

100.26.1058

**RECEIVED**

AUG 06 1992

DEPT. OF ENVIRONMENTAL  
CONSERVATION  
NRO

**FOCUSED SITE INVESTIGATION  
MAIL TRAIL ROAD SITE  
FAIRBANKS, ALASKA**

*Prepared for:*  
Crowley Maritime Corporation  
2401 4th Avenue  
Seattle, Washington 98121

*Prepared by:*  
America North Inc.  
201 E. 56th Avenue, Suite 200  
Anchorage, Alaska 99518

**RECEIVED**

AUG 07 1992

DEPT. OF ENVIRONMENTAL  
CONSERVATION  
NRO

October 25, 1991

## CONTENTS

---

<b>TABLES, FIGURES AND APPENDICES</b>	ii
<b>EXECUTIVE SUMMARY</b>	iii
<b>1 INTRODUCTION</b>	1
<b>2 SITE CONDITIONS</b>	3
2.1 Site Location and Setting	3
2.2 Regional Geology and Hydrogeology	3
2.3 Site Reconnaissance	3
2.4 Adjacent Land Use	4
2.5 Aerial Photographs	4
2.6 Agency File Review	6
2.7 Beneficial Use Survey	7
<b>3 SUBSURFACE CONDITIONS</b>	9
3.1 Exploration Program	9
3.2 Soil	9
3.3 Ground Water	10
<b>4 QUANTITATIVE CHEMISTRY ANALYSIS</b>	12
4.1 Analytical Methods	12
4.2 Soils	12
4.3 Ground Water	15
<b>5 SUMMARY OF ENVIRONMENTAL CONCERNS</b>	17

## TABLES, FIGURES AND APPENDICES

---

### Tables

Table 1	Ground Water Elevation Measurements	11
Table 2	Results of Laboratory Analysis for Organic Compounds	13
Table 3	Results of Laboratory Analysis for Total Metals	14

### Figures

Figure 1	Site Location Map
Figure 2	Adjacent Property and Beneficial Use Map
Figure 3	Site and Exploration Plan
Figure 4	Ground-water Contour Map

### Appendices

Appendix A	Historical Aerial Photographs
Appendix B	Agency File Review Material and Beneficial Use Survey Material
Appendix C	Exploratory Boring Logs
Appendix D	Water Sample Field Data Sheets
Appendix E	Laboratory Analytical Results and Chain-of-Custody



# America North Inc.

Environmental Consulting & Engineering • Health & Safety

October 25, 1991

Mr. George Brooks  
Crowley Maritime Corporation  
2401 4th Avenue  
Seattle, Washington 98121

**RE: Submittal of Final "Focused Site Investigation Report -  
Mail Trail Road Site, Fairbanks, Alaska"**

Dear Mr. Brooks:

Attached please find two copies of the "Focused Site Investigation Report - Mail Trail Road Site, Fairbanks, Alaska". Should you have any questions or comments, please do not hesitate to contact the undersigned.

Respectfully submitted,  
**AMERICA NORTH INC.**

Kevin G. Rattue  
Project Manager

KGR/jla

Attachment (1)

cc w/att: L. Peterson; ANI Fairbanks  
H. Small; SE/E Bothell, Washington

1195200\102591.ut

## EXECUTIVE SUMMARY

---

At the request of Crowley Maritime Corporation (Crowley), America North Inc. (ANI) conducted a focused environmental site investigation at an approximately 10 acre parcel of land located at the corner of Mail Trail Road and South Dale Road in Fairbanks, Alaska. The purpose of the work was to identify potential environmental concerns at the site associated with past and present usage. The site was formerly used as a shop and maintenance facility for a trucking (an oil pipeline service) company. Two of the three buildings on the site are currently leased to tenants and used as storage facilities. We understand that information presented in this report may be used by Crowley in negotiations for the sale of the property.

Our scope of work, completed between August and October 1991, consisted of: (1) conducting a site reconnaissance, reviewing available aerial photographs and regulatory agency documents for information on past site use and environmental concerns in the area; (2) conducting a ground water beneficial use survey; (3) preparing a health and safety plan; (4) coordinating with Crowley's contractor to remove storage drums and visibly stained soil from the site; (5) drilling and sampling nine soil borings, five completed as ground water monitoring wells; (6) surveying and developing the wells; (7) collecting ground water samples from the wells; (8) coordinating chemical analysis of ground water and selected soil samples for various organic and inorganic compounds; and (9) evaluating the data and preparing this report. Our investigation did not include an evaluation of the potential for asbestos-containing material at the site.

The investigation identified the following conditions:

- The Post Office, located north of the project site has an ongoing ground water contamination problem associated with a petroleum underground storage tank. The post office is located hydraulically cross gradient to the project site with respect to ground water flow direction.

- Four water wells have been identified to exist within a ¼-mile radius of the site. None of the wells are reportedly used for drinking water.
- Site development occurred between 1962 and 1974. Based on examination of available aerial photographs, the site was used as a shop and storage yard for a trucking (an oil field supply) company since approximately the 1970s.
- An above-ground gasoline storage tank (approximately 500 gallons in capacity) located on the site was observed to be leaking on to the ground on August 23, 1991. Leakage was apparently due to expansion of the fuel volume due to warm temperatures immediately after the tank had been filled. A portion of the tank contents was pumped off later in the day, and leakage from the tank stopped. Potential impact from leakage from this tank was not investigated.
- A wooden standpipe, apparently associated with a septic tank and drain field, is located adjacent to a buried propane tank. The propane tank is located between the two centrally located buildings. Soil and ground water quality in the area of the septic field was not investigated.
- Approximately 50 storage drums (up to 55-gallons each) were observed at the site. The drums were generally located along the southern boundary of the site and scattered in "clusters". Surface soil staining was visually observed in random areas of the site. The majority of the surface soil staining was observed at the southwestern corner of the property. Visual observation revealed petroleum-based products in some of these drums. However, drum contents were not sampled or analyzed during this investigation.
- Soils adjacent to the diesel tank contained 2,600 mg/kg of petroleum hydrocarbons (quantitated as diesel fuel) at approximately 6 feet below ground surface. Soil samples collected from two other borings located approximately 40 to 50 feet north and west of the tank did not contain detectable concentrations of petroleum hydrocarbon compounds.
- Soil samples collected at three of four locations within visibly stained surface soils contained petroleum hydrocarbons quantitated as either diesel fuel or oil, at concentrations above 100 mg/kg.

