

Ref. 1?

Barr

Engineering Company

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April 14, 1992

Mr. Thomas Cotruvo
Duluth Economic Development Authority
400 City Hall
Duluth, MN 55802-1196

Re: Limited Phase I Site Assessment
(Historical Records Review)
Bayfront Property
Duluth, Minnesota

Dear Mr. Cotruvo:

Barr Engineering Company (Barr) has prepared this historical records review for Lot 9, Block 4, and all of Block 5, Bayfront Division of Duluth (Property). The Property is owned by Northland Constructors, Inc. and is located on the Duluth bayfront.

SCOPE OF WORK

This investigation was conducted for real estate transaction purposes. Barr's scope involved the review of available historical records for evidence indicating activities that may have resulted in a release of hazardous substances or petroleum products to the Property and the review of the results from previous investigations conducted at the Property.

The historical review consisted of an inspection of Duluth city directories, available aerial photographs, Sanborn Fire Insurance maps, real estate atlases, and historical photographs of the Property and the immediately surrounding area. Interviews were conducted with a previous property owner, a consultant for the current owner, a consultant for one of the previous owners, and staff of the Minnesota Pollution Control Agency. The scope of the investigation did not include a review of regulatory documents or a site visit. These tasks were reportedly completed by others during two previous investigations.

PROPERTY LOCATION

The Property is located on the Duluth harbor waterfront, southeast of the intersection of Railroad Street and 7th Avenue West. The Property is bordered on the northwest by Railroad Street, on the southwest by 7th Avenue West, and on the northeast and southeast by Slip No. 1 and the Duluth harbor,

respectively. The Property is rectangular in shape and is roughly 1,000 feet by 170 feet. The Property is described as Lot 9, Block 4, and all of Block 5, Bayfront Division of Duluth. The general site layout is shown on Figure 1.

PROPERTY DESCRIPTION AND HISTORY

The Property consists of the northeastern half of a low-lying, relatively flat pier lying between slips No. 1 and No. 2 in the Duluth harbor. The pier is manmade and reportedly has been historically used for the storage and transfer of products between rail and water vessels and the storage and heat treating of pipe. The pier may have also been used for docking and refueling of tugboats.

The Property is currently owned by Northland Constructors, Inc. Reportedly, no structures presently exist, but piles of what appear to be fill material and/or demolition debris are present on the Property.

Prior to development, the Property was likely a water-covered area of the St. Louis River bay area. Between 1871 and 1883, a wooden pier was constructed at the current property location. A Northern Pacific warehouse and railroad tracks were built on the pier. Between 1888 and 1909, fill was placed around the wood piles that supported the pier. The results from previous investigations conducted at the property suggest that the fill was primarily sand dredge spoil with some wood, cinders, and brick.

The Northern Pacific warehouse and railroad tracks extended nearly the entire length of the pier (adjacent to Slip No. 1). The railroad tracks were located on the southwestern side of the warehouse. The 1909 Sanborn map also indicates the presence of a small building located on the southwestern corner of the Property. The Sanborn maps for this time period did not contain any information which could typically be interpreted as an indicator of potential environmental liability. The oblique photographs of the site did not show images suggesting that a chemical release had occurred. The locations of the Northern Pacific warehouse, railroad tracks, and the small building are shown on Figure 1.

The Northern Pacific warehouse and the nearby small building are visible on the 1939, 1952, and 1953 aerial photographs. The small building may have been the Union Towing and Wrecking Company. Boxcars are visible on the railroad tracks. A dock was visible in the northeastern corner of the Property. Images typically interpreted as indicators of potential chemical release were not observed on the 1939, 1952, or 1953 aerial photographs.

Between 1953 and 1955, the Northern Pacific warehouse was either partially demolished, or replaced with a smaller warehouse, located at the half-way point of the peninsula. The 1955 Sanborn Map indicates that this warehouse remained the property of Northern Pacific Railway. The 1955 Sanborn map did not contain information suggesting the presence of a potential environmental liability.

Changes to the Property observed on the 1958 aerial photograph image were the addition of an aboveground storage tank (likely petroleum product storage)

located near the small building at the end of the pier and what appears to be soil staining near the rail terminus northwest of the main warehouse building. The tank is an indicator of a potential environmental liability. The soil staining is an indicator of a potential chemical release.

