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APR 10 1992

April 6, 1992

Department of the Army  
Regulatory Branch  
U.S. Army Engineer District, Alaska  
P.O. Box 898  
Anchorage, Alaska 99506-0898

Attention: Mr. Glen Justis, Eastern Team Leader  
Project Evaluation Section - South

Subject: Gastineau Channel 435, 2-920022. Summary of  
Environmental Reports on Occurrence, Concentrations and  
Leachability of Heavy Metals. Proposed Harbor Dredging  
at the Alaska-Juneau Gold Mine, North Rock Dump, Juneau,  
Alaska.

As the authorized agent for A.J. Associates, Inc., ASCG, Incorporated is responding to the written comments of three federal agencies which are reviewing this permit application.

Agency Concerns

The U.S. Environmental Protection Agency (letter dated 3/23/92), National Marine Fisheries Service (letter dated 3/16/92) and the U.S. Fish and Wildlife Service (letter dated 3/18/92) have all expressed concern about the potential for the release of heavy metals resulting from the proposed dredge and fill project.

Summary

The purpose of this letter is to show, using information from existing studies, that the proposed project will not result in the release of toxic substances in toxic amounts into waters of the United States. We therefore request that no further testing of the proposed dredge area be required.

Project Description

The proposed project includes the dredging and filling of an existing intertidal area comprised of waste rock from the former Alaska-Juneau Gold Mine, North Rock Dump. A total of about 139,000 cubic yards of this dredged material will be discharged into intertidal waters to construct a rubble mound breakwater and into nearshore waters to construct pads for water dependent activities.

### A.J. Mine North Rock Dump, Site History

The A.J. Mine North Rock Dump is located on the eastern shore of Gastineau Channel, approximately 1 mile south of Juneau. The site contains about 60 to 70 acres and extends into Gastineau Channel. It was created from the disposal of waste rock from the Alaska-Juneau mine. The A.J. Mine operated from 1901 to 1951 and was one of the largest gold mining operations in the Juneau area. During this period, more than 55 million tons of waste rock and ore were mined from the A.J. The mine was connected with the dump by a series of conveyor belts which carried the millions of tons of waste rock about one half mile to form the present site. The waste rock originated from the hand sorting of the schist bedrock from the gold-bearing quartz in an effort to enhance gold yields from the ore. In addition to hand sorting, mercury amalgamation was used to improve the gold recovery of the pulverized ore. It is uncertain whether, and how much, of the processed tailings were also deposited at the North Rock Dump. The sulfide ore concentrates that were separated during the milling process were transported across Gastineau Channel to the Treadwell Mill for further processing by chlorination or cyanidation.

### Existing Studies

Several mining sites in the Juneau area have been investigated for potential heavy metal concentrations that might be a health or environmental hazard. The North Rock Dump and the Thane Mine Dump to the south have been the subject of past CERCLA investigations to determine if they present a risk of environmental contamination. Investigations at both sites indicate that, while overall metal concentrations are high within the dumps, the mobility or leachability of those metals is low when tested according to either EPA's Extraction Procedure Toxicity (EP Tox) analysis or the Toxicity Characteristic Leaching Procedure (TCLP).

Golder Associates (1987) collected samples at the North Rock Dump site to evaluate potential leachability of metals, as tested by the EP Tox method. None of the sample analyses exceeded criteria for designation as a hazardous waste as defined by 40 CFR 261.24. Golder Associates also collected groundwater samples from five monitoring wells along the seaward side of the North Rock Dump. Three of the wells were found to contain nearly undetectable concentrations of metals. One well had lead and chromium concentrations above drinking water standards, while one well had selenium above drinking water standards. The report noted that the higher metal concentrations in these two wells on the North Rock Dump could be the result of localized areas containing higher concentrations of the metals, or due

to the infiltration of marine water from Gastineau Channel, which contains higher concentrations of lead, chromium, and selenium than the fresh water originating through the rock dump.

Ecology and Environment (1990) reported that on-site soil samples from the North Rock Dump had lead and zinc at elevated concentrations. The Ecology and Environment (1990) sample site #2 is located at the proposed dredging site for this project. None of the 1990 Ecology and Environment (E&E) samples were analyzed for leachability. However, the rock material from the Thane Rock Dump was derived from the same ore body as the North Rock Dump. Therefore, a comparison of the E&E (1988) samples and EP Tox results for the Thane Rock Dump allows for a reasonable extrapolation of the EP Tox values to the proposed dredging project location (see Tables 1 and 2, Figure 3, and Figure 3-17, Golder 1987, E&E 1990).

