and Gas Extraction Point Source Category, in 18 AAC 83.010 (specifically in 18 AAC 83.010(g)(3)). Per 40 CFR 125.3(c)(2), the Department may only establish technology based effluent limitations (TBELs) using case-by-case best professional judgment (BPJ) when there are no existing ELGs or the existing ELGs did not consider a particular pollutant. Neither of these underlying conditions exists for the Department to develop more stringent TBELs using BPJ. The existing ELGs do not provide the Department with the guidance necessary to promulgate more stringent technology-based requirements.

By authority granted under the CWA, EPA is responsible for making revisions to ELGs on a routine, specified basis. EPA conducts a review of existing ELGs and potential industrial sectors warranting

promulgation of new ELGs annually, and subsequently publishes final revision plans bi-annually. On even numbered years, EPA works to complete annual reviews and publish the preliminary plans simultaneously with the final plans for public review and comment under CWA section 304(m)(2).

The recent 2012 Preliminary Plan identified 40 CFR 435 as requiring an amendment to include ELGs for unconventional oil and gas. EPA is currently amending 40 CFR 435 for future publication at which time the public, including the Department, may provide comments. Until the Department has reviewed these proposed revisions, it is not possible to speculate on how these modifications to 40 CFR 435 may apply to the permit.

No change to the permit documents were made as a result of these comment.

4 Comments on Ocean Discharge Criteria Evaluation

4.1 Insufficient Information

Comment Summary

Trustees et al and Cook Inlet RCAC believes that in some areas of Cook Inlet, DEC has insufficient information to determine whether there will be unreasonable degradation to the marine environment.

Specifically, there is insufficient information on which to base the unreasonable degradation finding because of the lack of information about the potential for bioaccumulation or persistence of pollutants to be discharged, the potential fate and transport of such pollutants, the composition and vulnerability of biological communities that may be exposed to the pollutants, and the potential impacts on human health.

Commenters indicated that in the few instances where the risks of bioaccumulation are discussed, it is noted that little is known about the risk of toxicity or bioaccumulation of contaminants and pollutants. It is particularly disturbing to see that the ODCE did not include the discussion regarding metal accumulation potential that was originally included in the 2006 ODCE.

Allegedly only a bare-bones discussion regarding the actual risk of bioaccumulation was provided in the ODCE. Since the discussion failed to acknowledge the lack of information about the long-term effects of substances such as heavy metals, the conclusion on this criterion is arbitrary and insufficient information was provided on which to base a determination of no significant degradation under this factor.

Trustees et al notes that the ODCE concludes that “there is little potential for discharges to exceed marine water quality criteria.” The ODCE statement that dischargers will meet human health and water quality criteria at the end of the pipe is inaccurate. The criteria are required to be met at the edge of the mixing zones. The ODCE analysis must be performed based on actual discharges, which will exceed water quality criteria within the mixing zones and will not meet water quality standards at the end of the pipe. There is insufficient information on this ground to support a finding of no unreasonable degradation to the marine environment.

Trustees et al acknowledge that although the ODCE recognizes that at least some of the particles that remain suspended will be transported out of Cook Inlet, the ODCE does not discuss whether contaminated drill cuttings and other materials that settle to the seafloor will be transported out of Cook

Inlet, even though the ODCE recognizes that there are significant, unknown long-term risks to benthic and possibly other organisms. Because the ODCE does not provide any indication of how long pollutants and discharges are likely to persist on the seafloor, there is insufficient information in the ODCE on which to base an unreasonable degradation finding for this criterion.

Trustees et al notes that the ODCE identifies several vulnerable, endangered or threatened species in Cook Inlet, including Steller sea lions, beluga whales, and northern sea otters. However, during the long history of oil and gas development in Cook Inlet, little has been done by either EPA or industry to understand the impacts of oil and gas pollution, noise, and other impacts on these species. Until there is more ambient water quality data, significantly more rigorous monitoring data, biological studies, and other information, there is insufficient information on which to base a finding of no unreasonable degradation under this factor (The Composition and Vulnerability of the Biological Communities That May Be Exposed to Such Pollutants).

Response:

The first comment was not specific in listing the areas of concern, so DEC has reviewed existing Cook Inlet references to address the comment (see comment response 4.8). DEC maintains sufficient information has been evaluated regarding permit authorized areas of coverage to make a determination under 125.122(a)(5).

Note that the Department has purposefully prohibited discharges in sensitive areas in Cook Inlet under the general permit to ensure unreasonable degradation will not occur.

During the process of developing and revising the ODCE, the Department has reviewed Cook Inlet studies from 1967 to 2014 (see response 2.2) covering sediment transport, fish consumption, and other relevant studies related to concerns. The Department has also reviewed ODCE sections on the composition and vulnerability of biological communities and updated these sections in cases where more recent information is available. Additional information regarding the content of discharged drill cuttings (e.g., Neff, 2008 and 2010); the fate of discharged materials (e.g., Neff, 1987 and 2010; PERF, 2005; Thibodeaux et al.,1986); and the persistence, re-suspension, and redistribution of discharged materials (e.g., Rye et al.,1998; Snyder-Conn et al., 1990; Thibodeaux et al.,1986; Yunker et al.,1990) has been added. In addition, the discussion on heavy metals from the 2006 ODCE has been included, and compared to the ICIEMAP study efforts as it included parameters that are associated with the discharge of drilling fluids and drill cuttings in Cook Inlet. The ICIEMAP results did not show a correlation between the concentrations found in sediment or the water column with oil and gas activities in Cook Inlet.

Adherence to the WQS ensures that there are no severe impacts to human health and the environment and in part led to the ODCE determination of no unreasonable degradation in Cook Inlet as per 40 CFR 125.122(b). WQS are composed of designated uses of the water body (e.g., recreation, aquatic life), water quality criteria to protect designated uses (numeric pollutant concentrations and narrative requirements), an antidegradation policy to maintain and protect existing uses and high quality waters, variances (e.g., mixing zones), and general policies addressing implementation issues. Per 40 CFR 125.122(b), “discharges in compliance with state water quality standards shall be presumed to not cause unreasonable degradation of the marine environment.” While some parameters of concern will meet Alaska Water Quality Criteria at the end of pipe, the water quality criteria for all parameters must be met at the

boundary of an authorized mixing zone. Therefore, per ODCE regulations, no unreasonable degradation is presumed.

Also to serve as a basis for the Department's ODCE determination, the Department has reviewed recently available information including environmental monitoring plan (EMP) baseline studies conducted by new exploration facilities. These studies indicated the environmental conditions present at the drill sites are representative of net erosional sediment conditions that lack the fine-grained benthic substrate to support a diverse and abundant biological community. This information supports the Department's determination that there is no unreasonable degradation and that adverse effects are not anticipated given drilling fluids will be adequately dispersed in the receiving water. DEC requires continued environmental monitoring during the next permit cycle to collect data to inform future decisions and to provide ongoing verification of ODCE and other permit related findings.

The ODCE was developed by referencing a multitude of relevant reports representing the best available scientific information. DEC also incorporated additional information based on public input received during the public comment period. DEC has updated portions of the ODCE in relation to these comments in order to address identified concerns. Please refer to the response to comments 4.2 (volume estimates), 4.3 (sediment transport), 4.5 (fish consumption and human health), and 4.8 (misinformation) for additional, related details.

4.2 Volume Estimates

Comment Summary

Trustees et al alleges that the ODCE estimation of the potential discharge volumes is arbitrary. The ODCE determined the potential discharge volumes for exploration facilities by averaging the discharge quantities provided in Furie's Notice of Intent (NOI) and choosing an arbitrary number of wells — 12. To ensure that no unreasonable degradation will occur, the ODCE cannot underestimate the potential discharge quantity under the permit. Trustees et al says that although permittees are generally limited to drilling no more than five exploratory wells at a single drilling site, EPA (or DEC) can authorize the discharges for drilling of additional wells per site on a case-by-case basis. The ODCE does not analyze whether allowing the drilling of additional wells in a drilling site could result in unreasonable degradation, even though such an activity is possible under the permit. This exception means that there is no real ceiling on how much heavy metal and other contaminants could be released at a single drilling site.

Response:

A point of important clarification is that DEC does not authorize the drilling of wells, as the scope of regulatory activities per the APDES permit is confined to regulating wastewater discharges. Based on input from industry and a review of past exploration activities in Cook Inlet, DEC has established an upper limit to the number of exploration wells that would be drilled from a mobile offshore drilling unit regarding a lease. Since multiple exploration efforts in the past were able to effectively delineate the resource with two to three wells, the Department maintains that five wells is a reasonable maximum number to assume. If an operator requests to drill more than five exploration wells at one location, the operator will need to submit a formal request to the Department for review. The Department will review information including, but not limited to, water depth, current speed and sea floor type, and additional information including results from EMP monitoring reports from previous wells. The Department will

then use this information to determine whether the drilling of additional wells would be appropriate without affecting any previous determination by DEC. DEC sets the limit at discharges associated with five wells unless the permittee can demonstrate that no adverse impacts would result from discharges associated with additional wells (see permit section 2.2.4 for additional information).

EPA and DEC estimated the number of exploration wells and the volumes of authorized discharges based on the sporadic history of exploration in Cook Inlet. The total estimated volumes of drilling fluids and drill cuttings listed in the publicly noticed ODCE were for 20 wells in state waters and 12 wells in federal waters, of which, the estimated relied on preliminary estimates from NOI applications submitted in 2011. The Department maintains the NOI application values were appropriate to derive a maximum estimate at that time. Since that time, actual discharge data has been submitted to DEC that has been used to refine this initial estimate. This data indicated the NOI estimates were overly conservative and the estimated duration of a rig being at a well location was under estimated.

Based on comments received, a follow-up evaluation was conducted to determine an appropriate number of wells and estimated discharge volumes of drilling fluids and drill cuttings, and incidental discharges that reflect the duration a rig is onsite. DEC has verified that 20 wells is a reasonable estimate of the number of wells expected to be drilled in state waters during the permit cycle. This number is consistent with previous estimates, accounts for the length of the drilling season and the assumption that two wells could be drilled by each rig in a season. The duration at each well location in recent years was approximately 90 days, which correlates strongly with the assumption of two wells per rig per ice-free drill season.

DEC reviewed all of the recently authorized waste streams to derive updated volume estimates based on the observed average length of time that a rig spends at a location to drill a well. The previous estimates did not adequately account for rig up, drilling downtime, or well testing. As an outgrowth of the comment, the volumes for discharges 002-013 have also been updated in Table 3-4 of the ODCE. These updated estimates have not affected the Department determination of no unreasonable degradation to marine waters. Further, as the permit requires compliance with Alaska WQS, unreasonable degradation is presumed not to occur, regardless of volume estimations.

Although it has been some time since significant exploration occurred in Cook Inlet, DEC has reviewed historic and recently available information to update the preliminary estimates. There were two exploration rigs recently operating in Cook Inlet that have submitted end of well reports for review. DEC has compared this more recent data with the previous estimates as well as approximately 20 years of historic well data from Cook Inlet and elsewhere (including the California coast, the Beaufort, and the North Sea). Accordingly, the Department concludes the preliminary estimates provide a reasonable upper bound of drilling fluids and drill cuttings volumes to be expected during the permit cycle. The recent end of well reporting provides a more appropriate practical maximum estimate. DEC is using the maximum reporting generation of drilling fluids and drill cuttings discharges. Based on this evaluation, DEC proposes to use 336,000 barrels (bbls) fluids and 145,000 bbls drill cuttings total for an estimated 20 wells completed in State Waters during the next permit cycle. The incidental discharge volumes associated with time on site have increased based on the revised estimation approach. Sections 3.3 and 6.0 of the ODCE have been revised to reflect this revision. Note that these estimates are less than those previously used to evaluate in the unreasonable degradation evaluation (2006 and 1994 ODCEs), so this does not affect the

Department determination of no unreasonable degradation to marine waters. See comment response 4.3 for metal content.

