

**STATE OF ALASKA
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL HEALTH
SOLID WASTE PROGRAM
555 CORDOVA STREET
ANCHORAGE, ALASKA 99501**

**GENERAL PERMIT
FOR THE CONSTRUCTION AND OPERATION OF A MONOFILL
FOR THE STORAGE OF OIL AND GAS EXPLORATION AND PRODUCTION
WASTE AND RCRA NON-EXEMPT
NON-HAZARDOUS WASTE
GENERATED ON THE NORTH SLOPE**

GENERAL PERMIT
NO. SWG0308000

PAGE 1 of 16
DATE OF ISSUANCE: MARCH 17, 2003

This general permit is issued for the storage of oil and gas exploration and production (E&P) waste, and RCRA non-exempt non-hazardous waste at a drilling waste monofill. For the purposes of this general permit a drilling waste monofill must be located on the North Slope of Alaska and used only for the storage of waste prior to disposal and/or remediation.

Waste stored under the authority of this general permit must be generated from petroleum or natural gas development, enhancement or exploration activities on the North Slope of Alaska. For the purposes of this general permit, the North Slope of Alaska is defined as the geographic area located North of 68 (degrees) North Latitude, and within the borders of the State of Alaska.

Under the authority of this general permit a drilling waste monofill cannot accept for disposal or storage: municipal solid waste, putrescible waste, camp waste, or hazardous waste as defined in 40 CFR 261.3.

A facility subject to this permit must be located on land controlled by the applicant. If the applicant does not own the land on which the proposed monofill would be located, the following is required: a copy of the deed or another legal document that identifies the landowner; and a written statement from the landowner consenting to the development of a drilling waste monofill facility on the property; or a copy of any lease agreement that is clearly relevant the proposed activity; or written approval from the oil and gas leasing agency.

This general permit is effective upon issuance and expires MARCH 17, 2008. An application for the renewal of this general permit must be submitted at least 30 days before the expiration date. The Department may terminate or modify this permit in accordance with AS 46.03.120. This permit does not relieve the permittee of the responsibility of complying with other state, local or federal laws.

A person requesting coverage under this general permit must complete the application form provided, and submit it to the Alaska Department of Environmental Conservation (ADEC), Solid Waste Program (SWP) Office located in Anchorage. Waste may be placed in a monofill only after the SWP Coordinator has approved the application in writing.

This permit is classified as a Class D General Permit under 18 AAC 60.255(e) requiring an annual fee of \$304.00. The first annual fee must be submitted with the permit application, subsequent annual fees will be sent after the first of each calendar year.

This permit is issued under the provisions of Alaska Statute 46.03, and the Alaska Administrative Code, Title 18, Chapter 60, as amended or revised and other applicable state laws and regulations.

S/b

Heather T. Stockard
Solid Waste Program Manager

SPECIFIC CONDITIONS**A. Application Compliance**

The Permittee must comply with the designs and plans in the application documents, unless modified in this permit. The Permittee may request a permit amendment in writing. A permit amendment will not become effective until authorized by the Solid Waste Program Coordinator in writing.

B. Site Preparation

[18 AAC 60.420(a)]

1. Signs

The Permittee shall:

install and maintain a readable sign at the facility entrance, which identifies the following information:

- a. name of the facility and the Permittee;
- b. emergency telephone numbers;
- c. type of waste stored at the facility
- d. specify that municipal waste and hazardous waste are prohibited.

2. Fencing

[18 AAC 60.220]

The Permittee shall at the request of the Department, install and maintain a fence around the waste cell(s) if needed to restrict access by unauthorized persons and wildlife.

3. Surface Water Quality Control

[18 AAC 60.225, 18 AAC 60.430(c)]

The Permittee shall:

- a. construct and maintain diversion structures (ditches or berms), appropriate snow storage/disposal areas or surface grading as needed to prevent surface and snow melt water from flowing over, into or through the monofill.
- b. control drainage from the facility to prevent a violation of the water quality standards in 18 AAC 70.

