

Appendix A

Phase I Environmental Site Assessment Documentation 700-1000 West Railroad Street Bayfront Lots C and D Duluth, Minnesota

I. General Property Information

Property location map is shown on Figure 1. Property layout with existing and former features is shown on Figure 2. Historical property details are on Attachment A.

Property name: 700 – 1000 West Railroad Street, Bayfront Lots C and D

County: St. Louis

Township: 50N **Range:** 14W **Section:** 34

Property size: 13.0658

Current Property owner: Duluth Economic Development Authority

Current Property use: Vacant or used for seasonal storage or overflow parking.

II. Physical Setting

Surface elevation: Approximately 604 feet above sea level (Ref 2a)

Topographic conditions of Property: Level piers adjacent to two slips of water that are connected to the Duluth Harbor of the St Louis River. No significant relief (Ref. 2a, 1a).

Stratigraphy (soils and upper bedrock units): Filled land with pier dock walls adjoining open water and boat Slips 2 and 3. Fill may be 10 feet or greater overlying former wetland deposits of organic silt to silty clay or sand (Ref.2a, 2c, 2d, 2e). Native glacio-lacustrine deposits ranging from silt or silty sand to clay may be over 50 feet thick overlying bedrock which is likely similar to the Duluth Complex gabbro which outcrops approximately 800 feet west of the Property (Refs. 2c, 2d, 2e).

Nearest surface water body (name and distance): This is waterfront property which is immediately adjacent to Slips 2 and 3, Slip C and the Duluth Harbor which is part of Superior Bay.

Anticipated groundwater depth/flow direction: The groundwater is within 2 to 3 feet of the ground surface based on the surface topography (604 to 605 feet) and the mean lake level of 602 feet (Ref. 2a). Based on experience with similar sites situated on piers adjoining the Duluth Harbor, the groundwater table is likely level and essentially similar to the adjoining surface water body water elevation. Groundwater flow at the Property is likely to vary due to changes in the St Louis River or the Lake Superior lake level- seasonally as well as in response to normal lake seiche fluctuations. The upland area west and north of the Property likely has groundwater flows directed down slope towards the St Louis River/Duluth Harbor. Consequently the upslope area west and northwest of the site is considered up-gradient with respect to groundwater flow- as shown on the annotated map at the back of this appendix (Figure A-1).

Regional aquifer: Groundwater is present within the native silt to sandy-silt units comprising the glacio-lacustrine deposits beneath the site. The water table is likely close to the same elevation as the adjoining Duluth Harbor water surface elevation (Ref. 2a). Groundwater is also likely present in the underlying fractured bedrock (crystalline gabbro and basalt of the Duluth Complex and North Shore Volcanic Group) (Refs. 2b, 2c, 2d, 2e). Potable water supplies in the area are taken from the surface waters of Lake Superior (Ref. 5a).

III. Municipal Information & Utility Service to Property

The locations of Property utilities including water and storm drainage are shown on Figure A-2 (Ref 5f). There were no wells reported or observed on the Property (Ref. 2b).

Water Supply

Municipal water supply and intake location(s): Duluth's municipal water supply is from a surface water intake in Lake Superior located about 6 miles northeast of the Property (Ref.5a).

Property potable/process water supply: Municipal water supply lines are supplied to the Property from Railroad Street (Ref. 1h, 4b).

Property potable/process water supply well(s) data: No on-site water wells were known to be present (Ref. 1h, 2b).

Years of service for the current potable water supply for the Property: The water main on Railroad Street was installed in 1908, with a service line to 8th Ave installed in 1928 (Ref. 5f).

Have other potable water supplies serviced the Property? If yes, describe: not reported

Sanitary Service

Type of sanitary service for the Property: Municipal sewer lines are supplied to the Property from Railroad Street (Ref. 1h 4b). The Property is served by the Western Lake Superior Sanitary District waste water treatment system which serves the Duluth area (Ref. 1h).

Years of service for the current sanitary service: Since approximately the 1970s when the system went into operation (Ref. 1h).

Evidence of onsite septic systems or drainfields: not reported

Have other methods of sanitary service been used at the Property? No

Storm Drains

Is the Property serviced by storm water drains and storm sewers? Yes. One storm drain was found west of the garage.