4.3 Sediment Toxicity

Comment Summary

Trustees et al state that "EPA (or DEC) has failed to show that the discharge of drilling fluids and drill cuttings will not cause unreasonable degradation. Studies performed to date on the effects of drilling fluids and drill cuttings on the environment and various species provide little information about what level of exposure is safe. Recent studies indicate that the toxicity of drill cuttings can harm the environment. One water-based drill cutting study found that there were no adverse effects from natural sedimentation, but there was a "significant reduction in [the] number of taxa, abundance, biomass and diversity . . . with increasing layer thickness of water-based drill cuttings."

EPA (or DEC) similarly acknowledged the uncertainty and risks associated with drill cutting discharges. The ODCE explains that the "presence of potentially toxic trace elements in drilling fluids and adherence to cuttings is a concern." Even water-based fluids and cuttings contain dangerous substances like mercury, cadmium, arsenic, chromium, copper, lead, nickel, and zinc. The ODCE states that drill cuttings, even in small quantities, can have severe impacts on benthic organisms: "exposure to mixtures as low as 10 percent cuttings and 90 percent sand were found to affect the survival of the benthic organisms, with 100 percent mortality occurring within days in some test cases." EPA also recognized that there is a lack of information about long-term impacts of exposure and that, even to the extent that there have been studies, testing to date has only been on invertebrates. EPA does not have sufficient information on which to base its determination about whether the discharge of drill cuttings and drilling fluids will cause unreasonable degradation.

Response:

DEC disagrees that there is insufficient information for the Department to conclude no unreasonable degradation in marine waters. The technical reports and studies reviewed show that there will be limited aquatic toxicity from the discharge of drilling fluids and drill cuttings within the area of coverage if the discharges adhere to permit limits and conditions. The following paragraphs demonstrate the sufficiency of the available information as described in the ODCE.

The Draft ODCE submitted for public comment does not conclude that any of the metals listed in the comment are dangerous to the environment or human health when discharged according to the permit limits and conditions. Rather, the ODCE states in section 3.1.2.2.1 that "the presence of potentially toxic trace elements in drilling fluids and adherence to cuttings is a concern. Barite is known to contain trace contaminants of several toxic heavy metals such as mercury, cadmium, arsenic, chromium, copper, lead, nickel, and zinc."

The first referenced study (Trannum, 2009) that mentioned a significant reduction in the number of taxa, abundance, biomass and diversity with increasing layer thickness of water-based drill cuttings was a laboratory study and the drilling fluid contained the biodegradable organic compound glycol. Oxygen depletion associated with biodegradation of the glycol was suggested to contribute to these observe

adverse effects. In regard to the other study (Osborne & Leeder, 1989) in the comment referring to severe impacts to benthic organisms, the study results cited are from a laboratory test focusing on oil-based drilling fluids and drill cuttings used in the Beaufort Sea. The biodegradation of the oil is suggested to be a contributing cause of the lethality in the experiment. While these studies are informative, neither replicate the anticipated natural environment in Cook Inlet where high energy currents will not allow long-term deposition of drill cuttings. Any affects from accumulation of drill cuttings will be limited spatially and temporally. The strong currents present in Cook Inlet redistribute the drill cuttings within a short duration such that operators upon return to the drill site do not encounter deposit accumulation or sediment that is available for sampling purposes. As a result, oxygen depletion is not expected due to redistribution of cuttings by currents (COST study, Dames and Moore, 1978; Little, 2001; permit required EMP reports received to date). However, the permit requires data collection under the EMP study plan to continue to investigate drilling fluids and drill cuttings in depositional areas to inform future permit decisions and to provide ongoing verification of ODCE and other permit related findings (see Section 2.2.7). In addition, the permit area of coverage excludes known depositional areas.

4.4 Cook Inlet Oceanography and Sediment Transport

Comment Summary

DEC received numerous comments regarding sediment transport in Cook Inlet. These comments are summarized below.

Cook Inlet RCAC indicates that the ODCE does not accurately portray the environmental conditions of Cook Inlet. Descriptions of the oceanography of Cook Inlet in the ODCE included numerous inaccuracies or careless language that could lead to misunderstandings by a reader. For example, the discussion in the ODCE is unclear regarding where the sediment originates and is deposited. Upper Inlet sediments transported in the western boundary current are deposited in areas of eddies or slowed currents along the coast (thus, the extensive mudflats throughout much of the upper and central Inlet), some are deposited in Kamishak Bay, and some are swept out to deposit in deep quiescent areas of Shelikof Strait. These distinctions are important because there has been significant confusion by the public on the physical oceanography and sediment transport in Cook Inlet that has led to misrepresentation of contaminant study results. Since the ODCE is used to make decisions about the proposed permit and potential unreasonable degradation of the marine environment, it is important that it be amended.

In addition, the paragraph describing salinity was both limited in scope and a poor description of the dynamic process. Density differences drive the net circulation (baroclinic flow) of Cook Inlet (e.g., the currents that transport much of the sediment from the upper Inlet to the lower Inlet and areas beyond). The circulation currents are extremely complex, varying across the Inlet, within a tidal cycle, and seasonally. The major influences on salinity in the Inlet are the freshwater inputs (both from rivers within the Inlet and from the Alaska Coastal Current (ACC) entering the Inlet at Kennedy Entrance), and intruding seawater. Salinity is a measure of dissolved salts, with suspended or depositing glacial silt or other sediments is not controlling salinity. In much of the upper and central Inlet, sediment loads can almost be a proxy for freshwater influence and salinity. Areas of higher salinity are controlled by the intrusion of saltwater into the upper Inlet. The amount of freshwater varies by season and also varies by the hour. Any hydrographic measurements at the same location throughout a water column show

variability over time based on the amount of seawater intruding north with the tide, the position of the high energy convergent zones, and numerous other factors.

Response

The Department acknowledges that the commenter has a valid point that the statement referenced above in the comment summary gives the wrong impression that silt is an important factor controlling salinity. DEC appreciates specificity in the comments where it was provided. However, since Cook Inlet RCAC did not suggest specific studies to substantiate the comments provided, DEC reviewed existing studies to amend the information in the ODCE. The referenced statement has been removed in the Final ODCE (see below) and references to the original statement have been restructured to focus on salinity changes rather than turbidity and sediment loads.

The language in the Final ODCE clarifies that sediment deposition occurs from the southeast (driven by the Alaska Coastal Current coming up from the Gulf of Alaska) into Kachemak Bay, Lower Cook Inlet and Shelikof Strait. Sediment deposition also occurs from Upper Cook Inlet along the west side to Kamishak Bay, Lower Cook Inlet and Shelikof Strait. A diagram from MMS (2003) was included to show this pictorially. The ODCE recognizes that much of upper Cook Inlet sediment is deposited in the extensive tidal flats (see ODCE section 4.2 for additional information) and the fate and transport of the sediment is predominantly along the west side. The Final ODCE has been appropriately updated to address this comment.

As the commenter indicates, freshwater flow and the resulting density differences caused by temperature and salinity in the waterbody are an important factor driving the net circulation in the Cook Inlet. Review of the Draft ODCE (on which public comments were received) indicate that the single paragraph describing salinity and sediment in the Cook Inlet led to confusing statements. This confusion likely resulted from editing a discussion that combined salinity with sediment where they should have been separate discussions. These two discussions have been separated to provide clarity. This discussion has been updated using available information that better represents the physical processes in the Cook Inlet relating to salinity (e.g., Ladd et al., 2007; Okkonen, 2005; Okkonen et al., 2009, etc.).

4.5 Human Health and Fish Consumption

Comment Summary

Trustees et al believes that DEC does not have sufficient information on which to base its determination about human health and no unreasonable degradation of the marine environment for the following reasons:

- No comprehensive study has been undertaken to evaluate exposures from eating subsistence species.
- Gaps in information exist regarding the amount and type of fish species consumed by subsistence users in the Cook Inlet
- The ODCE relies on the 2009 Health Consultation report published by the Agency for Toxic Substances and Disease Registry (ATSDR), which evaluated data from a number of other flawed reports, including two 2000 and 2003 reports by EPA, a report based on a 2005 fish fillet analysis by DEC, and 1999 and 2001 reports by the Cook Inlet RCAC on clam and mussel samples. Sampling was conducted on only a limited range of species and was not done at all for some key

subsistence species, such as Dolly Varden. The studies did not analyze contaminant levels in marine mammals, which potentially have the highest concentrations of any contaminants having a tendency to bioaccumulate. It is also unclear from the report whether the samples collected were from small specimens or whether the study took into consideration variations in sizes. This is particularly important in species such as halibut, where contaminant concentrations will tend to be higher in larger specimens.

- The ODCE fails to discuss or recognize the potential link between benthic organisms and effects on other species, like sea otters that rely on benthic organisms for their food source.
- The use of whole animal or composite samples skews results by making it difficult to determine the levels of contaminants in the parts of the animal that people actually consume. It is also unclear from the Health Consultation and other studies what impacts and risks there will be from mixed seafood diets.
- The existing contaminants, such as lead levels in chiton, have already reached disturbing levels that pose a threat to human health.
- The ODCE failed to consider the existing levels of exposure in members of the population in tandem with the contaminant levels in the samples.

Response:

The Department disagrees with the commenter's opinion that the studies are flawed and that there is insufficient information to make the determination there will be no unreasonable degradation to the marine environment in regard to human health concerns and fish consumption. The ODCE is based on existing, available, and sufficient scientific information and related studies. Per the 2010 Produced Water Study, there is no known direct exposure pathway to humans from the discharges associated with oil and gas exploration in Cook Inlet, Alaska. Indirect exposure is primarily from direct consumption of species exposed to discharges. Contaminant concentrations detected in fish in Cook Inlet are similar to those in fish collected throughout Alaska (ATSDR 2009). As described in the 2009 ATSDR Health Consultation Study, the concentrations of pesticides, dioxins, and PCBs detected in Cook Inlet skinless Chinook salmon filets fall within the range of concentrations detected from fish caught throughout Alaska. None of the maximum concentrations in Cook Inlet Chinook filets exceeded the maximum concentrations detected elsewhere.

During the ODCE, DEC reviewed many studies that focused on fish consumption habits and related concerns. The Alaskan Traditional Knowledge and Native Foods Database (2002) indicates that while harvest data is available for subsistence communities, consumption data is necessary to estimate exposure to individuals. The Alaska Department of Fish and Game provided additional information regarding subsistence harvests in their 2003 report. More recent studies, like the one completed by the Seldovia Village Tribe, considered consumption habits for the local communities of Seldovia, Port Graham, Nanwalek, and Tyonek. Additional studies are ongoing in both federal and state agencies that may be used to further inform and potentially refine future permitting activities. In conducting the ODCE and developing the Permit, the Department used EPA approved aquatic life and human health criteria, which are legally appropriate criteria that protect the existing uses of the waterbody. The ODCE and Permit are not the appropriate legal mechanism to modify WQS.

The Alaska Department of Health and Social Services, Division of Public Health recommends that the majority of Alaskans continue unrestricted consumption of all fish from Alaskan waters, including those

from Cook Inlet (DHSS 2007 and 2014). The fish species that were included in the DHSS 2014 report include Dolly Varden and halibut, among other species. The report advises most species of fish, including Dolly Varden and halibut (under 40 lbs), and salmon can be consumed in unrestricted amounts as part of a balanced diet. In addition, the studies summarized in the 2014 report include sampling of tissue, whole fish, eggs, and other part of fish from throughout Alaska.

