



Shell Exploration & Production Company

May 7, 2009

Mr. Mike Lidgard
U.S. EPA, Region 10
Office of Water & Watersheds, NPDES Permits Unit
1200 Sixth Avenue, Suite 900, M/S OWW-130
Seattle, WA 98101

Shell
3601 C Street, Suite 1000
Anchorage, AK 99503

Tel. (907) 646-7112
Email susan.childs@shell.com
Internet <http://www.shell.com/>

RE: Notice of Intent (NOI), NPDES General Permit AKG-28-0000
2010 Outer Continental Shelf Lease Exploration Plan, Camden Bay, Alaska
Dillship M/V *Frontier Discoverer*
Lease Number OCS-Y-1805, Lease Block 6658

Dear Mr. Lidgard:

By this Notice of Intent (NOI), Shell Offshore Inc. (Shell) hereby serves its required formal notice of intent to discharge under NPDES General Permit AKG-28-0000 during its 2010 OCS exploration drilling program in Camden Bay, Alaska. Permitted discharges will be as described in the attached materials and at the location specified therein. This NOI and accompanying materials is submitted in satisfaction of the requirements of 40 CFR 55.4 (a) and (b) for an OCS source.

If you have questions regarding this NOI, or about Shell's proposed project, please contact me at (907) 646-7112 or email susan.childs@shell.com, or call Nicole St. Amand at (907) 646-7152 or email nicole.stamand@shell.com.

Sincerely,

A handwritten signature in cursive script that reads "Susan Childs".

Susan Childs
Regulatory Affairs Manager, Alaska

Attachments - Notice of Intent (NOI) Information Sheet

Location Map
Projected generated Solid and Liquid Wastes & Disposal method
Waste Feed Lines

cc: *Diane Soderlund, USEPA Region 10, Alaska Operations*
Cindy Godsey, USEPA Region 10, Alaska Operations
XXX, Alaska DEC
Jeff Walker, MMS Alaska
Don Perrin, Alaska DNR
Administrative Record

ATTACHMENT 1

**NOTICE OF INTENT (NOI) INFORMATION SHEET
NPDES GENERAL PERMIT AKG280000
OIL AND GAS EXPLORATION FACILITIES
ON THE OUTER CONTINENTAL SHELF AND CONTIGUOUS STATE WATERS**

| APPLICANT (Owner/Operator) | | | | | | |
|---|-------------------------------------|---------------------------|---|--------------------|-------------------|--|
| Owner Name: | Shell Offshore Inc. | Operator Mailing Address: | 3601 C Street | | | |
| Telephone Number: | 907-770-3700 | | Suite 1000 | | | |
| Operator Name: | Shell Offshore Inc. | | Anchorage, AK 99503 | | | |
| Telephone Number: | 907-770-3700 | | | | | |
| FACILITY | | | | | | |
| Facility Name: | Frontier Discoverer | Facility Mailing Address: | 3601 C Street | | | |
| Contact Name: | Susan Childs | | Suite 1000 | | | |
| Telephone Number: | 907-770-3700 | | Anchorage, AK 99503 | | | |
| Beginning Date of Operation: | July 10, 2010 | Stationary Facilities | Latitude: | | | |
| Expected Duration of Operation: | approximately 34 days per well site | | Longitude: | | | |
| Facility Type <i>(check applicable type)</i> | <input type="checkbox"/> | Jackup | Mobile Facilities | Initial Latitude: | 70° 23' 29.5814" | |
| | <input checked="" type="checkbox"/> | Drill Ship | | Initial Longitude: | 145° 58' 52.5284" | |
| | <input type="checkbox"/> | Semisubmersible | | | | |
| | <input type="checkbox"/> | Other (specify): | | | | |
| <p>Submit a site map showing the exact location of facility and discharges associated with the project. Mobile facilities may designate an area where they may be operating and must include a map showing those areas and a description of operations within those areas. If the discharge is within 4000 meters of an environmentally sensitive area indicated by the permit, those areas and their distance from the operation/discharge must be shown on the map.</p> | | | | | | |
| RECEIVING WATER | | | | | | |
| <input type="checkbox"/> | Chukchi Sea | <input type="checkbox"/> | Other (specify): <input type="checkbox"/> | | | |
| <input checked="" type="checkbox"/> | Beaufort Sea | | | | | |
| <p>Supply confirmation with the U.S. Department of State and NOAA that the discharge is seaward of the inner boundary baseline, if applicable.</p> | | | | | | |
| LOCATION OF DISCHARGE | | | | | | |
| MMS | Lease Number | OCS-Y-1805 | ADNR | Lease Number | N/A | |
| | Block Number | 6658 | | Block Number | N/A | |
| Range of water depths below mean lower low water (MLLW) in the lease block: | | From: | 107' | To: | 107' | |