C. Waste Cell Development

[18 AAC 60.430(c)]

The Permittee shall:

1. ensure a minimum horizontal separation distance of 200 feet to any public drinking water well.
2. ensure that the interior waste cell walls are constructed to engineering standards that will minimize erosion and contain the waste.
3. line the interior of each waste cell with a liner as described in the permit application in order to prevent the migration of pollutants from the facility.
4. ensure the liner is constructed of a synthetic material or compacted soil with a hydraulic conductivity of no more than 1×10^{-7} .
5. provide documentation to the Department showing that the liner installation specifications have been satisfied prior to placing drilling waste in the waste cell.
6. ensure the liner is designed and installed in accordance with the manufactures specifications and the integrity of the liner is maintained during all phases of construction, operation and closure of the facility; and
7. ensure the waste cell liner is:
 - a. continuous over the pit side walls and bottom;
 - b. securely anchored to prevent slippage into the pit;
 - c. designed and installed so that no erosion or other deterioration of the liner results from the placement of waste into the cell;
 - d. protected from frost action damage, and other freeze/thaw effects; and
 - e. resistant to, and compatible with, hydrocarbon and drilling mud waste.

D. Facility Operation

1. Waste Storage

The Permittee shall:

- a. limit the storage of waste to drilling waste and/or RCRA non-exempt non-hazardous waste.
- b. ensure that wastes are deposited and removed in a manner that will not damage the impermeability of the liner, or otherwise jeopardize the integrity of the liner.

2. Temporary Closure of a Waste Cell.

The Permittee shall:

- a. Unless otherwise approved by the Department ensure a temporary cover is placed over a waste cell within 90 days after:
 - i. a period of one (1) year has transpired since the last deposition of waste into the cell; or
 - ii. the cell is not likely to receive waste within a one (1) year time period.
- b. ensure the temporary cover consists of an impermeable flexible membrane liner placed over the waste cell in conjunction with fluid management to prevent the extended accumulation of water on top of the temporary cap.
- c. ensure that waste cells in a temporary closure status are permanently closed in accordance with Section G of this permit when the general permit expires

3. Fluid Management

The Permittee shall:

- a. remove all pumpable liquids from the waste cell as soon as possible to prevent ponding and overtopping of fluids and dispose of the liquids in accordance with all applicable state laws and regulations.
- b. ensure that a minimum two (2) feet of freeboard is maintained in the waste cells at all times during operation.

4. Hazardous and Other Prohibited Waste

The Permittee shall:

- a. prohibit the storage of oily wastes (such as used oil filters, waste oil, shop rags, and absorbents), prohibited chemical waste, spent radioactive material, solvents, corrosives, lead-acid batteries, polychlorinated biphenyl (PCB) fluids, explosives, and any hazardous waste defined and regulated under 40 CFR 261.
- b. report all spills or discharges of hazardous substances which occur at the facility as described in 18 AAC 75, Article 3 as revised or amended; and
- c. ensure that the lined disposal cell does not cause a discharge of pollutants to the surface of the land or into surface waters of the State.

E. Monitoring

[18 AAC 60.800]

1. Visual Monitoring

The Permittee shall:

- a. ensure that a person who is familiar with the requirements of this permit and the applicable requirements of the Solid Waste Management Regulations, 18 AAC 60, conduct a visual inspection of the waste cell(s) at least once per month. A written record must be maintained of each inspection. These records must be made available to the Department upon request and must be kept in the operating record for the facility.

The visual monitoring program will inspect and document:

- i. damage or signs of potential damage to any component of the facility from but not limited to: settlement, ponding, leakage, and thermal instability, frost action, erosion, or operations at the facility;
- ii. damage to the structural integrity of a containment structure, retaining wall, erosion control, or diversion structure;
- iii. damage to the above-grade portions of surface water monitoring markers and/or points;
- iv. any escape of waste, leachate or any unauthorized waste disposal;
- v. slippage of a waste cell liner or damage to its anchor;

- vi. signs of fire or combustion in the waste cell;
 - vii. evidence of death or stress to fish, wildlife, or vegetation that might be caused by the facility; and
 - viii. violations of permit conditions or requirements of 18 AAC 60
- b. immediately notify ADEC, Solid Waste Program upon noticing any permit violation or damage to the facility, and initiate any corrective action necessary.