The literature (e.g., Leuterman et al., 1997; Neff, 1987a; Neff et al., 1989b and 1989c; PERF, 2005; Schaanning et al., 1996; URS, 2002) does not suggest that a link occurs between benthic organisms potentially contaminated by drilling fluid discharges and accumulation in higher tropic levels. The metals in cuttings piles are present primarily as insoluble inclusions in barite, clay, and cuttings particles (PERF 2005). Solid metals and metal salts associated with barite, clay, and cuttings particles are not readily bioaccumulated by animals living in close association to the cuttings pile, and the metals are not passed efficiently through marine food chains (Leuterman et al., 1997; Neff, 1987a; Neff et al., 1989b and 1989c; URS, 2002). When accumulated, the metals often are not assimilated into the tissues, but remain in the tissues as insoluble, inert concretions, probably of the original barite particles (Jenkins et al., 1989). See response to comment 4.3 for additional details on sediment toxicity.

Contaminant levels in marine mammals have been reviewed, focusing on Sea Otters, Stellar Sea Lions, and Beluga Whales. The 2013 USFWS Recovery Plan for Sea Otters notes that “heavy metals are unlikely to be a casual factor in the decline” in sea otter populations in and around the Cook Inlet. Similarly, the 2008 Stellar Sea Lion recovery plan does not include oil and gas activities or related discharges as a threat to the population. The concentration of contaminants found in Cook Inlet Beluga Whales were lower than in other surveyed Alaskan beluga stocks, and the Cook Inlet population was actually healthier than most other national and international populations (Becker, 2000). The study also suggested that low recruitment rates may be the primary stressor rather than toxics.

There have been several surveys of the concentrations of metals in tissues of marine animals from the vicinity of offshore water based muds and cuttings discharges in temperate and cold-water marine environments near drilling operations (Neff 2010). In nearly all cases, these surveys have shown that metals and hydrocarbon concentrations in tissues of marine animals near drilling operations are similar to concentrations in tissues of the same or similar species well away from and out of the influence of the drilling operations.

The 2003 EPA report, Survey of Chemical Contaminants in Fish, Invertebrates and Plants Collected in the Vicinity of Tyonek, Seldovia, Port Graham, and Nanwalek – Cook Inlet, AK, clearly states that the contaminant concentrations presented in the report are based on analyses of uncooked whole-body, unscaled fish samples. For the purposes of a contaminant survey, whole-body samples are representative of exposures to the fish or predators that consume the whole fish. However, chemical concentrations derived from a whole-body measurement may not be representative of exposures resulting from consumption of individual body parts. For many contaminants, whole-body levels would be expected to exceed those in edible fillets. Species (potentially consumed by humans) other than fish were not overlooked in the 2003 report. The report includes data for mussels, clams, chiton, octopus, snails, and three plants.

Baseline exposure levels of the population in tandem with fish tissue concentrations were not addressed because per 40 CFR 125.122(a)(6) the ODCE assesses the direct and indirect impacts to human health

from discharges. The evaluation of risk components unrelated to the authorized discharges are beyond the scope of the ODCE requirement. However, the recent Fish Consumption Advisory (DHSS, 2014) discusses the potential of bioaccumulation due to fish consumption, and reports that mercury values present on hair samples (from 1148 women in 148 Alaskan communities) were below levels of concern. Other agencies having broader authority over this concern are evaluating baseline exposure data.

The numerous studies consulted for the ODCE, in addition to conclusions in the additional reports mentioned above, inform the position that sufficient data is available and has been reviewed to make the determination of no unreasonable degradation (see the response to 4.1 regarding insufficient information for more details). Ongoing studies on subsistence users in Cook Inlet will serve to add content to the matter. The Final ODCE has been appropriately updated throughout to include this information and to address these comments.

4.6 Coastal Waters

Comment Summary

Cook Inlet RCAC finds it frustrating that the ODCE evaluates permits and their potential to cause unreasonable degradation of the marine environment within the territorial seas, contiguous zones, and the oceans, but not coastal areas. Discharges that are allowed in Cook Inlet coastal areas are not allowed in other coastal subcategory areas due to their being “typically highly sensitive to pollutant discharges.” Since the ELGs allow discharges into coastal waters in Cook Inlet (only), it is reasonable to expect that the evaluation of discharges that occurs in an ODCE also include coastal waters of Cook Inlet, unless another mechanism is identified for an ecosystem-perspective evaluation.

Response:

The Department agrees with the commenter that the technology-based effluent limitations and standards required by the Coastal Oil and Gas ELGs were issued, in part, because coastal waters are typically more sensitive than offshore subcategory waters. The commenter also correctly points out that the ODCE (required by CWA section 403(a)) is an evaluation of regional and site-specific information to assess a set of criteria established to determine if discharges authorized by the permit have the potential to cause unreasonable degradation of the marine environment within the territorial seas, contiguous zones, and the oceans, but not coastal areas. Therefore, an ODCE is not a proper regulatory mechanism to evaluate discharges to coastal waters. Compliance with state WQS, including mixing zones and antidegradation, are the appropriate regulatory mechanism to evaluate degradation in coastal waters. However, nothing precludes the Department from using technical information in an ODCE in conjunction with WQS to inform Department decisions for discharges occurring in coastal waters (e.g., mixing zones and discharge prohibitions). Note that the discharges as proposed by the permit will meet WQS whether in the territorial seas or coastal area, and meeting WQS is one of the key components for evaluating unreasonable degradation in the ODCE (40 CFRR 125.122(a)(10) and CWA 304(a)(1)). While it is correct that an ODCE does not apply to coastal waters, the imposition of similar permit requirements in both areas results from this nexus with WQS.

4.7 Excluded Areas

Comment Summary

In the draft state permit, the prohibition for discharges shoreward of the 10-meter isobath and within 4,000 meters of coastal marsh, river delta, river mouth, other listed special habitat areas, etc. has been continued to afford better protection of these sensitive areas since existing baseline data on fate and effects is very limited in these areas. Cook Inlet RCAC strongly agrees with EPA/DEC and supports continuing the discharge prohibition in these areas. However, in the draft state permit, the map of allowable areas includes: coastal intertidal and marsh areas in Chinitna Bay and at Chinitna Point, intertidal/coastal marsh areas and areas near river deltas/mouths in Redoubt Bay, nearshore areas north of Anchor Point near the Anchor River, and extensive coastal areas in the upper Cook Inlet including near the mouth of the Kenai River, Kasilof River, and Swanson Rivers that appear to be within areas restricted by the draft permit. The Prohibition Areas identified in the draft state permit clearly specify that discharge is prohibited: "Within the boundaries or within 4,000 meters of a coastal marsh, river delta, river mouth…" and "…shoreward of the 10-m mean lower low water (MLLW) isobaths." Cook Inlet RCAC supports these prohibitions and request that the area of coverage maps be updated to clearly reflect the prohibition areas that are specified in the text of the draft permit. Also, please note that the ODCE is confusing on this issue. Although it states that coastal waters (above Kalgin Island) are not subject to ODCE regulations, that would preclude the ODCE from applying to the state permit, yet language throughout the ODCE discusses both permits and 40 CFR Part 125 Ocean Discharge Criteria is adopted by reference in 18 ACC 83.010(c). Since the Ocean Discharge Criteria set guidelines for territorial seas, the contiguous zone, and the ocean, the ODCE should include the prohibition from discharging within 4,000 meters of coastal marshes, etc...(Section 1.2.2).

Response:

The ODCE discusses the appropriateness of a prohibition from discharging within 4,000 meters of rivers, marches, etc. (see ODCE section 1.2.1 for additional information). DEC appreciates the support for maintaining area prohibitions in the permit. The coverage area map is intended to be a "general representation" as described in the disclaimer on the map. The applicant bears the burden of proof to demonstrate that they are operating within the coverage area as described in the permit (sections 1.2, 1.4 and Appendix D) during the NOI process (Attachment 1). The Department will review information provided by the applicant to ensure they are within the area of coverage as described in the permit. Further, it is the responsibility of the permittee to verify and prove that they are operating in an area of coverage provided by the permit. The Fact Sheet section 4.2, the Permit section 1.4.5 and the NOI form have been revised to emphasize this intent. Even if discrepancies are apparent, the area of coverage and prohibition language, not the map, in the permit is the governing language.

4.8 Misinformation

Comment Summary

Cook Inlet RCAC believes that the ODCE contains significant misinformation and in many cases does not include information that should be incorporated or discussed. It was confusing to read because in some sections it was clear that significant effort was made to describe in detail some aspect of Cook Inlet's habitat or biota, yet in others the explanations or summaries were lacking detail or included

descriptions of areas that are significantly different from Cook Inlet and missed more relevant existing information for Cook Inlet.

Response:

The Final ODCE incorporates additional information specifically brought up in comments and attempts to clarify parts where misinterpretations were evident from the comments received. However, this comment is too broad and too general for any specific issues to be addressed (see response to 2.1.1 for additional information). The APDES permitting regulations require that all reasonably ascertainable issues and all reasonably available arguments supporting a commenter's position be raised by the close of the public comment period (40 CFR 124.13). To satisfy these requirements, issues raised in the public comment period must be raised with a reasonable degree of certainty to ensure that the DEC need not guess at the meaning of imprecise comments; the Department is not obligated to speculate about possible concerns not articulated. There is no attempt in the comment to describe what misinformation is included, what information is not included, or which sections did not include adequate detail. However, DEC has added details to several sections of the Final ODCE in response to other, more specific public comments, thereby addressing this comment.

4.9 Accuracy

Trustees et al commented that there is also no indication that DEC independently verified the accuracy of the ODCE. The ODCE was prepared by EPA with the assistance of Tetra Tech. DEC provided only a conclusory statement that, after considering the 2013 ODCE and existing limitations from the 2007 permit, "DEC determined that discharges authorized by the permit and discharged in accordance with the permit requirements will not cause unreasonable degradation of the ocean environment when receiving waters have adequate dispersion and mixing." This statement is insufficient to show that DEC independently verified the accuracy of the information in the ODCE. DEC also did not indicate in the ODCE discussion or elsewhere when receiving waters will have "adequate dispersion and mixing." Without sufficient information about what actually constitutes adequate dispersion and mixing, there can be no finding that there is no unreasonable degradation because the unknown risk exists. As such, DEC must either demonstrate that there is adequate dispersion and mixing or require measures to ensure adequate dispersion and mixing so that a finding of no unreasonable degradation can be made.

Response:

As demonstrated by earlier comment responses that significant revisions were made to the ODCE based on comments received, DEC has independently verified the content of the Final ODCE, and went so far as to develop a separate ODCE specific to the state permit only. In addition, the Department has gone through and re-evaluated the determination steps, as outlined in CWA Section 403 of the CWA and 40 CFR 125. Locations or situations where there would be inadequate dispersion and mixing are addressed in the ODCE (see sections 3.4 and 6.1). Near shore environments, less than 10 meters deep based on the Mean Lower Low Water (MLLW) mark are excluded from coverage. In addition, DEC established a depth and rate of discharge limitation to ensure there is adequate dispersion for drilling fluid discharges within the area of coverage. Please refer to the discussion in responses to comments concerning 4.1 (insufficient information), 4.4 (oceanography), EMP baseline studies (7.1), the sediment transport comment response (4.4) and 5 (mixing zone responses) and 7.1 (EMPs) for additional information.