- Polychlorinated biphenyls were not detected in any of the analyzed soil samples. Halogenated volatile organic compounds were not detected in any of the analyzed soil or water samples (collected on September 4, 1991).
- Total metals concentrations in analyzed soil samples were below levels which would cause the Resource Conservation and Recovery Act to be the primary enforcement regulation governing cleanup at this site.
- Diesel-range petroleum hydrocarbons were detected by U.S. Environmental Protection Agency (EPA) Method 3510/3550/8015M in a ground water sample collected from a monitoring well (MW-1) located adjacent to the diesel tank at a concentration of 66 mg/l on September 4, 1991. Low concentrations (less than 0.5 mg/l) were also reported in ground water samples from the other four monitoring wells collected on September 4, 1991.
- Total petroleum hydrocarbons (TPH-IR) concentrations analyzed using EPA Method 418.1 were below 1.5 mg/l in ground water samples collected from four of the five monitoring wells. The sample obtained from the well adjacent to the diesel tank (MW-1) on September 4, 1991 contained a concentration of 34 mg/l TPH-IR.
- Benzene, toluene, ethylbenzene and xylenes (BTEX compounds) were not detected in any ground water sample collected on September 4, 1991, except in the sample collected from MW-1 which is located adjacent to the diesel tank. Concentrations were benzene at 0.92 mg/l, toluene at 0.41 mg/l, ethylbenzene at 0.16 mg/l, and total xylenes at 0.52 mg/l.
- The general direction of ground water flow beneath the site was west-northwest on September 4, 1991, and depth-to-water measurements ranged from approximately 8 to 9 feet below ground surface on this date.

## 1 INTRODUCTION

---

At the request of Crowley, ANI conducted a focused environmental site investigation to assess soil and ground water conditions at selected locations at the site. Sampling locations were selected based on information collected during our site reconnaissance conducted July 17, 1991 and on subsequent telephone conversations with Mr. George Brooks of Crowley on August 9, 1991.

The scope of work focused on existing site features which included an underground storage tank and drum storage areas. We understand that Crowley may use the information presented in this report during negotiations for the sale of the property.

Crowley is in the process of removing and disposing of storage drums currently on site. Soil from several areas of the site with visible surface staining is also being removed. ANI is providing periodic monitoring of disposal activities and soil sampling, when requested by Crowley.

Tasks completed under the current scope of work consisted of:

- Past and present usage of the subject property and surrounding property were researched using site reconnaissance, brief interviews with adjacent property owners, and review of aerial photographs. Available records were reviewed for information concerning registered underground storage tanks and water wells within an approximate ¼-mile radius of the site.
- A site specific health and safety plan was prepared addressing potential hazards during the field investigation.
- Limited contractor coordination and observation of confirmatory sampling associated with the removal of the storage drums and impacted soil as discussed above.
- Nine soil borings were advanced at the site to depths of between 4 and 15 feet below ground surface (bgs). Five of these borings were completed as ground water monitoring wells. Ground



water and selected soil samples were collected and submitted for quantitative chemical analysis for specific organic and inorganic compounds.

- Surveying the elevations of the monitoring well casings, and determining the general direction of ground water flow beneath the site.
- Report preparation.

## 2 SITE CONDITIONS

---

### 2.1 Site Location and Setting

The project site is located approximately ¼-mile west of the Fairbanks International Airport at the junction of Mail Trail Road and South Dale Road (Figure 1). The site is situated approximately 450 feet east of the Chena River on an apparent river meander feature. The site is roughly rectangular, approximately 640 feet north to south, and 600 feet east to west. Topography across the site is generally flat with an estimated relief of about 5 feet, sloping gradually to the west.

### 2.2 Regional Geology and Hydrogeology

The site is located on the broad, westerly dipping flood plain of the Tanana River. The flood plain alluvium consists of glacial outwash sediments of sands and gravels which are up to 700 feet thick near the Tanana River (Riger, Samuel; Dement, J.A.; and Sanders, Dupree, 1963, "Soil Survey of Fairbanks Area, Alaska." U.S. Department of Agriculture, Soil Conservation Service, Series 1959, No. 25). Layers of finer alluvial silts and sands overlie the glacial outwash deposits. Ground water recharge in the Fairbanks area is derived primarily from infiltration of precipitation, snow melt and seepage from surface waters. Regional ground water flow is generally to the northwest.

### 2.3 Site Reconnaissance

ANI conducted a site walk of the property on July 17, 1991, to identify areas of potential environmental concern, and to observe current site conditions. There are three existing buildings on the site; two are centrally located, while the third is located near the northern property boundary. The westernmost building, in the central portion of the site is currently leased to Horizon Services, Inc. Numerous "sani-cans" are stored in the yard west of the building. The northernmost building is currently leased to Everts Air Fuel, Inc., and is apparently used for

storage of spare aircraft parts. A portion of the roof of this building has collapsed.

One 10,000-gallon diesel underground storage tank is located east of the northern building. The tank reportedly has not been in use for some time. The area above and adjacent to the tank is not paved. A pump dispenser and meter are located near the eastern side of the tank.

One buried propane tank is located near the southeast corner of the building leased by Horizon Services, Inc. An approximately 500-gallon above-ground gasoline storage tank is located adjacent and east of the propane underground storage tank. An approximately 6-inch-diameter wooden standpipe was observed next to the above-ground tank. The standpipe is assumed to be connected to a septic tank.

Approximately 50, 55-gallon drums were observed at various locations on the site. Some of the drums appeared to be empty, while other drums appeared to contain fluids. Areas of dark soil stains were observed next to many of the drums, and appeared to be composed of petroleum-based compounds. Other areas of visibly stained surface soil were observed but were not apparently associated with drums. Several of the drums were located along the fence line in brush and small trees. Scattered pieces of metal debris and machine parts were also observed at various locations on the site.

## **2.4 Adjacent Land Use**

Adjacent land use is comprised of bulk petroleum storage (Mapco bulk storage facility to the south), transport facilities (Air Freight Service and Progressive Transport to the east), uncontrolled storage (miscellaneous aircraft parts, material, drums and equipment), on Federal Aviation Administration (FAA) and Department of Transportation (DOT) property north of the site), the Post Office also to the north, and undeveloped and private lands to the west. A small painting contractor occupies an area adjacent to the southwest corner of the project site. Figure 2 present the locations of adjacent properties.

## **2.5 Aerial Photographs**

Historical aerial photographs were examined to identify past uses of the project site and surrounding properties. Xerox copies of the photographs are included in Appendix A. The scale of the photographs is approximately 1 inch equals 200 feet.