If the Property is serviced by storm drains and sewers, do any sources from Property buildings discharge to the storm sewer (sumps, roof drains, floor drains, etc.): There is no discharge from the garage to a storm sewer that was noted.

Fire Department Information

The Fire Department's Deputy Fire Marshall reviewed their records and found no violations for the Property's address (Ref. 4c).

Property Zoning

Current zoning as listed on the city assessors website information is WM; Downtown Waterfront Mixed Use District and Heavy Manufacturing (Ref 1c).

IV. Property, Adjoining, and Surrounding Area Regulatory Status

Regulatory database summary and supporting information is in the Environmental Data Resources (EDR) Report located in Appendix D. Only information generated through searches of databases required by ASTM 1527-05 and within the appropriate minimum search distances were reviewed.

Property Regulatory Status

ASTM List	Listing Status	Potential for Release to Soil	Potential for Release to Groundwater	Does Property Have a Documented Release to Soil/Groundwater?
US Brownfields Bayfront	Completed 3/31/2004	Not reported	Not reported	Not reported

Adjoining or Potentially Upgradient Sites

Five sites were identified that may be hydraulically up-gradient (Appendix A, Figure A-1) with respect to potential groundwater migration at the Property. The EDR Report lists four other sites that are within the 0.25 mile radius report. Two have wrong addresses, and two are not adjacent nor potentially upgradient.

Name	Address	ASTM Listing(s)	Distance & Direction From Property	Comments	Do issues related to the listing indicate the potential for impacts to soil or groundwater at the Property?
Lenox Place	701 W. Superior Street, Duluth, MN 55802	RCRA CESQG/ FINDS	North-northwest, 858 ft.	Site is potentially up-gradient with respect to groundwater migration at the Property	No, listing as a small quantity generator does not signify a release and no spills are noted. Therefore, this listing is not likely to pose a threat to groundwater conditions at the Property
Gateway Tower	600 W. Superior St., Duluth, MN 55802	RCRA Non-generator/ FINDS	North, 930 ft	Site is potentially up-gradient with respect to groundwater migration at the Property	No, listing as a small quantity generator does not signify a release and no spills are noted. Therefore, this listing is not likely to pose a threat to groundwater conditions at the Property
Railroad Street Utility Work- City of Duluth	Railroad Street between 8 th Avenue W. and Garfield Ave., Duluth, MN	VIC Site VP9540 (opened 1998, closed 2000)	North and west- 50 to 1,000 ft	Site is potentially up-gradient with respect to groundwater migration at the Property	Yes. The following notes are paraphrased from the MPCA database- "The city performed street repaving and replacement of a box culvert along Railroad Street. Railroad Street was formerly a marsh that was filled in. Historically numerous railroad tracks were present. The fill contains creosote type wood wastes, rubbish and can be heavily contaminated with PAH's. Presently, the city is taking the contaminated soils to the old city of Duluth landfill adjacent to WLSSD landfill and clean soils are going to Northland Pier to be recycled." This listing indicates the presence of fill containing creosote-treated wood debris, other building debris, and PAH soil contamination in the street right of way adjoining the Property. It is possible that similar fill soil is present on the Property. For this reason the listing is indicative of potential soil impacts on the Property.

Name	Address	ASTM Listing(s)	Distance & Direction From Property	Comments	Do issues related to the listing indicate the potential for impacts to soil or groundwater at the Property?
The Depot	508 W. Michigan St., Duluth, MN 55802	RCRA-NonGen	NNE 1307 ft.	Site is potentially up-gradient with respect to groundwater migration at the Property	No, listing as a small quantity generator does not signify a release and no spills are noted. Therefore, this listing is not likely to pose a threat to groundwater conditions at the Property
Duluth Art Institute	506 W. Michigan St., Duluth MN 55802	RCRA-CESQG	NNE 1309 ft.	Site is potentially up-gradient with respect to groundwater migration at the Property	No, listing as a small quantity generator does not signify a release and no spills are noted. Therefore, this listing is not likely to pose a threat to groundwater conditions at the Property

Do issues related to the listings indicate the potential for impacts to soil or groundwater at the Property? No

An executive summary table of regulatory listings is included at the back of this appendix. The summary table includes comments regarding the relationship of each site location with respect to the Property.