Investigations by E&E (1988) at the Thane Rock Dump (Figure 3-17) involved the collection and evaluation of surface water, groundwater, and soil/sediment samples. Samples were analyzed for compounds and/or elements on the EPA Target Compound List. Six soil samples from the dump were analyzed for various metals using the EP Tox method. Sampling data showed that arsenic and lead are present in the dump at elevated concentrations. However, testing by EP Tox showed that leachability of these two metals was extremely low (Table 2). Lead levels ranged from 0.02 ppm to below detection limits while arsenic, cadmium, chromium, mercury and selenium levels were either below the EP Tox maximum concentrations, or were below the method detection limits.

The material from the Thane Rock Dump was derived from the same ore body as the North Rock Dump. The Hazard Ranking System model has ranked the Thane site high, primarily due to the large quantity of tailings present, despite information suggesting that the lead and arsenic concentrations are low. An EPA Memorandum (EPA 1990) noted that the model was skewed by the quantity of tailings, and the EPA does not feel the site poses a significant health risk. The Thane dump site is not ranked on the National Priorities List (NPL), nor will any action be taken to designate it as an NPL site (A-J Draft EIS).

#### Section 404(b)(1) Guidelines for Specification of Disposal Sites for Dredged or Fill Material

##### Subpart G - Evaluation and Testing.

40 CFR 230.60 General evaluation of dredged or fill material.  
The purpose of these evaluation procedures and the chemical and biological testing sequence outlined in 40 CFR 230.61 is to provide

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information to reach the determinations required by 40 CFR 230.11.

40 CFR 230.60(a) If the evaluation under paragraph 230.60(b) indicates the dredged or fill material is not a carrier of contaminants, then the required determinations pertaining to the presence and effects of contaminants can be made without testing.

40 CFR 230.61(b)(1) Dredged or fill material may be excluded from the evaluation procedures specified in 40 CFR 230.61(b)(2) and (3) if it is determined on the basis of the evaluation in 40 CFR 230.60 that the likelihood of contamination by contaminants is acceptably low....

#### Summary of Conclusions

Investigations indicate that, while overall metal concentrations are high within the rock dump, the mobility or leachability of those metals is low when tested according to either EPA's Extraction Procedure Toxicity (EP Tox) analysis or the Toxicity Characteristic Leaching Procedure (TCLP).

The EP Tox results for the Golder Associates (1987) North Rock Dump study are all within acceptable levels. In addition, a comparison of the E&E (1988) Thane Rock Dump samples and EP Tox results with the samples of E&E (1990) allows for a reasonable extrapolation of the acceptable EP Tox values of the Thane Rock Dump to the proposed dredging project location.

Adequate information exists from previous studies which demonstrates the proposed project will not result in the release of toxic substances in toxic amounts into waters of the United States. We therefore request that no further testing of the proposed dredge area be required.

If you have any questions please contact us at 349-5148 or fax 349-4213.

Very truly yours,

ASCG, Incorporated



Thomas W. Mortensen  
Environmental Permit Manager

TM:1170-2032, 0.4

ASCG

attachments:

Figure 3  
Figure 3-17  
Exhibit 1, Location Map  
Exhibit 2, Vicinity Map  
Exhibit 3, Plan View  
References

Table 1. North Rock Dump, Summary of Inorganic Elements  
Detected in Soil Samples.

Table 2. Thane Rock Dump, Summary of Inorganic Elements  
Detected in Soil Samples.

Ecology and Environment, Inc., June 1990. Site Inspection Report  
for Alaska Juneau Dump, Juneau, Alaska.