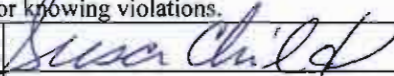
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| Discharges (check all that apply) | | | | | |
|--|--|--|--|-------------------------------------|---|
| <input checked="" type="checkbox"/> | 001 Drilling Mud and Cuttings | Water Depth: | 107' | | |
| <input checked="" type="checkbox"/> | 002 Deck Drainage | Water Depth: | 107' | | |
| <input checked="" type="checkbox"/> | 003 Sanitary Waste | Water Depth: | 107' | | |
| <input checked="" type="checkbox"/> | 004 Domestic Waste | Water Depth: | 107' | | |
| <input checked="" type="checkbox"/> | 005 Desalination Unit Waste | Water Depth: | 107' | | |
| <input checked="" type="checkbox"/> | 006 Blowout Preventer Fluid | Water Depth: | 107' | | |
| <input type="checkbox"/> | 007 Boiler Blowdown | Water Depth: | | | |
| <input type="checkbox"/> | 008 Fire Control System Test Water | Water Depth: | | | |
| <input checked="" type="checkbox"/> | 009 Non-Contact Cooling Water | Water Depth: | 107' | | |
| <input checked="" type="checkbox"/> | 010 Uncontaminated Ballast Water | Water Depth: | 107' | | |
| <input checked="" type="checkbox"/> | 011 Bilge Water | Water Depth: | 107' | | |
| <input checked="" type="checkbox"/> | 012 Excess Cement Slurry | Water Depth: | 107' | | |
| <input checked="" type="checkbox"/> | 013 Mud, Cuttings, Cement and Seafloor | Water Depth: | 107' | | |
| <input type="checkbox"/> | 014 Test Fluid | Water Depth: | | | |
| Provide a brief description of the treatment process(es) and disposal practices (e.g., backhauled, reinjected, discharged, etc.) at the facility. See attached (Table 1) | | | | | |
| Provide a line drawing that shows flow of discharged waste streams through the facility. Indicate intake sources, operations contributing to the effluent, and treatment units labeled to correspond to the discharges (001 – 014). Construct a flow balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a flow balance cannot be determined, provide a pictorial description of the nature and amount of any sources, and any collection or treatment measures. | | | | | |
| Well Information | | | | | |
| Well Name: | Sivulliq | Latitude: | 70° 23' 29.5814" | | |
| Well Number: | N | Longitude: | 145° 58' 52.5284" | | |
| Beginning Drill Date: | July 10, 2010 | Hole Diameter or Estimated Total Discharge Volume: | 36" diameter at surface, reducing through 4 stages to 8.5" at depth | | |
| Drilling Fluid | | | | | |
| Category (check all that apply) | <input checked="" type="checkbox"/> | Water-based | Group (check all that apply) | <input type="checkbox"/> | Lignosulfonate |
| | <input type="checkbox"/> | Oil-based | | <input type="checkbox"/> | Lime |
| | <input type="checkbox"/> | Synthetic-based | | <input type="checkbox"/> | Gyp |
| | <input type="checkbox"/> | Other (specify): | | <input checked="" type="checkbox"/> | Sea-water |
| | | | | <input checked="" type="checkbox"/> | Saltwater |
| | | | | <input type="checkbox"/> | Saturated Saltwater |
| | | | | <input checked="" type="checkbox"/> | Nondispersed (Viscosifier/Polymer) PH/PA |