4.10 Waterbody Comparisons

Comment Summary

Cook Inlet RCAC notes that the ODCE made comparisons to Arctic areas (e.g., Beaufort Sea) in several instances (e.g., Mysis growth, nearshore lagoons) followed by a statement such as "Although this study was completed in the Beaufort Sea…rates are likely similar…in Cook Inlet." Environmental conditions in Beaufort Sea lagoons are very different from areas in Cook Inlet in atmospheric and ocean conditions, coastal influences, tides, currents, sedimentation rates, etc…and there would be little similarity between the Arctic lagoons studied by Dr. Ken Dunton and any area of Cook Inlet.

Response:

The specificity of the comment is appreciated and the Final ODCE has been verified for accuracy and consistency to correspond with the final permit. Since the commenter did not suggest a study, DEC reviewed existing Cook Inlet studies to reference information.

Although the information presented in the Draft ODCE was factually correct, applicable historical and modern Cook Inlet-specific studies (e.g., Larrance and Chester 1979; Redburn et al. 1976; Speckman et al. 2005) have replaced the Beaufort Sea and Simpson Lagoon examples in the primary production and zooplankton sections of the Final ODCE. See the responses to comments 4.1 (insufficient information), 4.4 (oceanography), 4.5 (human health), and 4.11 (microalgae), for additional information.

4.11 Microalgae

Comment Summary

Cook Inlet RCAC comments that the description of attached macroalgae in the ODCE contains numerous inaccuracies and missed data sources that could have provided more detail. This is especially important since there are areas not far from the potential discharge locations within the Cosmopolitan Unit, where Buccaneer has begun drilling, that have shown diverse and lush benthic kelp communities and an abundance of higher trophic levels as evidenced by the heavy sport fishing of halibut and salmon that occur in the area.

Response:

The comment is too vague to respond to directly. Since the commenter did not suggest a study, DEC reviewed existing Cook Inlet studies to reference (see comment response 2.2 and 4.8 for addition details). There is no attempt by the commenter to describe any inaccuracies or provide missing data sources. Additional studies (e.g., Redburn et al., 1976; Schoch and Chenolet, 2004; Spurkland and Iken, 2011) have been identified to supplement the information presented on macroalgae distribution and abundance, growth and production, environmental factors, and habitat sections in the Final ODCE.

4.12 Misrepresented Context

Comment Summary

Cook Inlet RCAC request that EPA (or DEC) revisit the ODCE and clean it up since it seems customary for language within one ODCE (or similar evaluation summary documents) to be extensively referenced and used in future ODCE's for the same area. This ODCE states that it "relies extensively on information provided in…" MMS Lease Sale Final Environmental Impact Statements, permit fact sheets, previous

permits, and a prior ODCE for Forest Oil. These documents often simplify, summarize, or misrepresent the findings of extensive study reports and manuscripts during the effort to describe some Cook Inlet ecosystem or biotic category in a paragraph or two.

Response:

While DEC is not required to respond to comments directed at EPA specifically, the Department provides the following response. DEC did intend to simplify and summarize often voluminous documents but never intended to misrepresent their findings. Sections have been thoroughly edited to clarify or correct information and updated references have been added based on comments that provided specific supporting information. See section 4 responses to comments for additional details. The ODCE has been updated accordingly.

5 Comments on Mixing Zone

DEC received numerous comments regarding the permit authorized mixing zone. These comments are summarized below.

The draft state permit allows the authorization of a standard 100-meter (m) mixing zone when requested if the proposed discharges are consistent with permit conditions and that demonstrate compliance with the requirements of 18 AAC 70.240 – 18 AAC 70.270. Cook Inlet RCAC recommends that the 100-m mixing zone size be the maximum allowed, and that where possible, a mixing zone should either be eliminated or reduced in size to be the smallest size practicable as required by 18 AAC 70.240.

Trustees et al claim DEC failed to demonstrate that the mixing zone is as small as practicable. The commenter states DEC provided no information on the modeling performed or any other analysis used in determining the size of the mixing zone. The commenter claims the 100 meter length mixing zone is more lenient than the one authorized in 2007 for chemically treated miscellaneous discharges.

Trustees et al further claim that the permit does not guarantee that dischargers will treat effluent using methods that are the “most effective and technologically and economically feasible.” Trustees et al discuss the total residual chlorine limit and compliance with the minimum treatment requirements. Trustees et al assert that since the regulations in 18 AAC 72.060 permit a waiver from the minimum treatment requirements, there is no guarantee that dischargers “will utilize the most effective and technologically and economically feasible treatment methods.” As such, Trustees et al believe the draft permit requirements do not comply with 18 AAC 70.240(a)(3).

The commenter also alleges that DEC’s analysis of the protection of existing uses within the receiving water is flawed. Trustees et al assert that DEC did not provide sufficient analysis or justification in the conclusion that existing uses will be maintained. The commenter states DEC did not discuss its analysis of the physical, biological, and chemical characteristics of Cook Inlet nor the discharge characteristics. Trustees et al claim DEC has not provided sufficient data and analysis to ensure any mixing zones will not result in discharges of pollutants that will bioaccumulate, bioconcentrate, or persist above natural levels.

Trustees et al assert DEC failed to analyze the risk to organisms passing through the mixing zone. The commenter claims DEC has not addressed whether discharges in the mixing zone will or will not cause

lethality to passing organisms. The commenter also states that DEC did not address whether the discharges will, or are expected, to cause "carcinogenic, mutagenic, or teratogenic effects on, or otherwise present a risk to, human health." Trustees et al object to the reporting of chemical usage occurring in the end of well report. The commenter also states the NOI form is insufficient to ensure the applicant submits the information necessary to demonstrate an approved mixing zone complies with the 18 AAC 70 regulations and to ensure there is adequate information for the public and DEC.

Trustees et al wants EPA to require benthic organism sampling in the vicinity of the mixing zones. Benthic organism sampling supposedly would provide a direct method for determining the impacts of the discharges on the environment and aquatic ecology

AOGA at the Anchorage public hearing on the draft permit commented that the requirements imposed by EPA's Ocean Discharge Criteria do not apply to the inland waters north of the south end of the Kalgin Island in Cook Inlet. DEC also has the authority to approve a mixing zone larger than 100 meters. Accordingly, the draft state permit should be revised to allow submission of an application for a larger mixing zone with the NOI, allowing the 100-meter cylinder mixing zone to be tailored to the higher current speed conditions that are common in most of the Cook Inlet, if appropriate for a particular discharge.

AOGA additionally noted that the draft state Permit and Fact Sheet define a default mixing zone with a 100 meter radius for several waste streams. DEC's explanation for the default mixing zone satisfies Alaska's WQS, and the default mixing zone should be retained in the final permit. However, both documents wrongly assert that DEC cannot approve a mixing zone larger than 100 meters under the draft state permit because of requirements imposed by EPA's Ocean Discharge Criteria. The Ocean Discharge Criteria do not apply to inland waters (those landward of the baseline). In Cook Inlet, the waters north of the south end of Kalgin Island are inland waters, and not subject to the Ocean Discharge Criteria. Accordingly, DEC is free to authorize mixing zones larger than 100 meters in these waters, so long as the requirements of Alaska's WQS are met.

The draft state permit should be revised to allow submission of an application for a larger mixing zone with a NOI. This also would allow the 100 meter cylinder mixing zone to be tailored to the higher current speed conditions that are common in most of Cook Inlet, if appropriate for a particular discharge. This change may be particularly important for sanitary discharges. As demonstrated by the higher limits authorized under the 2007 Permit, the proposed 1 mg/L effluent limit for total recoverable chlorine (TRC) – with a 100 meter mixing zone – is not feasible for many facilities.

Response:

By using critical oceanographic conditions that are representative of the area of coverage and conservative discharge characteristics while evaluating the mixing zone (per 18 AAC 70.240 to 70.270, 2003 version), the Department has the authority and ability to authorize a 100 meter mixing zone for any location that is determined to meet the general requirements for coverage under the permit. Due to the nature of exploration facilities, discharges could occur at any location within the coverage area. Note that the permit prohibits discharges to areas in Cook Inlet where site conditions could be inherently different due to oceanographic conditions that affect dispersion. The discharge of drilling fluids and drill cuttings is limited by a depth dependent discharge rate that ensures the 100 meter radii chronic mixing zone remains

applicable at various locations in the coverage area. These and other permit requirements and prohibitions help establish additional constraints that support authorization of a standard 100 meter mixing zone.

An applicant may request a mixing zone in the NOI if satisfactorily demonstrating the facility fulfills the requirements for coverage under the permit. However, the NOI is not a mixing zone application. The Fact Sheet has been revised to emphasize this point. Rather, the NOI provides information to the Department to verify that the conditions for a specific site for which coverage is being sought would not be considered substantially different than the conditions considered during the mixing zone evaluation. If the site is not substantially different, then the Department has the authority to authorize a 100 meter mixing zone. If the applicant cannot demonstrate through the NOI process that the facility meets the general requirements for coverage under the permit, then the Department may consider an individual permit for the facility (see Permit sections 1.2.9.3 and 2.10.4.3). Only in these unique cases would DEC request a mixing zone application for the purpose of evaluating a different size mixing zone during development of an individual permit. A larger mixing zone is not appropriate because the 100 meter mixing zone considered critical conditions in the receiving water and the most effective and reasonable treatment methods (e.g., TBELs for chlorine). The need for a larger mixing zone implies that the facility has not implemented appropriate treatment technology.

The mixing zone analysis for the discharges associated with mobile exploration facilities is based on the analysis conducted for the 2007 Permit mixing zones, which considered both mobile exploration facilities and fixed production platforms. The fixed platform evaluation is not applicable to the mobile exploration permit. The mixing zone evaluation from the 2007 permit that does apply to the mobile exploration facilities was re-evaluated to ensure that there were no substantial changes or new information that would have resulted in a different determination. The 2007 Permit included a Cornell Mixing Zone Model determination of 100 meter mixing zones using critical current conditions in Cook Inlet that represented 90th percentile and 10th percentile current speeds, 2.3 meters per second (m/s) and 0.2 m/s, respectively (see the 2007 DEC 401 certification for a more detailed discussion). In addition, the modeling addressed both surface discharges and subsurface discharges for a wide array of discharge flow rates that resulted in an in-depth understanding of dilution factors identified at the boundary of the 100 meter mixing zone. This modeling effort resulted in development of critical dilutions for whole effluent toxicity (WET) testing as well as a means to evaluate receiving water concentrations for other parameters at the boundary of the mixing zone at various flow rates.

Since there have been no changes in proposed discharge flow rates, characteristics of the discharges, or the critical oceanographic conditions over the general coverage area, the previous mixing zone modeling for discharges associated with mobile exploration facilities are still valid. In addition, currently available environmental studies and other supporting information were reviewed to inform the Department's decision to retain the 100 meter mixing zone in the mobile exploration permit. As in the 2007 Permit, the determination of the 100 meter mixing zone is based on Alaska WQS and supported by technical information contained in the ODCE and the COST Study (Dames and Moore, 1978). For example, the Department evaluated exposure pathways and whether pollutants authorized in the mixing zone would bioaccumulate or persist in the environment or could be expected to cause a carcinogenic or human health risk. Similar to findings in the ODCE, the Department did not find evidence that reasonably demonstrated these human health concerns exist as a result of the authorized mixing zones. (See 4.5 on human health and fish consumption response for additional information.)

