

RESOLUTION NUMBER 7699

WHEREAS, the City of Beatrice, Nebraska, desires to apply for federal assistance from the 2026 United States Environmental Protection Agency (“EPA”) Brownfield Grant Program for the purpose of requesting funding for site cleanup and remediation at the Dempster’s Site, located at 711 South 6th Street, Beatrice, Nebraska.

NOW, THEREFORE, BE IT RESOLVED BY THE MAYOR AND CITY COUNCIL OF THE CITY OF BEATRICE, NEBRASKA:

SECTION 1. That the Mayor, City Attorney, and City Clerk be authorized and are hereby directed to execute the application for federal assistance, and any other official project documents necessary to obtain such assistance, including any agreement, contracts, or other documents that are required by the 2026 United States Environmental Protection Agency (“EPA”) Brownfield Grant Program.

SECTION 2. That all resolutions or parts of resolutions in conflict herewith are hereby repealed.

RESOLUTION PASSED AND ADOPTED this 5th day of January, 2026.

Attest:


Erin Saathoff, MMC, City Clerk


Robert Morgan, Mayor

Analysis of Brownfields Cleanup Alternatives (ABCA) – Preliminary Evaluation
Dempster Industries – Gage County Parcel 014509000
Beatrice, NE

Prepared for the City of Beatrice

I. Introduction and Background

a) Site Location

The former Dempster Industries manufacturing facility is located at 711 South 6th Street in Beatrice, Nebraska. Dempster Industries is comprised of five parcels. The parcel subject to this ABCA is the Eastern Section of Gage County Parcel 014509000. This parcel contains the bulk of the manufacturing buildings and lies adjacent to Highway 77/South 6th Street, which is the main thoroughfare through the City of Beatrice and is one of the first parcels seen when entering the City of Beatrice from the south.

b) Forecasted Climate Conditions

The Site is located in the EPA's climate designation of the Great Plains. The Great Plains extend the entire north-south length of the United States from Canada across to Mexico. The region includes a wide range of ecosystems, seasonal temperatures, and precipitation averages. The Central Great Plains are experiencing rising temperatures, leading to more frequent and intense heatwaves. This can have implications for water resources, energy demands, and overall ecosystem health.

According to the National Oceanic and Atmospheric Administration National Centers for Environmental Information, extreme precipitation events are projected to increase in the State of Nebraska, leading to increased runoff and flooding.

According to Federal Emergency Management Agency Flood Zone Map 31067C0313C, portions of the Site are located within Zone AE of the Big Blue River, which is in the Regulatory Floodway of the Special Flood Hazard Areas. Extreme weather events and increased flooding would have the most significant impact to the Site.

According to the City of Beatrice zoning regulations, the Site is located in Zones GI/FF, which are defined as the General Industrial District and Floodway Fringe District. Park and recreation use within Zones GI/FF are permitted uses by right.

c) Previous Site Use(s) and Any Previous Cleanup/Remediation

Mr. Charles Dempster founded the Dempster Mill Manufacturing Company (Dempster) in 1878. Dempster operated for over 100 years and was one of the longest running wind-powered water pump manufacturers in the country. Dempster was responsible for introducing alternative energies in the form of wind power for sustainable agriculture. During

World War II, Dempster significantly contributed to the war effort by producing over 1.5 million 90-millimeter shells, while also continuing to manufacture farm equipment to support the domestic food supply.

The Dempster family owned the company until it was purchased by Warren Buffet in 1961. A group of investors purchased the company from Mr. Buffet in 1963 and changed the name to Dempster Industries, Incorporated. The company was purchased by a private individual in 1985 and by Mr. Wallace Davis in 2008 who changed the name to Dempster Industries, Inc.; Dempster Industries, Inc. went bankrupt shortly after. The property was abandoned, leaving behind a massive eyesore and source of significant environmental contamination. The industrial facility included a foundry, blacksmith shop, machine shop, and metal galvanizing shop that are the source of much of the contamination on and off site. The City of Beatrice took ownership of the property to begin visioning, cleanup, and redevelopment measures.

In March 2021 a fire was intentionally set by trespassers within a trailer outside a loading dock. The fire spread to one of the main manufacturing buildings and caused considerable damage. As a result of the fire, the main building had become structurally unsound. The City of Beatrice removed asbestos-containing materials from the building and deconstructed the building due to safety concerns.

d) Site Assessment Findings

September 2017 – Phase I Environmental Site Assessment

In 2017 the City of Beatrice reached out the Nebraska Department of Water, Energy, and Environment (DWEE) Section 128(a) Brownfields Program for assistance with environmental assessment work. A qualified environmental professional (QEP) under contract with DWEE completed an ASTM E1527-13 complaint Phase I Environmental Site Assessment (ESA) dated September 11, 2017. The Phase I ESA identified several Recognized Environmental Conditions (RECs) at Dempster Industries, including:

- Staining observed on the concrete floor below a hydraulic test bench, an equipment area, and a forge shop.
- Four diesel above ground storage tanks.
- A hazardous material storage area and an oil storage area.
- Two 55-gallon drums, labeled as semi-synthetic coolant, with rusty, expanded bottoms.
- Observed releases from a 5-gallon bucket and two steel drums.
- Several floor drains and two sumps that connect to a storm sewer in a basement that discharges to a drainage way on the adjacent southwest property.
- Two concrete containment pits. An oily sludge was observed in one pit and an unknown liquid was observed in the other.
- The historical use of the property as an industrial facility since 1898.
- The Site is listed in the State Hazardous Waste Site and Superfund Enterprise Management System Archive databases for a dump site to the southwest.
- An upgradient leaking underground storage tank site.