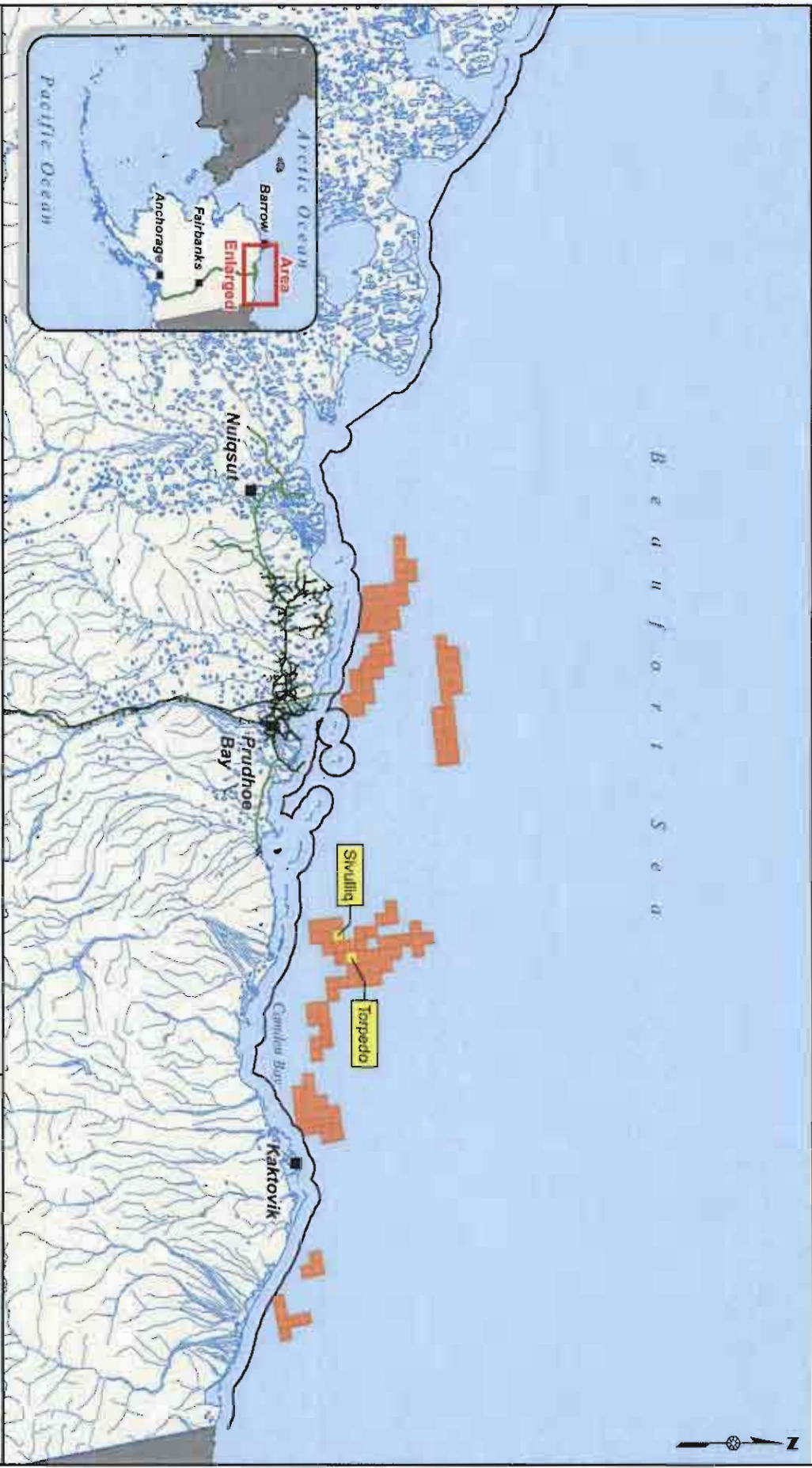
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| Zone of Deposit Request <i>(applicable to those discharges within state of Alaska waters)</i> | | | |
|---|--------------------------|---|---|
| Are you requesting a Zone of Deposit from ADEC? | <input type="checkbox"/> | Yes <i>(continue filling out this section)</i> | <input checked="" type="checkbox"/> |
| | | | No <i>(skip this section and proceed to Special Conditions, below)</i> |
| THE FOLLOWING INFORMATION MUST BE PROVIDED IF REQUESTING A ZONE OF DEPOSIT. The burden of proof for justifying a zone of deposit through demonstrating compliance with the requirements of 18 AAC 70.210 rests with the applicant. | | | |
| Distance from shoreline of discharge point (measured at M.L.L.W.): | | Average Mud density: | |
| Depth of discharge (measured at M.L.L.W.): | | Flow Rate: | |
| Orientation of outfall to shoreline (e.g., perpendicular, 45°, parallel): | | Total Volume: | |
| Orientation of outfall to water surface (e.g., perpendicular, 45°, parallel): | | Maximum current and direction: | |
| If possible, provide salinity and temperature data from the receiving water surface to the depth of the discharge port or diffuser. | | | |
| Mixing Zone Request <i>(applicable to those discharges within state of Alaska waters)</i> | | | |
| Are you requesting a mixing zone from ADEC? | <input type="checkbox"/> | Yes <i>(continue filling out this section)</i> | <input checked="" type="checkbox"/> |
| | | | No <i>(skip this section and proceed to Special Conditions, below)</i> |
| THE FOLLOWING INFORMATION MUST BE PROVIDED IF REQUESTING A MIXING ZONE. The burden of proof for justifying a mixing zone through demonstrating compliance with the requirements of 18 AAC 70.240 through 18 AAC 70.270 rests with the applicant. | | | |
| Distance from shoreline of discharge point or first port of diffuser (measured at M.L.L.W.): | | Length of diffuser: | |
| Depth of discharge port or diffuser (measured at M.L.L.W.): | | Diameter of port(s): | |
| Orientation of diffuser to shoreline (e.g., perpendicular, 45°, parallel): | | Number of ports: | |
| Maximum current: | | Port spacing: | |
| USE OF RECEIVING WATER AT DISTANCE FROM DIFFUSER i.e., Supply for drinking water, Supply for agriculture including irrigation & stock water, Supply for aquaculture, Supply for industrial use, Contact recreation, Secondary recreation, Fish spawning, Harvesting and consumption of raw fish, or other aquatic life (Not needed if not requesting a mixing zone from ADEC): | | | |
| If possible, provide salinity and temperature data from the receiving water surface to the depth of the discharge port or diffuser. | | | |