The mixing zones for TRC are for the authorized domestic wastewater (Discharge 003) and gray water (Discharge 004) waste streams. These mixing zones are based on the maximum TRC TBEL of 1 mg/L developed using BPJ as well as an understanding of maximum flow rates of domestic wastewater discharges that would be associated with a mobile exploration facility. The mixing zones were established previously using the same governing parameters, which have not changed. Since the 1 mg/L TRC limit is a TBEL based on the most effective, technologically and economically feasible treatment available, the permittee must meet this limit and there is no opportunity to seek a waiver. Further, the permit requirement to obtain a waiver to minimum treatment requirements per 18 AAC 72.060 does not pertain to TRC or mixing zone authorizations. Per 18 AAC 72.050, minimum treatment is secondary treatment as defined in 18 AAC 72.990(56), which does not include TRC in the mixing zones. Therefore, minimum treatment or waivers to minimum treatment are not applicable to mixing zone regulations 18 AAC 70.240 to 70.270 as suggested in comments.

When evaluating the mixing zone for drilling fluids and drill cuttings, the Department considered the nature of the base fluid, cuttings from the natural formation, and drilling fluid additives commonly used by industry. Specifically, DEC evaluated drilling fluids plans (DFPs), end of well reports, and the COST Study (Dames and Moore, 1978) to inform their decision to include dissolved metals associated with drilling fluids in the chronic mixing zone (see responses to 4.2 discussing volume estimates, 4.3 regarding sediment toxicity, 7.1 on environmental monitoring, and 10.4 regarding drilling fluid plans for additional information). This determination was based on presence of particulate metals in the base drilling fluid and the likelihood that there could be associated chronic effects at the point of discharge that is quickly reduced to due to dispersion in the water column. Note that the COST Study (Dames and Moore, 1978) demonstrated that there are no anticipated acute toxic effects associated with drilling fluids within 100 meters of the discharge. The permit requirement for developing and implementing a DFPs assists in ensuring consistent results. The COST Study (Dames and Moore, 1978) also supported the decision to exclude zones of deposit in the permit at this time. The study indicated that long-term deposition was not observable after one or two tidal cycles. In addition, the EMP requirements are designed to collect data that may inform future decisions. To date, the conditions observed in the COST Study (Dames and Moore, 1978) have been collaborated by EMP monitoring where sediment deposition has not occurred at the sites investigated due to the erosional effects of the high current speeds found in Cook Inlet. Note also that these consistently high current conditions were used during the development of a standard 100 meter mixing zone where the observed 90th percentile currents were used to estimate dispersion.

Mixing zones in the permit are based on applicable state mixing zone regulations and further supported by the technical information found in the 2013 ODCE.

The 100 meter radius mixing zone (as defined by 40 CFR 125.121(c) and evaluated per 18 AAC 70.240-270) ensures that water quality criteria is met at the boundary of the mixing zone and is determined to be as small as practicable per 18 AAC 70.240. The determination of small as practicable has three general considerations: 1) The mixing zone does not impair the integrity of the water body as a whole (protection of uses); 2) There is no lethality to organisms passing through the mixing zone (protection of aquatic life); and 3) There are no significant health risks, considering likely pathways of exposure (protection of human health). The 100 meter mixing zones are very small when compared to the entire area of coverage of Cook Inlet such that the integrity of the water body as a whole is protected. Lethality is not expected to occur if a passing organism can travel through the acute mixing zone within 15 minutes. As noted by

Trustees et al, DEC did not provided information about the boundary of a smaller mixing zone of initial dilution where acute aquatic life criteria applies. The Department establishes a 10 meter radius acute mixing zone for TRC associated with the domestic wastewater (Discharge 003) and gray water (Discharge 004) waste streams. This mixing zone is established per 18 AAC 70.255(d) as being 10 percent of the chronic mixing zone dimension where the acute criteria is met for TRC. The Permit and Fact Sheet have been revised to include the acute mixing zone. Using a 20 meter diameter (10 meter radius) acute mixing zone and the 10th percentile current of 0.2 m/s, a drifting organism would pass through the mixing zone in 1 minute 40 seconds. Because this time is less than 15 minutes, lethality to aquatic organisms is not expected to occur. As stated previously for the discharges of drilling fluids and drill cuttings, the COST Study (Dames and Moore, 1978) also demonstrated that there was no lethality observed within 100 m during their in-situ bio-assay testing. As stated previously, the detailed review of available information has not resulted in reasonable evidence that the discharges will pose a significant human health risk when considering likely pathways of exposure (see response to 4.5 for additional information related to human health and fish consumption). The above demonstrates that the default mixing zones are small as practicable and protect existing uses.

DEC cannot speak on behalf of EPA in regard to benthic organism sampling in the vicinity of the mixing zones. See responses to 4.3, 7.1 and 10.4 for additional information regarding sampling and toxicity.

6 Comments on Zones of Deposit

Trustees et al claim the draft state Permit fails to consider zones of deposit from the discharges and that DEC has failed to perform the proper analysis for allowing the deposit of substances on the bottom of marine waters. The commenter believes that discharges authorized under the general permit can lead to zones of deposit.

Response:

Comment noted, and a zone of deposit discussion has been added to the ODCE. In most locations in Cook Inlet within the coverage area, there is limited potential for a zone of deposit to form and if one does form it lasts for short durations. The depth and rate limitation for drilling fluids and drill cuttings help to limit development of a zone of deposit. Several of the studies available that discuss the fate and transport of drilling fluids and drill cuttings are from water bodies (e.g., the Beaufort Sea) where there is a depositional environment and where deposits may persist for multiple seasons. In Cook Inlet, it is likely that the deposited material will be separated into suspended materials (drilling fluids) and bedforms (drill cuttings) within 1-2 tidal cycles. In addition, the EMP study results reviewed to date have not identified depositions of muds and cuttings that could be sampled. Therefore, DEC has not included zones of deposit in the general permit. However, EMP study objectives are designed to collect data over the next permit cycle to inform future permitting decisions, including the potential inclusion of zones of deposit.

7 Comments on Monitoring Requirements

7.1 Environmental Monitoring Plans

Comment Summary

Industry, Cook Inlet RCAC, and Trustees et al commented on the EMP requirements. Both Cook Inlet RCAC and Trustees et al requested more stringent EMP requirements and discontinuance of the exemption provision while industry commented that the EMP requirements should be removed for coastal waters because the requirements are based on the ODCE, which regulatorily does not apply to coastal waters. Cook Inlet RCAC objects to allowing exemptions to EMP requirements because it is impossible to predict whether any significant impacts would occur in advance of drilling operations because the drilling fluid composition can be changed in the field. Trustees and Cook Inlet RCAC further comment that neither the existing EMP studies being conducted under the existing Cook Inlet Exploration, Development, and Production General Permit nor the requirements under the proposed Mobile Exploration General Permit satisfy the objectives of the EMP. Cook Inlet RCAC states that this is partly due to lack of specificity in the proposed permit and because the EMP Study Plans are not reviewed by scientists knowledgeable about Cook Inlet or otherwise open to public review. Supporting this comment, Cook Inlet RCAC points to various vague and incorrect descriptions in the ODCE concerning Cook Inlet conditions and marine biology (see comment 4.4). Trustees et al notes the objective of the EMP is to collect representative data that can be used to inform future decisions about degradation caused by oil and gas facilities in Cook Inlet. Cook Inlet RCAC claims the objective is to conduct monitoring similar to the previous produced water studies incorporating a sediment triad approach and that sediment toxicity, water column chemistry, and benthic community monitoring needs to be included in all EMP studies. Industry states the objective is to support the ODCE determination that there is no unreasonable degradation to the marine environment.

Response:

DEC first responds with a clarification of the overall objective of the EMP monitoring requirements is to evaluate the applicability of the 4,000 meter setback to sensitive nearshore environments and develop baseline information that can be used to evaluate impacts to nearshore environments from current and future discharges of drilling fluids and drill cuttings. The EMP baseline monitoring requirements originated in the 1999 general permit and included only facilities operating within 4,000 meters of coastal marshes, while the prohibition was 1,000 meters (see Fact Sheet section 3.0). However, during the term of the 1999 permit no data was collected because there were no facilities that operated within 4,000 meters of marshes. In the 2007 Permit, the prohibition was expanded to 4,000 meters as a conservative measure until EMP data was available to evaluate the applicability of the expanded prohibition. Therefore, the monitoring requirement was expanded to include all mobile facilities regardless of location so that at least some data would be available in future permit reissuances. Given there is still limited data, these EMP requirements are retained from the 2007 Permit, (i.e., all new exploration facilities regardless of proximity to prohibited nearshore environments).

Per 2007 Fact Sheet section, IV(D)(1) these requirements would assist in understanding potential future impacts in nearshore environments from the discharge of drilling fluids and drill cuttings as well as address concerns raised by Tribal members and citizen groups. Accordingly, the EMP objectives purposely focus on localized impacts to nearshore environments within the vicinity of the discharge and

are not intended to evaluate the overall impacts from oil and gas facilities over the entire coverage area, although larger waterbody inferences can be made if similarities occur at multiple sites within the area of coverage. In this instance, the EMP requirements are dissimilar from the requirements associated with produced water studies referenced by Cook Inlet RCAC. Per Fact Sheet section 7.2.9, the purpose of the EMP is to obtain localized fate and effect data for discharges of drilling fluids and drill cuttings to evaluate the justification of the 4,000 meter setback to coastal marshes that was established in the 2007 Permit. The legal basis for this EMP requirement is found in 40 CFR 125 for state waters of the territorial sea and 18 AAC 70 for the entire area of coverage (see response 4.7 for additional information regarding excluded areas). Therefore, the EMP requirements apply to both the territorial sea and coastal waters of Cook Inlet.

As there were no drilling operations that occurred within proximity of marshes during the previous permit cycle, this requirement was expanded to include all exploration sites in the state Permit. In addition, the primary objective of obtaining data that could assist in evaluating nearshore environmental impacts from the discharge of drilling fluids and drill cuttings remains unchanged. Since the permit restricts drilling in nearshore environments (see Fact Sheet section 4.1), the EMP objective is to collect baseline data at sites within the coverage area that may have similar characteristics which in turn may lead to extrapolation of impacts to excluded nearshore areas. The desired characteristic could be present in depositional or transitional areas (where sediment is in motion) with fine-grained sediments that are susceptible to metals accumulation, supportive of biological communities, and subject to slower sediment transport than areas where there is net erosion. As stated in a comment by Cook Inlet RCAC, the:

> "…Critical consideration for the sediment sampling program is the bottom type. Based on our experience of sampling throughout Cook Inlet, many locations are scoured with each tidal cycle and no net accumulation of sediments occurs. The sediment sampling program may not even be possible, as the bottom may consist entirely of cobble, large gravel, or very coarse sediments. Typically the accumulation of pollutants in the marine environment is associated with fine-grained sediments. Thus, if the sediment program is in a net erosional environment, it is expected that sampling will be difficult or impossible and pollutants may not be accumulating in these areas."

DEC appreciates Cook Inlet RCAC acknowledgement that sediment sampling may not be possible in many locations in the coverage area due to net erosion and that accumulation of pollutants in sediment is associated with fine-grained sediments. It is also important to note that benthic biological communities are strongly correlated with sediment. Because the primary objective of the EMP requirements is to evaluate sites that are characteristic of nearshore environments (i.e., fine-grained sediment), the inability to sample sediments (i.e., none have been deposited) at a location indicates that the particular site does not require further consideration. In addition, because these scoured locations are located in high tidal currents, dispersion is already known to be adequate to demonstrate that further evaluation of localized fate and transport will not help in meeting EMP objectives. In these cases, DEC maintains the EMP sampling exemption is warranted.