Tribal Sites

As part of the EDR Report, locations of Native American reservations equal to or greater than 640 acres in size within the search area are reported. No reservations meeting this size criterion were identified within 1 mile of the Property (Ref. 3a). As noted in Ref. 3a, tribal and state governmental regulatory databases were searched.

Orphan Site Summary

There were 20 unmapped (orphan) sites identified in the regulatory report. None of the orphan sites with potential or documented releases to soil and/or groundwater were determined to be located adjoining to or upgradient from the Property based on a review of area maps, field observations, and mapping websites; with the exception of the following site. The potential for adverse impacts to the Property from the listed sites is discussed in the following table.

Name	Address	ASTM Listing(s)	Distance & Direction From Property (approx.)	Do issues related to the listing indicate the potential for impacts to soil or groundwater at the Property?
Lafarge North America	8th Ave. W. and Railroad Street,	RCRA-NLR, FINDS	Adjacent to Lot C and Slip 3	No

Name	Address	ASTM Listing(s)	Distance & Direction From Property (approx.)	Do issues related to the listing indicate the potential for impacts to soil or groundwater at the Property?
Former Food Service of America	Duluth MN 55802 Foot of S. 8 th Avenue West at Bayfront.	Closed LUST site 2094– petroleum release reported 1989, site closed 1995.	Adjoins Property on north.	A former underground storage tank leak was discovered in 1989, investigated and remediated, leading to closure of the site in 1995. Since the petroleum release was at a location close to the north Property boundary and reportedly some residual soil impacts were not removed. The soil impacts have the potential to extend onto the Property. This listing has a potential to impact soil or groundwater on the Property, although not necessarily above levels of regulatory concern under the current land use, since the MPCA closed the LUST site in 1995.

Environmental Liens

No environmental liens were identified for the Property (Ref. 1h, 1i, 3b, 4a).

Activity Use Limitations

No institutional or engineering controls were identified for the Property (Ref. 1g, 1h, 3a, 4b).

V. Previous Environmental Investigations of the Property

Relevant portions of previous investigation reports completed for the Property are reproduced in Appendix E. The following table gives a general summary of the each known previous investigation’s scope, conclusions and recommendations. Each investigation is described according to its specific reference number, as denoted in the Information Resources section of the Assessment report.

REF. #	Investigation Summary	Findings
1g	<i>Historical Summary: Bayfront Property Area, 500-1000 Railroad Street, Duluth, Minnesota.</i> Prepared by Barr Engineering Company for the City of Duluth Community-wide Brownfield Assessment Grant project, March 2008.	This report summarizes the history of the Bayfront properties including the LaFarge property. The history notes that the Property and surrounding waterfront area was filled to create the early industrial port facilities beginning in the mid to late 1800s. The original shoreline was west of the Property

REF. #	Investigation Summary	Findings
		<p>approximately where the Interstate highway or Railroad Street now run. The property and adjoining areas were originally shallow wetland in pre-development time. The report was submitted to the Minnesota State Historical Society, State Historic Preservation Office and U.S. EPA.</p>
1h	<p><i>Phase I Environmental Property Assessment: City of Duluth Waterfront Properties, 500-1000 Railroad Street, Duluth, Minnesota.</i> Prepared by Barr Engineering Company March 2004 for the City of Duluth.</p>	<p>A Phase I Assessment was conducted on properties along the Duluth Bayfront from approximately 500 to 1000 Railroad Street. The assessment area encompassed the Property, however entry into the LaFarge buildings and onto the grounds was not part of the scope. The historical review, exterior area reconnaissance and regulatory review included the overall area. Five <u>recognized environmental conditions</u> (RECs) were identified by this assessment- 1) property area is primarily composed of fill materials of unknown origin, 2) documented release from Former Food Service of America LUST site between Slips 2 and 3, 3) activities associated with scrap materials handling at the former Northern Scrap Iron and Metal site along Railroad Street near the head of Slip 3, 4) potential oil storage associated with various oil companies at former warehouses along the southern side of Slip 3, and 5) waste materials associated with electrical equipment manufacture at Western Electric facility south of Slip 3.</p>
1j	<p><i>Limited Phase I Assessment (Historical Records Review), Bayfront Property, Duluth, Minnesota.</i> Prepared by Barr Engineering Company for the Duluth Economic Development Authority, April 1992.</p>	<p>A limited Phase I assessment was conducted for the northern half of the pier between Slips 2 and 3 (adjoins the Property), with its main focus being summarizing historical information about the Property. This assessment noted the historical use of creosote piles in construction of docks and piers, the pier includes fill material of unknown origin and could include debris mixed with soil, apparent soil staining observed on the site and on aerial photographs, past use and storage of petroleum products on the target property, and the past storage and use</p>