Changes to the property observed on the 1964 aerial photograph were two areas of what appear to be soil staining. One of the areas was located northwest of the warehouse building, and the second area of staining was located near the end of the pier under a set of railroad tracks. An object which may be an aboveground storage tank was also observed in the northeast part of the Property. The presence of soil staining may indicate that a chemical release had occurred. The areas of soil staining are shown on Figure 1.

The 1966 aerial photograph is of insufficient quality to determine the presence of soil staining. General site conditions appear similar to 1964.

Between 1966 and 1969, the small building at the end of the peninsula was removed. This building may have been used between 1956 and 1967 by the Great Lakes Towing Company. One of the soil stains observed on the 1964 aerial photograph was still visible on the 1969 photograph.

A single railroad tanker car is visible on the 1971 aerial photograph of the Property. Other site features appear to be generally unchanged. Images suggesting that chemical releases had occurred were not observed.

The 1973 aerial photograph image shows that the Northern Pacific warehouse and the railroad tracks had been removed and the site is vacant. Two objects that may be aboveground storage tanks were observed on the southwestern side of the Property. These objects were not observed on the 1971 or 1975 aerial photographs. Images suggesting that chemical releases had occurred were not observed.

The Property appeared to be covered with stacks of pipe at the time of the 1975 and 1977 photographs. Images suggesting that chemical releases had occurred were not observed.

The only change observed on the 1978, 1979, 1980, 1981, 1982, 1988, and 1989 aerial photographic images was the presence of one or two structures located at the northwestern end of the Property. These structures appear to be associated with Pipe Benders, Inc., a pipe heat-treating operation. Two unidentified cylindrical objects are visible on the southeast side of the Property on the 1979 aerial photograph.

The 1990 aerial photograph image (partial site coverage) shows that the Property contains piles of what appear to be fill material and a storage tank. No buildings were observed. Evidence indicating that the storage tank was in use was not observed. Evidence of chemical release was not observed.

Surrounding Properties

The western half of the pier was developed at about the same time as the Property. Known uses of the neighboring property were a cold storage business and the Duluth Roller Mill. Other companies listed (in the Duluth city directories) in the general area were: a bottling firm, creameries, a wire goods manufacturer, oil companies, a paint company, a transfer company garage, wholesale grocers, plywood manufacturers, hardware wholesalers, an insulation contractor, a towing and wrecking company, and several marine and contracting firms.

Previous Investigations

Previous subsurface investigations conducted at the Property have indicated that the fill material used in the pier consists of sand, wood, cinders, and brick. The wood is likely associated with the pilings used to support the pier. The wood reportedly had a creosote odor. Creosote is a common wood preservative and the odor likely indicates that the piles were treated with this material to slow decay. The presence of treated wood in the form of pilings, railroad ties, telephone poles, and old bridge abutment structures is common throughout the state.

The previous investigations also reported the presence of petroleum product soil contamination near the southeastern end of the pier. This contamination was attributed to a surface spill. The historical data review suggests that the contaminated soil was located approximately 50 feet from the location of the suspected petroleum storage tank (1958 aerial photograph). This suggests that the presence of contaminated soil could have been the result of a tank release. The locations of the borings placed during the previous investigations are shown on Figure 1.

SUMMARY

The following evidence of potential environmental liability or chemical release were observed in the course of the historical record review:

- The wood pilings supporting the pier appear to have been treated with creosote. The pilings are most likely still present at the Property, and have likely released measurable concentrations of semivolatile organic compounds to the adjacent soil and/or groundwater. Releases of this nature are common throughout the state. Barr believes that the MPCA is aware that these releases commonly occur, but is unaware of an instance where the MPCA has pursued a cleanup of such a release.
- The results from previous investigations suggest that the materials used as fill at the pier were largely dredge material (sand) with some wood, cinders, and brick. Dredge spoil originating from some locations of the Duluth harbor have been found to contain concentrations of contaminants at levels of concern to the MPCA. Use of dredge spoil as fill in and around the Duluth harbor, however,

appears to be ubiquitous. As a result, an MPCA decision to address this issue will likely impact most properties surrounding the harbor, as well as any work conducted in the harbor, such as channel maintenance. Cleanup, if required, could be extremely costly. Therefore, it would likely be focused on the most serious problems identified. We suspect that slips constructed of dredge spoil from the 1800s, if contaminated, would not receive a high priority.