Golder Associates, Inc., December 1987. Environmental Audit  
Investigation of A.J. Mine Rock Dump, Juneau, Alaska.

copies with attachments:

Don Kohler, Corps, Anchorage  
Dan Robison, EPA, Anchorage  
Valerie Haney, EPA, Anchorage  
Linda Comercci, EPA, Anchorage  
Susan Cantor, EPA, Anchorage  
Steven Pennoyer, NMFS, Juneau  
Nevin D. Holmberg, USFWS, Juneau  
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Elena Whitken, ADEC, Juneau  
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John Palmes, ADF&G, Juneau  
Reed R. Stoops, A.J. Associates, Juneau  
Barbara Sheinberg, Juneau

TABLE 1  
NORTH ROCK DUMP  
SUMMARY OF INORGANIC ELEMENTS DETECTED IN SOIL SAMPLES

ELEMENT	Mg/Kg			
	SAMPLE 1	SAMPLE 2	SAMPLE 5	BACK- GROUND, SAMPLE 7
ARSENIC	15.3	9.1	28.8	13.4
CADMIUM	4.5	3.8	9.2	6.3
CHROMIUM	78.4	66.5	47.8	??
COPPER	27.4	27.2	45.3	39.2
LEAD	58.2	52.4	97.9	81.2
MERCURY	0.10	0.10	0.11	0.18
SELENIUM	1.0	1.0	1.1	1.8