REF. #	Investigation Summary	Findings
		of petroleum associated with the former warehouse operations at this location. The report summarized recommended Phase II investigation activities.
5b	<i>Phase II Environmental Site Assessment Report, Duluth Waterfront Property, Duluth, MN.</i> Prepared by Barr Engineering Company for the City of Duluth. August 2004.	A Phase II investigation was conducted on Duluth Economic Development Authority-owned land surrounding former boat slips 2 and 3. All soil borings indicated non-native fill soil present to termination. The borings ranged from 10 feet to 15 feet deep. Some observed debris mixed with the fill soil. Trace concentrations of VOCs and SVOCs were detected, but all below applicable risk-screening criteria. RCRA metals were analyzed but no concentrations exceeded applicable risk-screening criteria for an industrial site. Chromium was detected above the more conservative risk-screening criterion for potential leaching to groundwater (but below the industrial site criterion). Diesel range organic (DRO) compounds were detected in soil materials present at the former Food Service of America LUST location- but the concentration was below the MPCA action level for DRO for a sandy soil. Minor amounts of debris including building debris was observed in the soil borings and on the site surface, however no apparent asbestos-containing materials were observed.
5c	Minnesota Pollution Control Agency LEAK file #2094- Partial copy of J&D Tank Services Excavation Report. November 1990. The file information reports on a tank removal with removal of soil from the excavation and a follow-up remedial investigation where 5 soil borings were placed through and around the former tank basin area to document the remaining soil and groundwater conditions.	It was noted that the tank had been removed, 457 cubic yards of soil were removed for treatment, and the follow-up remedial investigation noted the presence of remaining petroleum impacts to the soil within the former tank basin area. Site closure was granted for Leak # 2094 on August 22, 1995 with some soil contamination remaining in place.
5d	Minnesota Pollution Control Agency LEAK file #2094- Partial copy of American Engineering and Testing, Inc. report. 1993.	An investigation was conducted including advancing five soil borings in the vicinity of the Former Food Service of America UST basin, to depths of 9 to 15 feet below ground surface. Fill soil was encountered in all borings with textures ranging from silty-sand to

REF. #	Investigation Summary	Findings
		<p>sand and gravel. Soil headspace organic vapor screening using an organic vapor monitor indicated apparent petroleum soil vapor impacts ranging from 20 to 240 parts per million vapor (ppmv). Total petroleum hydrocarbons as gasoline analyses detected concentrations of 7.6 to 19 milligrams per kilogram (mg/kg). Benzene, toluene and xylenes were also detected slightly above the laboratory detection limit. Review of the analytical laboratory chromatograms suggested both fuel oil and gasoline sources for the petroleum detected. No groundwater samples were collected. Soil contamination was summarized as occurring between 2 to 14.5 feet bgs. It was estimated that at least 300 cubic yards of petroleum-impacted sandy fill soil remained in-place beneath the site in 1994.</p>

VI. Property and Nearby Property Land-Use History

Property Land-use History

Historical information sources reviewed are listed in Section 5.0 of the report and copies of most are included in Appendix C or E.

Current Use(s) of the Property: Property is currently vacant, although some areas are utilized for seasonal storage of road sweepings and excess snow; storage of pallets, drums and two semi trailers. The Property is also utilized for Bayfront Park's overflow parking.

Original Property development (year/use): Historical maps show no development of the property prior to approximately the 1860s, at which time the Property was in a nearshore swamp or wetland area in the embayment of the St Louis River located south of a large sand and gravel spit extending from the Minnesota shore of Lake Superior toward Superior, Wisconsin (Ref. 1g, 5h).

Chronology of Property use/ownership:

The following general ownership and use information is summarized from Barr's 2004 Phase I ESA which utilized historical fire insurance maps, aerial photographs, reverse city directories, and site visit. Information sources as listed in the Reference Resources section of that summary.