- Soil staining was visible on several aerial photographs at several locations on the Property. Although the aerial extent of staining was relatively limited, a likelihood exists that these stains are indicative of a chemical release.
- Petroleum products have likely been used and stored on the Property. Evidence also exists that releases of petroleum products to soils on the Property have occurred. Investigation of these releases will be required by the MPCA. The cost of investigations and any required cleanup of petroleum contaminants, however, will be reimbursable by the State PETROFUND (at a rate of 90 cents on the dollar) if the release is determined to be a release (leak) from a stationary petroleum storage tank system (dispenser pipes or tank).
- The historical records suggest that storage and use of petroleum products have occurred on adjacent properties. If releases have occurred, soil and/or groundwater quality at the Property may have been impacted. State and federal law, however, specifies that the responsibility for investigation and cleanup of chemical or petroleum releases rests with the owner or operator of the land at the source of the release.

RECOMMENDATIONS

Barr recommends placement of soil borings at locations identified as potential sources of chemical release (soil-stained areas and petroleum storage tank). Information collected will establish if a release requiring cleanup has occurred at those locations.

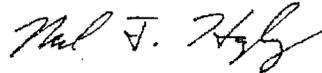
The proposed boring locations are shown on Figure 1. We recommend advancing the soil borings to the surface of the water table and collection of soil samples continuously throughout the depth of the boring. The soil samples should be screened in the field for the presence of volatile organic compounds, odor, oil sheen, and staining. Soil samples collected from the vicinity of the former petroleum storage tank (Boring SB-101) should be analyzed for total petroleum hydrocarbons, benzene, ethyl benzene, toluene, and xylenes. Soil samples collected from the vicinity of the stained soil areas (Borings SB-102 and SB-103) should only be submitted for laboratory analyses if evidence of contamination is observed.

LIMITATIONS

Barr Engineering Co. has performed its work in a manner consistent with the care and skill ordinarily exercised by members of the environmental engineering profession under similar scope, budget, and time constraints. Within this context, Barr assumes responsibility for its observations and for interpretation of the information gathered by Barr. However, Barr does not assume responsibility for the accuracy or the reliability of the information provided by other parties. In no event does Barr represent or guarantee that this property is free of contamination. Such a representation cannot be made regardless of the scope of the site investigation.

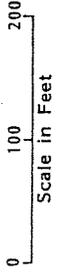
If there are questions or additional information is necessary, please contact Dale Wikre or me.

Sincerely,



Mark T. Hagley
Hydrogeologist

MTH:ors
23\69\076\C20.LTR



- 88-01 ● Lakehead Testing Soil Borings
- B-1 † Twin Ports Testing Soil Borings (Locations are Approximate)
- Areas of Apparent Soil Staining
- ++++ Railroad Tracks (No Longer Present)
- Property Boundary
- SB-101 ● Proposed Soil Boring Locations