ZINC	178.0	150.0	324.0	182.0

U = Undetected  
NT = Not tested

Sample 2 is from the proposed dredging area for this project.

E&E (1990), Samples 1, 2, 5, and 7, see Figure 3 for location.

TABLE 2

THANE ROCK DUMP, TAILINGS  
SUMMARY OF INORGANIC ELEMENTS DETECTED IN SOIL SAMPLES

ELEMENT	Mg/Kg		Mg/L		EP TOX MAX
	SAMPLE 1A2	SAMPLE 1A3	EP TOX, SAMPLE 1A2	EP TOX, SAMPLE 1A3	
ARSENIC	34.0	55.0	U	U	5.0
CADMIUM	11.0	10.0	0.0008	0.0071	1.0
CHROMIUM	35.0	34.0	U	U	5.0
COPPER	38.0	64.0	NT	NT	
LEAD	84.0	155.0	0.007	0.014	5.0
MERCURY	U	0.72	U	U	0.2
SELENIUM	U	U	U	U	1.0
ZINC	204.0	261.0	NT	NT	

U = Undetected  
NT = Not tested

E&E (1988), Samples 1A2 and 1A3, see Figure 3-17 for location.

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### References

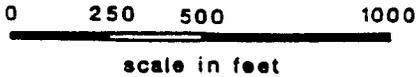
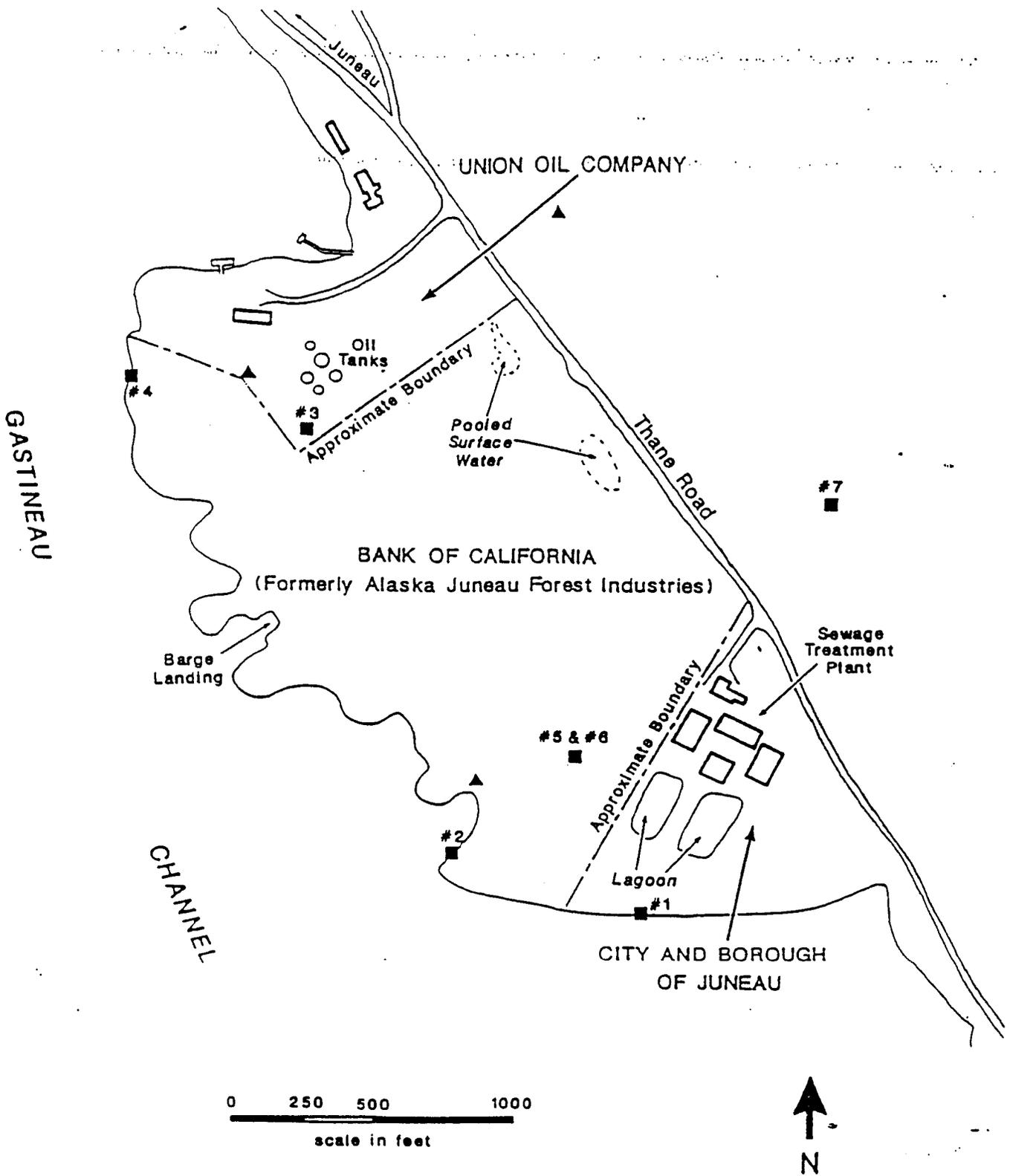
A-J Mine Project, Draft Environmental Impact Statement. January 1991.