- 1888 Slip 2: Bowen and Bartlett Storage and warehouse, planked dock on piles, Duluth Roller Mill, Chicago, St. Paul, Mississippi and Omaha Railroad (CSPM&O RR)
Slip 3: Warehouse, Limestone Dock
- 1908 Slip 2: Northern Pacific Railroad, CSPM&O RR, iron clad dock

- Slip 3: City Dock Company, Lime Stone Mill
 Slip 4: platted. No structures on Slip 4 property – water only
- 1950 Slip 2: Northern Pacific Railroad, CSPM&O RR, iron clad dock and planked dock
 Slip 3: Cutler-Magner Warehouse (on wood posts), Stone Yard, Cement Storage and Shipping, Lime Kilns, Western Electric, Heating and Ice Plant
 Slip 4: National Carloading Corp., Oil Warehouse
- 1955 Slip 2: Northern Cold Storage, Northern Pacific Railroad, CSPM&O RR, Fish House
 Slip 3: Huron Portland Cement, Cutler-Magner Co. Warehouse, Stone Yard, Lime Kilns, Telephone Supply, Western Electric, Heating and Ice Plant
 Slip 4: National Car Loading Corporation on the west (an apparent warehouse with railroad sidings) and Duluth Terminal and Cold Storage on the east (warehouse), Oil Warehouse, private garage
- 1963 Slip 2: Northern Pacific Railroad, CSPM&O RR, Northern Cold Storage
 Slip 3: Huron Portland Cement, Cutler-Magner Co. Warehouse
 Slip 4: Duluth Terminal and Cold Storage, National Carloading Corp.
- 1969 Slip 2: Northern Pacific Railroad, CSPM&O RR
 Slip 3: Huron Portland Cement, Cutler-Magner Co. Warehouse
 Slip 4: Structures as of 1963 remain. The head of Slip 4 appears to have been filled and a structure is present at the northwest end of Slip 4 (possible warehouse construction).
- 1972 Slip 3: Cement plant remains in use along Slip 3.
 Slip 4: Approximately one-third of Slip 4 appears to have been filled. A 3-4 story building, parallel with Railroad Street, is located at the head of the filled slip (Gamble Robinson Whole Sale Food, 800 West Railroad Street and Jenos Inc. food production manufacturers, 824 West Railroad Street).
- 1975 Slip 4: Entire Slip 4 has been filled. Buildings remain the same as in 1972 except that the car loading and cold storage warehouses are no longer present.
- 1991 and 1997: Foundation slab present for former warehouse parallel with Railroad Street at the north end of Block 12. No buildings remain on Slip 4 area.

Filling appears to have occurred during a time when the piers were being used for private commercial purposes and to create a site for the food company building at 800 to 824 West Railroad Street.

Historical Property Structures

The structures noted above have all been removed, and only remnant foundations remain.

Demolition Debris:

Demolition debris remains on-site. There are remnants of garage doors and piping from the former Jenos building located centrally on Lot D. There are also areas of mixed construction waste used as fill along the water's edge.

Historically there have been many structures on this Property. Most of what remains are the footings and foundations and no walls or roofs.

Current Property Structures, Renovations and Additions

The only building currently on the Property is a garage that was built in 1980.

Its dimensions are 30 feet X 50 feet.

Renovation Debris: *Not applicable*

Building Additions: *Not applicable.*

Nearby Property Land-Use History

- Northeast Historical Use:** Former boat slip 2 with industrial port land beyond- The northern side of slip 2 generally used for various warehouse and docking operations. The southern side of slip 2 generally a large warehouse and docking facility from 1880s through 1969. Food Service of America occupied the northeast end of the pier from approximately the 1970s until the 1990s. Food Service of America had a leaking underground storage tank which is discussed in the regulatory review section.
- Current Use:** Vacant boat slip with Bayfront Park and gravel surface parking lot beyond.
- Southwest Historical Use:** Slip 4 was located approximately 350' southwest and parallel to Slip 3. There was a freight loading depot and rail traffic.
- Current Use:** Cutler-Magner is a salt packaging facility. Stockpiles of salt are also stored on their property.
- Southeast Historical Use:** Duluth Harbor
- Current Use:** Duluth Harbor
- Northwest Historical Use:** Railroad Street and rail yard/tracks beyond.
- Current Use:** Railroad Street with tracks and I-35 beyond.