Photographs from the years 1962, 1974, 1979, 1982, 1985, and 1990 were examined for evidence of past structures, soil irregularities, and "stressed" vegetation which may be related to the presence of hazardous substances/materials on or adjacent to the project site. The following observations were made:

- A July 17, 1962, black and white photograph was examined. The project site is undeveloped with trees and high bush vegetation covering the area. South Dale Road forms the western boundary of the property. The small lot located at the southwest corner of the site has been partially cleared and several small buildings have been constructed. Apparent drainage channels for small streams generally oriented in an east-west direction were identified.
- An April 30, 1974, black and white photograph was examined. The southern portion of the site has been cleared and two buildings have been constructed. Truck trailers, equipment and materials are stored along the eastern and southern portions of the property. What appears to be 55-gallon drums are located approximately 80 feet south of the main building. The northwestern portion of the property has been cleared, but has not been developed. Mapco's bulk storage facility has been constructed approximately 600 feet south of the project site. Development associated with the airport, has occurred south and east of the property. Three apparent above-ground storage tanks are located northeast of the Mapco facility. The area north of the property across Mail Trail Road remains undeveloped.
- A May 5, 1979, black and white photograph was examined. Development has occurred on the two lots directly east of the site, where two buildings have been constructed and the area apparently paved with asphalt. Truck trailers are parked at several locations around the properties. A small square concrete pad has been constructed north of the main building which may be a fueling station and pump island. Two buildings have been constructed on the FAA and DOT property located north across Mail Trail Road. The Post Office is under construction. On the subject property, a small storage building located north of the main building has been removed. Two new buildings have been added, and the structures appear to coincide with the current structures on site. A dirt loading ramp has been constructed along the property line where the orientation of the fence line bends from north-south to east-west along the western property line. Just west of the loading ramp, dark surface staining is

visible along the fence line. Several other dark apparently "stained" areas are visible in the northwestern portion of site. Truck trailers and materials are scattered along the property boundary. Most of the equipment and materials have been removed from the property. The diesel underground storage tank has apparently been installed approximately 50 feet east of the northernmost building. Apparent surface "staining" is visible in the western portion of the site north of the project site.

- A June 1982 color photograph was examined. Equipment and material storage at the site appear to have decreased. Apparent surface "stains", equipment and drums are visible in the southeastern portion of the site. Drums and surface "stains" are also visible immediately west of the dirt loading ramp. Dark surface "stains" are also visible near the main entrance to the site on Mail Trail Road, in the northwestern portion of the site, adjacent to the east side of the dirt loading ramp, and immediately north of the east-central building.
- A May 21, 1985, black and white photograph was examined. "Sani-cans" can be seen lined up to the west of the west-centrally located building. Most of the equipment and material seen in the 1979 photograph has been removed. Dark surface "stains" are visible in the northwestern portion of the site, and west of the dirt loading ramp along the fence line.
- A May 5, 1990, color photograph was examined. The project site appears generally unchanged from the 1985 photograph. Vegetation has increased along the property boundary, and equipment and material storage in the vicinity of the dirt loading ramp can be seen. The three above-ground storage tanks first seen in the 1974 photograph on the property south of the site have been removed. Material storage on the FAA and DOT property located north across Mail Trail Road has increased. An apparent excavation filled with water is visible in the northwestern corner of the Post Office property and may be associated with the reported removal of underground storage tanks at that location.

## 2.6 Agency File Review

Alaska Department of Environmental Conservation's (ADEC) Northern Region List of Contaminated Site (dated August 27, 1991) was reviewed to determine whether any sites within a ¼-mile radius have documented

spills or releases of hazardous substances. The Post Office was the only site listed as having a documented release of hazardous substances.

Information contained in ADEC's files for the Post Office project were reviewed. These documents are included in Appendix B. In summary, two underground storage tanks were installed in the northwestern corner of the site in 1979. Both tanks originally contained gasoline. The southernmost tank was later converted to diesel storage. The southernmost of the two tanks apparently experienced a problem with water in the tank almost immediately after installation. A tank integrity test of the southernmost tank in 1987 by James M. Montgomery, Consulting Engineers, Inc. indicated the potential of a leak, but was not conclusive due to uncertainties associated with tank system installation.

A site investigation including the installation of several ground water monitoring wells was conducted in 1987 (by James M. Montgomery, Consulting Engineers, Inc.) to assess soil and ground water quality adjacent to the tanks. One-tenth of a foot of free product was reported in one well adjacent to the tanks. Ground water flow was determined to be generally to the northwest in mid-1989. Both tanks and approximately 420 cubic yards of contaminated soil were removed in 1989. Additional investigation and on-site remediation of petroleum contaminated soil was planned for the summer of 1990, but no information was present in the files. We understand that the investigation is ongoing.

We briefly interviewed Mr. Grant Gaskill who works for the painting contractor occupying land adjacent to the southwest corner of the project property. He indicated that in August 1986, an apparent hydrocarbon-like sheen and odor were detected in water from a shallow well on his property. He uses the well water to wash equipment. Since August of last year, he has not noticed hydrocarbon-like sheen or odors in well water. He also mentioned that the septic system is near the well.

## 2.7 Beneficial Use Survey

United States Geological Survey, Water Resources Division listing (Number 99775-1760) was reviewed for locations of monitoring wells within ¼-mile of the project site. The list includes monitoring wells installed for site investigations and subsurface studies and does not include water supply wells. Copies of water well records are included in Appendix B.

We also reviewed the state of Alaska list of domestic supply wells. No domestic water supply wells were listed within 1/4-mile of the site.

## 3 SUBSURFACE CONDITIONS

---

### 3.1 Exploration Program

Subsurface soil and ground water at the site were investigated by advancing nine soil borings to depths ranging between 4 and 15 feet bgs. Borings were advanced using a Chicago Mining and Equipment (CME) 55 hollow stem auger drilling rig owned by Discovery Drilling under subcontract to ANI. Exploration locations are shown on Figure 3. Soil samples were collected using a 2½-inch inside diameter split barrel sampler at approximately 2½- to 5-foot depth intervals in the borings. Samples were placed in laboratory-prepared glass jars for chemical analysis.

Five of the borings were completed as 2-inch-diameter PVC ground water monitoring wells at depths of approximately 15 feet bgs. Well completion information is included on the boring logs in Appendix C. The wells were developed and ground water samples collected for chemical analysis. Field methods employed during the investigation were in accordance with ANI's Quality Assurance Program Plan for site investigations which is on file with the Alaska Department of Environmental Conservation.

A portion of each recovered sample was screened in the field for the potential presence of volatile organic compounds using physical appearance (visual) and photoionization detector (PID) techniques. The results of the PID measurements are recorded on the boring logs at the respective depth intervals.

Drill cuttings from the borings were placed on plastic and covered with plastic adjacent to the drill holes.