Ecology and Environment, Inc. 1988. Site Inspection Report for Thane Mine Dump Site, Juneau, Alaska (TTD-F10-8712-02/PAN FAK1095AR). Prepared for the USEPA, Region 10, Seattle, WA.

Ecology and Environment, Inc. 1990. Site Inspection Report for the Alaska Juneau Dump, Juneau, Alaska. Prepared for the Alaska Department of Environmental Conservation, Juneau, Alaska.

EPA (U.S. Environmental Protection Agency) 1990. Memorandum from Rick Seaborne to David Dorris regarding EPA Comments on New A-J Mine Project Description, after A-J EIS, 1/91.

Golder Associates, Inc. 1987. Environmental Audit Investigation of A.J. Mine Rock Dump, Juneau, Alaska.

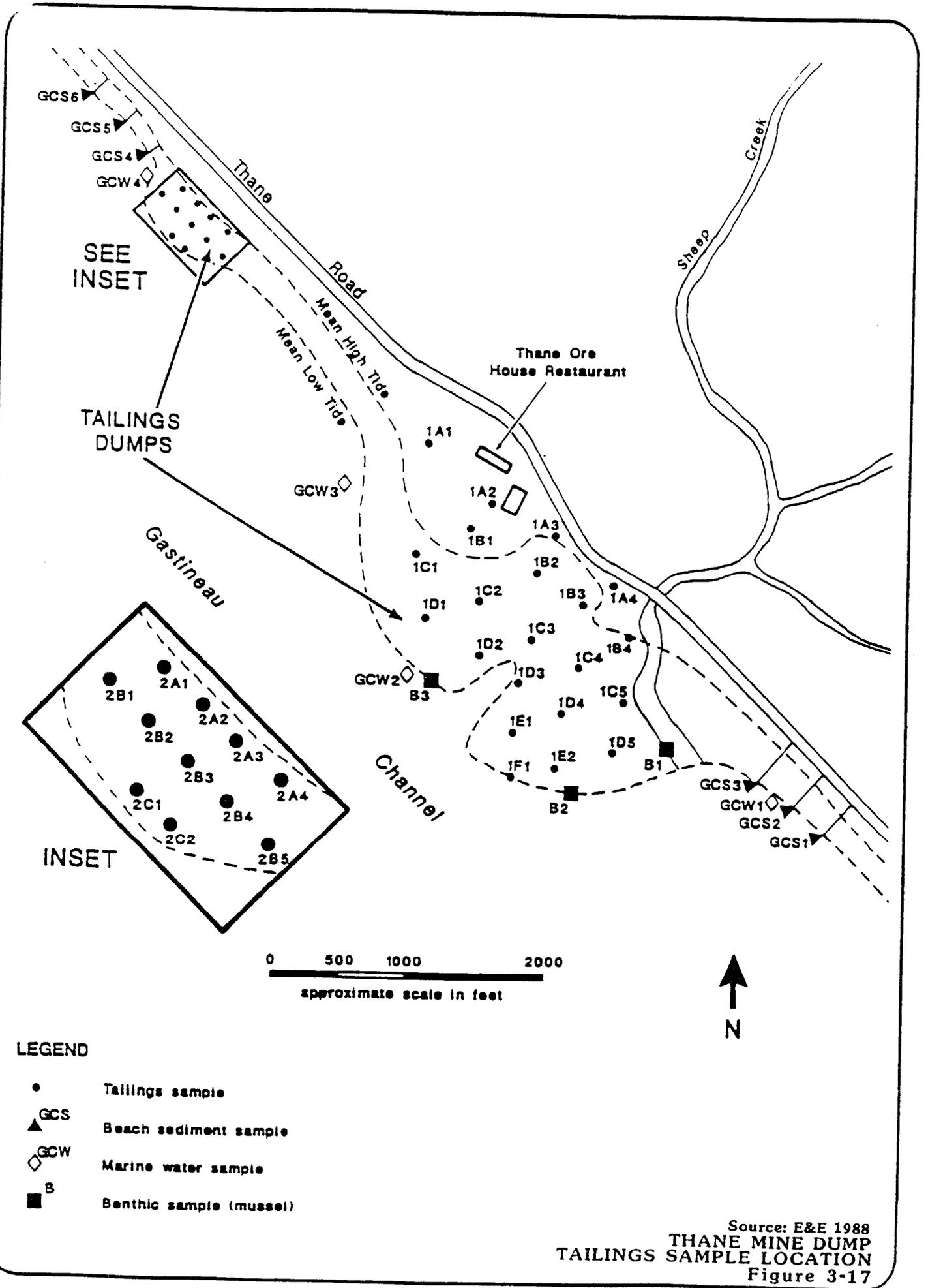


**LEGEND**

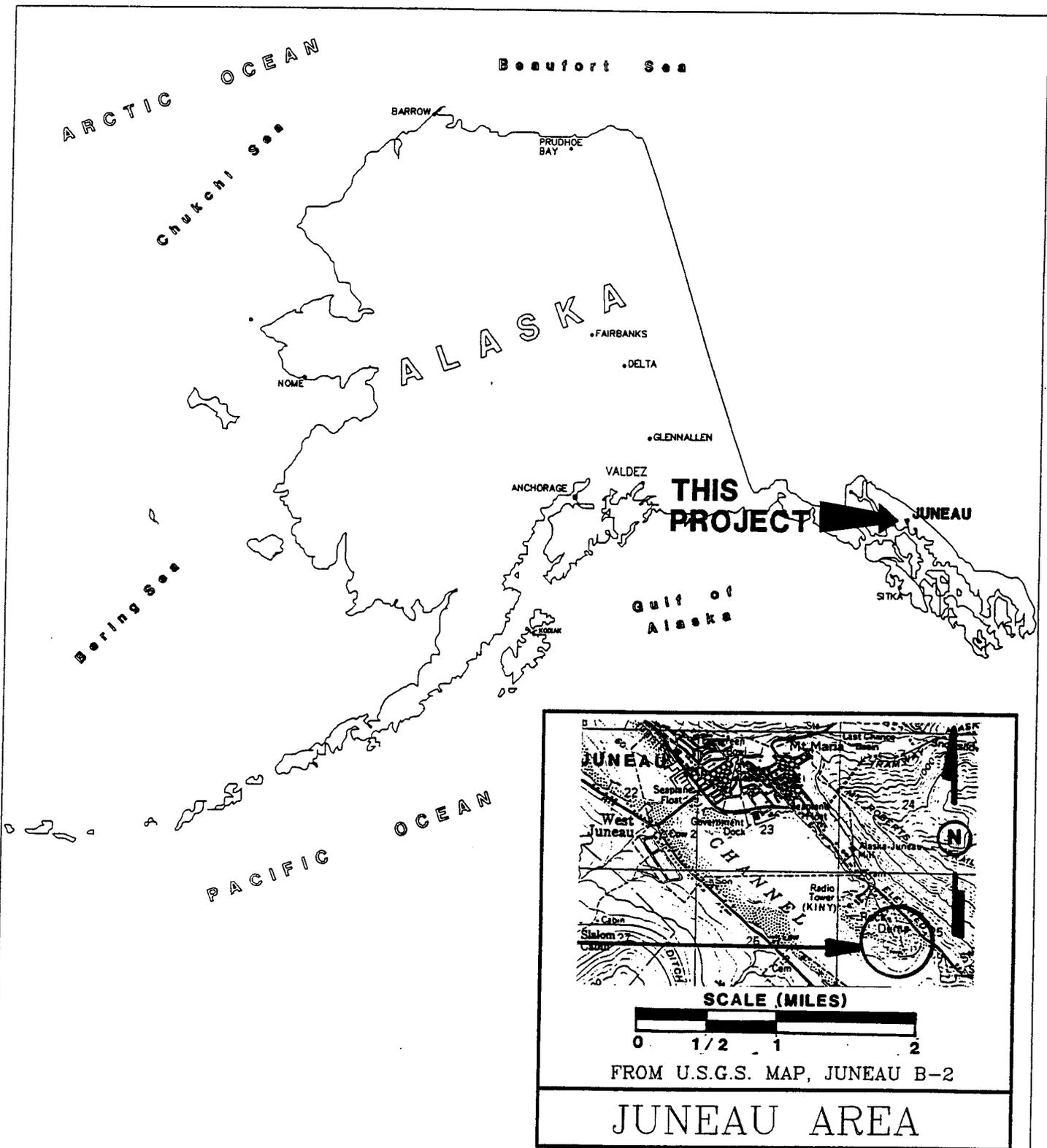
- Composite soil sample
- ▲ HI-volume particulate sampler location

ecology & environment, inc.	
Job: JK7011	Waste Site
Drawn by: B.T.	Date: Jan. 11, 1990

**FIGURE 3**  
**SAMPLE LOCATION MAP**  
**ALASKA JUNEAU DUMP**  
**Juneau, AK**



# EXHIBIT 1



**PURPOSE:**

Construction of public use boat harbor and associated breakwater.

**ADJACENT PROPERTY OWNERS**

See Exhibit 3

**LOCATION MAP**

**APPLICANT:**

A.J. Associates, Inc.

