



**ALASKA POLLUTANT DISCHARGE ELIMINATION SYSTEM
PERMIT FACT SHEET – DRAFT**

Permit Number: AK0053732

**AURORA ENERGY SERVICES – SEWARD COAL LOADING
FACILITY**

**ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Wastewater Discharge Authorization Program
555 Cordova Street
Anchorage, AK 99501**

Public Comment Period Start Date: November 19, 2015

Public Comment Period Expiration Date: December 21, 2015

[Alaska Online Public Notice System](#)

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Proposed issuance of an Alaska Pollutant Discharge Elimination System (APDES) permit to

AURORA ENERGY SERVICES, LLC

For wastewater discharges from

Seward Coal Loading Facility
903 Port Avenue
Seward, Alaska, 99664

The Alaska Department of Environmental Conservation (Department or DEC) proposes to issue APDES individual permit AK0053732 Aurora Energy Services - Seward Coal Loading Facility. The permit authorizes and sets conditions on the discharge of pollutants from this Facility to waters of the United States. In order to ensure protection of water quality and human health, the permit places limitations on the types and amounts of pollutants that can be discharged from the Facility and outlines best management practices to which the permittee must adhere.

This fact sheet explains the nature of potential discharges from the Seward Coal Loading Facility and the development of the permit including:

- information on public comment, public hearing, and appeal procedures
- a listing of proposed effluent limitations and other conditions
- technical material supporting the conditions in the permit
- proposed monitoring requirements in the permit

Public Comment

Note this is the second public notice and comment period for the draft permit. The first public comment period was from July 2, 2015 through August 17, 2015. Should an individual or entity like for their comments to be responded to in DEC's response to comment document generated after the public comment period closes, written comments must be submitted during this public comment period. Comments from the previous public notice period will not be responded to in the response to comment document. However, comments received during the first public notice were reviewed and used, where determined appropriate by DEC, to make updates to the draft permit and fact sheet. See below for more details on commenting on the draft permit during the public comment period.

Persons wishing to comment on, or request a public hearing for the draft permit for this Facility, may do so in writing by the expiration date of the public comment period.

Commenters are requested to submit a concise statement on the permit condition(s) and the relevant facts upon which the comments are based. Commenters are encouraged to cite specific permit requirements or conditions in their submittals.

All comments and requests for public hearings must be in writing and should be submitted to the Department at the technical contact address, fax, or email identified above. Mailed comments and requests must be postmarked on or before the expiration date of the public comment period.

After the close of the public comment period the Department will review the comments received on the draft permit. The Department will respond to the comments received in a Response to Comments document that will be made available to the public. If no substantive comments are received during the comment period, the proposed conditions in the draft permit will become the proposed final permit.

The proposed final permit will be made publicly available for a five-day applicant review. The applicant may waive this review period. After the close of the proposed final permit review period, the Department will make a final decision regarding permit issuance. A final permit will become effective 30 days after the Department's decision, in accordance with the state's appeals process at 18 AAC 15.185.

The Department will transmit the final permit, fact sheet (amended as appropriate), and the Response to Comments to anyone who provided comments during the public comment period or who requested to be notified of the Department's final decision.

The Department has both an informal review process and a formal administrative appeal process for final APDES permit decisions. An informal review request must be delivered within 15 days after receiving the Department's decision to the Director of the Division of Water at the following address:

Director, Division of Water
Alaska Department of Environmental Conservation
410 Willoughby Street, Suite 303
Juneau AK, 99811-1800

Interested persons can review 18 AAC 15.185 for the procedures and substantive requirements regarding a request for an informal Department review.

See <http://dec.alaska.gov/commish/InformalReviews.htm> for information regarding informal reviews of Department decisions.

An adjudicatory hearing request must be delivered to the Commissioner of the Department within 30 days of the permit decision or a decision issued under the informal review process. An adjudicatory hearing will be conducted by an administrative law judge in the Office of Administrative Hearings within the Department of Administration. A written request for an adjudicatory hearing shall be delivered to the Commissioner at the following address:

Commissioner
 Alaska Department of Environmental Conservation
 410 Willoughby Street, Suite 303
 Juneau AK, 99811-1800

Interested persons can review 18 AAC 15.200 for the procedures and substantive requirements regarding a request for an adjudicatory hearing. See <http://dec.alaska.gov/commish/ReviewGuidance.htm> for information regarding appeals of Department decisions.

Documents are Available

The permit, fact sheet, application, and related documents can be obtained by visiting or contacting DEC between 8:00 a.m. and 4:30 p.m. Monday through Friday at the addresses below. The permit, fact sheet, [application](#), and other information are located on the Department’s Wastewater Discharge Authorization Program website: <http://dec.alaska.gov/water/wwdp/index.htm>.

Alaska Department of Environmental Conservation Division of Water Wastewater Discharge Authorization Program 555 Cordova Street Anchorage, AK 99501 (907) 269-6285	Alaska Department of Environmental Conservation Division of Water Wastewater Discharge Authorization Program 410 Willoughby Avenue, Suite 310 Juneau, AK 99801 (907) 465-5180
	Alaska Department of Environmental Conservation Division of Water Wastewater Discharge Authorization Program 43335 Kalifornsky Beach Rd. – Suite 11 Soldotna, AK 99669 (907) 262-5210

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1.0 APPLICANT

This fact sheet provides information on the Alaska Pollutant Discharge Elimination System (APDES) permit for the following entity:

Name of Facility: Seward Coal Loading Facility
APDES Permit Number AK0053732
Facility Location: 903 Port Avenue, Seward
Mailing Address: PO Box 1789 Seward, AK 99664
Facility Contact: Mr. Fred Wallis, phone number 907-683-9749

Discharge Location

The discharge location is the southern end of belt conveyor BC-14 and the shiploading system nominally located at 60° 06.919 North Latitude and -149° 25.788 West Longitude. During the loading of ships, the shiploader moves in a north-south orientation as it loads the ships.

The project area Zone of Deposit (ZOD) generally reflects the geometry of a trapezoid and is approximately 21 acres in size. The northern boundary of the project area ZOD is 415 feet long, the eastern boundary is 1541 feet long, the southern boundary is 602 feet long and the western boundary is 1639 feet long (see Table 1 for project area ZOD coordinates).

Table 1: Boundary of the Project Area ZOD

Point	North Latitude	West Longitude
NE	60° 06.9858	-149° 25.6843
SE	60° 06.7338	-149° 25.6822
S	60° 06.7342	-149° 25.8433
SW	60° 06.7338	-149° 25.8809
W	60° 06.9390	-149° 25.8803
NW	60° 06.9944	-149° 25.8202

Figure 1 in Appendix A depicts the location of the Seward Coal Loading Facility.

2.0 FACILITY INFORMATION

2.1 Background

The Seward Coal Loading Facility (facility or SCLF) has been in operation since the early 1980s. The facility was designed as a terminal to facilitate the transport of coal mined in the interior of Alaska to Pacific Rim markets. Specifically, the facility was designed to unload coal from railcars, convey it to storage, reclaim material from storage, and load it into bulk ships. It was purchased by the Alaska Railroad Corporation (ARRC) in 2003. In 2006, Aurora Energy Services, LLC (AES or permittee) signed an agreement with ARRC to serve as the facility operator.

Coal is reclaimed from the stockpile and loaded onto BC-14, which transfers the coal over the water to a shiploader system. The shiploader system loads the coal to a moored bulk container ship via a feeder spout and deflector spoon. The shiploader spout is located on a fixed boom that swings out eastward from the BC-14 conveyor system over the moored ship.

3.0 COMPLIANCE HISTORY

3.1 Permitting History

The discharge from the SCLF was originally permitted by the Environmental Protection Agency (EPA) under a National Pollutant Discharge Elimination System (NPDES) individual permit in September 1984 (AK0040622). Compliance inspections of the Facility by EPA began shortly after the issuance of the permit. In 1999, EPA reissued permit AK0040622 to the SCLF. In February 2001, EPA recommended that the permittee seek coverage under and apply for an authorization to discharge under the NPDES Storm Water Multi-Sector General Permit (MSGP). On February 9, 2001, EPA authorized the permittee to discharge under MSGP authorization AKR05A452. On June 14, 2009, EPA authorized the permittee to discharge under Sector AD via permit authorization AKR05CC38. On October 31, 2009, the Alaska Department of Environmental Conservation (DEC or the Department) assumed authority for administering the 2008 MSGP.

In February 2010, DEC inspected the facility during loading operations for compliance with the MSGP. The inspection occurred approximately 24 hours after the commencement of coal transfer, which occurred at an average rate of 900+ tons/hour: coal dust and chunks had accumulated on the dock below the shiploader and the conveyor catwalk near the shiploader; no chunks of coal were observed falling into the water, but flakes of “carry-back” (congealed coal dust) were observed falling from the conveyor near the shiploader, and from the shiploader itself, into Resurrection Bay; and no visible dust was being generated at the end of the ship loading process, but dust was visible on the ship’s deck and hold cover. In August 2011, EPA inspected the facility to determine compliance with the Clean Water Act (CWA). EPA concluded that the facility was operating as expected and pursuant to the 2008 MSGP.