### 3.2 Soil

Soils encountered in the borings generally consisted of approximately 1 to 2 feet of silty, gravelly, sandy fill overlying unconsolidated silts, silty sands, and fine sand to the maximum depth explored 15 feet. Fine



laminations were observed in the silts and silty sands at several locations, and also varying amounts of naturally occurring organic matter such as roots, sticks, and wood. These unconsolidated deposits are interpreted as river flood plain deposits (alluvium) assumed to be associated with the nearby Chena River.

### 3.3 Ground Water

During drilling, unconfined ground water was encountered in five of the borings at depths ranging from approximately 7 to 8 feet bgs. Water level measurements were obtained from monitoring wells MW-1 through MW-5 on September 4, 1991, after well development was complete. No liquid-phase hydrocarbons were detected in any of the wells during drilling or well development using a clear polyethylene bailer. Development/purged ground water was contained in labelled 55-gallon drums and stored on site until proper disposal can be determined.

Water level measurements were converted into ground water elevations using the results of a monitoring well casing elevation survey performed by RCH Surveys of Fairbanks, Alaska. The survey was completed to an accuracy of 0.01 foot relative to Airport Survey Monument Number 263. A maximum ground water elevation difference of 0.32 feet was calculated between wells MW-2 and MW-3 on September 1991, which are approximately 470 feet apart. A hydraulic gradient of 0.0006 foot/foot was calculated using these data. The direction of ground water flow was generally to the west northwest in September 1991. Figure 4 presents a ground water elevation contour map of the water table surface using the September 4, 1991 data. Table 1 presents depth to water and ground elevation data for each monitoring well. Ground water sampling measurements are presented on ANI Water Sample Field Data Sheets in Appendix D.

Table 1

GROUND-WATER ELEVATION MEASUREMENTS  
CROWLEY MARITIME CORPORATION  
MAIL TRAIL ROAD SITE  
FAIRBANKS, ALASKA

MONITORING WELL #	ELEVATION* TOP OF CASING (FEET)	DEPTH TO GROUND WATER (FEET)	DATE	GROUND-WATER ELEVATION (FEET)
MW-1	426.21	7.73	09/04/91	+18.48
MW-2	426.74	8.10	09/04/91	+18.64
MW-3	425.51	7.19	09/04/91	+18.32
MW-4	425.72	7.29	09/04/91	+18.43
MW-5	426.17	7.81	09/04/91	+18.36

\* Based on Monument 263, Airport Datum

## 4 QUANTITATIVE CHEMISTRY ANALYSIS

---

### 4.1 Analytical Methods

Analysis of soil and ground water samples collected in September 1991 was performed by Columbia Analytical Services, Inc. in Kelso, Washington. Analysis quantified the concentrations of: (1) semivolatile fuel hydrocarbons (TPH as diesel); (2) selected volatile aromatic hydrocarbons, specifically benzene, toluene, ethylbenzene, and xylenes; (3) total petroleum hydrocarbons (TPH-IR); (4) halogenated volatile organic compounds; (5) polychlorinated biphenyls, and (5) total RCRA metal concentrations. Fuel hydrocarbon concentrations were determined by gas chromatography in accordance with U.S. Environmental Protection Agency (EPA) Methods 3510/3550/Modified 8015. BTEX compounds were quantified using gas chromatography techniques (EPA Method 5030/8020). TPH-IR concentrations were determined in accordance with EPA Method 418.1. Halogenated volatile organics concentrations were quantified using EPA Method 5030/8010. PCBs were analyzed using EPA Method 3550/8080. Total metals concentrations were determined in accordance with EPA Methods 6000/7000 series protocol.

A summary of the soil analytical results is presented in Table 2 and Table 3. Laboratory reports and chain of custody documentation are included in Appendix E.

### 4.2 Soils

Twelve soil samples from the borings were analyzed for fuel hydrocarbons. Soil samples analyzed from borings MW-2 (6 feet), MW-3 (6 feet), and MW-4 (6 feet) did not contain concentrations of fuel hydrocarbons above the method reporting limit. Soil samples collected from the remaining borings did contain concentrations of fuel hydrocarbons above the method reporting limit: MW-1 (6 feet) contained 2,600 mg/kg as diesel; SB-1 (0.25 feet and 3.5 feet) contained 8,300 mg/kg and 97 mg/kg as oil respectively; SB-2 (3.5 feet) contained 51 mg/kg as oil; SB-4 (0.25 feet) contained 13,000 mg/kg as

*1/2/91*

Table 2

**RESULTS OF LABORATORY ANALYSIS FOR ORGANIC COMPOUNDS  
CROWLEY MARITIME CORPORATION  
MAIL TRAIL ROAD SITE  
FAIRBANKS, ALASKA**

SAMPLE NUMBER	SAMPLE LOCATION	SAMPLE DEPTH (feet)	DATE SAMPLED	MATRIX	BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	HALOGENATED VOLATILE ORGANICS	FUEL HYDROCARBONS AS (fuel type)	PCBs	TPH
MW-1,S-1A	Boring MW-1	6	8/21/91	Soil	ND	ND	ND	ND	---	2,600 (Diesel)	--	2,500
MW-2,S-2	Boring MW-2	6	8/21/91	Soil	ND	ND	ND	ND	---	ND	--	42
MW-3,S-2	Boring MW-3	6	8/21/91	Soil	---	---	---	---	---	ND	--	61
MW-4,S-1	Boring MW-4	6	8/22/91	Soil	---	---	---	---	---	ND	--	40
MW-5,S-1	Boring MW-5	6	8/22/91	Soil	---	---	---	---	---	ND	--	34
SB-1,S-1	Boring SB-1	0.25	8/22/91	Soil	---	---	---	---	---	8,300 (Oil)	ND	--
SB-1,S-2	Boring SB-1	3.5	8/22/91	Soil	---	---	---	---	---	97 (Oil)	--	31
SB-2,S-2	Boring SB-2	3.5	8/22/91	Soil	---	---	---	---	---	51 (Oil)	--	75
SB-3,S-1	Boring SB-3	0.25	8/22/91	Soil	---	---	---	---	---	3,100 (Diesel) 1,000 (Oil)	ND	--
SB-3,S-2	Boring SB-3	3.5	8/22/91	Soil	ND	ND	ND	ND	ND	440 (Oil)	--	470
SB-4,S-1	Boring SB-4	0.25	8/22/91	Soil	---	---	---	---	---	13,000 (Oil)	ND	--
SB-4,S-2	Boring SB-4	3.5	8/22/91	Soil	ND	ND	ND	ND	ND	50 (Diesel) 175 (Oil)	--	3,000
MW-1	MW-1	---	9/4/91	Water	0.92	0.41	0.16	0.52	ND	66 (Diesel)	--	34
MW-2	MW-2	---	9/4/91	Water	ND	ND	ND	ND	ND	ND	--	1.0
MW-3	MW-3	---	9/4/91	Water	ND	ND	ND	ND	ND	0.26 (Diesel)	--	1.3
MW-4	MW-4	---	9/4/91	Water	ND	ND	ND	ND	ND	0.48 (Diesel)	--	0.9
MW-5	MW-5	---	9/4/91	Water	ND	ND	ND	ND	ND	0.28 (Oil)	--	1.3
MW-6	Dup of MW-1	---	9/4/91	Water	0.93	0.40	0.10	0.51	ND	46 (Diesel)	--	29