DEC disagrees with Trustees et al and Cook Inlet RCAC that the exemption should not be allowed and with Cook Inlet RCAC that sediment toxicity should be a monitoring requirement. The assertion that exemptions should not be considered because it is impossible to predict impacts associated with field

changes in drilling fluids composition is unfounded. Per Permit section 2.6.3, permittees are required to identify chemical additives and provide a worst-case cumulative toxicity estimate in the Drilling Fluids Plan (DFP) submitted with the EMP Study Plan during the authorization process. In addition, the permittee must establish procedures for determining whether or not a chemical additive (that was not originally planned for or used in the toxicity estimate) may be used. DEC reviews the DFP simultaneously with the EMP Study Plan and can request modifications to ensure these plans are compatible. In addition, the metals concentration toxicity of the drilling fluid is monitored during the drilling process. These efforts and requirements result in ongoing knowledge regarding the concentration of EMP parameters in the drilling fluids being discharged.

The intent of the EMP is to monitor spatial and temporal variations of metals concentrations in the sediment (should it be present) at the discharge location and to compare these concentrations with the baseline concentrations, drilling fluid concentrations, and accepted sediment screening criteria (e.g., NOAA Technical Memorandum NOS OMA 52, Long and Morgan, 1991,). Although not considered regulatory criteria, comparison of observed sediment metals concentrations to the effects range low (ERL) and effects range median (ERM) criteria provides a reasonable estimate of potential toxicity in marine sediments. Hence, sediment toxicity testing is not required in the EMP at this time. In addition, because sediment ERL and ERM criteria are available for the metals of concern, benthic organism sampling is not required within the mixing zone (See Comment 5).

Per permit section 2.2.7.2, an EMP Study Plan must be submitted with, or prior to, submission of an NOI. DEC will provide input into the study plan prior to the permittee implementing monitoring and reporting under the plan. If a draft report fails to meet objectives, the Department may require revisions or modifications to the monitoring program per Permit section 2.2.7.5.2. Per Permit section 2.2.7.6, the monitoring plan may be modified if DEC determines that modifications are appropriate to meet EMP objectives. Further, the Department has the technical expertise and legal authority to implement these permit conditions without public notice or third-party assistance.

As a result of this comment, permit section 2.2.7.3.2 and related content in Fact Sheet section 7.2.9 were revised to read "potential for" sediment toxicity to clarify the intent of this objective. The last sentences in Fact Sheet section 7.2.9 and Permit section 2.2.7.7 have been revised to read "A site-specific exemption request may be submitted in writing for Department approval."

Please see Section 4.0, Comments on ODCE for additional information.

7.2 Quality Assurance Project Plans

Comment Summary

The draft state Permit (section 3.1.1) specifies that the Quality Assurance Project Plan (QAPP) be implemented within 120 days of the effective date of this permit. Since this a General Permit, Cook Inlet RCAC recommends tying the implementation date to the NOI or to implementing prior to any discharge since a permittee should not have to develop a QAPP until they have plans to perform exploration.

AOGA commented that permit section 3.1 QAPP of the permit requires permittees to develop their own water quality assurance project plans. This requirement is unnecessary and duplicative as most permittees

will contract with the labs that have already developed their own quality assurance project plans. This section should be removed from the permit.

Response:

With respect to the first comment above, comment noted. Section 3.1.1 of the permit and Table 1 – Schedule of Submissions has been revised to require QAPP certification 90 days prior to commencing discharges under the permit.

DEC disagrees with the comment in the second paragraph above. A QAPP is a routine permit requirement in APDES permits given the NPDES Program by nature is a self-monitoring program, and a permittee is required to document how on-site sample collection, observations, and analysis are completed, how sample collection is conducted, and to ensure chain of custody. Although laboratory QAPPs may include procedures to ensure compliance with analytical methods required for the permit, they are not intended to fulfill all of the permit QAPP requirements.

7.3 Flow Estimates

Comment Summary

Trustees et al finds the monitoring requirements for chemically treated sea and fresh water discharges problematic. Entities are only required to provide estimates of their total flow quantities. Permittees are then required to use the estimated flow volume to calculate the concentration of chemicals added to the waste stream. In other words, the concentration calculations turn on uncertain estimates of how many million gallons per day the facilities discharge and not on the actual volume discharged.

Response:

Comment noted. DEC finds that this approach is the most practicable method for reporting. No changes have been made as a result of this comment.

7.4 Points of Compliance

Comment Summary

Trustees et al state DEC should require sampling/monitoring at the boundary of the mixing zone.

KBCS notes that there is no requirement to monitor at the boundary of the mixing zone.

Response:

Compliance with the effluent limits of the permit, developed pursuant to 40 CFR 122.44(d)(1), are determined by monitoring at the end-of-pipe. Per Appendix A – Standard Conditions, section 3.1, “A permittee must collect effluent samples from the effluent stream after the last treatment unit before discharging into the receiving waters. Samples and measurements must be representative of the volume and nature of the monitored activity of discharge.”

No change to the permit documents were made as a result of the comment.

7.5 Diesel Oil

Comment Summary

The draft state Permit seems to include some contradictory verbiage concerning "fingerprinting" (section 2.2.6.3.1). In the beginning of this section the draft permit states that presence or absence of diesel oil will be determined by a comparison of a fingerprint of the sample versus diesel oil in storage at the facility using Method 8015C, which is a GC/FID method. Later in the same section it states that GC/MS may be used when it is determined that greater resolution of the drilling mud "fingerprint" is needed. Cook Inlet RCAC would recommend changing the language in the State permit to that used in the draft EPA permit to clarify this section.

Response:

Comment noted. The Department has reviewed the two permit sections and have concluded they are consistent requirements. No change has been made to the permit as the sections were not different.

7.6 WET Testing

Comment Summary

The existing General Permit (2007 permit) requires testing of at least five dilutions plus a control with two dilutions above and two below the critical dilution. The draft state Permit retains this same wording. The new draft EPA permit specifies one dilution below and three dilutions above the critical dilution with concentrations at 10%, 50%, and 100% effluent. Cook Inlet RCAC recommends that the wording in the existing General Permit and in the draft state permit be retained and be used as a replacement for the wording in the draft EPA permit for consistency. Also, the critical dilution triggers listed in the EPA permit are all below 1% effluent concentration; in order to trigger additional testing, the IC25 would need to be below the critical dilution for which only one concentration is being tested. Additionally, the EPA permit does not specify the dilution for the one test concentration below the critical dilution. Cook Inlet RCAC recommends using a serial dilution for those concentrations below the critical dilution to provide the most useful information concerning toxicity of the discharge.

WET testing requirements – For accelerated testing both permits specify that a Toxicity Reduction Evaluation (TRE) with or without a Toxicity Identification Evaluation (TIE) should be initiated if chronic toxicity is seen during any accelerated test. However, neither of the draft permits specifies what should be done if no chronic toxicity is seen in the accelerated testing. We recommend that verbiage be added to clarify in both draft permits that would allow testing to resume at the normal schedule specified in the permit if no chronic toxicity is seen in the accelerated testing.

Trustees et al state the WET monitoring requirements are insufficient and toxicity trigger levels should be added for surface discharges less than 10,000 gallons per day. The commenter suggests increasing testing frequency.

Response:

DEC disagrees with Trustees et al that WET testing should apply to dischargers less than 10,000 gpd and be conducted more frequently. Due to high dissipation for flows less than 10,000 gpd, the discharge will be significantly diluted and it is not anticipated to exhibit toxic effects at the boundary of the mixing zone. The Department does not find a compelling basis to add WET testing for these low flow discharges.

DEC agrees with Cook Inlet RCAC that the Permit and Fact Sheet should be explicit in that normal testing will resume if chronic toxicity triggers are not observed during accelerated testing. The Permit and Fact Sheet have been revised to include this point. DEC also agrees that the two dilutions below the critical dilution should be serial. This has also been revised in the Permit and Fact Sheet.

DEC also agrees with Cook Inlet RCAC that the Permit and Fact Sheet should specify what action is required if no chronic toxicity is observed during accelerated testing. Permit section 2.8.9.4 is added to the permit and states "If chronic toxicity limits or triggers are not exceeded during accelerated testing, WET testing resumes at the normal frequency." Similar language is included in Fact Sheet section 7.6.3.2.

7.7 Monitoring with Reduced Staff

Comment Summary

AOGA commented that preliminary draft Permit section 2.1.8 was removed in its entirety. The section discussed the necessity to conduct monitoring when the facility is not staffed. However, we respectfully request DEC consider amending the draft state permit to clarify that the permittee is not required to conduct monitoring when the facility is not staffed. In addition, please clarify whether discharge monitoring reports are still required for unstaffed facilities.

Response:

DEC disagrees with the comment. The permittee must comply with the effluent limits in the Permit at all times when discharging regardless of facility staffing. While the lack of staff at a facility will terminate some discharges, DEC understands that some discharges will continue even if on an infrequent basis (i.e., Discharge 002 – Deck Drainage). DEC also understands that although a facility may become unstaffed, it is visited by staff on a routine basis such that monitoring activities may be performed based on this visitation frequency. In light of these considerations, continued discharges and periodic visits by staff, the monitoring and reporting must continue and discharge monitoring reports (DMRs) must be submitted even if there is no discharge. DMRs are necessary so DEC can track the status of the facility staffing and whether discharges are occurring. As outlined in the Permit section 2.9 regarding Reporting Requirements, the permittee agrees to submit legally binding DMRs for the duration of permit coverage. The permittee shall mark the DMR as "no discharge" during periods of no discharge.

7.8 Deck Drainage

Comment Summary

AOGA commented that permit section 2.3.2 (Deck Drainage) retains a provision from the 2007 Permit. This provision should be deleted as it appears to directly conflict with the monitoring required in Table 3, requiring use of a static sheen test only when discharge occurs during broken or unstable ice conditions. If the provision is retained, the phrase "once per discharge event" should be replaced with language limiting the sampling requirement to broken or unstable ice conditions.

Response:

The static sheen test is used to accommodate these discharges during times visual sheen monitoring is infeasible. The static sheen test is simple to conduct and takes very little time. No changes have been made to the final Permit based on this comment.

The provision in the permit section 2.3.2 to conduct static sheen testing is not in conflict with Table 3. Section 2.3.2 applies to "contaminated" deck drainage. Static Sheen Test applies when discharging during broken or unstable ice conditions or stable ice conditions, whether deck drainage is contaminated or not, and when discharging treated contaminated deck drainage. The permit language remains unchanged.

8 Comments related to Compliance and Enforcement

8.1 Schedule of Submissions

Comment Summary

AOGA commented that Table 1 – Schedule of Submissions: The due date for "Written documentation of noncompliance" under Appendix A 3.4.1 should read "Within five business days after the applicant becomes aware of the circumstances."

Response:

The Standard Conditions included in Appendix A are based on 18 AAC 83 regulations, are standardized for all APDES permits and cannot be changed. The Department can clarify deadlines and requirements in the schedule of submissions. DEC agrees with the comment and has made the revision in the schedule of submissions table. Appendix A has not been altered as a result of this comment.

8.2 Standard Conditions

Comment Summary

AOGA commented on Appendix A, section 1.1.2, stating it should specify what documents are to be submitted to the Compliance and Enforcement Division or refer back to Table 1.

Response:

The Standard Conditions in Appendix A are based on 18 AAC 83 regulations and are intended to apply to all permits issued under the APDES program. Therefore, changes to these standard conditions are not appropriate. The permittee is responsible for understanding and complying with all permit conditions.

8.3 Record Maintenance

Comment Summary

AOGA commented that Permit section 2.2.6.1 refers to maintaining records for a period of five years, which is inconsistent with Appendix A which references three years for record keeping. Please clarify.

Response:

The Department may request longer retention periods, as in this case, to ensure adequate data is available that is representative of the five-year term of the permit. Five years of data is often required in applications for permit reissuance. Three years is the minimum to comply with 18 AAAC 83.405(k)(2) (see the Standard Conditions in Appendix A).