2. Surface Water Monitoring

[18 AAC 60.810]

The Permittee shall:

- a. develop surface water monitoring procedures, including consistent sampling and analyses designed to ensure that monitoring results provide an accurate representation of surface water quality off site within 200' of the waste storage cell. Storage facilities at offshore developments are exempt from surface water monitoring. The owner or operator shall set out the surface water monitoring procedures in a handbook or similar document and shall place the surface water monitoring procedures in the operating record and notify the department when that occurs. The surface water monitoring procedures must include procedures and techniques for:
 - i. sample collection;
 - ii. sample preservation and shipment;
 - iii. analytical procedures;
 - iv. chain of custody control;
 - v. quality assurance and quality control; and
 - vi. specify frequency of sample collection.
- b. select three (3) off site, surface water monitoring sample sites within 200' of the facility boundary. The surface water monitoring sites must be located such that there is one (1) background sample site located upgradient from the facility boundary and at least two (2) sample sites located downgradient from the facility boundary. In the event there is no surface water within 200' of the facility boundary, surface water sample sites must be located in areas most likely to detect contamination from the monofill.

- c. Each of the three (3) surface water sample sites must be clearly marked in the field and on the facility site plan, and background water quality samples must be collected (previously gathered background data for surface waters at the site may be used upon approval from the Department). Surface water samples will be collected once each summer season. The location of the surface water sample sites will be selected such that winter snow storage is not placed at that location or runoff from snow storage stockpile areas will not melt into the sample collection site. In the event no surface water is available off pad within 200' of the waste cell area, downgradient sample sites must be selected at locations most likely to detect contamination from the facility.
- d. analyze all surface water samples for the parameters listed in Appendix A and submit copies of the surface water test results to the Department by November 30 of the calendar year when the permittee collects the samples.

3. Assessment Monitoring and Corrective Action [18 AAC 60.810, 18 AAC 60.860]

The Permittee shall:

- a. at the request of the Department conduct assessment monitoring by sampling and analyzing any surface water if circumstances or evidence indicate that contamination may have occurred.
- b. for purposes of this permit, contamination of surface waters shall be deemed a violation when surface water contaminant levels exceed those levels specified in 18 AAC 70 (Water Quality Standards) except those parameters documented as having natural background levels already exceeding these limits. Indications of contamination may include, but are not limited to:
 - i. a sudden, abrupt, or significant increase in any one, or more, constituents listed in Appendix A, which are attributed to site operations.
 - ii. a determination that there is a statistically significant increase over background levels for one or more of the constituents monitored.
- c. submit copies of any assessment monitoring test results, to the Department within thirty (30) days from receipt of the laboratory analyses.
- d. take appropriate corrective action if any violation of a permit condition, State regulation, or structural damage to the facility or a monitoring device, is observed during visual monitoring or during a Department inspection, This corrective action may include correcting the violation or

damage, prevent the escape of waste or leachate, and cleaning up any improper waste disposal.

- e. initiate corrective action as outlined in the Solid Waste Management Regulations, 18 AAC 60.815, perform all other actions deemed necessary by the Department for compliance with 18 AAC 60 if contamination is indicated by the surface water quality monitoring program or assessment monitoring.
- f. within 14 days after making the determination that ground water contamination has occurred, place a notice in the operating record indicating which constituents have statistically significant changes from background levels, and notify the department that this notice was placed in the operating record.
- g. close a drilling waste monofill as required by 18 AAC 60.430(e)(4), or reconstruct the monofill to meet the standards of 18 AAC 60.430(c), within one year after detecting a violation of the water quality standards at the point of compliance.

F. Reporting and Record Keeping

[18 AAC 60.235]

The Permittee shall maintain an operating record at a location that will be readily accessible for Department review and by employees working at the facility. The record must consist of:

- a. the permit application and the permit;
- b. inspection records, training procedures, and notification procedures if required by 18 AAC 60.240;
- c. any demonstration, certification, finding, monitoring, testing, or analytical data required by 18 AAC 60.800 - 18 AAC 60.860;
- d. any permit or record required under the Clean Water Act as that Act applies to leachate and storm water discharges;
- e. financial assurance documentation as under 18 AAC 60.265;
- f. the operating plan required in 18 AAC 60.210(b)(9);
- g. as-built drawings of the facility; and any other documents required by this permit to be kept in the operating record.

G. Cell Closure [18 AAC 60.430]

The Permittee shall:

1. notify ADEC, in writing, at least thirty (30) days before the storage cell is permanently closed.
2. ensure the closure activities are inspected by a third party or supervised by the permittee or a representative familiar with the closure requirements of the facility. A written closure verification in the form of a notarized statement must be signed by the permittee and submitted to the Department within 30 days of the final closure action. This closure verification must include a statement verifying that the site was closed in accordance with the facility closure requirements of this permit, the date(s) the closure activity took place, and the signature(s) of person(s) who supervised or performed the closure activity certifying that the information provided is true.
3. remove all waste material from the waste storage cell.
4. decommission the waste storage cell and reuse or dispose of all timbers, liners and debris in a permitted disposal facility.
5. collect representative grab samples of the material and water (if available) that were underlying the waste storage cell(s) and have them analyzed for the metals constituents listed in Appendix A and diesel range organics (DRO).