3.2 Litigation History

In October 2009, the Sierra Club and the Alaska Community Action on Toxics (ACAT) served AES with a Notice of Violation and Intent to File Suit under the CWA. In December 2009, the Sierra Club and ACAT filed a lawsuit in the U.S. District Court, District of Alaska claiming that the direct discharge of coal to surface water from AES’s coal loading activities constituted

violations of the CWA and that AES was without coverage under the 2008 MSGP or any earlier version thereof for the subject of coal discharge. In March 2013, the U.S. District Court, District of Alaska granted summary judgment in AES's behalf and ruled: 1) AES was protected by the CWA permit shield defense; and 2) EPA and DEC knew of the challenged discharges, reasonably contemplated those discharges in extending MSGP coverage, and, in fact, actively regulated those discharges under the 2008 MSGP.

The Sierra Club and ACAT appealed the decision on the claim concerning the permit shield to the Ninth Circuit of Court of Appeals. On September 3, 2014, a panel of the Court of Appeals for the Ninth Circuit (Panel) issued its decision finding that the District Court erred in concluding that coverage under the MSGP shielded AES from liability for their coal discharges and reversed the decision of the District Court. In its decision, the Panel ruled that the case would be remanded to the District Court for further proceedings consistent with the Panel's decision. The Panel's decision was the first ruling, by either a court or administrative agency that AES was in violation of the CWA for discharging coal into waters of the United States. As of November 16, 2015, the remand remains pending resolution in the District Court.

On September 29, 2014, AES signed a Compliance Order by Consent (COBC) that was issued by DEC requiring AES to submit an application for an individual permit under the APDES Program for coverage of discharge of incidental coal from the overwater conveyor system and the shiploader system. The COBC was in response to the decision issued from the Panel finding that the MSGP does not provide coverage for non-storm water discharges of coal from the overwater conveyor system and the shiploader system to Resurrection Bay. This subject permitting action is in response to the application turned in by AES as required by the COBC.

On April 2, 2015 AES and others petitioned the U.S. Supreme Court via a writ of certiorari. The writ of certiorari cited several case law examples, but places emphasis on the recent *Sierra Club v. ICG Hazard, LLC* case (January 27, 2015) in the Court of Appeals for the Sixth Circuit as being contrary to the findings of the AES Ninth Circuit decision. The U.S. Supreme Court denied to hear the case in May 2015. As such, the Ninth Circuit's decision stands and resolution is pending the District Court's finalization of the Ninth Circuit's remand.

4.0 PERMIT LIMITATIONS AND MONITORING REQUIREMENTS

4.1 Basis for Permit Limitations

18 AAC 83.015 prohibits the discharge of pollutants to waters of the United States unless first obtaining an APDES permit that meets the purposes of Alaska Statutes 46.03, in accordance with CWA Section 402 and the requirements adopted by reference at 18 AAC 83.010. Per these statutory and regulatory provisions, the permit includes permit limitations that require the permittee to: 1) meet standards reflecting levels of technological capability; 2) comply with Alaska Water Quality Standards (WQS); 3) comply with other state requirements that may be more stringent; and, 4) cause no unreasonable degradation to the marine environment per CWA Section 403.

In establishing permit limitations, DEC first determines if Technology Based Effluent Limits (TBELs) established by EPA Effluent Limitation Guidelines (ELG) rule makings apply to the discharges and shall be incorporated into the permit. Where EPA has not yet developed ELGs for a particular industry, TBELs may be established on a case-by-case basis using Best

Professional Judgment (BPJ) where BPJ meets the requirements of Best Conventional Technology and Best Available Technology Economically Achievable (BCT/BAT) [CWA Section 402(a)(1)]. TBELs have not been promulgated for this sector (coal loading of vessels). The ELGs for the coal industry at 40 CFR Part 434 apply to discharges from any coal mine that the extraction of coal is taking place or is planned to be undertaken as well as to coal preparation plants and associated areas. Even though coal storage is identified as an associated area, the facility is not considered an associated area under the ELGs because the language in 40 CFR 434.20 indicates that associated areas are related to the cleaning and beneficiation of coal, which does not occur at the facility. In addition, numeric Water Quality Based Effluent Limits (WQBELs) were found largely to be infeasible to derive as well, so Best Management Practices (BMPs) have been incorporated to control the discharge (note, a numeric limit on ZOD size was included in the permit and narrative WQS have also been incorporated into the permit). NPDES regulations at 40 CFR §122.44(k) allow for use of BMPs when numeric limits are infeasible.

The permit includes a requirement to develop BMPs for the conveyor system since there is no minimum level of treatment for coal discharges provided by currently available treatment technologies other than the application of BMPs. The permit also includes an adaptive management approach for making operational and monitoring improvements to the facility to reduce the discharge of incidental coal. In addition, a 1.0-acre threshold for continuous coal coverage within the authorized project area Zone of Deposit (ZOD) is adopted as a permit limit for implementing remediation planning. DEC has developed permit conditions that are protective of water quality including existing and designated uses of the receiving water body.

4.2 Basis for Monitoring

In accordance with AS 46.03.110(d), the Department may specify in a permit the terms and conditions under which waste material may be disposed. Monitoring in a permit is required to determine compliance with permit conditions. Monitoring may also be required to gather effluent and receiving water data to determine if additional effluent limits are required and/or to monitor effluent impact on the receiving water body quality.

The applicant submitted the results of a seafloor coal monitoring survey conducted in December 2014 that investigated the presence of potential coal residues on the seafloor near the conveyor system. During this survey, dissolved oxygen (DO) measurements were also collected. The survey and its results are described in Sections 5.3.3 and 7.3. The permit describes seafloor survey requirements to be conducted by the permittee in year one and thereafter as necessary (see Permit Part 1.4).

4.3 Permit Limitations and Monitoring Requirements

The permit contains one numeric as well as narrative WQS-based WQBELs. The following summarizes the effluent limits and loading monitoring and reporting requirements.

- 4.3.1 Petroleum Hydrocarbons, Oil, and Grease. There shall be no discharge of hydrocarbons or oil and grease that causes a film, sheen, or discoloration on the surface or floor of the water body or adjoining shorelines. The permit requires daily monitoring of the surface of the receiving water when coal transfer activities are occurring.

- 4.3.2 Discharge of Incidental Coal. The incidental spillage of coal is monitored and BMP's are adjusted as needed in an adaptive management approach.
- 4.3.3 Residues. Except as authorized by a project area ZOD issued by DEC under 18 AAC 70.210, there shall be no discharge of coal, scum, floating solids, oily wastes, foam, or other residues which alone, or in combination with other substances: 1) makes the water unfit or unsafe for use in aquaculture, water supply, recreation, growth and propagation of fish, shellfish, aquatic life and wildlife, or the harvesting and consumption of raw mollusks or other aquatic life; 2) causes a film, sheen, or discoloration on the surface of the water or adjoining shorelines; 3) causes leaching of toxic or deleterious substances; or, 4) causes a sludge, solid, or emulsion to be deposited beneath or upon the surface of the water, within the water column, on the bottom, or upon adjoining shorelines. The permit sets a permit limit for the extent of residues that may be deposited at 1.0 acre with a depth of four inches (See Section 8.4).

The boundary of the authorized project area ZOD is defined in Permit Part 1.0. The project area ZOD authorizes a deposit of substances on the seafloor within the area of the defined project area ZOD. The WQS for residues must be met at all points outside the project area ZOD.

- 4.3.4 Discharges shall not cause violations of the Alaska WQS (18 AAC 70).

4.4 Monitoring and Reporting

In accordance with 18 AAC 83.455, the Department may specify in a permit the terms and conditions under which waste material may be disposed. Monitoring in permits is required to determine compliance with permit conditions. Monitoring may also be required to gather data to determine if additional permit conditions are required and/or to monitor the discharge's impact on receiving waterbody quality. The permittee is responsible for conducting the monitoring and for reporting results in an Annual Report (Permit Part 1.3.2).

- 4.4.1 Tons of Coal Loading. The number of tons of coal loaded onto ships at the Facility shall be counted by each ship loading and reported in the annual report.
- 4.4.2 Volume of Coal Spilled. The permittee shall develop and implement a methodology to estimate coal spillage during ship loadings. The average of the first four estimates following the issuance of the permit shall constitute a baseline from which to evaluate if there is an increase or decrease in coal spillage during subsequent loadings. After the first four loadings, if the most recent estimate exceeds the baseline by more than 10 percent, then the permittee has to follow the adaptive management plan described in Permit Part 2.3. If the next estimate has an increase less than 10 percent or a decrease, then implementation of the adaptive management is not required by the permit.
- 4.4.3 Oil Sheen Monitoring and Reporting. During periods of coal transfer activity, receiving waters at the SCLF shall be visually monitored daily for the presence of an oil sheen. The presence (or absence) of any oil sheen shall be recorded with the date, name of observer, cause or source of oil sheen, and corrective measures taken. Monitoring results shall be reported to DEC and within 24 hours of the observation in accordance with permit requirements. Oil spills shall also be reported to the U.S. Coast Guard National Response Center and the Central Alaska Oil Spill Response Team, as specified in the permit.

Alaska state law requires all oil and hazardous substance releases to be reported to the Department of Environmental Conservation. DEC's Spill Prevention and Response website (<http://dec.alaska.gov/spar/spillreport.htm>) provides the following information on oil/petroleum releases:

TO WATER: Any release of oil to water shall be reported as soon as the person has knowledge of the discharge.

TO LAND: Any release of oil in excess of 55 gallons shall be reported as soon as the person has knowledge of the discharge. Any release of oil in excess of 10 gallons but less than 55 gallons shall be reported within 48 hours after the person has knowledge of the discharge. A person in charge of a facility or operation shall maintain, and provide to the Department on a monthly basis, a written record of any discharge of oil from 1 to 10 gallons.

TO IMPERMEABLE SECONDARY CONTAINMENT AREAS: Any release of oil in excess of 55 gallons shall be reported within 48 hours after the person has knowledge of the discharge.

DEC contact phone and fax numbers are available on the webpage (<http://dec.alaska.gov/spar/spillreport.htm>).

4.4.4 Annual Report. During the term of the permit, and by January 31 of each year, the permittee shall prepare and submit (postmark) to DEC an Annual Report of coal transfer activities regardless if there was incidental coal discharges during coal transfer, periods of noncompliance, and facility changes. The Annual Report shall be submitted even when there is no coal transfer activity during the year. The Annual Report shall include the following information:

- APDES permit number; facility permittee; facility name, mailing and email addresses, telephone, and fax number;
- A summary of periods of noncompliance with any of the requirements of the permit, the reasons for such noncompliance, and the corrective steps taken;
- Summary information from oil sheen monitoring observed during operating periods, including the date, name of observer, cause or source of oil sheen, and corrective measures taken;
- A summary of coal transfer activity during the previous year, including the volume of coal loaded (tons) per ship loading, the method of loading and estimate of coal spillage (cu. yds.) per ship loading;
- A description of the actions carried out under the BMP Plan, modifications made to improve the BMP Plan, and planned improvements for the next year;
- A description of the actions carried out under the Adaptive Management Plan (if implemented), modifications made to improve the Adaptive Management Plan, and planned improvements for the next year;
- A description of practices that will be used to minimize additional coal accumulation if continuous coverage of coal exceeds both 1.0-acre and a thickness of four inches at any point; and

- A statement of changes in facility information from information provided in the permit application.

4.4.5 **Seafloor Coal Monitoring Survey.** The purpose of the seafloor coal monitoring survey is to determine compliance with the authorized project area ZOD. In accordance with 18 AAC 70.210, DEC has authorized a project area ZOD for the SCLF. The project area ZOD may include continuous coverage, discontinuous coverage, and trace coverage by coal. Continuous coverage is defined as 100% coverage of the seafloor by coal within a three foot by three foot area. Discontinuous coverage is defined as 99% to 10% coverage of the seafloor by coal within a three foot by three foot area. Trace coverage is defined as less than 10% coverage of the seafloor by coal within a three foot by three foot area. (See Appendix C of the permit for definitions of continuous, discontinuous and trace.)

The seafloor coal monitoring survey must determine the depth, total area, and outer boundary of continuous coverage of coal (100%) on the seafloor in water depths to -100 feet Mean Lower Low Water (MLLW) within the project area ZOD. All continuous coal coverage deposits mapped during the seafloor coal monitoring survey must be summed (in acres) up and reported in the Seafloor Coal Monitoring Report. The calculated aggregate (i.e., summed) piles of continuous coal coverage value will be the metric used to determine compliance with the no measurable increase, moderate measurable increase, or significant measurable increase described in Permit Part 1.4.3.3 and defined in Appendix C of the permit.

The seafloor coal monitoring survey must also determine the depth, total area, and outer boundary of discontinuous coverage by coal in the 99% to 50% cover class. In water depths to -100 feet MLLW, the permittee must determine the total area of discontinuous coverage by coal in the 49% to 10% cover class on seafloor. (Note: Actual diving depths may be equal to or greater than -100 feet MLLW depending upon tidal conditions during a seafloor coal monitoring survey.) Given the biological diversity encountered during the dive survey conducted as part of the application process, calculation of the area of trace coverage does not appear to be warranted at this time.

The permit requires a seafloor coal monitoring survey to be conducted during the first year of the permit. DEC maintains this frequency is adequate to characterize the discharge given the recent dive survey results indicate only limited trace coal coverage on the seafloor. The permit provides a detailed description of the methods to carry out the survey. The permittee may request a waiver from the approved method and request approval of an alternate method, by submitting a detailed description of the circumstances requiring the waiver and alternate method. The permittee must demonstrate how the alternative method will meet the objectives stated in Part 1.4.2 in the permit. The permittee shall receive a written approval from DEC prior to implementing the requested alternative. Note seafloor coal monitoring frequency changes (i.e., in the first year of the permit and annually thereafter if continuous coal coverage is detected above 0.9-acre) will not be alternated without modification or reissuance of the permit. The permit provides a detailed description of the content to be included in the Seafloor Coal Monitoring Survey Report and the signatory requirements.

5.0 RECEIVING WATER BODY

5.1 Water Quality Standards

Regulations in 18 AAC 70 require that the conditions in permits ensure compliance with the WQS. The State's WQS are composed of use classifications, numeric and/or narrative water quality criteria, and an antidegradation policy. The use classification system designates the beneficial uses that each water body is expected to achieve. The numeric and/or narrative water quality criteria are the criteria deemed necessary by the state to support the beneficial use classification of each water body. The antidegradation policy ensures that the beneficial uses and existing water quality are maintained.

Water bodies in Alaska are designated for all uses unless the water has been reclassified under 18 AAC 70.230 as listed under 18 AAC 70.230(e). Some water bodies in Alaska can also have site-specific water quality criterion per 18 AAC 70.235, such as those listed under 18 AAC 70.236(b). Resurrection Bay has not been reclassified, nor has a site-specific criteria been established.

5.2 Water Quality Status of Receiving Water

Any part of a water body for which the water quality does not or is not expected to meet applicable WQS is defined as a "water quality limited segment" and placed on the state's impaired water body list. Resurrection Bay is not included on the *Alaska's Final 2010 Integrated Water Quality Monitoring and Assessment Report*, September, 2010.

Accordingly, Resurrection Bay is not listed as impaired and no total maximum daily load has been prepared.

Resurrection Bay is classified for all seven uses: water supply, aquaculture, seafood processing, and industrial; water recreation, contact recreation, secondary recreation; growth and propagation of fish, shellfish, other aquatic life, and wildlife; and harvesting for consumption of raw mollusks or other raw aquatic life.

5.3 Zone of Deposit Analysis

In accordance with state regulations at 18 AAC 70.210, as amended through April 8, 2012, the Department may authorize a project area ZOD in a permit. The water quality criteria of 18 AAC 70.020(b) and the antidegradation requirements of 18 AAC 70.015 may be exceeded in a project area ZOD. However, the residue WQS excursion authorized by the ZOD must be met at every point outside the project area ZOD. In no case may the WQS be violated in the water column outside the project area ZOD by any action, including leaching from, or suspension of, deposited materials. The project area ZOD is for residues, specifically incidental coal falling from the shiploader and BC-14 during loading of ships. The size of the authorized project area ZOD (21 acres) is based on the location of the shiploader and the conveyor with a reasonable boundary around the ship being loaded to account for the dispersion of coal by natural processes (e.g., tidal currents).

More specifically, the project area ZOD authorizes the discharge of incidental coal to Resurrection Bay that could occur from over-the-water portions of the BC-14 conveyor system, transfer feeder conveyor system, or swing arm shiploader system. The authorized project area ZOD extends from the south fence of the SCLF to the end of the mooring dolphins

and on either side of the conveyor and shiploader systems. The discharge could potentially occur due to incidental spillage or dropping of coal from the over-the-water portions of the conveyor and shiploader systems. The 21 acres for the project area ZOD is derived from the north-south distance of the BC-14 conveyor adjacent to the ship being loaded and the travel distance of the shiploader. The east-west distance provides a buffer in the event incidental coal is carried by the tide perpendicular to the conveyor as well as movement from other receiving water processes (e.g., wave action).

This is the first APDES permit for this pollutant, for this industry. The permit was, in part, developed using DEC's APDES experience with ZODs for the seafood and timber industries, which, coupled with the applicant's supplemental permit application materials, provide the most meaningful material for DEC to use to formulate permit conditions. The seafloor coal monitoring survey conducted in year one of the permit cycle will, when compared with the seafloor survey conducted for the permit application, provide an estimate of the incidental coal accumulation on the seafloor as well as a comparison of dissolved oxygen measurements and benthic communities. DEC will use this data to further refine permit conditions during the next permit cycle.

The following provides the Department's regulatory ZOD analysis under 18 AAC 70.210 (b)(1 - 6):

1. **18 AAC 70.210 (b)(1)**. Consider alternatives that would eliminate, or reduce, any adverse effects of the deposit.

During the past several years, the Facility has made changes to the conveyor and to its coal handling practices. The following are the pollution containment and control measures present on the over the water portions of the BC-14 conveyor, the BC-14 conveyor transfer point, and the shiploader.

BC-14 Conveyor

- Conveyor covers that extend the entire length of the belt.
- Full width underside containment system (drip pan) that extends from the shore line to the southernmost transfer point.
- Two primary scrapers, and one secondary scraper, on the head pulley.

BC-14 Transfer Point

- Sealed chute with side boards.
- Hood and spoon assembly which allows for a smoother loading of the material.
- Vibrating dribble chute, which is designed to keep material flowing smoothly.

Feeder Belt

- Covered conveyor that extends the entire length of the belt.
- Full width underside containment system (drip pan).
- Skirt boards the entire length.
- Primary and secondary scraper.

Feeder to Boom Transfer

- Hood and spoon assembly, which allows for a smoother loading of the material.
- Sealed chute.

Boom Belt

- Dust hood structure to slow air movement, which reduces dust.
- Skirt boards along the sides of the belt.
- Two primary scrapers, and one secondary scraper, on the head pulley.

Shuttle Belt

- Skirt boards along the sides of the belt.
- Vibrating dribble chute, which is designed to keep the material flowing smoothly.
- Two primary scraper on the head pulley.

As required by the COBC, the permittee developed a BMP Plan to prevent or minimize the potential for incidental discharges of coal from the overwater conveyor system and the shiploader swing arm. The BMP Plan was submitted to the DEC in October 2014 for review. The BMP Plan was later revised in November after receiving feedback to the original plan from DEC. The BMP Plan will be continually updated to reflect any future operational and design modifications or monitoring practices that are found to control or minimize the potential incidental discharge of coal to Resurrection Bay.

The permittee implemented the BMP Plan, which included several existing controls and procedures designed to prevent or minimize the discharge of coal to Resurrection Bay including:

- spill prevention practices;
- proper housekeeping;
- preventative maintenance protocols;
- employee training;
- inspection protocols;
- the conveyor system is covered;
- the system contains multiple wipers on the conveyor belt to reduce coal carry back on the return belt;
- modifications to the chute to reduce coal spillage;
- seal replacement to minimize coal spillage from the sides of the belt; and
- installation of wider drip pans under the conveyor system to collect carryback coal from the return belt.

In addition to the existing controls and procedures, the BMP Plan also outlined Investigational BMPs. The Investigational BMPs are intended to demonstrate whether any additional controls and procedures are necessary and feasible. It was determined by the installation of the geotextile cloth under BC-14 that a more robust and durable enclosure of the underside of BC-14 would be feasible. The permittee has completed construction of a full width conveyor enclosure along the bottom of BC-14 to replace the existing drip pan and geotextile cloth. The existing drip pan did not extend the full width of the return side of the conveyor belt. The new enclosure extends beyond the return side of the conveyor.

The conveyor enclosure starts from the point where it leaves the southern fence line (beginning of dock) to the first take up bend pulley for BC-14, located at the end of the dock near Tower 14. The enclosure uses the existing belt conveyor metal structure as the support structure for the sheet metal. The full width enclosure at the base of the four feet by eight inches wide conveyor support structure is constructed using 16 gauge galvanized sheet metal as the floor and sidewalls of the pan. The addition was completed in April 2015 at a cost of approximately \$150,000. This additional measure is anticipated to reduce the incidental dropping of carryback coal from the underside of BC-14.

The permittee also engaged an engineering consultant to evaluate the conveyor facility to identify measures that could be considered to further minimize the incidental discharge of coal and other trace pollutants (HDR, 2014). The permittee is implementing a number of the recommendations from that study. Other measures that would further minimize incidental coal discharges are not practicable at the facility given its design and age and associated costs of those measures. The measures considered include the following and their estimated cost:

- Replacement of Shiploader and BC-14 - Estimated Cost \$60,000,000 to \$80,000,000
- Expand the dock to capture incidental coal discharge under the Shiploader - Estimated Cost \$5,000,000
- Modify BC-14 - Estimated Cost \$2,000,000 to \$6,000,000
- Install a Larger Belt - Estimated Cost \$350,000 to \$450,000
- Install a Belt Washing System - Estimated Cost \$150,000 to \$250,000.

While the belt washing system appears to be potentially economical, there would be the added environmental impact of the generation of belt washing wastewater that would require collection, treatment and disposal, which similar to the discharge of incidental coal at the facility, the belt wash wastewater would be very challenging to capture given the current configuration of the facility. In addition, DEC's evaluation of the installation of a larger belt at this time would be premature given the adequacy of the conveyor enclosure to capture coal (as discussed in preceding paragraphs) has yet to be determined. The consultant reported that a new Facility would cost between \$60 and \$80 million and evaluated several other projects requiring significant capital expenditures. Investment of that magnitude is not reasonable for the following reasons:

- 1) Typical export coal contracts are very short term in nature. A large project would have to be amortized over a long period of time, which would create a large financial risk for the permittee.

2) Current export coal prices do not support large capital investments. Indexed coal prices from Australia have decreased over 50% since 2011. Even when prices were higher, a project of this magnitude was not reasonable because the demand was not such to warrant a new Facility.

3) Export tonnages from Seward do not support large amounts of capital investment. The dock at the SCLF has sat idle on average about 90% of the time since 2013. At the SCLF's peak year in 2011, the dock sat idle approximately 80% of the time.

The permittee has been successful in reducing the amount of incidental discharges of coal by making continual incremental improvements of all feasible and effective strategies, such as the ones listed in the BMP Plan. This is confirmed by the findings of the seafloor coal monitoring survey as reported in number 3 below (see Seafloor Coal Monitoring Survey). The measures the permittee is undertaking and the evaluation provide a conclusion that the permittee is employing the most effective and reasonable methods to control the incidental discharge of coal.

2. **18 AAC 70.210 (b)(2).** Consider the potential direct and indirect impacts on human health.

Direct or indirect impacts to human health would not be expected from the incidental discharge of coal in the requested project area ZOD. Results from dissolution studies (leaching studies) to determine hazard potential and the concentration of potential pollutants indicate leaching of coal is not a concern (Environ, 2014). Results of an underwater survey of the seafloor in the immediate vicinity of the loading Facility did not indicate any physical hazards caused by current coal deposits on the seafloor. A detailed description of these studies and potential impacts is discussed in item 3 below concerning potential effects to aquatic life.

3. **18 AAC 70.210 (b)(3).** Consider the potential impacts on aquatic life and other wildlife, including the potential for bioaccumulation and persistence.

Dissolution Studies

In 2014, the permittee submitted a bulk sample of four mesh Sub-bituminous C coal to be used for dissolution testing (Environ, 2014). The testing was conducted in order to characterize the potential toxicity of the solid coal material in marine aquatic environments for purposes of hazard categorization. Testing was conducted using United Nations Globally Harmonized System (UN GHS) prescribed methods and procedures for categorizing the aquatic toxicity of bulk materials. These guidance methods are designed to assess aquatic hazards and to specify test methods to measure concentrations of dissolved chemicals in the leachate.

Based on UN GHS guidance and using knowledge of toxic constituents that are potentially leached from coal, a suite of 15 inorganic constituents (primarily heavy metals) and 18 polycyclic aromatic hydrocarbons (PAHs) were analyzed during a seven day dissolution test. The data analysis then compared the concentrations of metals and PAHs that resulted from a high ("worst case") loading rate of 100 milligrams of coal per liter (mg/L) to published marine water quality criteria. Based on the guidance and methods, the coal is considered non-hazardous if the constituent concentrations in the leachate produced from the "worst case" loading rate does not exceed the marine aquatic life criteria (acute and chronic). In addition, the UN GHS Guidance Part 4 (Environmental Hazards) procedures also provide guidelines for defining Acute Category 1 and Chronic Category 1 and 2 materials as follows:

- Acute 1 - Fish (96 hour), crustacean (48 hour), or algae (72 or 96 hour) LC50_i or EC50_i value less than 1 mg/L;
- Chronic 1 – Fish, crustacean, or algae No Observed Effects Concentration (NOEC) value less than 0.1 mg/L; and
- Chronic 2 – Fish, crustacean, or algae NOEC value less than 1 mg/L.

A technical report summarizing the results of the tests is provided as Attachment 4 to the permit application (Environ, 2014). Results from the seven-day dissolution (leaching) test consistently showed non-detectable concentrations of PAHs and very low concentrations of heavy metals and other inorganic constituents after accounting for background concentrations in the test medium. For metals where a slight increase in the concentration was noted in the leachate, the observed concentrations were orders-of-magnitude below Federal and State marine aquatic life criteria. In addition, using the UN GHS guidelines for hazard ranking, the leachate could not be designated as having either a Category 1 Acute Aquatic Toxicity or a Category 1 or 2 Chronic Aquatic Toxicity.

Seafloor Coal Monitoring Survey

At the request of the Department, the permittee contracted to have a seafloor survey conducted at the SCLF to investigate the extent, if any, of coal transfer debris that had been discharged into Resurrection Bay, as well as to document overall benthic conditions, marine life, and DO measurements. The seafloor coal monitoring survey was conducted in December 2014 in the vicinity of the coal conveyor transfer system (Haggitt Consulting, 2015).

The survey consisted of a seafloor coal monitoring survey and a video survey with accompanying continuously recording measurements of DO. The seafloor coal monitoring survey covered 1.55 acres along 11 equally spaced transects set at 75 foot intervals perpendicular to the coal conveyor system. The percent coverage of coal along the seafloor was determined at 15 foot intervals along each transect. Eleven push core samples were also collected, nine within the operational area of the SCLF and two at background reference sites. The video survey consisted of continuous recording video along 10 transects spaced at 30 foot intervals parallel to the conveyor system and covered 26.4 acres. DO measurements were also continuously recorded at 30 second intervals during the video tow.

A technical report summarizing the results of the seafloor coal monitoring survey was submitted with the APDES permit application (Haggitt Consulting, 2015). The seafloor coal monitoring survey documented that the marine area did not contain significant coal transfer debris. Results of the seafloor and video surveys showed that there was zero acreage of continuous coverage of coal debris, defined as 100 percent (%) cover within a three foot by three foot area, and zero acreage of discontinuous coverage of coal debris, defined as 10% - 90% cover. The 26.4 acre operational area is considered as having insignificant coverage of coal debris with observations of 0% to trace being recorded. “Trace” is defined by the guidelines as less than 10% cover in a three foot by three foot area.

Results of core sampling showed that a layer of coal debris underlays approximately two to four inches of glacial sediment in the area directly under the terminus of the conveyor belt and the swing arm. Coal was not noted on the benthic surface. This layer was noted in four of the

nine core samples in this area. Testing was not done to further define the area of the covered coal debris. Other core samples in the SCLF area consisted of glacial sediments with some noted intermixed imbedded fragments of coal.

The survey also showed normal DO levels along each video transect. The general health of the marine ecosystem was observed to be good with documented marine life consistent with the type and diversity commonly found near areas with vessel traffic. The area immediately around the SCLF supported a number of bottom fish, such as halibut and other opportunistic feeders. The discharge of coal incidental to coal transfer conveyor operations was found to be insignificant during the 2014 Survey.

Potential Impacts

Based on results of the dissolution tests, and the incidental discharge or deposit of incidental coal, the coal is not expected to cause an excursion above Alaska WQS within the project area ZOD. Impacts to water quality outside the project area ZOD would also not occur. The bioaccumulation of metals or other compounds in marine organisms or into food webs, including humans, would not be expected based on the results of the dissolution studies. Coal is primarily made up of carbon and, as is demonstrated by the dissolution tests and chemical analyses, relatively inert and non-reactive. A high degree of geologic weathering would not be expected on coal. For this reason, coal would be expected to persist in its current mineral state in the environment. Coal would be expected to disperse with the other natural glacial and mineral sediments on the seafloor. These findings were demonstrated by the seafloor survey.

Ahrens and Morrisey (2005) in a detailed review of the biological effects of unburnt coal in the marine environment found that, “even though trace metals may be leached from coal piles, their concentrations after dilution by large volumes of water, such as coastal seas, may become negligible compared to other sources.” They go on to say that the general opinion is that, “coal may present a physical hazard in the marine environment when present in sufficient quantities, but not a chemical one.”

4. **18 AAC 70.210 (b)(4).** Consider the potential impacts on other uses of the waterbody.

No impacts to any designated use of the waterbody would be expected to result from the project area ZOD. The seafloor survey showed normal DO levels along each video transect. The general health of the marine ecosystem was observed to be good with documented marine life consistent with the type and diversity commonly found near areas with vessel traffic. The area of the proposed project area ZOD supported a number of bottom fish, such as halibut and other opportunistic feeders. Results of the seafloor survey indicated that the incidental discharge of coal is insignificant resulting in no physical or other hazards or impacts to the seafloor.

5. **18 AAC 70.210 (b)(5).** Consider the expected duration of the deposit and any adverse effects.

Coal is primarily made up of carbon, which is relatively inert and non-reactive. A high degree of geologic weathering would not be expected, particularly in an underwater low oxygen environment. As previously indicated, coal would be expected to persist in its current mineral state in the environment. Coal would be expected to become increasingly mixed with the other natural glacial and mineral sediments on the seafloor as a result of natural processes including

tidal movement, wave action and sediment deposition. No adverse physical or toxic effects would be expected.

6. **18 AAC 70.210 (b)(6)**. Consider the potential transport of pollutants by biological, physical, and chemical processes.

Coal is relatively inert and non-reactive as demonstrated by the results of dissolution testing which resulted in no significant dissolution of pollutants to water using a conservatively high loading rate of 100 milligrams of coal per liter of marine water, as specified by the UN GHS guidelines (Environ, 2014). For this reason, no significant biological or chemical weathering and resulting transport of pollutants to the water column would be expected. The uptake or bioaccumulation of pollutants in marine biota would also not be expected. As previously discussed, coal would be expected to continually mix with other glacial and mineral sediments. This mixing would be expected to continuously occur as a result of normal tidal forces and undercurrents, wave action and sediment deposition.

6.0 ANTIBACKSLIDING

18 AAC 83.480 requires that “effluent limitations, standards, or conditions shall be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit.” 18 AAC 83.480(c) also states that a permit may not be reissued “to contain an effluent limitation that is less stringent than required by effluent guidelines in effect at the time the permit is renewed or reissued.” This is the first time issuance of the permit, therefore further backsliding regulatory analysis is not warranted.

7.0 ANTIDEGRADATION

Section 303(d)(4) of the CWA states that, for water bodies where the water quality meets or exceeds the level necessary to support the water body's designated uses, water quality-based effluent limitations may be revised as long as the revision is consistent with the State's Antidegradation Policy.

The Department’s approach to implementing the Antidegradation Policy, found in 18 AAC 70.015, is based on the requirements in 18 AAC 70 and the Department’s *Policy and Procedure Guidance for Interim Antidegradation Implementation Methods*, dated July 14, 2010. Using these procedures and policy, the Department determines whether a water body, or portion of a water body, is classified as Tier 1, Tier 2, or Tier 3, where a higher numbered tier indicates a greater level of water quality protection. At this time, no Tier 3 waters have been designated in Alaska. Resurrection Bay is not listed as impaired on DEC’s *Alaska’s Final 2010 Integrated Water Quality Monitoring and Assessment Report*; therefore, a Tier 1 designation is not warranted. In addition, little other baseline receiving water data exists. Accordingly, this antidegradation analysis conservatively assumes that the discharge is to a Tier 2 water body.

The Antidegradation Policy of the WQS (18 AAC 70.015) states that the existing water uses and the level of water quality necessary to protect existing uses shall be maintained and protected. If the quality of water exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the Department, after receiving from the applicant all information reasonably necessary to make a decision, allows the reduction of water quality for a project area ZOD under 18 AAC 70.210 (April 2012), a mixing zone under 18 AAC 70.240 (July 2003), or another purpose as authorized in a Department permit, certification, or other approval. The following Antidegradation Analysis applies to waters outside the project area ZOD.

Inside the project area ZOD the water quality criteria for residues and antidegradation requirements can be exceeded. The Department may authorize a reduction of water quality for Tier 2 waters only after the applicant submits information in support of the application, and the Department makes five findings. The Department's five findings are as follows:

1. **18 AAC 70.015 (a)(2)(A).** Allowing lower water quality is necessary to accommodate important economic or social development in the area where the water is located.

Based on the evaluation required per 18 AAC 70.015(a)(2)(D), the Department has determined that the most reasonable and effective pollution prevention, control and treatment methods are being used and the lowering of water quality is necessary.

Usibelli Coal Mine, Inc. (UCM), located 115 miles south of Fairbanks in Healy, is currently Alaska's only operating coal mine. In operation since 1943, UCM is a family-owned and operated company providing significant socioeconomic benefits to the state. UCM provides coal to six power plants in the Interior of Alaska, and exports coal to customers in Chile, South Korea, and Japan. Additionally, AES, a subsidiary of UCM, operates the SCLF, which is owned by the ARRC and located in the Kenai Peninsula Borough.

In 2013, UCM, including AES, employed an average 140 individuals, with 117 located in Healy, 14 in Seward, seven in Fairbanks, and two in Palmer. Wages for UCM employees totaled \$14.7 million and UCM spent \$40.7 million with Alaska vendors. Including benefits, total labor costs were \$21.3 million. One-in-four UCM employees has been with the company over 20 years, and the longest employed individual has been with UCM for 40 years. All UCM employees are Alaska residents. With recent downturn in the overseas coal market, AES went through a lay off which reduced the crew size at the facility to three people. At the height of the overseas market in 2011, there were 24 people employed by the facility. These numbers do not include the staff hired by the Alaska Railroad to handle coal trains.

Approximately \$1.2 million was spent with 33 businesses located in Seward, Soldotna, and Kenai on the Kenai Peninsula. AES paid taxes and fees to the City of Seward and Kenai Peninsula Borough.

UCM has contributed \$272,000 to nearly 100 non-profits in 16 Alaska communities. Since 2010, UCM has donated \$610,000 to the University of Alaska and has participated in a number of research projects. More than 20 academic scholarships are supported annually by UCM including two University of Alaska Fairbanks (UAF) scholarships – the UCM Mining Scholarship is awarded to a student entering in UAF's mining or geologic programs, and the Honors Scholarship is awarded annually to 10 students in the Honors Program.

The Department concludes that the operation of the SCLF and the authorization of the discharge accommodates the important economic and social development in the area the water is located and that the finding is met.

2. **18 AAC 70.015 (a)(2)(B).** Except as allowed under this subsection, reducing water quality will not violate the applicable criteria of 18 AAC 70.020 or 18 AAC 70.235 or the whole effluent toxicity limit in 18 AAC 70.030.

The source of coal supplied to the Facility is currently from mining operations managed by UCM. In 2014, as discussed in more detail in Section 5.3 review finding number three, AES submitted a bulk sample of 4 mesh Sub-bituminous C coal to be used for dissolution testing. The testing was

conducted in order to characterize the potential toxicity of the solid coal material in marine aquatic environments for purposes of hazard categorization as a residue. A suite of 15 inorganic constituents (primarily heavy metals) and 18 polycyclic aromatic hydrocarbons (PAHs) were analyzed during a seven-day dissolution leaching test.

Results from the seven-day dissolution (leaching) test consistently showed non-detectable concentrations of PAHs and very low concentrations of heavy metals and other inorganic constituents after accounting for background concentrations in the test medium. For metals and inorganic analytes where a slight increase in concentration was noted in the leachate, observed concentrations were orders-of-magnitude below Federal and State marine aquatic life criteria

The Department concludes based on the results of the dissolution testing, the incidental discharge of coal to Resurrection Bay would not violate applicable marine water quality criteria, as specified in 18 AAC 70.020, whole effluent toxicity as specified in 18 AAC 70.030, or site-specific criteria as specified in 18 AAC 70.235, and that the finding is met.

3. **18 AAC 70.015(a)(2)(C).** The resulting water quality will be adequate to fully protect existing uses of the water.

Existing uses of the waterbody as a whole are protected because the permit requires that water quality criteria be met at the boundary of the authorized project area ZOD.

At the request of the Department, the permittee contracted to have an seafloor survey conducted at SCLF to investigate the extent, if any, that coal transfer debris has accumulated on the seafloor in the vicinity of the conveyors and loading arm, as well as to document overall benthic conditions (marine life) and record DO measurements. The seafloor coal monitoring survey was conducted in December of 2014 in the vicinity of the coal conveyor transfer and loading systems.

The survey, as discussed in more detail in Section 5.3 review finding number three, consisted of a seafloor coal monitoring survey and a video survey with accompanying continuously recording measurements of DO. The survey documented that the marine area did not contain significant coal transfer debris. Results of the dive and video surveys showed that there was zero acreage of continuous coverage of coal debris, defined as 100 percent (%) cover within a three foot by three foot area, and zero acreage of discontinuous coverage of coal debris, defined as 10% - 90% cover. The 26.4-acre operational area is considered as having insignificant coverage of coal debris with observations of 0% to trace being recorded. "Trace" is defined as less than 10% cover in a three-foot by three-foot area.

The general health of the marine ecosystem was observed to be good with documented marine life consistent with the type and diversity commonly found near areas with vessel traffic. The area immediately around the Facility supported a number of bottom fish, such as halibut and other opportunistic feeders.

The incidental discharge of coal as a function of coal transfer conveyor operations has been determined to be minor based on the lack of coal identified on the seafloor during the survey. Based on results of the seafloor coal monitoring survey and the analytical tests undertaken by AES, authorization of these discharges according to the terms of the permit will result in ongoing protection of the existing uses of the water body.

The Department concludes based on the results of the December 2014 seafloor coal monitoring survey, that the resulting water quality in Resurrection Bay will be adequate to protect the existing uses of the water and that the finding is met.

4. **18 AAC 70.015(a)(2)(D)**. The methods of pollution prevention, control, and treatment found by the department to be most effective and reasonable will be applied to all wastes and other substances to be discharged.

The current pollution containment and control measures currently implemented at the facility are described in the Zone of Deposit Analysis section above. The COBC issued by DEC and signed by both DEC and AES on September 29, 2014 required AES to develop a BMP Plan to prevent or minimize the potential for incidental discharges of incidental coal from the overwater conveyor system and the shiploader swing arm. As a condition of the COBC, a BMP Plan was originally developed and implemented in October 2014 prior to a scheduled ship loading in late October 2014. The plan outlined several existing controls and procedures designed to prevent or minimize the discharge of incidental coal to Resurrection Bay including:

- spill prevention practices;
- proper housekeeping;
- preventative maintenance protocols;
- employee training;
- inspection protocols;
- the conveyor system is covered;
- the system contains multiple wipers on the conveyor belt to reduce coal carry back on the return belt;
- modifications to the chute to reduce coal spillage;
- seal replacement to minimize coal spillage from the sides of the belt; and
- installing wider drip pans under the conveyor system to collect carryback coal from the return belt.

In addition to the existing controls and procedures, though not required under the existing regulations, the BMP Plan also outlined Investigational BMPs. The Investigational BMPs are intended to demonstrate whether any additional controls and procedures are feasible. It was determined by the installation of the geotextile cloth under BC-14 that a more robust and durable enclosure of the underside of BC-14 would be feasible. The permittee constructed a full width conveyor enclosure to replace the existing drip pan and geotextile cloth. The full length conveyor enclosure was completed in April 2015 at a cost of approximately \$150,000.

The BMP Plan was submitted to DEC in October 2014 for review. The BMP Plan was later revised in November after receiving feedback on the original plan from DEC. The BMP Plan will be continually updated to reflect any future operational or design modifications, or monitoring practices that are found to control or reduce the potential discharge of incidental coal to Resurrection Bay.

The permittee engaged an engineering consultant to evaluate the conveyor Facility to identify measures that could be considered to further reduce the incidental discharge of coal (HDR, 2014). The permittee is implementing a number of the recommendations from that study as noted above. Other measures that would further reduce potential incidental discharges are not practicable at this facility, given its design and age and associated costs of those measures. The measures considered include the following and their estimated cost:

- Replacement of Shiploader and BC-14 - Estimated Cost \$60,000,000 to \$80,000,000
- Expand the Dock to Capture Incidental coal discharge under the Shiploader - Estimated Cost \$5,000,000
- Modify BC-14 - Estimated Cost \$2,000,000 to \$6,000,000
- Install a Larger Belt - Estimated Cost \$350,000 to \$450,000
- Install a Belt Washing System - Estimated Cost \$150,000 to \$250,000.

The consultant reported that a new Facility would cost between \$60 and \$80 million, and evaluated several other projects requiring significant capital expenditures. Investment of that magnitude is not reasonable for the following reasons:

- 1) Typical export coal contracts are very short term in nature. A large project would have to be amortized over a long period of time which would create a large financial risk for the permittee.
- 2) Current export coal prices do not support large capital investments. Indexed coal prices from Australia have decreased over 50% since 2011. Even when prices were higher, a project of this magnitude was not reasonable because the demand was not such to warrant a new Facility.
- 3) Export tonnages from Seward do not support large amounts of capital investment. The dock at the Seward Coal Terminal has sat idle on average about 90% of the time since 2013. At the Facility's peak year in 2011, the dock sat idle approximately 80% of the time.

The permittee has been successful in reducing the amount of incidental discharges of coal by making continual incremental improvements of all feasible and effective strategies such as the ones listed in the BMP Plan. This is confirmed by the findings of the seafloor coal monitoring survey as reported in Section 5.3.3. The measures AES is undertaking and the engineering evaluation provide a solid foundation for DEC to conclude that AES is employing the most effective and reasonable methods to control the discharge of coal.

The Department concludes that the most cost-effective and reasonable methods of pollution prevention control and treatment will be applied to all substances to be discharged and that the finding is met.

5. **18 AAC 70.015(a)(2)(E)**. All wastes and other substances discharged will be treated and controlled to achieve (i) for new and existing point sources, the highest statutory and regulatory requirements; and (ii) for nonpoint sources, all cost-effective and reasonable best management practices.

The "highest statutory and regulatory requirements" defined in 18 AAC 70.990(30) (as amended June 26, 2003) have been applied to evaluate this requirement. There are three parts to this definition.

The first part of the definition considers any federal technology-based ELGs that could apply to the discharge. No ELGs are applicable to the facility. The BMP Plan has been developed to minimize the discharge of incidental coal to Resurrection Bay. As discussed in the fourth antidegradation finding above, the permittee engaged an engineering consultant to evaluate the conveyor Facility to identify measures that could be considered to further reduce the discharge of coal. The measures the permittee is undertaking are effective and the most practicable for the Facility. The BMP Plan would be continually updated to reflect any future operational or design modifications of the conveyor and loading system.

The second part of the definition 18 AAC 70.990(30)(B) (2003) appears to be in error, as 18 AAC 72.040 describes discharges to sewers and not minimum treatment. The correct reference appears to be the minimum treatment standards found at 18 AAC 72.050, which refers to domestic wastewater discharges only. The application of 18 AAC 72.050 is for the treatment of domestic wastewater and does not apply to the potential incidental discharge of coal.

The third part of the definition considers any more stringent treatment required by state law including 18 AAC 70 and 18 AAC 72. The APDES permit requires the permittee to develop and implement a BMP Plan that will control the incidental discharges to satisfy all applicable state and federal limitations.

The Department finds the treatment methods employed by the permittee achieve the highest statutory and regulatory requirements required under the antidegradation regulations and that the finding is met

8.0 OTHER PERMIT CONDITIONS

8.1 Quality Assurance Project Plan

The permittee is required to develop procedures to ensure that the monitoring data submitted are accurate and to explain data anomalies if they occur. The permittee is required to update the Quality Assurance Project Plan (QAPP) within 60 days prior to instigation of the seafloor coal monitoring survey. Additionally, the permittee shall submit a letter to the Department within 60 days prior to instigation of the seafloor coal monitoring survey stating that the plan has been implemented within the required time frame. The QAPP shall consist of standard operating procedures the permittee shall follow for collecting, handling, storing and shipping samples; laboratory analysis; and data reporting. The QAPP shall be retained on site and made available to the Department upon request.

8.2 Best Management Practices Plan

In accordance with AS 46.03.110 (d), the Department may specify in a permit the terms and conditions under which waste material may be disposed. The permit requires the permittee to develop or update a BMP Plan in order to prevent or minimize the potential for the release of pollutants to waters and lands of the State of Alaska through plant site runoff, spillage or leaks, or erosion. The permit contains certain BMP conditions that shall be included in the BMP Plan.

Pursuant to CWA Section 402(a)(1), development and implementation of BMP Plans may be included as a condition in APDES permits. CWA Section 402(a)(1) authorizes DEC to include miscellaneous requirements that are deemed necessary to carry out the provision of the CWA in

permits on a case-by-case basis. BMPs are required to control or abate the discharge of pollutants in accordance with 18 AAC 83.475.

The permittee shall develop and/or update a BMP Plan that achieves the objectives and the specific requirements to prevent or minimize the generation and release of pollutants during operation of the Facility. The permittee shall 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 waters of the U.S. The permittee shall also amend the BMP Plan, as appropriate, when Facility operations covered by the BMP Plan change. All changes to the BMP Plan shall be reviewed by the Facility engineering staff and manager.

The permit requires the permittee to develop or update and implement a BMP plan within 180 days of the effective date of the final permit. The BMP Plan shall be kept on site and made available to the Department upon request.

8.3 Adaptive Management Plan

Adaptive management is an iterative approach to developing and implementing a management strategy. Any strategy generated through an adaptive management approach contains a monitoring plan for evaluating implementation successes and has mechanisms in place for using monitoring data to revise and adjust the overall strategy. An example of where EPA currently supports the use of adaptive management is NPDES permits for storm water discharges. The storm water permits contain best management practices, rather than numeric effluent limits, and mechanisms for evaluating the effectiveness of the practices, allowing permittees to make adjustments to their storm water management plans that reflect the data on the effectiveness of best management practices. Pursuant to CWA Section 402(a)(1), development and implementation of Adaptive Management Plans may be included as a condition in APDES permits. CWA Section 402(a)(1) authorizes DEC to include miscellaneous requirements that are deemed necessary to carry out the provision of the CWA in permits on a case-by-case basis.

In the subject permit, if changes in environmental indicators, such as coal spillage and coal found on the seafloor, exceed adaptive management thresholds, programmatic adjustments will be implemented through the adaptive management framework. The permit uses a four-step monitoring and adaptive process as the conceptual framework. The four steps are (1) assess problem, (2) increase monitoring, (3) evaluate alternatives, and (4) adjust facility. The four steps are carried out in an iterative manner to improve the best management practices to maintain or reduce the discharge of incidental coal.

8.4 Remediation Plan

If the results of the seafloor coal monitoring survey(s) submitted by the permittee, and other available evidence demonstrates aggregate continuous coal coverage on the seafloor that exceeds both 1.0-acre and a thickness of four inches at any point, the permittee shall submit a Remediation Plan to DEC within 60 days of discovery of such conditions, unless additional time is granted by DEC. Note, all continuous coal coverage deposits mapped during the seafloor coal monitoring survey must be summed up (in acres) and reported in the Seafloor

Coal Monitoring Report. The calculated aggregate (i.e., summed) piles of continuous coal coverage value will be the metric used to determine compliance with the 1.0-acre and four inches deep remediation permit limit. The 1.0-acre and thickness of four inches threshold for aggregate continuous coal coverage within the project area ZOD is adopted as a limitation for implementing remediation planning in other APDES Sectors (e.g., log transfer/storage) that DEC has found to protect water quality and has been incorporated in the permit. In the absence of other facilities permitted to discharge incidental coal in the state of Alaska, DEC has relied on its APDES experience permitting other facilities with discharges that result in a ZOD to form as an aide to formulate permit conditions for this facility's discharge. DEC will use this permit cycle to gather additional data to determine if future modifications are needed to control the authorized discharge.

8.4.1 Remediation Plan Contents

A Remediation Plan must:

8.4.2 Describe, to the extent that information is reasonably available, the historical coal transfer processes, volumes, and responsible parties at the site and their apparent relation to the existing deposition of coal;

8.4.2.1 Describe the expected future coal transfer processes and volumes at the site;

8.4.2.2 Evaluate environmental impacts caused by existing deposits of coal, and environmental impacts of methods to reduce continuous coverage; and

8.4.2.3 Evaluate methods to reduce continuous coverage, including:

8.4.2.3.1 Alternative methods of coal transfer and transport;

8.4.2.3.2 Operational practices, including handling of coal on or under the conveyor, and other operational elements;

8.4.2.3.3 Feasible methods and costs of removing coal from the seafloor; and

8.4.2.3.4 Other methods.

A Remediation Plan shall identify, as a result of the evaluation, a set of feasible, reasonable, and effective measures that the permittee proposes to implement to reduce existing and future continuous coverage by coal to less than both 1.0-acre and a thickness of four inches at any point. The Remediation Plan shall provide justification for the measures identified (Permit Part 2.3.2.4).

8.4.3 Remediation Plans Proposing Coal Removal

If removal of coal is proposed, the Remediation Plan shall specify the following:

8.4.3.1 The proposed areas, methods, and timing of removal;

8.4.3.2 The volume and nature of material to be removed;

8.4.3.3 The method of disposal of removed material, and management practices at the disposal site to assure meeting WQS and other applicable standards and to assure prevention of objectionable odors; and

8.4.3.4 The costs of removal by the proposed methods and alternatives considered.

8.4.4 Other Remediation Plan Requirements

A proposed Remediation Plan shall include a performance schedule and performance measures for implementation of the plan. A proposed Remediation Plan may describe measures that will be implemented in phases, with continued coal monitoring surveys, and with future modification of the Remediation Plan based on progress in reducing continuous coverage.

8.4.5 DEC Review

Within 30 days of receipt of a proposed Remediation Plan, DEC will approve, approve with modification, or deny the proposed Remediation Plan. In acting on a Remediation Plan, DEC will consider the extent of the exceedance; environmental impacts of accumulated coal; environmental impacts of methods to reduce continuous coverage; the feasibility, reasonableness, effectiveness, and cost of proposed and alternative measures; the timing of recovery under various alternatives; and other pertinent factors.

An approved Remediation Plan constitutes an enforceable condition of the APDES permit.

8.5 Standard Conditions

Appendix A of the permit contains standard regulatory language that shall be included in all APDES permits. These requirements are based on the regulations (18 AAC 83) and cannot be challenged in the context of an individual APDES permit action. The standard regulatory language covers requirements such as monitoring, recording, reporting requirements, compliance responsibilities, and other general requirements.

9.0 OTHER LEGAL REQUIREMENTS

9.1 Ocean Discharge Criteria Evaluation

Section 403(a) of the CWA, Ocean Discharge Criteria, prohibits the issuance of a permit under Section 402 of the CWA for a discharge into the territorial sea, the water of the contiguous zone, or the oceans except in compliance with Section 403. Permits authorizing discharges seaward of the baseline of the territorial seas must comply with the requirements of Section 403, which include development of an Ocean Discharge Criteria Evaluation (ODCE).

An interactive map depicting Alaska's baseline plus additional boundary lines is available at <http://www.charts.noaa.gov/OnLineViewer/AlaskaViewerTable.shtml>. The map is provided for information purposes only. The U.S. Baseline committee makes the official determinations on baseline. A review of the baseline line maps revealed that the SCLF discharge area is positioned landward of the baseline of the territorial sea; therefore, Section 403 of the CWA does not apply to the permit, and an ODCE is not required to be completed for this permit issuance.

9.2 Endangered Species Act

The Endangered Species Act (ESA) requires federal agencies to consult with the National Oceanic and Atmospheric Administration (NOAA) Marine Fisheries and the U.S. Fish and Wildlife Service if their actions could beneficially or adversely affect any threatened or endangered species.

NMFS is responsible for administration of the Endangered Species Act (ESA) for listed cetaceans, seals, sea lions, sea turtles, anadromous fish, marine fish, marine plants, and corals. All other species (including polar bears, walrus, and sea otters) are administered by the USFWS.

Section 7 of the ESA requires a federal agency to consult with the USFWS and NMFS to determine whether their authorized actions may harm threatened and endangered species or their habitats. As a state agency, DEC is not required to consult with USFWS or NMFS regarding permitting actions; however, DEC interacts voluntarily with these federal agencies to obtain listings of threatened and endangered species and critical habitat. DEC contacted USFWS and NMFS on March 24, 2015 and requested them to identify any threatened or endangered species under their jurisdiction in the vicinity of SCLF project area ZOD. To date, USFWS and NMFS have not responded.

NMFS maintains an interactive endangered species map at <http://alaskafisheries.noaa.gov/mapping/esa/>. DEC reviewed this map for threatened and endangered species near the SCLF project area ZOD. The ESA popups on the map for Resurrection Bay included Steller Sea Lion, Humpback Whale, North Pacific Right Whale and Sperm Whale.

9.3 Essential Fish Habitat

Essential fish habitat (EFH) includes the waters and substrate (sediments, etc.) necessary for fish from commercially-fished species to spawn, breed, feed, or grow to maturity. The Magnuson-Stevens Fishery Conservation and Management Act (January 21, 1999) requires federal agencies to consult with NOAA when a proposed discharge has the potential to adversely affect (reduce quality and/or quantity of) EFH. As a state agency, DEC is not required to consult with NMFS regarding permitting actions; however, DEC interacts voluntarily with NMFS. On March 24, 2015 DEC contacted and requested NMFS to identify any EFH under their jurisdiction in the vicinity of SCLF. To date, NMFS has not responded.

In addition, the Alaska Department of Fish and Game (ADF&G) maintains regulatory and interactive maps that identify anadromous streams, fish passage, and fish inventory at: <http://www.adfg.alaska.gov/sf/SARR/AWC/index.cfm?ADFG=maps.maps>. DEC reviewed the maps on ADF&G's website and did not identify any EFH in the vicinity of the SCLF that would be adversely affected by the Facility's discharge.

9.4 Permit Expiration

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

REFERENCES

1. Ahrens, Michael J. and Donald J. Morrissey. 2005. Biological Effects of Unburnt Coal in the Marine Environment. In *Oceanography and Marine Biology: An Annual Review*. Vol 43. Pp 69-122.
2. Alaska Department of Environmental Conservation, 2003. *Alaska Water Quality Criteria Manual for Toxics and Other Deleterious Organic and Inorganic Substances*, as amended through December 12, 2008.
3. Alaska Department of Environmental Conservation, 2010. APDES Inspection Report, Inspection Date February 1 & 2, 2010.
4. Environ, 2014, Dissolution Test Results- Usibelli Coal Mine, Inc.
5. Haggitt Consulting, 2015, 2014 Marine Transfer Area Discharge Assessment.
6. HDR, 2014, Seward Coal Loading Facility Incidental Coal Discharge and Containment Improvement Review.

Figure 1. Seward Coal Loading Facility, Zone of Deposit

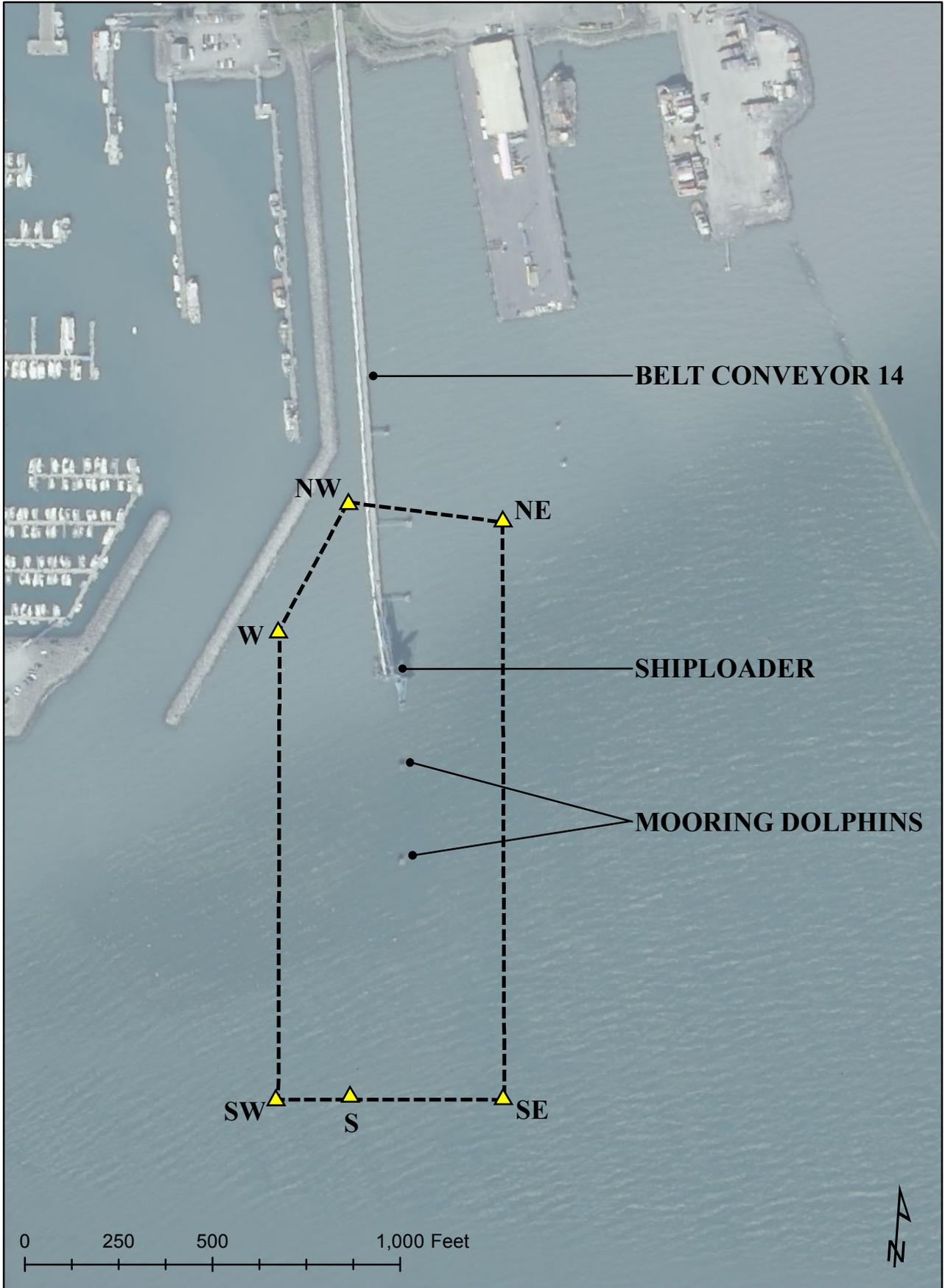


Figure 2: SEWARD COAL LOADING FACILITY Process Flow Diagram

COMPONENTS OF THE SEWARD LOADING FACILITY