8.4 Corrective Action

Comment Summary

Trustees et al commented that the corrective action section of the general permit does not sufficiently restricts dischargers. The commenter requests DEC clarify whether the provisions of the corrective action section apply only to graywater and wastewater discharges or are applicable to other general permit requirements. The corrective action schedules are contradictory and too lenient. Facilities are required to return to being in compliance, but are provided relaxed time frames for achieving compliance and completing renovations or repairs according to the commenter.

Response:

The corrective action section was developed to outline standard process and procedures that could be required if the permittee was unable to comply with limits for domestic wastewater and gray water discharges. Based on a review of the Standard Conditions, other permit terms and conditions, and discussions with EPA the Department has determined that the corrective action section is duplicative. Accordingly, the corrective action section of the permit has been removed.

8.5 Self-reporting

Comment Summary

KBCS commented that the compliance and monitoring provisions primarily depend on the dischargers to be decent and self-report problems. Even if dischargers determine that violations are continuing to occur, there is no requirement that they stop discharging into Cook Inlet. If the facilities can’t comply with their permits, they should not be allowed to continue polluting –if violations occur, include requirement to stop discharging.

Commenters stated that allowing dischargers to be self-monitoring is ineffective and any related evaluations would be based on underreporting. EPA and DEC they need to enforce the policies in place, if there are any. They need to be on platforms, they need to be checking and seeing what's going on, not listening to self-reports.

Response:

The Department conducts a critical review of the self-reported data during permit reissuance along with facility compliance history to inform decisions relevant to the next permit cycle, potentially resulting in reduced monitoring requirements if the record demonstrates consistent compliance. Conversely, poor monitoring performance or noncompliance results in increased monitoring frequency requirements or other permit requirements to ensure compliance with the CWA and WQS.

Self-monitoring and reporting is a cornerstone of the CWA. CWA 308(a)(4)(A) requires that permits contain self-monitoring requirements:

> “the Administrator shall require the owner or operator of any point source to (i) establish and maintain such records, (ii) make such reports, (iii) install, use, and maintain such monitoring equipment or methods (including, where appropriate, biological monitoring methods), (iv) sample such effluents (in accordance with such methods, at such locations, at such intervals, and in such

manner as the Administrator shall prescribe), and (v) provide such other information as he may reasonably require"

Note that the permittee must certify under penalty of law the validity of its sampling results with each DMR submitted to the permitting authority. DEC and EPA conduct routine inspections at platforms in a manner that helps ensure inspections are conducted at the times that are representative of normal operations as much as practicable. These inspections are typically scheduled based on reviewing the self-reporting data.

8.6 Inspections

Comment Summary

KBCS commented that the permit does not indicate how frequently inspections will take place and there is no indication that the DEC will ever inspect these short-term exploration facilities before they finish their operations. The enforcement mechanisms in these permits cannot protect water quality when violations occur, if the agencies are not regularly (and on a surprise basis) inspecting these facilities.

Bob Shavelson stated "I wonder about inspections, because since the enforcement action (that created Cook Inlet Keeper), when citizens stood up and protected their public water resources, we've seen no enforcement from EPA or DEC in terms of inspections on the platforms. There may have been one inspection in the past decade, but I can't remember anything more than that. The trend has been to ask industry to self-report their violations, along with environmental audits. So that's why I asked the question about what would the inspection routine be for DEC since DEC is just taking over this permitting program. And, you know, if you don't have enforcement, you don't have compliance, you don't have any incentive to increase better behavior out there."

Ms. Amundson commented "One of the ways to have more health -- and when we think about public health is through policy and enforcement. And the EPA, the DEC, if there are policies in place, they need to be enforced. They need to be on platforms, they need to be checking and seeing what's going on, not listening to self-reports."

Response:

The inspection schedule is outside of the scope of this permit, and is managed by the DEC Compliance and Enforcement Program. However, DEC does have a Compliance and Enforcement Program that routinely completes inspections of Cook Inlet in addition to any follow-up enforcement action deemed necessary. In addition, EPA still maintains a compliance presence by also inspecting APDES permitted oil and gas facilities in Cook Inlet on a routine basis.

9 Comments on Effluent Limits

9.1 Waivers

Comment Summary

KBCS states that DEC should not be allowed to waive the domestic wastewater treatment requirements without including the public. If DEC will waive the minimum treatment requirements for domestic

wastewater (which likely includes fecal coliform bacteria) then DEC must provide a public notice and comment procedure and ensure the protection of the public.

Trustees et al states the general permit allows DEC too much leeway in adjusting the requirements for discharges of domestic/sanitary wastewater and graywater. They provide examples, such as the potential for a discharger to obtain a mixing zone for TRC and DEC's authority to waive the minimum treatment requirements for domestic wastewater and graywater. The commenters state that allowing a waiver would constitute backsliding on effluent limits contained in the most recent general permit for these facilities.

Response:

The authority for the Department to grant waivers to minimum treatment is described in 18 AAC 72.060. Minimum treatment is established as secondary treatment in 18 AAC 72.050. Secondary treatment is defined in 18 AAC 72.990(59) as having removal of dissolved and colloidal materials that produce an effluent that has pH greater than 6 and less than 9 standard units and five-day biochemical oxygen demand (BOD_5) and total suspended solids (TSS) as shown below:

	Monthly Average	Weekly Average	Daily Average
BOD_5	30	45	60
TSS	30	45	60

The 18 AAC 72 definition of secondary treatment does not include total fecal coliform bacteria or TRC (see sections 2.4.1 and 2.9.4 for TRC information). The existing general permit AKG315000 – Oil and Gas Extraction Facilities in Federal and State Waters in Cook Inlet (2007 permit) established permit limits that are less stringent than secondary treatment as defined in 18 AAC 72. The 2007 permit established domestic and gray water TBELs on a case-by-case basis using BPJ, which are different than the limits outlined in 18 AAC 72.990(59) in some cases. Upon re-evaluation by the Department, these previous limits have been retained in the Exploration Permit so no backsliding has occurred. The permit and supporting documents that evaluate the permit limits demonstrate that the limits are protective and a waiver may be sought by the applicant where necessary. Waivers to minimum treatment will not absolve the permittee from meeting the limits established in the permit. Applicants seeking coverage for these retained limits that are less stringent than secondary treatment levels must request a waiver under 18 AAC 72.060. Lastly, a waiver is only granted if the Department has determined that doing so will be "protective of the public health, public and private water systems, and the environment and not violate a requirement of 18 AAC 83.005."

Similarly, the provisions for gray water have been retained from the 2007 permit, therefore no backsliding has occurred.

9.2 Marine Sanitation Devices

Comment Summary

AOGA commented on Permit Section 2.4.1. The 2007 Permit required annual tests of Marine Sanitation Device performance only for facilities operating in federal waters, where state water quality standards do not apply. The draft state permit only applies to facilities discharging to state waters, which are subject to water quality-based effluent limits. Accordingly, this requirement is redundant to effluent limits imposed

by the permit, and should be deleted. If DEC wishes to retain the provision in some form, then it should be changed to require permittees to follow MSD manufacturer instructions regarding testing.

Response:

DEC agrees with the comment and has removed the requirement for MSD annual tests from the permit.

10 Comments on Reporting Requirements

10.1 General Support

Comment Summary

Cook Inlet RCAC commented in support of the following reporting requirements:

- Drilling Fluids Plan be developed and submitted with the NOI. The goal of the plan as stated in the Fact Sheet is to ensure personnel on-site are knowledgeable in the information and methods required to formulate the drilling fluids/chemical additives, to meet the permit's toxicity requirements, and to minimize addition of toxic substances.
- Best Management Practices (BMP) Plan be submitted with the NOI to DEC. The existing GP only requires that a certification statement be submitted with the NOI.
- New Cooling Water Intake Structure (CWIS) requirements for new offshore oil and gas extraction facilities as required by the 2006 regulations, 40 CFR Part 125, Subpart N. the implementation procedures for the CWIS requirements in the draft permits require permittees to detail their implementation technologies or operational measures in their BMP Plan to minimize impingement and entrainment of fish and shellfish.
- A Corrective Action Plan be developed and implemented upon violating a permit requirement for Domestic Wastewater or Graywater discharges.
- Bilge Water (011) be sampled by the static sheen method at least once per discharge event.

Response:

The Department appreciates the comment. No changes have been made to the permit as a result of these comments. See comment and response 8.4 regarding Corrective Action Plans for more information.

10.2 Report Submittals

Comment Summary

AOGA commented that Permit section 1.2.1 refers to submission of plans and reports with the (NOI). The NOI form calls for submission of facility plans if the facility has not already undergone DEC plan review. The NOI form does not call for any reports. Please clarify what, if any plans and reports must accompany a completed NOI form.Section 1.2.2 also refers to submittal of unspecified reports. The plans referred to in this section presumably facility plans submitted to DEC for plan review.

Response:

Fact Sheet sections 4.4.1 and 4.4.2 describe the permit requirements for engineering plans and reports. To obtain permit coverage as a first time permittee and prior to discharging to waters of the U.S., an applicant must submit plans for approval per 18 AAC 72.200 and/or 18 AAC 72.600. The plans shall be

prepared by a licensed Alaska engineer and submitted with the NOI and be accompanied by the appropriate fee required by 18 AAC 72.955. Under 18 AAC 72.060, an applicant may request a waiver from the requirements of 18 AAC 72.050(a)(4) by submitting an engineering report in accordance with 18 AAC 72.050(d)(1)-(5) and 18 AAC 72.060(b). The engineering report shall be prepared by a licensed Alaska engineer, submitted with the NOI, and be accompanied by the appropriate fee required by 18 AAC 72.955. The NOI is intended to support the application process. The engineering report requirement to support the request for a waiver per 18 AAC 72.060 are explained in Section 9 of the NOI.

Permit section 1.2.1 uses the term "plans" generically to include any plan that is required to be submitted (e.g., EMP Study Plan, DFP, and engineering plans). Details about each individual plan requirements are described in the other sections of the permit where they apply. Operators of all mobile exploratory facilities discharging drilling muds and drill cuttings must submit a plan of study for environmental monitoring to DEC for review with, or prior to, submission of an NOI (See Section 2.2.7.2). The applicant is responsible for complying with the application requirements. The NOI form has been updated to clarify requirements to support the application process as an outgrowth of this response to comments.

10.3 End of Well Reports

Comment Summary

AOGA commented that Permit section 2.1.6 refers to reporting all discharges of "surfactants, dispersants, and detergents" in the End-of-Well Report. There are, however, no guidelines for reporting surfactants, dispersants, and detergents in the End-of-Well Report. AOGA further commented that Permit section 2.2.6.2.1 refers to "hole diameter," which needs additional clarification at which surface, total depth, etc.

Response:

DEC agrees with the first comment and has included the requirement for reporting the discharge of surfactants, dispersants, and detergents in Permit section 2.2.6.2. DEC agrees with the second comment and has revised the section to say "Well name, number, latitude, longitude, beginning drill date, and hole diameter at depth, and well completion date."

10.4 Drilling Fluid Plans

Comment Summary

AOGA commented that Permit section 2.2.8 (Drilling Fluid Plan Requirements) requirement is duplicative to a requirement under AOGCC regulations and should be removed as a drilling plan is required by AOGCC in order to obtain a permit to drill.

Response:

DEC disagrees with this comment and the requirement has been retained. The Drilling plan required by AOGCC is different than the one required under the APDES permit. The purpose of the DFP requirement in the permit is to ensure toxic substances are not discharged in toxic amounts and to ensure compliance with WQS, Pollution Prevention Act, and sections 308 and 403(c) of the CWA (see Fact Sheet section 7.2.10).