H. Post-Closure Care and Monitoring [18 AAC 60.800]

1. no post-closure monitoring will be required if the waste cell has been removed, tested for contamination and the underlying materials show no statistically significant increase over background levels.
2. if contamination is found in the underlying materials a corrective action plan and post closure monitoring requirements will be determined in accordance with Section E. 4(d)

I. Violation and Enforcement

1. noncompliance with any section of this permit constitutes a violation of the conditions of this permit.
2. pollution, as defined in AS 46.03.900, resulting from the operation of this permitted facility, constitutes a violation of this permit.

3. a violation of any condition of this permit may result in the imposition of civil penalties in accordance with AS 46.03.760 and/or criminal penalties AS 46.03.790. Additionally, the Permittee may be required to expand monitoring, evaluate impacts, and provide restoration at the site.

GENERAL CONDITIONS

A. Access and Inspection

The Department's representatives shall be allowed access to the Permittee's facilities to conduct scheduled or unscheduled inspections or tests to determine compliance with this permit and State laws and regulations.

B. Availability of Records

Except for information related to confidential processes or methods of manufacture, all application materials and records and reports submitted in accordance with the terms of this permit shall be available for public inspection at the Department's Southcentral Regional Office.

C. Location of Permit and Application

The Permittee shall maintain a copy of this permit and facility plans at the disposal facility or, if that is not feasible, at the Permittee's or operator's place of business.

D. Civil and Criminal Liability

Nothing in this permit shall be construed to relieve the Permittee from civil or criminal penalties for noncompliance, whether or not such noncompliance is due to factors beyond his control, including but not limited to accidents, equipment breakdowns, or labor dispute.

E. Adverse Impacts

The Permittee shall take all necessary means to minimize any adverse impact to the receiving waters or lands resulting from a violation or noncompliance with any limitations specified in this permit, including any additional monitoring needed to determine the nature and impact of the activity in noncompliance. The Permittee shall cleanup and restore all areas adversely impacted by the noncompliance.

F. Cultural or Paleontological Resources

Should cultural or paleontological resources be discovered as a result of this activity, work which would disturb such resources are to be stopped, and the Office of History and Archaeology, Division of Parks and Outdoor Recreation, Department of Natural Resources, is to be notified immediately (907) 269-8721.

G. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, nor does it authorize any damage to private property.

H. Modifications or Changes

This permit authorizes only that operation specified in the application and permit. Any alteration, installation, expansion or modification which was not submitted as a component of the permitted facility plan will require a written plan approval or permit amendment prior to implementation. Any expansion, modification, or other change in a facility process or operation which may result in an increase in emissions or discharges or may cause other detrimental environmental impacts from the Permittee's facility requires a new permit.

I. Applications for Permit Renewal, Amendment or Plan Approval

Application for a renewal of, or amendment to, a permit will be treated in the same manner as the initial application, except that public notice or hearing may not be required for applications for renewal or amendment. Application for renewal or amendment or plan approval must be made no later than 30 days before the expiration of the permit or the planned effective date of the amendment or change.

J. Transfers

This Department reserves the sole discretion to transfer this permit. The Permittee may request to transfer this permit to another proposed Permittee. The written request must include a certified signed affidavit from the proposed new Permittee stating that they accept this permit in its entirety. The permittee is responsible to insure that all terms and conditions of the permit are met until the transfer is approved. Transfer of the permit is only valid when written approval has been received from the department. Should operation of the facility be contracted or a change in contractors be made, the new contractor shall be notified of the existence of the permit and its conditions.

K. Termination

This permit terminates upon the expiration date. The Department has the authority to terminate a permit upon 30 days written notice if the Department finds that there has been a violation of the conditions of the permit.