General type of current or past uses in the surrounding areas:

Generally this area has been park land, streets, railway corridor, industrial docks and waterfront land.

VII. Site Reconnaissance

The objective of the site reconnaissance is to obtain information indicating the likelihood of identifying recognized environmental conditions in connection with the property (ASTM 1527-05 Sec 9.1). Existing Property features are shown in the Property layout on Figure 2. Photographs obtained during the Property inspection are in Appendix B.

Date of inspection: March 5, 2010 and March 9, 2010

Name of individual conducting site visit: Eric Dott and Kinnan Stauber

Weather information: Sunny, 30 degrees, light NE wind. Overcast, NE wind, 37 degrees.

Interior Observations

The only intact building on the Property was inspected on a second site visit with a City of Duluth representative. The interior was in fair shape, and is being utilized for storage of scenery and other display items, a boat and trailer. There is no water, sewer nor electricity active for the building.

Features of Current Property Structure(s)

There is only one structure on the Property. It is a garage measuring 30'X50' and located on Lot D near Slip 3.

Unoccupied occupant spaces:

At the time of the site visits the single building was unoccupied and locked.

Exterior Observations

Methodology used to observe the Property: The objective of the site visit was to document the current conditions of the Property. The site walk followed the entire perimeter where accessible, with detours to large former building features and other possible pertinent features. The water in slips 2 and 3 was frozen, and allowed closer inspection of the pier/water interface and fill used. Fig. A-3

Access to the Property (vehicular access and restrictions to public access): Access to Lot D is restricted by a locked gate and fence. Lot C is also fenced and gated.

Periphery of the Property (roads, streets and parking facilities, etc.): Railroad Street runs along the property boundary to the Northwest. There is a driveway through two gates into Lot D, and there is also a driveway through a gate into Lot C. Both of these areas are used as needed for overflow parking from the DECC and Bayfront Park activities.

Ground surface cover (paved, gravel, grass): The ground surface is variable. Much of Lot D is asphalt covered, and other areas are mostly gravel with little plant growth visible. There are still snow and ice/water covered areas that could not be assessed.

Visible evidence of filling, excavation, or burned areas: The entire waterfront in this area is built on imported fill. Newer fill was noted at the Northwest end of Slip 3.

Visible evidence of vegetative stress: Much of the areas with vegetation showing were also still snow-covered. Plants showing were dormant due to winter conditions..

Pits, ponds, lagoons, and standing surface water: Much of the area was still snow-covered or had standing water or ice. This made for many more areas of ponding that may not be present year around.

Stained soil or pavement: The only staining visible was an area of pavement where barrels had been spray-painted (Appendix B, photo 11).

Wastewater, stormwater, and other visible liquid discharge points into a pipe, ditch, stream or adjoining property: None noted.

Indications of past uses of the Property likely to involve the use, treatment, storage, disposal or generation of hazardous substances or petroleum products: None found.

Nonpotable/process wells: No wells were observed.

Pipelines across or into Property: There was only one pipeline marked, and that was between the Property and Railroad Street. Visual evidence shows this to be a gas pipeline.

Rail lines: Remnant rail lines still come across Railroad Street into Lot C.

Transformers: Several transformers were noted. There is a pole-mounted transformer next to Railroad Street, and there are seven on one pole on 8th Ave. W. Also on 8th Ave W. is a set of two pad-mounted transformers, and there is an electric transformer shed just to the south of that on the adjacent former LaFarge property.

Outdoor Chemical Storage Areas/Drums: There is an area of drum storage south of the large foundation on Lot D. The majority of the stored drums appear to be upside down and empty.

Odors: None were noted.

VIII. Interior and Exterior USTs and ASTs

No evidence of underground storage tank (UST) or above ground storage tank (AST) installations were observed during the inspection. No UST or ASTs are registered for the Property based on the regulatory report (Appendix D).

IX. Current Property Waste Management

There appears to be no current waste service at the Property as the facility is vacant and unoccupied.

X. Interviews with Owners/Occupants

The objective of interviews is to obtain information indicating recognized environmental condition in connection with the property (ASTM 1527-05 Sec 10.1). Interview questionnaires are in Appendix F. Especially relevant information from the interviews is included and documented throughout the Assessment report and Appendix A.