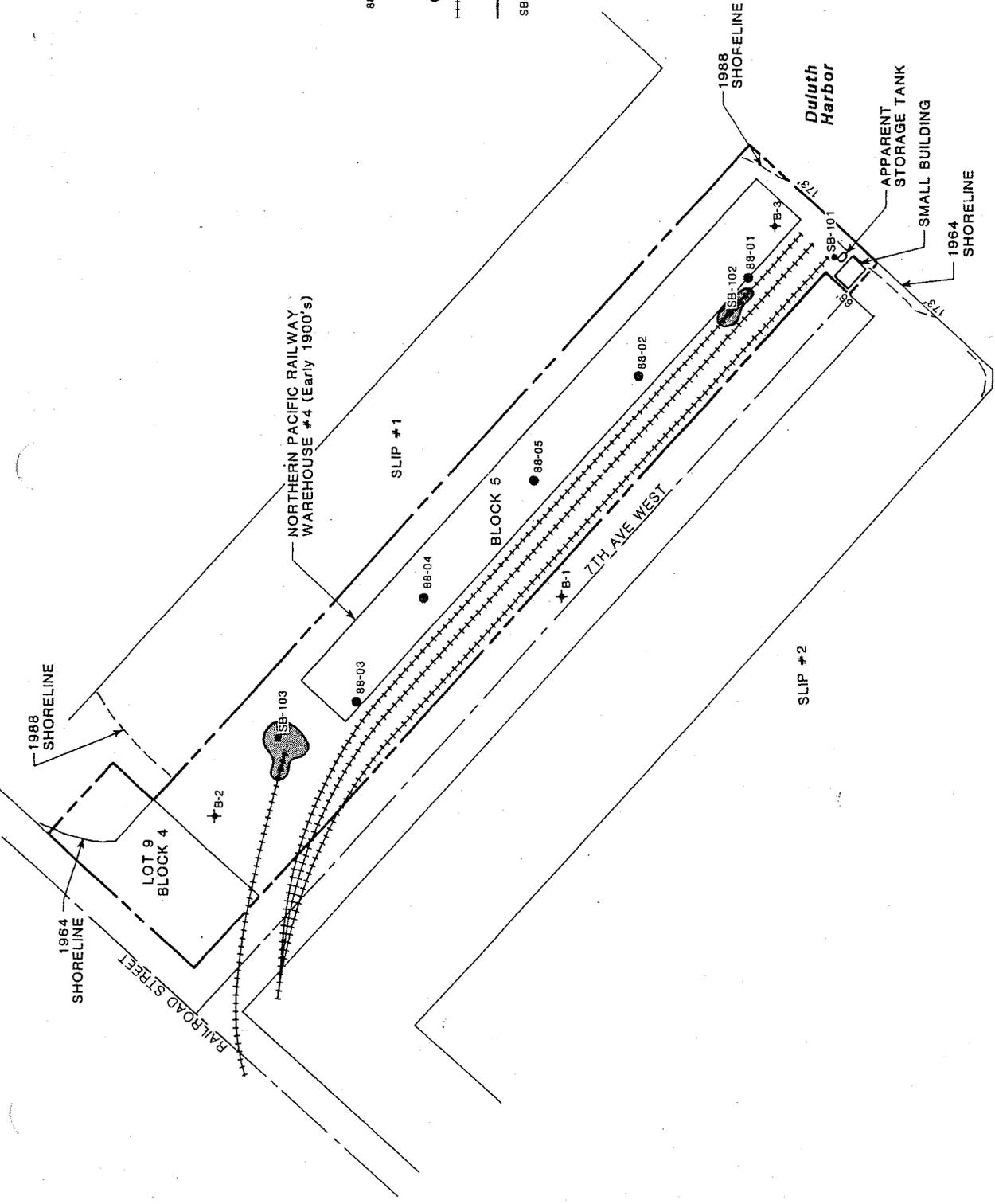


Figure 1
SITE MAP WITH
PROPOSED SOIL BORING LOCATIONS

LIST OF REFERENCES

United States Geological Survey Topographic Map, Duluth, Minnesota Quadrangle dated 1953. Photograph revised 1969 and 1975.

Aerial photographs from 1939, 1952, 1953, 1958, 1961, 1964, 1966, 1969, 1971, 1973, 1975, 1977, 1978, 1979, 1980, 1981, 1982, 1988, 1989, and 1990.

Historical photographs (oblique) from the St. Louis County Historical Society files. Included photographs of the Property in the 1870s, 1880s, 1890s, 1930s, 1940s, 1950s, and 1960s.

Roe's Real Estate Atlas, 1890.

Frank's Map (Plate 25), 1902.

Duluth Real Estate Atlas, 1924.

Sanborn Fire Insurance Maps, 1884, 1885, 1888, 1909, and 1955.

Duluth City Directories, 1930 to 1991, except 1933, 1945, 1947, 1949 (not published).

LIST OF CONTACTS

Mr. William Mierhoff, previous property owner (as part of two separate partnerships, approximately 1970 to 1988).

Mr. Randy Debolt, Twin Ports Testing, Inc. Current owner's consultant.

Mr. Tim Musick, Minnesota Pollution Control Agency, Duluth Regional office.

Ms. Lynne Grigor, Minnesota Pollution Control Agency, Site Response Section.

Mr. Robert Nielson, formerly of Twin City Testing, (on-site geologist during drilling of five Twin City Testing/Lakehead Testing soil borings).