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| Special Conditions (provide justification for all that are not required, completed or provided) | | | | | |
|---|---|----------|---|--------------|---|
| Special Monitoring | <input type="checkbox"/> | Required | <input checked="" type="checkbox"/> | Not Required | Justification: |
| Exploration Plans | <input type="checkbox"/> | Attached | <input checked="" type="checkbox"/> | Not Provided | Justification: Submitted to MMS |
| Biological Surveys | <input type="checkbox"/> | Attached | <input checked="" type="checkbox"/> | Not Provided | Justification: |
| Environmental Report(s) | <input type="checkbox"/> | Attached | <input checked="" type="checkbox"/> | Not Provided | Justification: Submitted to MMS as part of the Exploration Plan |
| Drilling Fluid Plan | <input type="checkbox"/> | Complete | <input checked="" type="checkbox"/> | Not Complete | Justification: In Preparation |
| Certification | | | | | |
| I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. | | | | | |
| Signature: |  | | | Date: | 5/07/09 |
| Printed Name: | Susan Childs | | | Title: | Regulatory Affairs Manager |
| Mail Completed NOI to EPA and ADEC at the following addresses: | | | | | |
| US EPA 1200 6 th Avenue, M/S OWW-130 Seattle, WA 98101 | | | ADEC, Water Division 555 Cordova Street Anchorage, Alaska 99501 | | |

B e a r f o r t S e a



 2010 Exploration Plan Block
 Shell OCS Lease Block

 Village
 Road
 Pipeline

 State-Federal Water Boundary



**PLANNED EXPLORATION
 DRILLING PROGRAM**
 2010 Camden Bay Exploration Plan

SCALE: 0 15 30 60 Miles
 FIGURE: 1-1

NAD83, Alaska Albers Equal Area



Table 1 Projected ocean discharges – Sivulliq Prospect Drill Site N

| Type of Waste | Total Amount to be Discharged* | Discharge Rate* | Discharge Method |
|--|---|---|--|
| Drill Cuttings | 3,483 bbl/well (Cuttings only; no drilling muds used) | 697 bbl/day (discharged over 5 days) | Deposited at the seafloor |
| Spent drilling fluids | 2,761 bbl/well (when multiple wells drilled in same season, same water based mud system will be transferred to next well) | 95 bbl/day (discharged over 29 days; includes discharge of excess water base fluid at end of the season, approx 1500 bbl) | Discharged to water through disposal caisson diluted 30:1 with seawater |
| Drill cuttings from water base drilling fluid interval | 1,261 bbl/well | 43.5 bbl/day (discharged over 29 days) | Discharged to water through disposal caisson diluted 30:1 with seawater |
| Excess cement | 50 bbl/well | two occasions at 1 bbl/min | Discharged at seafloor during 30-inch and 20-inch cementing operations |
| Cooling water | 1,530,000 bbl/well | 45,000 bbl/day | Discharged to the water at several sites |
| Sanitary wastewater | 201 bbl/well | 27 bbl/day | Treated in the MSD prior to discharge to meet NPDES limits (based on 124 people at 9 gal/person/day) |
| Domestic wastewater | 2811 bbl/well | 83 bbl/day | Discharged to water through disposal caisson below the water's surface (based on 124 people at 28 gal/person/day) Food wastes will not be discharged, they will be incinerated onboard |
| Desalination unit brine water | 4,250 bbl/well | 125 bbl/day | Discharged through disposal caisson below water's surface |
| Deck drainage | 170 bbl/well | 5 bbl/day (dependent on rainfall) | Drains to oily water separator. Uncontaminated water discharged through disposal caisson below water's surface. Oily water is stored onboard in waste oil tank, then transferred by boat to an approved treatment/disposal facility. |
| Ballast water | 21,080 bbl/well | 620 bbl/day | Discharged through disposal caisson below water's surface |
| Firewater bypass | 0 bbl | 0 bbl/day | No routine firewater system testing anticipated |
| Bitge water | 1,000 bbl/well | 28.6 bbl/day | Treated in an oil/water separator. Uncontaminated water discharged to sea through the disposal caisson, oily water is stored onboard then transferred by boat to an approved treatment/disposal site |
| BOP fluid | 42 bbl/well | Up to 6 BOP tests at an average 7 bbl/test | Discharged at the seafloor at the BOP |

Notes:

* assumes 5 days to complete the MLC and 36" section; 29 days to complete the remainder of the well