Numerous Phase II ESAs were completed to identify and characterize the contaminants present in soil, soil gas, groundwater, and building materials. **For the purposes of this ABCA, only contaminants identified on the parcel subject to this grant proposal will be discussed.**

January 2018 – Phase II Environmental Site Assessment

In January 2018 DWEE tasked the same QEP to complete an ASTM E1903-11 compliant Phase II ESA to assess any releases to the environment in relation to the RECs identified in the Phase I ESA. As part of the Phase II ESA, five groundwater samples and 14 discreet soil samples were collected. The soil samples were analyzed for Resource Conservation and Recovery Act (RCRA) metals, polycyclic aromatic hydrocarbons (PAHs), total extractable hydrocarbons (TEHs), and volatile organic compounds (VOCs). All 14 soil samples had arsenic concentrations exceeding the DWEE residential Voluntary Cleanup Program (VCP) Remediation Goal (RG) for direct contact. Of those 14 samples, the concentration in seven samples exceeded the average natural background concentration for Gage County, Nebraska; and the concentration in one sample exceeded the industrial VCP RG for direct contact by four orders of magnitude. Five sample locations contained several PAHs within various depths at concentrations exceeding both residential and industrial VCP RGs. One soil sample contained TEHs as diesel fuel and waste oil exceeding the Risk Based Screening Levels for surface soil. One groundwater sample contained naphthalene, and another contained lead above DWEE VCP RGs for direct contact.

June 2018 – Supplemental Phase II Environmental Site Assessment and Asbestos-Containing Materials (ACM) Survey

In June 2018 DWEE tasked the QEP to complete a supplemental ASTM E1903-11 compliant Phase II ESA to delineate the contamination discovered on site, as well as an ACM Survey. The Phase II ESA consisted of five-point composite samples from two locations that were analyzed for RCRA metals; five groundwater sampling locations, including one off-site in the upgradient direction that were analyzed for PAHs, TEHs, and VOCs; 20 discrete soil sampling locations that were analyzed for RCRA metals, PAHs, TEHs, and VOCs; and 11 exterior soil gas samples analyzed for the full suite of VOCs.

Both composite samples had arsenic concentrations exceeding both the residential VCP RG and the average natural background concentration for Gage County. One composite sample contained lead at a concentration exceeding the residential VCP RG, and the other composite sample had lead at a concentration exceeding the industrial VCP RG. One of the groundwater samples had several PAHs and VOCs exceeding their respective direct contact VCP RGs and/or residential vapor intrusion from groundwater VCP RGs. Contaminants in groundwater were detected down to a depth of at least 21 feet below ground surface (bgs). Ten of the discrete soil samples contained arsenic at concentrations exceeding both the residential VCP RG and the average natural background concentration for Gage County. Additionally, the concentration of arsenic in three of the samples exceeded the industrial VCP RG. Lead concentrations exceeded the residential VCP RG at three of the soil sample locations and the industrial VCP RG in two of the sample locations. Contamination was detected down to a depth of at least five feet bgs. Several PAHs were detected in eight of the discrete soil samples

exceeding the residential VCP RGs for direct contact. Contamination was detected down to a depth of at least ten feet bgs. Naphthalene was detected in two of the soil gas samples, and benzene was detected in one soil gas sample at concentrations exceeding their respective residential VCP RGs.

The ACM Survey identified numerous building materials testing positive for asbestos.

February 2021 – Phase I Environmental Site Assessment

In 2021 the City of Beatrice requested a new Phase I ESA to satisfy environmental due diligence requirements prior to purchasing the site. The Phase I ESA identified the following RECs:

- Historical data sources show that the site has been occupied by an industrial facility since at least 1889. The facility included a foundry, blacksmith shop, machine shop, and metal galvanizing shop. Oil, gasoline, and coal storage is documented at the site.
- Soil and groundwater contamination above applicable regulatory screening levels was identified at the site and southwest adjoining property during a Phase II investigation in 2018.
- Based on the consistent presence of free phase petroleum product, unknown extent of contamination, and the upgradient proximity to the site, there is a potential for groundwater and/or soil gas contamination associated with the Rhen Marshall Inc. facility to migrate onto the site.

Recognized Environmental Conditions Specific to the parcel subject to this ABCA

- A hydraulic test bench was observed near the current assembly area on the main floor of Building 5. Evidence of a release was observed on the concrete floor below the equipment.
- A compressor machine was observed in Building 6. Evidence of a release was observed on the concrete floor below the machine.
- Four diesel aboveground storage tanks (ASTs) were observed. Three ASTs are in Building 4 contained in a concrete room. Two ASTs have a capacity of 10,000 gallons, and the third AST has a capacity of 500 gallons. The fourth AST is in the basement of Building 6. This AST has a capacity of 1,000 gallons. The contents and quantity are unknown, but a strong odor was present. The AST was located behind a concrete wall and has a concrete floor above it. The AST can only be viewed through two small openings. The area below the AST could not be observed.
- There are two main drum storage areas on the site: a hazardous material storage area in Building 3 and the attached shed storage area in Building 4.
- Several floor drains were observed throughout the site. The drains are piped through the building and are connected to the storm sewer in the basement of Building 6. The storm sewer discharges to a drainage way southwest of the site. One sump was

observed in Building 5. Staining was observed on the floor in the area around the floor drains.

- Fifteen pad-mounted transformers were observed during the site reconnaissance. