The Process and Requirements for Large Mine Permit Applications in Alaska

May 2008

Presentation Outline

- What is the process?
- Mining 101
- The Permits
- The Agencies
- Q&A — How can we improve?

KEY CONCEPTS

1) Process doesn’t guarantee a “Yes”
2) Mining 101 — rock chemistry drives water quality and mine design
3) Many permits from many agencies are required
4) Financial assurance ($) is required
5) We have experienced, dedicated regulators
6) Interagency monitoring & inspection continue through operation and closure

Mineral Rights on State Land

- Most state land is open to mining
- Rights established for most minerals by discovery and appropriation (staking claims) under Alaska Constitution, Article VIII, Section 11
- State and Federal (BLM and most Forest Service) Land — established through staking claims (hard rock minerals)
- ANCSA and Private Land — through agreements between landowner and mining companies
- State land use plans determine allowable land uses, and if land is open or closed to mining (legislative approval needed for more than 640 acres)
- If there is no land use plan, default is usually open to taking

1. The Process!

Large mining projects in Alaska

- Red Dog
- Rock Creek
- Chuitna
- Pebble
- Pre-permitting
- Construction
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Major Steps in Mineral Development Process

- Initial Exploration
- Advanced Exploration
- Feasibility Studies
- Financing
- Construction
- Operation
- Post-Closure Monitoring

No Single Permit to Mine: there are many permits & authorizations

STATE
- Plan of Operations (POE)
- Exploration
- Staking
- Prospecting
- Coastal Zone Consistency Determination
- Monitoring Plan
- Cultural Resource Protection (DNR)
- Dam Safety Certification (DNR)
- Tidelands Leases (DNR)
- Right of Way/Access (DNR/DOT)
- Water Rights (DNR)
- Fish Habitat and Fishway Permits (DNR)
- Air Quality Permits (ADEC)
- Sewage Treatment System Approval (ADEC)
- Certification of NPDES and ACOE Permits
- Waste Management Permits and Bonding
- Reclamation and Bonding (DNR)
- Plan of Operations (DNR)

(These are only some of the authorizations required)

FEDERAL
- US EPA Section 402 NPDES Water Discharge Permit
- US EPA Air Quality Permit
- US Forest Service: USFS, BLM, USFS
- National Park Service
- Bureau of Land Management
- National Marine Fisheries Service
- US Fish and Wildlife Service
- US Army Corps of Engineers
- US Environmental Protection Agency
- Department of Law
- Department of Commerce, Community and Economic Development
- Department of Fish and Game
- Department of Natural Resources
- US Department of the Interior
- US Department of Transportation
- US Department of Agriculture
- US Department of Agriculture
- US Department of Energy
- US Department of Labor
- US Department of the Air Force
- US Department of Energy
- US Department of the Navy
- US Department of the Navy
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EIS discusses impacts to:

- Hydrology
- Air & Water Quality
- Noise
- Wetlands
- Fish & Aquatic Habitat
- Wildlife
- Threatened & Endangered Species

EIS (cont.)

- Socioeconomics
- Land Use
- Subsistence
- Cultural Resources
- Visual Resources
- Recreation, Safety & Feasibility
- Cumulative Impacts

An EIS is

- A disclosure document prepared so agencies making decisions on a project are fully informed.

- NOT a decision document

NEPA Process

- Application
- Scoping/Scoping Responsiveness
  - Inquire about Tribal Consultation
  - T & E under Endangered Species Act
  - Essential Fish Habitat (EFH)
- Draft
- Comments
- Final
- Comments
- ROD

Record of Decision

- An agency’s permitting/project decision based on the information presented in the EIS.

Necessary NEPA Information
For more information on NEPA:

- Hanh Shaw
  NEPA Compliance Coordinator
  1200 Sixth Avenue OWW-130
  Seattle, WA 98101
  (206) 553-0171/(800)424-4372
  shaw.hanh@epa.gov

Example: Pogo Mine

Pogo Process

- Agency Discussions and Baseline Studies Initiated in 1997
- EIS Initiated in August 2000
- Public input on Scoping 2000/2001
- Public Review of Draft EIS and Public Meetings, Spring 2003
- Final EIS Completed in October 2003
- State Permits Issued in December 2003

Baseline Studies

- Surface Water Quality & Quantity
- Groundwater Quality & Quantity
- Subsistence
- Aquatic Life
- Wildlife
- Wetlands
- Socioeconomics
- Cultural Resources
- Meteorology
- Tribal Consultation with 12 Tribes (Government to Government)
- Traditional Ecological Knowledge (TEK)
- Visual Resources
- Noise
- Air Quality

Coordinated State/Federal Process

- Draft State Permits included in Draft EIS for Public Review
- Public involvements (meetings, notices, etc) are synchronized
- Processes are synchronized, not “streamlined”
- Public still comments on all State authorizations

Pogo Public Participation

- Pre-Application meetings and outreach (community groups, Native groups, NGOs)
- Environmental Impact Statement Process
  - Scoping meetings, public notice
  - Draft EIS (meetings, public notice)
  - Final EIS (public notice)
- Tribal Consultation with 12 Tribes (Government to Government)
- Public comments accepted on all State authorizations
- Open Communication (website, meetings, newsletters, etc)
Do we ever say “No”?  

**ANSWER:** We say NO many times

- There are numerous permits, each requiring YES/NO decisions.
- A NO typically results in design changes to the project.
- The final approved permit usually looks like a shoe box with substantial ensure minor minor changes to get to YES.
- Sometimes applicants abandon a project before they get rejected because they don’t want to do what the permit requires.
- Sometimes applicants abandon a project before they even submit development permits – economics or permit requirements make project infeasible or unattractive to company.

**Example**

- In 1986 Echo Bay Mines began an evaluation of reopening the Alaska-Juneau Gold Mine that operated from 1911 to 1944.
- Agencies did not approve the company’s proposed uplands tailings storage facility.
- Submarine tailings disposal (used historically) was not an option because of limitations of the federal Clean Water Act.
- Echo Bay Mines abandoned and closed the project in 1997 after expenditures in excess of $100 million.

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**Types of Mining**

- **Placer**
- **Open Pit**
- **Underground**

**Ore and Waste**

A generalized example, based on Fort Knox
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WASTE PRODUCTS

Geochemistry
(Water Chemistry)

Water Quality!

Diagram Showing NP:AP

NP:AP ratio, 1.0

NP:AP ratio > 1.2

NP:AP ratio < 1.0

Acid Potential (AP) Sulfide Sulfur
(tons CaCO3/1000 tons)

Neutralization Potential (NP)
(tons CaCO3/1000 tons)

Diagram Showing NP:AP

Column Tests or Humidity Cells Measure Long Term Chemical Trends in Waste Rock

Humidity Cell Tests

This test lasted for 103 weeks before being terminated.
Understanding the chemistry is essential to designing the mine (including waste storage, closure options).

Example: Red Dog drainage from waste rock piles must be captured and treated prior to discharge.

Water Treatment

Example: Red Dog drainage from waste rock piles must be captured and treated prior to discharge.

Greens Creek Mine – Upper Water Treatment Building

State of Alaska Regulatory Requirements

- Waste Disposal Permits and Bonding (ADEC)
- Coastal Zone Consistency Determination (DNR)
- Land Disturbance Permit (ADEC)
- CCR Impacted Land Use Plan (ADEC)
- Sewage Treatment System Approval (ADEC)
- Air Quality Permits (ADEC)
- Water Rights (DNR)
- Mining and Reclamation (DNR)
- Reclaimed Water Use (DNR, DOT)
- Reclamation Plan Approval (ADEC)
- Coastal Zoning (ADEC)
- Dust Suppression (DNR)
- Dust Suppression (DNR)
- Surface Coal Mining Control and Reclamation Permit (ONR)

The Permits
Overview of ADEC Integrated Waste Management Permit

- **Integrated Waste Management Permit**
  - 18 AAC 60 – Solid Waste Management
  - 18 AAC 70 – Water Quality Standards
  - 18 AAC 92 – Wastewater Disposal

- **Typical Wastes Managed**
  - Tailings
  - Waste Rock

- **Potential Contaminants Controlled**
  - Acid Rock Drainage
  - Metals Leaching
  - Process Chemicals

- **Primary Focus of Protection**
  - Surface Water
  - Groundwater

### Integrated Waste Management Permit

- **Reviews applications**
  - Plan of Operation
  - Monitoring Plan
  - Baseline Ship Collection Plan
  - Closure Plan
  - Financial Assurance (bonding)
  - Wastewater Plan Reviews
  - Storm Water Pollution Prevention Plan (SWPPP)
  - Water Characterization Plan
  - Design and Construction Documentation
  - Hydrology, Geochemistry Analysis, Mass Load Modeling, etc.

### A Solid Waste Disposal Permit is required when:

- Waste material presents a danger to public health, safety, or welfare due to the environment.
- The waste material is a management system that must be managed.
- The landfill is designed and constructed to prevent contamination or drainage of hazardous materials into the environment.
- The landfill is designed and constructed to prevent contamination or drainage of hazardous materials into the environment.

**Exemptions:**
- There is an environmental problem associated with the management of the waste or the waste.
- The tailings from hard rock or placer mining have been amalgamated or chemically treated.
- The waste material is being managed in a manner that causes a nuisance.

### State vs. Federal Discharge Permits

- **Facilities that discharge to surface water - Federal**
  - Discharge to surface water may be required.
  - State permits may also be required.
  - Water from surface water may be discharged.
  - Water from surface water may be discharged.
  - The Federal NPDES permit is required by the Clean Water Act (CWA).
  - State permits required by the NPDES permit are the NPDES permit.
  - Examples: Fort Knox Mine, Red Dog Mine

- **Facilities with zero discharge to surface water - State**
  - Discharge to surface water may be required.
  - No discharge to surface water.
  - Water from surface water may be discharged.
  - Examples: Fort Knox Mine
Discharge at Red Dog Mine

Mixing Zones

- Defined in Alaska Regulations 18 AAC 70.990(38).
- Are part of most permitted discharges to surface water.
- Required to be as “small as Practicable” 70.240(k).
- Can apply to both domestic and industrial discharges.
- Size is designated by the state (DEC).

Mixing Zones

- MZ Definition 18 AAC 70.990(38) Means an area in a water body surrounding, or downstream of, a discharge where the effluent plume is diluted by the receiving water within which specified water quality criteria may be exceeded.
- Part of state NPDES Certification Process.
- The Mixing Zone’s regulations approved by the state on March 23, 2006 apply ONLY to state permits NOT NPDES permits and other federal authorizations until the EPA approves them. DEC is currently working with EPA for federal approval.

Example Water Monitoring Required in ADEC Large Mine Permit

- At Zero-discharge facilities:
  - Groundwater and surface water monitoring to ensure that facility is operating as no-discharge (chemical and physical).
  - Process water monitoring.
  - Soils, rocks, vegetation monitoring.
  - Biological monitoring.

- At Discharging Facilities:
  - All of the above monitoring.
  - Upstream and downstream water monitoring.
  - Examples: Red Dog Mine and Pogo Mine.

RECLAMATION PLAN APPROVAL

Issued by DNR Division of Mining, Land and Water/Mining Section

- Minesite must be returned to a stable condition, compatible with the post-mining land use (AS 27.19.020).
- Financial Assurance must ensure State can do reclamation even if company cannot.
**Financial Assurance**

- What Mechanism? (Bond, Letter of Credit, Cash, Collateral)
- Most are Letters of Credit
- Trust Fund to be used for long-term obligations
- Applies equally to US and non-US corporations

**Financial Assurance for Alaska Mines**

<table>
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<th>Operation</th>
<th>Total Bond ($ Millions)</th>
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<td>Red Dog Mine</td>
<td>$255.9</td>
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<tr>
<td>Kensington &amp; Fairbanks Mine</td>
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<tr>
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</tr>
<tr>
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<td>Pogo Mine</td>
<td>$27.6</td>
</tr>
<tr>
<td>Nixon Fork Mine</td>
<td>$3.5</td>
</tr>
<tr>
<td>Red Dog Mine</td>
<td>$154.9</td>
</tr>
</tbody>
</table>

**TOTAL** $279.3

Financial Assurance is based on a detailed engineering analysis.
**Dams in Alaska**

- **35 Federal Jurisdictional Dams**
- **52 Non-Jurisdictional Dams** (on inventory)
- **83 State Jurisdictional Dams**
- **170 Dams on Inventory**

**Alaska Dam Safety Statutes and Regulations**

- AS 46.17 establishes basis for program and defines a state jurisdictional dam.
- 11 AAC 93.151 through 93.201 articulates the Dam Safety regulations.
  - Hazard classification assignment
  - Requirements for owner’s Periodic Safety Inspections
  - Authority for inspections and emergency actions by the state
  - Requirements for Certificates of Approval

**AS 46.17.900 (3) defines a dam**

- “dam” includes an artificial barrier, and its appurtenant works, which may impound or divert water and which:
  - A...20 feet high
  - B...10 feet high and stores 50 acre-feet
  - or
  - C...high or significant hazard potential

**Five stages in the regulatory life of a dam**

- Application for new dam construction
- Construction
- Operation
- Remediation
- Closure
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Alaska Dam Safety Program
- **Certificate of Approval to Construct, Modify, Repair, Remove or Abandon a Dam**
  - for extraordinary activity
- **Certificate of Approval to Operate a Dam**
  - for ordinary activity

Review process for Certificates of Approval
- Receive Application & Review For Completeness
- Geologic Information
- Structural Information
- Stability Calculations
- Hydrologic Information
- Hydraulic Information
- Special Conditions
- Technical Review
- Issue Certificate of Approval to Construct a Dam
- Post Construction Review
- Construction Quality Assurance Reports
- Foundation Report
- As-Built Drawings
- O & M Manual
- Emergency Action Plan

Four parts to design application
- Initial Application Package
- Preliminary Design Package
- Detailed Design Package
- Final Construction Package

Post construction submittals
- Construction completion report
- Record drawings (as-built)
- Design changes
- Inspection reports
- Operations and maintenance manual
- Emergency Action Plan

Alaska Dam Safety Program
- **Certificate of Approval to Operate a Dam**
  - Dated to expire after next Periodic Safety Inspection due date
- **New Certificate of Approval to Operate a Dam**
  - Issued based on current Operations and Maintenance Manual after current Periodic Safety Inspection is approved

Alaska Dam Safety Program
- **Special Conditions to Certificate of Approval**
  - Emergency Action Plan requirements for Class I and II dams
  - Next PSI due date
  - Mandatory maintenance or repair requirements
  - Operating limitations
  - Other important stipulations
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**Communication: the Key to Safety**

**Operator Submittals**
- Application for Certificates of Approval
- OPERATIONS AND MAINTENANCE MANUAL
- Emergency Action Plan
- Periodic Safety Inspections
- Other submittals

**SURFACE COAL MINING CONTROL AND RECLAMATION PERMIT**

Issued by DNR, Division of Mining, Land and Water section

- State permit program with Federal oversight
- Prescribed engineering and design standards
- Financial assurance required
- Federal Applicant Violator System
- Mandatory monthly inspections
  - Inspectors have enforcement authority

**OFFICE OF HABITAT MANAGEMENT & PERMITTING**

OHMP Mission Statement

To protect Alaska’s valuable fish & wildlife resources and their habitats as Alaska’s population and economy continue to expand.

http://www.dnr.state.ak.us/habitat/

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**Communication: the Key to Safety**

**Dam Safety Response**

- Requests for additional information
- Review comments on manuals, plans and reports
- Certificates of Approval to Construct, Repair, Modify, Remove, or Abandon a Dam
- Certificate of Approval to Operate a Dam
  - Special Conditions to certificates

**OTHER DNR AUTHORIZATIONS**

- Section 14 840: Fish Act
  - Environment Act
  - Anadromous Fish Act
  - Endangered Species Act
  - State Historic Preservation Office

**Title 41 Permits**

- Title 41 14 870: Anadromous Fish Act
  - Endangered Species Act
  - Mining Act

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**OTHER DNR AUTHORIZATIONS**

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  - Environment Act
  - Anadromous Fish Act
  - Endangered Species Act
  - State Historic Preservation Office

**Title 41 Permits**

- Title 41 14 870: Anadromous Fish Act
  - Endangered Species Act
  - Mining Act
After July 1, 2008 under E.O. 114

- OHMP will become the Division of Habitat within the Department of Fish and Game
- AS 41.14.840 will be renumbered AS 16.05.841
- AS 41.14.870 will be renumbered AS 16.05.871

OHMP Review Responsibilities: Federal Actions and Authorizations

- Federal Actions: NEPA reviews, projects proposed by MMS, COE, USFS, BLM, Federal Plans
- Federal Authorizations: COE permits (Sec. 10, Sec. 404); EPA permits (NPDES)

After July 1, 2008

- The new Division of Habitat will also assume responsibility for Special Area (refuges, critical habitats, and sanctuaries) permitting, land use planning, land disposal review, and oil spill contingency planning.

Special Areas Management

AS 16.20 State Game Refuges, Game Sanctuaries, and Critical Habitat Areas

- Special Area Permits
- Special Area Plans

Culverts and bridges designed and installed to ensure fish passage
- Temporary water use
- In-water construction
- Bank restoration/stabilization

**Bons Pond-Red Dog Mine**

- Arctic grayling (*Thymallus arcticus*) transplanted into Bons Pond in 1994 and 1995 have established a self-sustaining population
- Arctic grayling population exceeds 5,000 fish greater than 200 mm long (about 8 inches)
- Arctic grayling have left Bons Pond and returned as a component of the spring spawning migration into North Fork Red Dog Creek which provides the only area of documented significant spawning habitat in the Ikaluktok Creek drainage

**Constructed wetlands at Fort Knox**

- Pond-stream-channel system created from mine tailings
- Habitat for waterfowl and wildlife

**Stream Channel Reclamation**

**Technical Report No. 97-6**

A Regime Stream Channel Reclamation Approach for Placer-Mined Watersheds

**Technical Report No. 97-8**

Water Intake Structures

An Alternative to Traditional Screened-Box Enclosures For The Protection of Fish
Fish studies conducted for streams associated with development projects in the state can be found on the web at:

www.dnr.state.ak.us/habitat/techrepts.htm

Links to specific mining related aquatic studies are included on OHMP’s home page:

Examples of published aquatic studies:


Monitoring Plan Approval (ADEC/DNR/ADF&G)

- Air Q
- Water Q
  - Surface
  - Groundwater
- Fish & Wildlife Studies

Baseline

Operation (Compliance)

Post-Closure (Compliance)

Environmental Audits

- Environmental Audits on 5 year schedule tied to reissuance of permits
- All environmental systems audited
- Audits evaluate Agencies as well as operations
- Audits by 3rd party experts
- Financial Assurances revisited and recalculated based on Audit results

State Agencies

LARGE MINE PERMITTING TEAM

- Department of Natural Resources (Lead State agency for coordination)
- Department of Environmental Conservation
- Department of Fish and Game
- Department of Transportation & Public Facilities
- Department of Commerce, Community and Economic Development
- Department of Law
- Department of Health & Social Services
State Agencies
LARGE MINE PERMITTING TEAM

- Department of Natural Resources
  - Division of Mining, Land and Water
  - Office of Habitat Management and Permitting
  - Office of Project Management and Permitting
  - Division of Coastal and Oceans Management

- Department of Environmental Conservation
  - Division of Water
  - Division of Air Quality
  - Division of Environmental Health

State Agencies
LARGE MINE PERMITTING TEAM

- Department of Fish and Game
  - Division of Wildlife Conservation
  - Division of Subsistence
  - Sport Fish Division
  - Division of Commercial Fisheries

The Process and Requirements for Large Mine Permit Applications in Alaska
May 2008

THE LARGE MINE PERMITTING TEAM:

- Coordinates review of applications and numerous State permit requirements

- Reviews, analyzes, and evaluates complex technical documents for adequacy and soundness

- Benefits from multi-disciplinary expertise of team members (geologists, engineers, hydrologists, biologists, environmental scientists)

- If the Team does not have the expertise, we can hire additional experts.

- At operating mines the team members conduct mine inspections and evaluates permit updates during operations.

- The Team is involved from pre-permitting to post-closure.

- State costs are billed back to the applicant/operator
Federal Agencies

- US Environmental Protection Agency
- US Army Corps of Engineers
- US Fish and Wildlife Service
- National Marine Fisheries Service
- Bureau of Land Management
- U.S. Forest Service
- National Park Service

MAJOR FEDERAL REGULATORY REQUIREMENTS

- US EPA Section 402 NPDES Water Discharge Permit
- US ACOE Section 404 Dredge and Fill Permit
- US ACOE Section 106 Historical and Cultural Resources Protection
- NMFS Threatened and Endangered Species Act Consultation
- NMFS Essential Fish Habitat
- USFWS Threatened and Endangered Species Act Consultation
- USFWS Bald Eagle Protection Act Clearance
- USFWS Migratory Bird Protection

NPDES

- National Pollutant Discharge Elimination System
- Controls the discharge of pollutants from point sources into waters of the United States
- Has to be consistent with the Coastal Zone Management Act
- Has to be certified by the State
  CWA §401

Makes a discharge legal:

Section 301(a) of the Clean Water Act states:
Except as in compliance with this section and sections 302, 306, 307, 318, 402, and 404 of this Act, the discharge of any pollutant by any person shall be unlawful.

Section 402 is NPDES Program

Section 402 of the CWA

- EPA currently:
  - Drafts permits with technology or water quality based limits (the more stringent of either)
  - Issues permits to discharges
  - Conducts compliance inspections
  - Tracks permit compliance
  - Takes enforcement actions when necessary

EPA

- CWA § 402 (NPDES)
  - NPDES wastewater discharge permit
  - Storm Water Construction
  - Storm Water Operation
- CWA § 404 Permit Review
- Spill Prevention, Control, Countermeasure (SPCC) Plan
- Underground Injection Control (UIC) permit
What else does NPDES do?

- For discharges with New Source Performance Standards, filing a federal NPDES application triggers NEPA.

For more information on NPDES:

- Cindi Godsey
  Alaska Mining Coordinator
  222 W. 7th Avenue, Box 19
  Anchorage, AK 99513
  (907)271-6561/(800)81-0983
godsey.cindi@epa.gov

Wetlands permitting

U.S. Army Corps of Engineers
Involvement with Large Mines

Sharon Seim
Project Manager
Fairbanks Field Office

Regulatory Authorities

- **Section 10 Rivers and Harbors Act of 1899**
  - Work in, under, or over navigable waters
  - Structures and activities that affect course, condition, location, or navigable capacity
  - Includes tidal waters and territorial seas
  - Navigable Waters List (subject to Section 10) on website: www.poa.usace.army.mil/reg/Do I Need a Permit?

Regulatory Authorities

- **Section 103 Marine, Protection, Research and Sanctuaries Act (1972)**
  - Disposal of dredged material in Ocean waters outside of territorial seas
Regulatory Authorities

- **Section 404 Clean Water Act**
  - Regulates discharge of fill in waters of U.S.
  - Corps permit required before discharge
  - Fill includes the redeposit of wetland soil
  - Applies on private, public, and Native lands
- **Waters of U.S.:**
  - Navigable waters and their tributaries
  - Surface waters (lakes, sloughs, mudflats, etc.)
  - Adjacent wetlands

Definition of Fill

- Material placed in waters of the U.S. with the effect of:
  - Replacing any portion of a water with dry land
  - Changing the bottom elevation of any portion of a water

Scope of Analysis

- Corps may broaden scope beyond waters of the U.S.:
  - Extent of Corps jurisdiction
  - Configuration of facilities/uplands affects location of regulated activity
  - Cumulative Federal control (e.g., land, $, permits)

Permit Evaluation

- **Public Interest Review**
  - Balance benefits against detriments to public
  - Corps issues unless “contrary to the public interest”
- **NEPA**
  - EA/FONSI or EIS on all actions
- **404(b)(1) Guidelines**
  - Analysis only on 404 permits
  - Least environmentally damaging practicable alternative (LEDPA)
  - All appropriate and practicable mitigation

Permit Process

- Receive complete application
- Issue Public Notice
- Consider:
  - All public comments
  - Alternatives
  - Determine the LEDPA
  - Mitigation
- Make decision to issue or deny

Permit Process with EIS

- Go through NEPA Process:
  - Scoping
  - Draft EIS (DEIS)
  - Final EIS (FEIS)
- Issue Public Notice on FEIS
- Consider:
  - All public comments
  - Determine the LEDPA
  - Mitigation
- Make decision to issue or deny
Permit Process with EIS

- Corps does not issue draft permits
- Corps permits are not placed in DEIS or FEIS
- Corps must issue Record of Decision (ROD)
- Corps does not request comments on ROD

404(b)(1) Guidelines

- Different than NEPA process:
  - Corps must select LEDPA
  - LEDPA may not be same as preferred alternative in FEIS
  - NEPA provides information for 404(b)(1)
  - More information may be required

Alternatives

<table>
<thead>
<tr>
<th>NEPA</th>
<th>404(b)(1) Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practicable alternatives:</td>
<td>Discharge cannot be authorized if:</td>
</tr>
<tr>
<td>- Available &amp; capable of being done</td>
<td>Violates applicable State water quality standard</td>
</tr>
<tr>
<td>- Considers overall project purpose</td>
<td>Violates applicable toxic effluent standard or prohibition</td>
</tr>
<tr>
<td>- Considers cost, technology, &amp; logistics</td>
<td>Jeopardizes threatened or endangered species</td>
</tr>
<tr>
<td>- Not necessarily available</td>
<td>Violates Marine Sanctuary designation</td>
</tr>
<tr>
<td></td>
<td>Contributes to significant degradation of waters of the U.S.</td>
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</tbody>
</table>

404(b)(1) Guidelines

- Discharge cannot be authorized if:
  - Significant adverse effect on aquatic life or dependent wildlife
  - Significant adverse effect on aquatic ecosystem diversity, productivity, and stability
  - Significant adverse effect on recreational, aesthetic, and economic values
  - All appropriate and practicable steps to minimize potential adverse impacts

Other Requirements

- ADEC Section 401 Certificate of Reasonable Assurance or waiver
- Conclusive Coastal Zone Consistency Determination
For More Information

- Call: 1-800-478-2712 (statewide), 474-2166 (Fairbanks)
- Visit us: 2175 University Avenue, Suite 201E
- Visit our website: www.poa.usace.army.mil/reg

SUMMARY

- Synchronize public notice, hearings, public comments
- Technical review of operations plan and environmental data
- “DESIGN FOR CLOSURE”
- Ensure appropriate monitoring (air, water, reclamation success, etc)
- Determination & maintenance of appropriate financial assurances
- Environmental Audits required every 5 years

How Can We Improve?

- Public involvement
- Information dissemination
- Education
- Others?

CHECK US OUT AT:

http://www.dnr.state.ak.us/opmp/

or

http://www.dnr.state.ak.us/mlw/mining/largemine.htm

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Tom.Crafford@alaska.gov
(907) 269-8629