NOTES: All values presented in mg/kg (soil) or mg/l (water) units which approximate parts per million (ppm) concentrations

--- Denotes sample not analyzed for particular analyte, or not applicable

Benzene, toluene, ethylbenzene, and total xylenes (EPA Methods 5030/8020)

Halogenated volatile organics (EPA Methods 5030/8010)

Fuel hydrocarbons (EPA Methods 3510/3550/8015 Modified)

PCBs means polychlorinated biphenyls (EPA Methods 3550/8080)

TPH means total petroleum hydrocarbons by EPA Method 418.1

ND means not detected above method reporting limit

Table 3

**RESULTS OF LABORATORY ANALYSIS FOR TOTAL METALS  
CROWLEY MARITIME CORPORATION  
MAIL TRAIL ROAD SITE  
FAIRBANKS, ALASKA**

SAMPLE IDENTIFICATION	MATRIX	EPA METHOD 7060 As (mg/kg)	EPA METHOD 7471 Hg (mg/kg)	EPA METHOD 7740 Se (mg/kg)	EPA METHOD 6010				
					Ba (mg/kg)	Cd (mg/kg)	Cr (mg/kg)	Pb (mg/kg)	Ag (mg/kg)
MW-1, S-1A	Soil	8	ND	ND	101	ND	19	ND	ND
MW-2, S-2	Soil	6	ND	ND	115	ND	21	ND	ND
MW-3, S-2	Soil	10	ND	ND	152	ND	28	ND	ND
SB-3, S-2	Soil	7	ND	ND	105	ND	21	ND	ND
SB-4, S-2	Soil	9	ND	ND	179	ND	36	ND	2
Method Blank	--	ND	ND	ND	ND	ND	ND	ND	ND
Method Reporting Limits	--	1	0.2	1	1	1	2	20	2

means not applicable

oil. The sample from SB-4 at Table 33.5 feet contained 50 mg/kg as diesel and 175 mg/kg as oil. The mg/kg units approximate parts per million (ppm) concentrations.

TPH-IR concentrations were detected in nine soil samples analyzed. Detected concentrations were generally below 75 mg/kg, with the exceptions of the samples from MW-1 (6 feet) and SB-4 (3.5 feet) which were 2,500 mg/kg and 3,000 mg/kg, respectively.

Soil samples collected at a depth of less than 1 foot bgs from borings SB-1, SB-3, and SB-4 were analyzed for the potential presence of PCBs. Analysis did not detect PCBs at or above the analytical method reporting limit of 1 mg/kg.

BTEX compounds were not detected in four soil samples at or above the method reporting limits. Two soil samples analyzed for halogenated volatile organic compounds did not contain these compounds at or above the method reporting limits.

Total RCRA metal analysis were performed on five soil samples. Concentrations of arsenic ranged from 8 mg/kg to 10 mg/kg; barium concentrations ranged from 101 mg/kg to 179 mg/kg; chromium concentrations ranged from 19 mg/kg to 39 mg/kg. Silver was detected in one sample at a concentration of 2 mg/kg. Cadmium, lead, mercury, and selenium were not detected in any of the analyzed samples at or above the method reporting limits. (Note Table 3.)

### **4.3 Ground Water**

Ground water samples collected from monitoring wells MW-1 through MW-5 were submitted for chemical analysis. A duplicate of the sample collected from well MW-1, and designated MW-6, was also submitted for analysis.

The five ground water samples and one duplicate sample were analyzed for BTEX compounds. These compounds were not detected at or above the method reporting limits in any of the samples with the exception of the sample from well MW-1 and its duplicate, sample MW-6. Benzene was reported at a concentration of 0.92 mg/l; toluene at a concentration of 0.41 mg/l; ethylbenzene at a concentration of 0.16 mg/l; and total xylenes at a concentration of 0.52 mg/l in the sample from MW-1.

TPH-IR concentrations in the analyzed ground water samples were all less than 1.4 mg/l with the exception of the sample from well MW-1 where a concentration of 34 mg/l was reported.

Fuel hydrocarbons as diesel fuel or oil were reported at less than 0.5 mg/l with the exception of sample MW-1 in which fuel hydrocarbons were detected at 66 mg/l.

Ground water samples were analyzed for the potential presence of halogenated volatile organic compounds. These compounds were not detected in any sample at or above the method reporting limits.

## 5 SUMMARY OF ENVIRONMENTAL CONCERNS

---

The following is a summary of environmental concerns at the site based on the results of our focused investigation.

**Potential Off Site Sources of Contamination.** Review of available records indicates that the Post Office located north of the property has a petroleum hydrocarbon problem in ground water associated with a former underground storage tank. Based on our September 1991 ground water measurements, the Post Office is located cross gradient from the project site relative to the ground water flow direction beneath the site. Changes, if any, in ground water flow patterns due to seasonal influences are unknown at this time. Long term ground water monitoring information would be required to address this issue.

Other potential off-site sources for petroleum hydrocarbons include the Mapco bulk storage facility located south of the subject property, and the property occupied by a painting contractor located at the southwest corner of the subject property.

**Underground Storage Tank.** One underground storage tank exists at the site. Based on results of chemical analysis of selected soil and ground water samples from a soil boring/monitoring well located near the tank, diesel-range petroleum hydrocarbons are present in the vicinity of the tank. The contamination is likely due primarily to spillage during refueling operations over the years. It was not determined in this investigation whether the tank had leaked. As the area adjacent to the tank is not paved, any spills which may have occurred could potentially have seeped into the ground near the tank. Additional soil and ground water sampling would be needed to determine the level and extent of diesel-range petroleum hydrocarbons in this area of the site.

**Drums and Surface Staining.** The drums observed on site likely contain varying amounts of petroleum-based compounds (e.g., oil, grease, lube oil). Drum contents have not been tested. Many of the drums are in poor condition (dented or rusted) and do not contain lids. Areas of visibly stained soil are often associated with the drum storage areas.