10.5 Best Management Practices

Comment Summary

AOGA commented that Permit section 2.11.4.1 is a repeat of permit section 2.11.3.1 and should be removed.

AOGA commented that Permit section 2.11.4.2 (first bullet) should read "engineering representative" instead of "engineering staff" and (fourth bullet) of the permit should read "DEC" instead of "EPA."

AOGA commented that Permit section 2.11.6.3 regarding the annual reporting of all BMP changes should be removed from this provision.

Response:

DEC agrees with the first two comments and has made the revisions. DEC has revised the subject permit section to read "engineering staff or representative" and changed the acronym from EPA to DEC.

DEC disagrees with the third comment and has retained the requirement. The permittee must amend the BMP plan whenever there is a change in the facility, or in the operation of the facility, that materially increases the generation of pollutants or their release or potential release to the receiving waters. The permittee must also amend the plan, as appropriate, when plant operations covered by the BMP plan change. Any such changes to the BMP plan must be consistent with the objectives and specific requirements listed above. To ensure compliance with these objectives, the BMP must have the provisions in the permit section 2.1.4.2 that require a critical review to address changes and any changes resulting from this review must be documented in the annual certification per permit section 2.11.6.3. All changes in the BMP plan must be reported to DEC in writing.

10.6 Chemical Additive Reporting

Comment Summary

Trustees et al feel the chemical additives reporting requirements should occur earlier than the end of well report. The commenter indicates DEC should add a requirement to the general permit that DEC is required to approve all chemicals prior to use.

Response:

Applicants are required to submit a DFP along with a complete NOI, which includes a list of additives and chemicals that may be used during drilling. The DFP provides an estimate of the maximum expected toxicity and the permit requires sediment particulate phase (SPP) toxicity monitoring to demonstrate compliance. The DFP must also clearly state a procedure to update the toxicity estimate of new chemicals once used. The Department receives satisfactory chemical information prior to use and requires SPP toxicity monitoring during drilling. No changes have been made as a result of this comment. (See responses 10.3 and 10.4 for additional information.)

11 Other Miscellaneous Comments Rig Ownership

Comment Summary

Petroleum Engineers, Inc.: Mobile rigs you reference (in Fact Sheet) are not owned by the operator's – they are contracted to the operators: Furie Operating Alaska, LLC (formerly Escopeda) and Buccaneer Alaska Operations, LLC

Response:

Thank you for your comment. The Fact Sheet has been revised to indicate that these rigs are being used by the permittee rather than owned.

11.2 Site

Comment Summary

The DNR DOG suggests that some thought be given to the definition of "site" for the permit authorization. The use of language such as lease, or tract may not be the optimal way to define location. These political surface boundaries are primarily beneficial for surface land management for access to the subsurface.

The applicant will be focused on a permit authorization for subsurface targets that may not match individual lease or tract boundaries. They may include several leases or tracts in their geographic description. The applicant will stay within their lease(s) boundaries for access to prospective drilling locations. Confusion and miscommunication may be an unfortunate result with the sole reliance on authorizations based upon the surface related terms "site", lease, or tract.

The applicant will be investigating a geologic prospect that may not have a boundary at the initial offset of exploration, during the DEC's initial APDES NOI process. The preferred outcome of the applicant will be delineation of a petroleum reservoir. The regulatory term for the resulting recoverable volume in the prospect will be defined as a hydrocarbon pool, termed a Producing Area (PA).

Use of location terms in the permit authorization that also are compatible with the applicant's perspective of location will help. It will reduce unexpected confusion and manipulation of the permit system.

Response:

Comment noted. The definition of "site" used by the DEC has implications with respect to the CWA, 40 CFR 122.2, and permits developed under the APDES program. Modifying the definition of "site" to fit the definition under other agencies' jurisdiction would create confusion under DEC's regulatory framework.

11.3 Increased Activity in Cook Inlet

Comment Summary

DEC previously presumed that Cook Inlet was a mature oil and gas field near the end of its useful life, but this permit recognizes the reinvigoration of oil and gas exploration and development in Cook Inlet, and allows for new exploration that will likely lead to new production facilities and more pollution in Cook Inlet. DEC should ensure that these new facilities are held accountable for protecting the health of

the people who depend on Cook Inlet for their food and livelihoods, as well as the important subsistence resources and endangered species that reside in and use the Inlet

Response:

DEC acknowledges and understands the impacts associated with increased exploration activities in Cook Inlet. DEC has determined through a detailed evaluation with respect to WQS and ODCE that the existing uses of the water body as a whole will be protected and that no unreasonable degradation of the marine environment will likely occur if the limits and conditions of the permit are adhered to. In addition, the permit is only for exploration and proposed production facilities would have a separate permit with requirements specific to those types of operations.

11.4 Cross References

Comment Summary

AOGA commented that Permit section 1.2.8 incorrectly refers to permit Section 2.9 and it should instead reference Section 2.10. There are several incorrect references throughout the permit that need to be corrected.

Response:

DEC agrees with the comment and has made revisions to the permit to correct references where identified. Additional references have been updated as an outgrowth of this response.

12 Comments on the Public Process

The Department received comments regarding the public process.

12.1 Permit Development

Comment Summary

At the Homer public hearing, Reveil commented: “the thing that is discouraging, I have to say, to me is looking through this document trying to understand everything that's in it, is that it's already set in place, that this is going to happen, that this permit is a done deal. And that's pretty discouraging I think for everybody here. I think a lot of people have said. So what are the pieces in place, my question would be, that would assist us in making these changes that we are all wanting to see of zero discharge?

Response:

DEC evaluates all the information available before making a determination regarding issuing an APDES general permit. See Response 3 referring to “Zero Discharge.” The Department is aware that this is a critical permit to numerous stakeholders and, as a result, provided a longer public notice period (than required by regulation). In addition, the Department planned public hearings and provided time and staff to listen to concerns to better inform the development of the permit.

12.2 Permit Fees

Comment Summary

Hillstrand would like to know what the cost is to the Federal government for the five year NPDES and APDES process.

Response:

Since CWA 301(m)(3) requires that "A permit under this subsection may be issued for a period not to exceed five years" and this is echoed in regulation at 40 CFR 122.46(a), which states that "NPDES permits shall be effective for a fixed term not to exceed 5 years". For APDES permits, the permittee is required to pay a fee that is based on the estimated cost of development and implementing the permit during the permit cycle. DEC defers to EPA to respond regarding the NPDES program.

12.3 Concerns

Comment Summary

At the Homer hearing, Dolma asked "that we look and take whatever it is in the political process to make a change to protect our habitat and make our water clean and not allow it to get used as a toilet bowl. It's not acceptable, as we know we have a unique species of belugas that have diminished to very low, low, less than 300, and this is very sad.

Response:

Development of an APDES permit is based on the CWA and WQS to protect our waterbodies and their uses, including supporting the growth and propagation of fish, shellfish, other aquatic life, and wildlife. Because the permit has been developed to meet WQS, discharges from mobile exploration facilities are not expected to adversely affect the beluga whale (see response 4.7 regarding excluded areas).

12.4 Public Review of Documents

Comment Summary

Cook Inlet RCAC states that the process is not clear where public review of an NOI is provided, even though the submission can include requests by the permittee for significant changes to what have been identified in the permit, such as a request for mixing zone and effluent modifications or a request for a waiver from minimum treatment requirements.

Response:

The public process applies to the general permit unless the Department determines the applicant does not meet all the requirements for coverage under the general permit. If the Department determines upon review of the application that the proposed discharges would not meet the requirements for coverage under the general permit, an individual permit or a modified mixing zone could be required and would be subject to additional public notice. However, request for a waiver to minimum treatment per 18 AAC 72.060 is not subject to public review (see comment 9.1 and 12.6).

12.5 Public Review of Waivers

Comment Summary

KBCS requested public notification if minimum treatment standards are waived.

Ms. Birkimer commented that the public should be notified whenever DEC decides to waive domestic wastewater treatment requirements. This is not only a health hazard, but it's disgusting. DEC must state plainly that discharges of produced water are forbidden under the permit, even if requested by an exploration facility.

Response:

Per 18 AAC 72.060, the Department reviews information submitted by a registered engineer to determine if the waiver to minimum treatment will be protective of public health, public and private water systems, and the environment, and will not violate a requirement of 18 AAC 83 – APDES Program. Waivers submitted under 18 AAC 72.060 are not subject to public review requirements. No changes have been made to the Permit as a result of the comment.

The Permit and Fact Sheet clearly state that the Permit does not authorize the discharge of produced water (see Permit section 1.4.3 and Fact Sheet section 2.0).

13 Comments Received During Applicant Review

13.1 Incorrect Permit Section References

Comment Summary

Blue Crest Energy noted the permit sections referenced in permit section 2.11.6 regarding BMPs were missing or incorrect. Blue Crest Energy also noted that the referenced permit section in 2.8.8.2 was incorrect.

Response:

DEC agrees with the commenter and has updated the permit section references based on the comment.

13.2 Clarifications Requested by EPA

Comment Summary

EPA also provided comments during the five-day review regarding various typos, grammatical errors and stylistic suggestions to improve clarity. Many of these suggestions are editorial in nature and intended to help provide clarity in the permit and ODCE. The main areas include the following:

- Clarify the items required in the End of Well report,
- Revise the date by which permittees need to submit an NOI,
- Suggested edits to Permit Table 6 footnotes regarding free oil in (Discharges 005-013), and
- Requested further clarification regarding the volume estimates.

Response:

The edits suggested by EPA were discussed and reviewed, and most but not all were incorporated into the final versions of the documents. DEC added text to Permit Section 2.2.6 regarding the End of Well reports to further clarify the reporting requirements. DEC has revised Permit Section 1.6, Permit Table 1, and Fact Sheet Sections 4.4.4 and 4.5.1 since no known existing facilities will need to submit a NOI for coverage as all the exploration activity authorized under the previous permit has been completed. In addition, DEC modified notes 2 and 3 in Permit Table 6 to clarify the requirements for free oil using visual versus Static Sheen Test methods.

As DEC discussed in the ODCE (Sections 3.3 and 6) and the volume estimate response to comment (4.2), the values used are based on a detailed review of past end of well reports. The majority of the wells

drilled in the past 20 years were for production and were not considered representative of recent exploration activity. Current exploration efforts are targeting deeper formations than had historically been drilled. Based on the relatively small number of exploration well reports available to review and the numerous variables that determine the volumes required for a well, DEC included an eight percent contingency to account for potentially deeper wells and to ensure conservative estimates (roughly 8%).

13.3 Amendments to the Reporting Requirements

Comment Summary

CPAI requested that the QAPP be submitted 45 days before discharge to align with the NOI submittal dates.

Response:

DEC agrees with the commenter and has updated the Permit Schedule of Submissions, Permit Section 3.1.1, and Fact Sheet Section 7.2.9 as a result of this comment.

13.4 Diesel Oil Testing

Comment Summary

CPAI requested that the following be added to the end of the Permit Section 2.2.6.3.1: “If the operator elects to confirm the results of Method 8015C, the GC/MS methods described in EPA 821-R-92-008 may be used. Results from methods described in EPA-R-92-008 shall supersede the results of Method 8015C.” These methods are the same as those specified by EPA in Appendix C of the Final NPDES General Permit for New and Existing Sources and New Dischargers in the Offshore Subcategory of the Oil and Gas Extraction Category for the Western Portion of the Outer Continental Shelf of the Gulf of Mexico (GMG290000).

Response:

The Department reviewed the request and has determined that additional testing to verify test results is appropriate, but does not agree that the results should supersede those from the 8015C method. Permit Section 2.2.6.3.1 and Fact Sheet Section 7.2.5 have been updated based on this comment.