**AGENT:**

ASCG, Incorporated  
301 Danner Ave., Suite 200  
Anchorage, Alaska 99518-3035

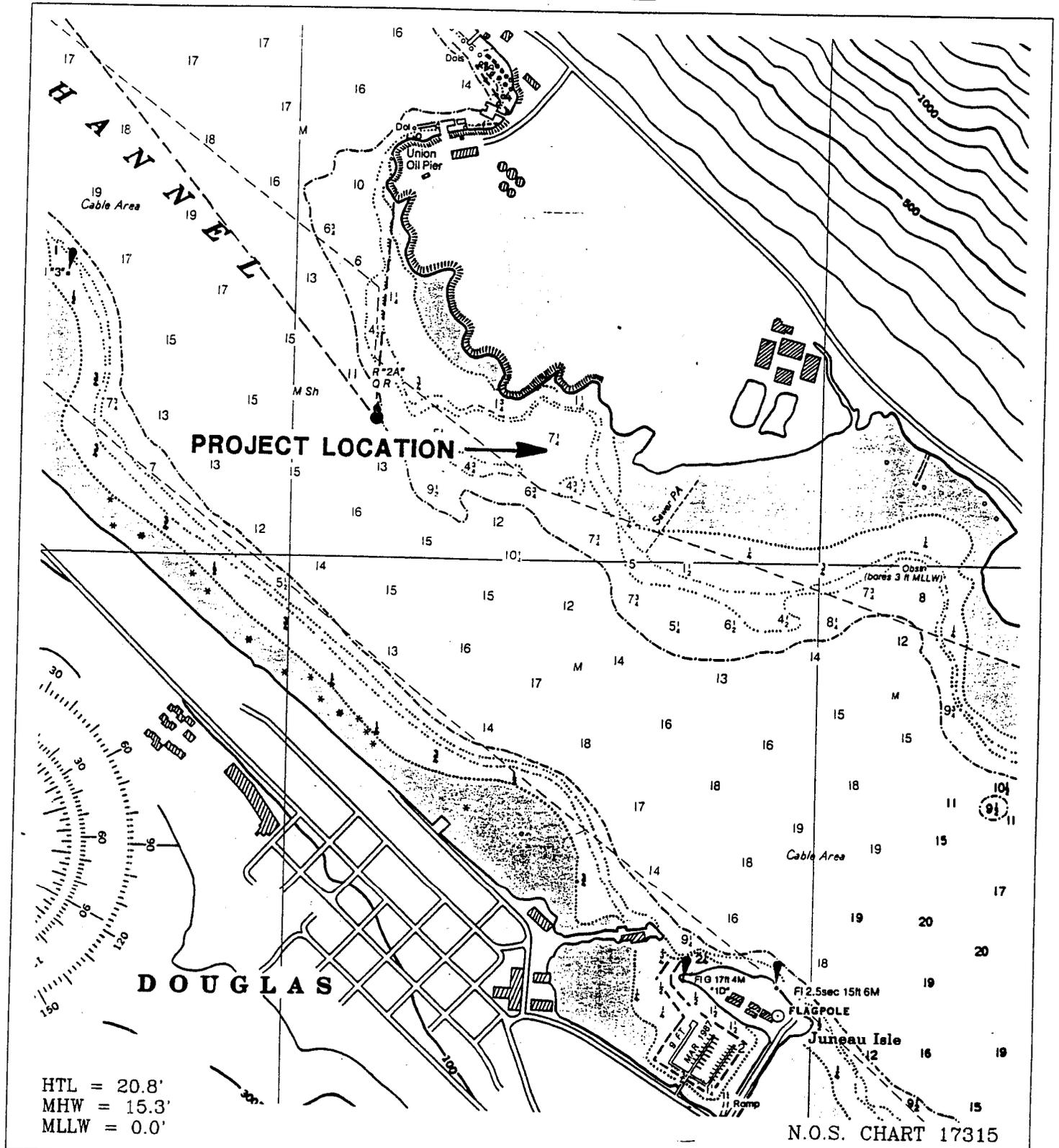
**PROPOSED BOAT HARBOR CONSTRUCTION IN GASTINEAU CHANNEL AT JUNEAU, ALASKA**

**WITHIN T 41 S, R 67 E,  
SECTION 25 NE1/4 SW1/4  
COPPER RIVER MERIDIAN**

JANUARY 1992

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# EXHIBIT 2



**PURPOSE:**

Construction of public use boat harbor and associated breakwater.

**ADJACENT PROPERTY OWNERS:**

See Exhibit 3

## VICINITY MAP

**APPLICANT:**

A.J. Associates, Inc.