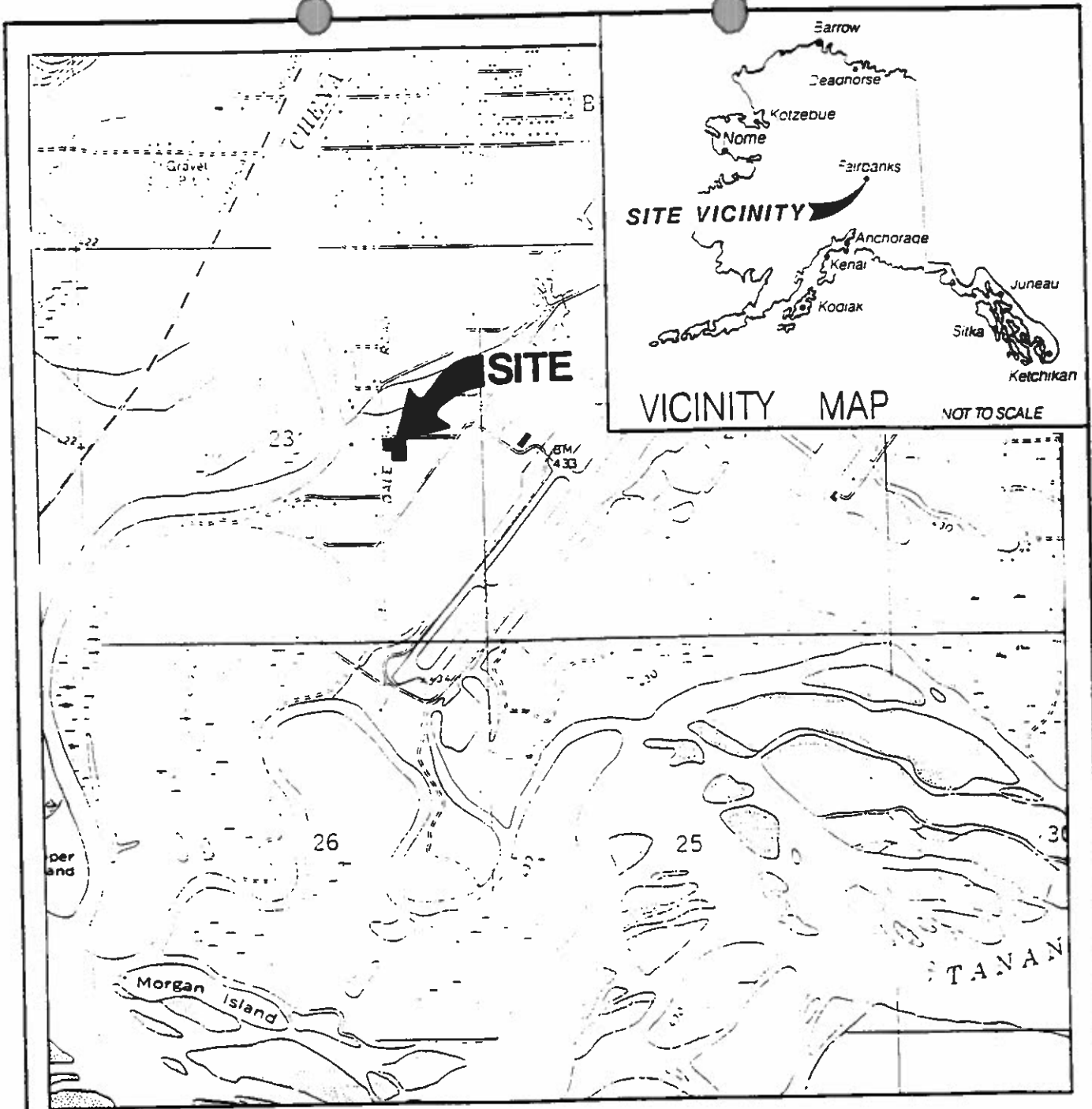


Other areas in which surficial stained areas were noted were not associated with present drum storage areas.


Crowley is coordinating with a contractor to stabilize, test, and remove the drums and visibly stained surface soil.

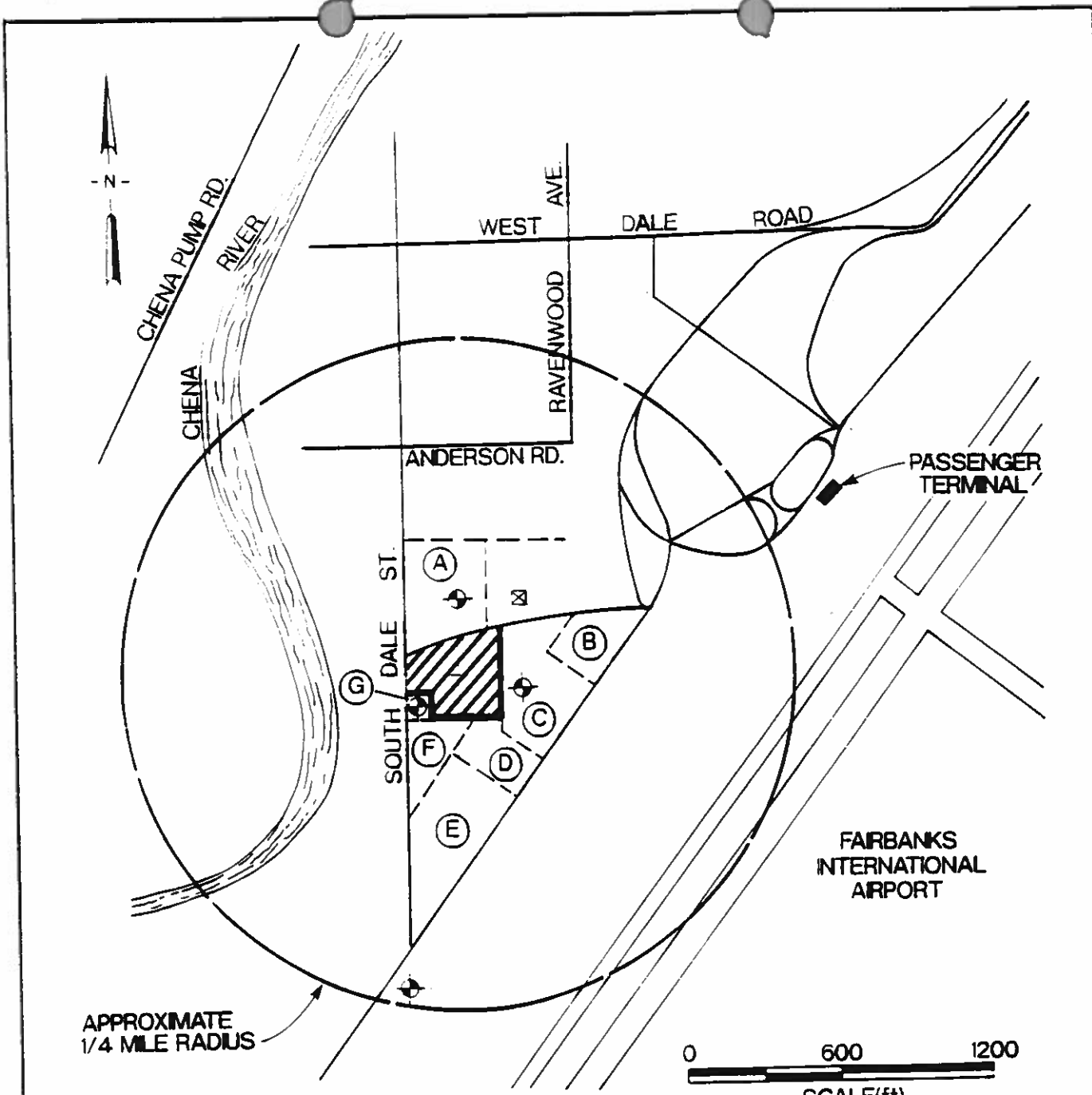
**Spillage from Above-ground Gasoline Storage Tank.** Soils beneath the above-ground gasoline storage tank may contain gasoline-related petroleum hydrocarbons based on our observations of leakage from the tank.