L. Pollution Prevention

In order to prevent and minimize present and future pollution, when making management decisions that affect waste generation, the Permittee shall consider the following order of priority options, as outlined in AS 46.06.021:

1. waste source reduction;
2. recycling of waste;
3. waste treatment; and
4. waste disposal

Appendix A

Surface Water Monitoring Parameters ⁽¹⁾

Parameter	Limit mg/L	Limit ?g/L
Arsenic ⁽¹⁾	.05	50
Barium ⁽¹⁾	2	2000
Chromium	.067-.1 ⁽²⁾	67-100 ⁽²⁾
Lead	.00054-.019 ⁽³⁾	.54-19 ⁽³⁾
Nickel	.049-.1 ⁽⁴⁾	49-100 ⁽⁴⁾
Zinc	.033-.340 ⁽⁵⁾	33-340 ⁽⁵⁾
Sodium	250 ⁽⁶⁾	250,000 ⁽⁶⁾
Benzene ⁽⁷⁾	.005	5
Toluene ⁽⁷⁾	1	1000
Ethylbenzene ⁽⁷⁾	0.7	700
Xylene ⁽⁷⁾	10	10,000
TAH ⁽⁷⁾	.01	10
pH (units)	6.5 to 8.5 units - May not vary more than 0.5 pH unit from natural conditions	
Petroleum Hydrocarbons, oils and grease (DRO)	No sheen or discoloration	
Calcium	No chemical specific criteria ⁽⁸⁾	
Magnesium	No chemical specific criteria ⁽⁸⁾	

Note⁽¹⁾ Alaska Water Quality Standards (AWQS), 18 AAC 70, incorporates EPA Quality Criteria for Water, July 1976, USEPA: 1977 0-222-904, the Ambient Water Quality Criteria for the 64 toxic pollutants listed in Federal Register Vol. 45, No 231, pg. 79318 November 1980, the final ambient water quality criteria documents listed in Federal Register Vol. 50, No 145, pg. 30784, July 1985, the Ambient Water Quality Criteria For Zinc-1987, EPA 440/5-87-003, page 31-32 and Ambient Water Quality Criteria for Nickel, EPA-1986, 440/5-86-004, p. 18. Per 18 AAC 70.040, water quality must be protected for the most stringent water quality criteria for all the use classes. The criteria presented in this chart is a compilation of the most stringent water quality criteria. The DW MCLs need to be measured as a total analysis and the metals criteria based on aquatic life criteria need to be measured as total recoverable. Changes in State regulations and adoptions of new federal standards may not be reflected in this table. Permittees are responsible to utilize Alaska Water Quality Standards as presented in the regulations.

Note⁽²⁾ Chromium values are hardness dependent and must be calculated using a hardness value as determined from calcium and magnesium analyses (formulas given below). The range given here is from the 1985 EPA Ambient Water Quality Criteria. For Cr3, the hardness dependent applicable range (for hardness 25-41 CaCO₃) is 67 ?g/L to 100 ?g/L with the upper limit based on the Drinking Water MCL of 100 ?g/L. The freshwater chronic criteria for Cr6 is .011 mg/L or 11 ?g/L.

Note⁽³⁾ Lead values are hardness dependent and must be calculated using a hardness value as determined from calcium and magnesium analyses (formulas given below). The range given here is for a hardness from 25 to 400. The maximum hardness value shall not exceed 400 mg/L even if the actual ambient hardness is greater than 400 mg/L as CaCO₃. The minimum hardness allowed in the equations shown shall not be less than 25 mg/L, as CaCO₃, unless the department determines that the resultant criterion is not protective of the water body uses.

Note⁽⁴⁾ Nickel values are hardness dependent and must be calculated using a hardness value as determined from calcium and magnesium analyses (formulas given below). The range given here is for hardness from 25 to 59. The controlling range for Ni criteria is 49 ?g/L to 100 ?g/L with the upper limit based on the Drinking Water MCL. The minimum hardness allowed in the equations shown shall not be less than 25 mg/L, as CaCO₃, unless the department determines that the resultant criterion is not protective of the water body uses.

Note⁽⁵⁾ Zinc values are hardness dependent and must be calculated using a hardness value as determined from calcium and magnesium analyses (formulas given below). The range given here is for a hardness from 25 to 400. The maximum hardness value shall not exceed 400 mg/L even if the actual ambient hardness is greater than 400 mg/L as CaCO₃. The minimum hardness allowed in the equations shown shall not be less than 25 mg/L, as CaCO₃, unless the department determines that the resultant criterion is not protective of the water body uses.