**AGENT:**

ASCG, Incorporated  
301 Danner Ave., Suite 200  
Anchorage, Alaska 99518-3035

**PROPOSED BOAT HARBOR CONSTRUCTION IN GASTINEAU CHANNEL AT JUNEAU, ALASKA**

**WITHIN T 41 S, R 67 E,  
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JANUARY 1992

PROJECT 1170-2032

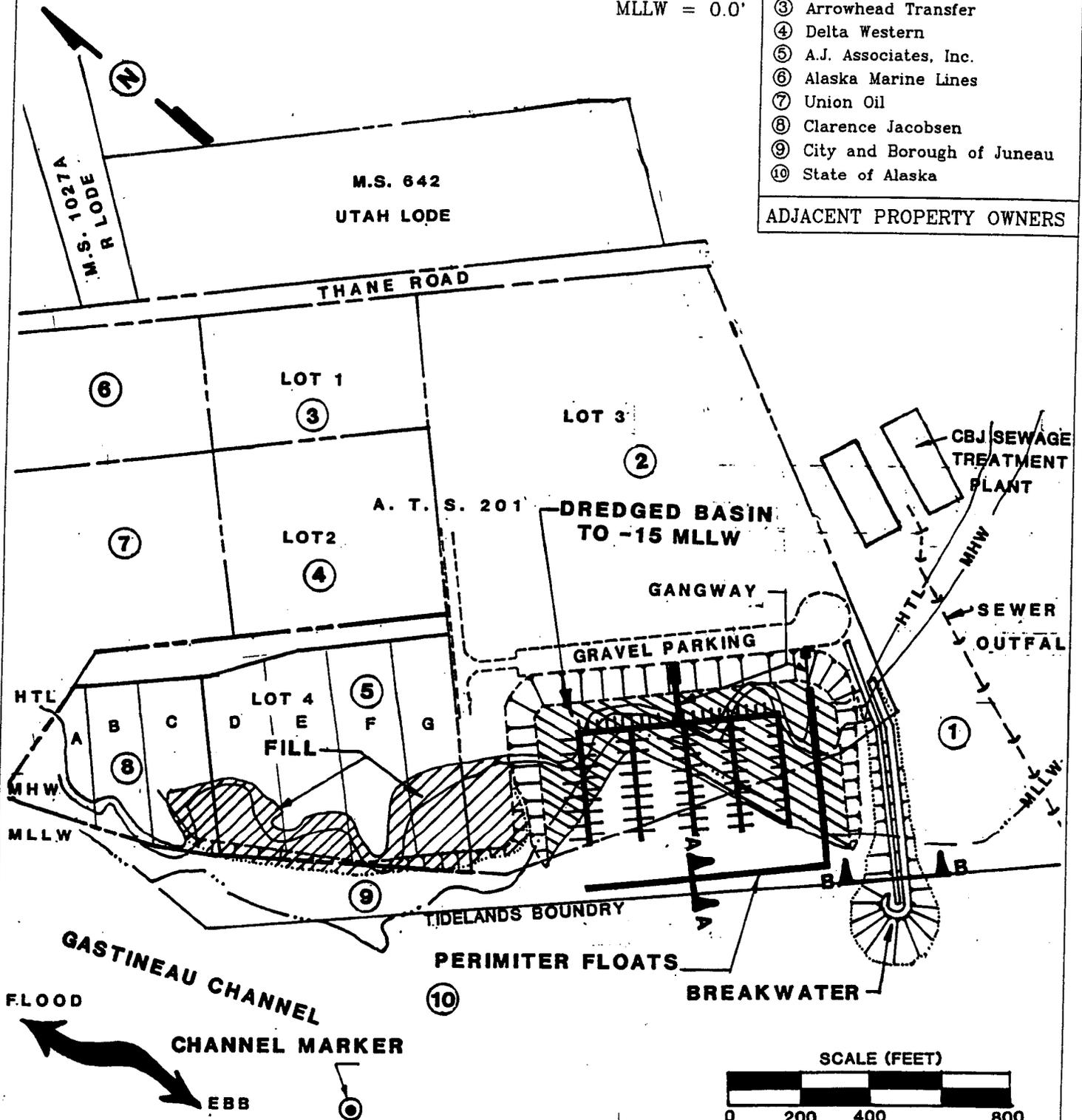
# EXHIBIT 3

DRAWING MODIFIED FROM PN&D, JUNEAU. 12/13/91

HTL = 20.8'  
MHW = 15.3'  
MLLW = 0.0'

- ① City and Borough of Juneau
- ② A.J. Associates, Inc.
- ③ Arrowhead Transfer
- ④ Delta Western
- ⑤ A.J. Associates, Inc.
- ⑥ Alaska Marine Lines
- ⑦ Union Oil
- ⑧ Clarence Jacobsen
- ⑨ City and Borough of Juneau
- ⑩ State of Alaska

ADJACENT PROPERTY OWNERS



**PURPOSE:**

Construction of public use boat harbor and associated breakwater.

**ADJACENT PROPERTY OWNERS:**

See above

## PLAN VIEW

**APPLICANT:**

A.J. Associates, Inc.

**AGENT:**

ASCG, Incorporated  
301 Danner Ave., Suite 200  
Anchorage, Alaska 99518-3035

### PROPOSED BOAT HARBOR CONSTRUCTION IN GASTINEAU CHANNEL AT JUNEAU, ALASKA

WITHIN T 41 S, R 67 E,  
SECTION 25 NE1/4 SW1/4  
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