Evaluations of soil and water quality adjacent to the septic tank, drain field, propane tank, and above-ground gasoline underground storage tank were not included in our scope of work.



Source: Geologic Map of Fairbanks Quadrangle  
USGS Misc. Inv. Map I-455

 <b>America North Inc.</b>	DATE <u>OCT. 1991</u>	<b>CROWLEY MARITIME CORP.</b> <b>MAIL TRAIL ROAD</b> <b>Fairbanks, Alaska</b> <hr/> <b>SITE LOCATION MAP</b>	<b>FIGURE</b>  <b>1</b>
	DWN. <u>J.A.</u>		
	CKD. <u>K.R.</u>		
	REV. _____		
	PROJECT No. <u>11952.00</u>		



APPROXIMATE  
1/4 MILE RADIUS



**LEGEND**

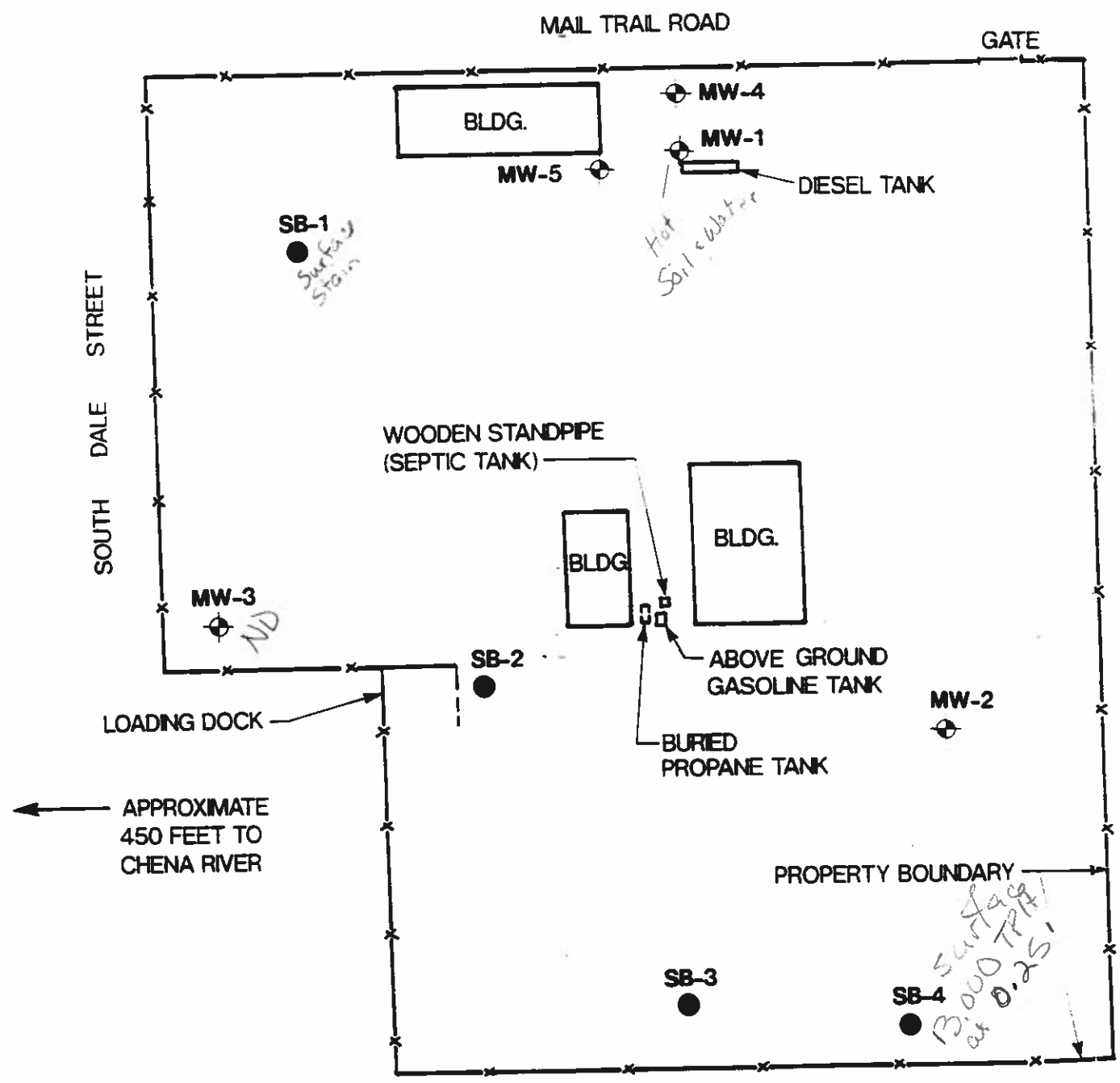
- ⊕ Approximate Well Location
- (A) FAA AND DOT
- (B) AIR FREIGHT SERVICE
- (C) PROGRESSIVE TRANSPORT INC.
- (D) MAPCO PETROLEUM INC.
- (E) AIRCRAFT SERVICES DIVISION
- (F) UNDEVELOPED
- (G) PRIVATE

Source: Fairbanks and vicinity, King of the Road Map Service, Inc.