Note⁽⁶⁾ There is no primary MCL for sodium, this is a secondary MCL. Secondary levels represent reasonable goals for drinking water quality. They mainly affect the aesthetic qualities of drinking water and enforcement of secondary MCLs is up to the discretion of the department. The sodium absorption ratio (SAR) must be less than 2.5, 18 AAC 70.020 (b)(Dissolved Inorganic Substances). The SAR formula is provided below.

Note⁽⁷⁾ Individual BETX criteria are drinking water MCLs for groundwater. Total aromatic hydrocarbons (TAH), defined as the sum of BETX concentration, can not exceed 10?g/L for surface water.

Note⁽⁸⁾ In accordance with 18 AAC 60.440 (table D), calcium and magnesium are analyzed for the purpose to calculate hardness. Calcium and magnesium have no chemical specific criteria under Alaska Water Quality Standards.

Hardness Dependent, Hardness, and Sodium Absorption Ratio Formulas

Chromium III

The (freshwater) 1985 trivalent chromium chronic criterion is hardness dependent. To determine the chronic criterion, site-specific hardness values must be obtained and used in the following formula:

$$2.718^{(.8190[\ln(\text{hardness})] + 1.561)}$$

The 2.718 is a natural log constant and hardness is converted to a natural log. Once the criterion is calculated then the measured concentration of trivalent chromium can be compared to it. This Criterion is associated with the **four-day average** duration. Examples shown in the EPA 1985 criteria document and federal register are as follows:

Hardness in mg/L CaCO ₃	Resultant Criterion
50	120 ?g/L
100	210?g/L
200	370?g/L

Lead

The (freshwater) Lead chronic criterion is hardness dependent. To determine the chronic criterion, site-specific hardness values must be obtained and used in the following formula:

$$2.718^{(1.266[\ln(\text{hardness})] - 4.661)}$$

The 2.718 is a natural log constant and hardness is converted to a natural log. This criterion is associated with the **four-day average** duration. Examples shown in 50 FR 30791 and EPA, 1985, Ambient Water Quality Criteria for Lead are as follows:

Hardness in mg/L CaCO ₃	Resultant Criterion
50	1.3?g/L
100	3.2?g/L
200	7.7?g/L

It should be noted that the instrument detection limits for EPA method 6010B for lead is 28? g/L (depending on sample matrix variations). It is suggested that EPA method 7000A(Furnace Procedure method) be used. This method has a detection limit of 1 ? g/L for lead.

Nickel

The (freshwater) 1986 Nickel chronic criterion is hardness dependent. To determine the chronic criterion, site-specific hardness values must be obtained and used in the following formula:

$$2.718^{(0.8460[\ln(\text{hardness})] + 1.1645)}$$

The 2.718 is a natural log constant and hardness is converted to a natural log. This criterion is associated with the **four-day average** duration. Examples shown in the 1986 EPA criteria document and federal register are as follows:

Hardness in mg/L CaCO ₃	Resultant Criterion
50	88?g/L
100	160?g/L
200	280?g/L

Zinc

The (freshwater) 1987 Zinc chronic criterion is hardness dependent. To determine the chronic criterion, site-specific hardness values must be obtained and used in the following formula:

$$2.718^{(0.8473[\ln(\text{hardness})] + 0.7614)}$$

The 2.718 is a natural log constant and hardness is converted to a natural log. This criterion is associated with the **four-day average** duration. Examples shown in the 1987 EPA criteria document and federal register are as follows:

Hardness in mg/L CaCO ₃	Resultant Criterion
50	59?g/L
100	110?g/L
200	190?g/L

Hardness Calculation

Utilizing the analyses for Calcium and Magnesium in mg/L, a hardness value in mg/L CaCO₃ may be obtained in the following formula:

$$(\text{mg/L Ca})(2.5) + (\text{mg/L Mg})(4.1) = \text{hardness in mg/L CaCO}_3$$

Sodium Absorption Ratio (SAR)

The Sodium Absorption Ratio (SAR) is empirically related to poor physical characteristics and plant toxicities and gives an estimated degree to which sodium from a given water will be adsorbed in soil. It is expressed as the quotient of the sodium ion concentration and the square root of half the sum of the calcium and magnesium ion concentrations:

$$\text{SAR} = \text{Na} / [(\text{Ca} + \text{Mg}) / 2]^{1/2}$$

**GENERAL PERMIT APPLICATION
FOR STORAGE OF OIL AND GAS EXPLORATION AND PRODUCTION
WASTE AND RCRA NON-EXEMPT NON-HAZARDOUS WASTE
ON THE NORTH SLOPE**

General Permit SWG0308000 Application Information

1. Submit a cover letter briefly describing the type of facility, the liner specifications for the facility, plans for operation, and sources of waste, and clearly show how the proposed activity will meet the criteria and conditions of this General Permit, as outlined in 18 AAC 60.255(e).
2. The letter must include a statement that the applicant is aware of all local zoning ordinances, local zoning requirements, and where appropriate, the Alaska Coastal Zone Management Program Requirements in 6 AAC 50.
3. Submit a site plan on an appropriate scale and design drawings that are approved and sealed by a registered engineer [18 AAC 60.430(c)(5)], which include the following information:
 - a map or drawing of the location of the waste disposal facility in relation to wetlands, direction of surface water flow, property boundaries, surface waters and drinking water sources; and
 - a cross sectional and plan view drawing of the storage facility showing the liner, geotextile and/or bedding materials, and any drainage ditches needed to prevent the flow of water over, into, or from the monofill facility.
4. Submit a surface water and visual monitoring plan that meets the requirements of 18 AAC 60.800-815. As part of the surface water monitoring plan include a narrative explaining why the locations for surface water sample sites were chosen and how these sample site locations meet the requirements found in section E.2 of the general permit.
5. Complete and sign the form at the end of this document, as required by 18 AAC 15.030.

A. Basic Information:

- Applicant's Name _____
Name of Contact _____
Mailing Address _____
City/State/ZipCode _____
Phone/FAX _____
e-mail Address _____
- Type of entity(e.g., individual, partnership, corporation) _____
State of incorporation or registration _____
Alaska business license number _____
IRS tax identification number, or social security number (if individual) _____

Operator's Name: _____
 Name of Contact: _____
 Mailing Address: _____

City/State/Zip: _____
 Phone/FAX #: _____

Facility Owner: _____
 Mailing Address: _____
 City/State/Zip: _____
 Phone/FAX#: _____

Land Owner: _____
 Mailing Address: _____
 City/State/Zip: _____
 Phone/FAX #: _____

Facility Location: (Legal description of the property; Meridian, Range, Township, and Section).

Informal Location: (Operations Pad or Milepost)

B. The applicant understands the following limitations of the general permit.

- | | <u>Circle One</u> |
|---|-------------------|
| 1. This permit is for the storage of drilling waste and RCRA non-exempt non hazardous wastes. The facility is used only for the storage of waste prior to disposal and/or remediation and the facility is not an inactive reserve pit. | Yes No |
| 2. Under the authority of this permit a facility cannot dispose of and/or bury any solid waste within the facility boundary; or store putrescible waste, camp waste or hazardous waste as defined in 40 CFP 261.3. | Yes No |
| 3. The facility will be lined with an impermeable liner that has a hydraulic conductivity of no more than 1×10^{-7} cm/s and is constructed of materials that are chemically, physically, and biologically compatible with any waste that may be stored within the facility. | Yes No |
| 4. The facility is located on the North Slope of Alaska which is defined as the geographic located north of 68° (degrees) north latitude, and is within the borders of the State of Alaska. | Yes No |

- C. Attach a copy of the deed, or other legal document that identifies the landowner. If the applicant is not the owner of the property, attach proof that the owner has received notice which fully describes the proposed facility, and
 - 1. A copy of a lease agreement which is clearly relevant to the proposed activity; **or**
 - 2. A written statement signed by the landowner or oil and gas leasing agency, stating that the landowner or agency consents to the proposed activity.

D. Signatures:

I, _____ certify that all the above information is true, correct and complete.

Applicant's Printed Name: _____

Applicant's Signature: _____

Date Application Signed: _____

18 AAC 15.030 SIGNING OF APPLICATIONS: All permit applications must be signed as follows:

- 1. In the case of corporations, by a principal executive officer of at least the level of vice-president or his/her duly authorized representative, if the representative is responsible for the overall management of the project or operation;
- 2. In the case of a partnership, by a general partner;
- 3. In the case of a sole proprietorship, by the proprietor; and
- 4. In the case of a municipal, state, federal or other public facility, by either a principal executive officer, ranking elected official, or other duly authorized employee.

E. Submit Completed Applications to:

**The Alaska Department of Environmental Conservation
Division of Environmental Health
Solid Waste Program Office
555 Cordova Street
Anchorage, Alaska 99510
Phone (907)-269-7500
FAX (907) 269-7655**