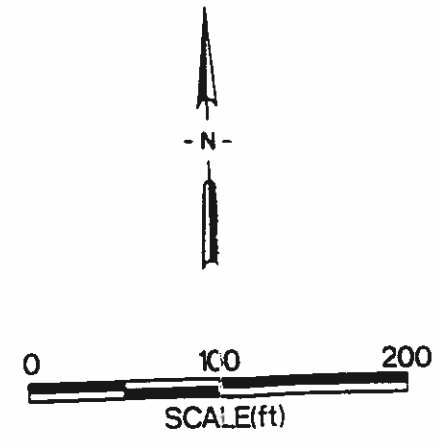
	DATE OCT. 1991	<b>CROWLEY MARITIME CORP.</b> <b>MAIL TRAIL ROAD</b> <b>Fairbanks, Alaska</b>	<b>FIGURE</b>  <b>2</b>
	DWN. J.A.		
	CKD. K.R.		
	REV. _____		
PROJECT No.	11952.00	<b>ADJACENT PROPERTY &amp;</b> <b>BENEFICIAL USE MAP</b>	

DATE	OCT. 1991
DWN.	J.A.
CKD	K.R.
REV.	
PROJECT No.	11952.00

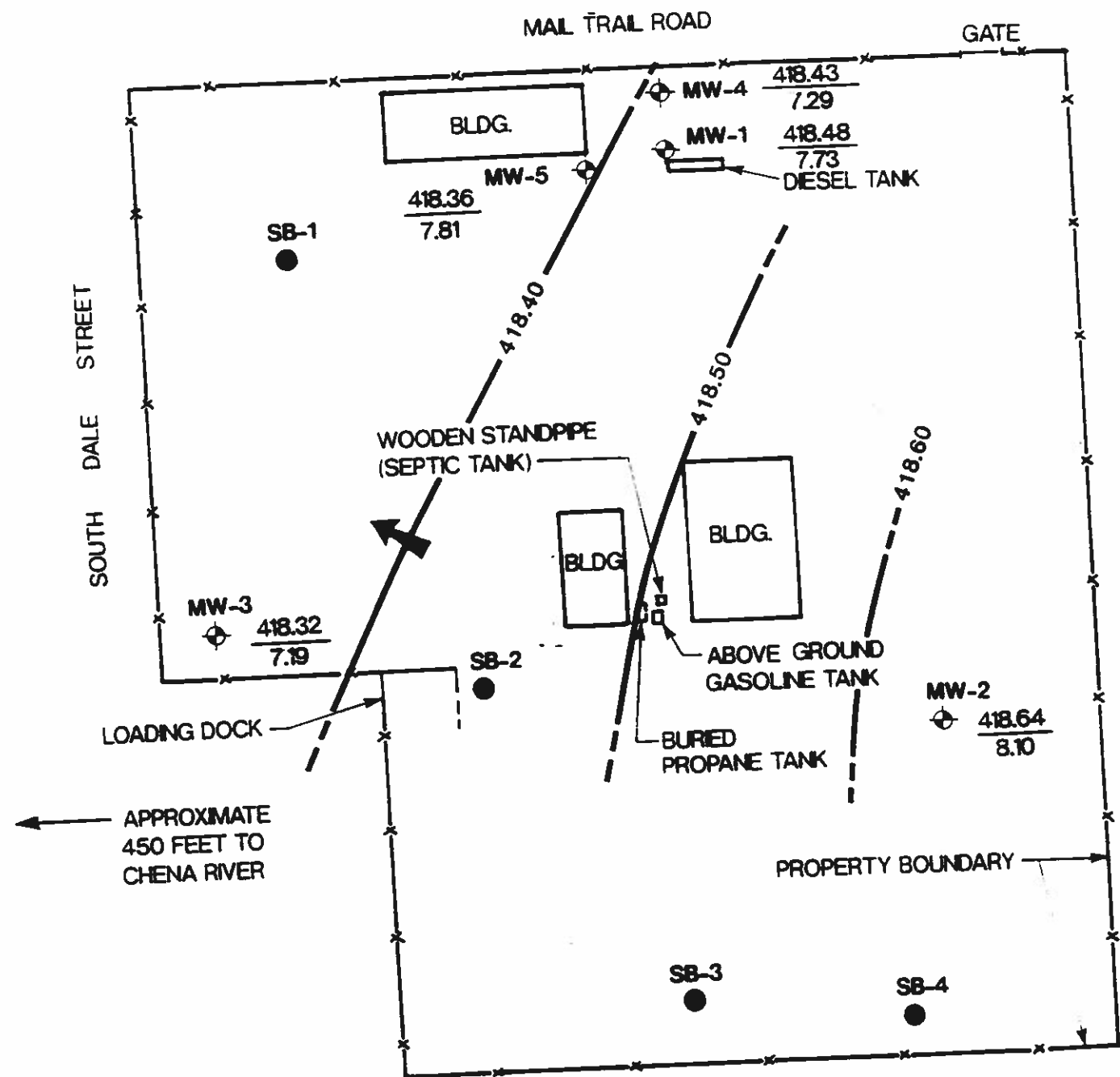
**America North Inc.**



- EXPLANATION:
- MW-1 SOIL BORING / MONITORING WELL LOCATION
  - SB-1 SOIL BORING LOCATION



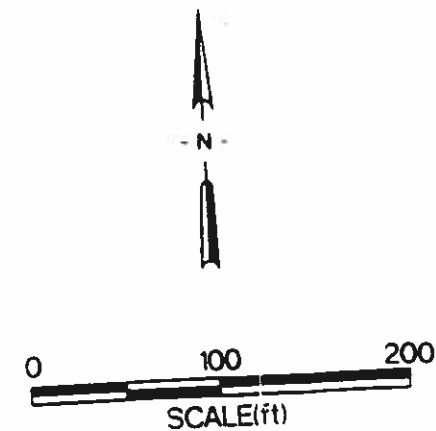
Source: Aerial Photograph #3-26, Roll #90-112, dated 5-19-90  
Project: Chena



EXPLANATION:

- MW-1 SOIL BORING / MONITORING WELL LOCATION
- SB-1 SOIL BORING LOCATION
- $\frac{418.48}{7.73}$  GROUND WATER ELEVATION \*  
DEPTH TO GROUND WATER ON 9/4/91 \*
- GROUND WATER ELEVATION CONTOURS  
WITH INFERRED DIRECTION OF GROUND WATER FLOW

\* BASED ON MONUMENT 263, AIRPORT DATUM



Source: Aerial Photograph #3-26, Roll #90-112, dated 5-19-90  
Project: Chena

DATE	OCT. 1991
DWN.	J.A.
CKD.	K.R.
REV.	
PROJECT NO.	11952.00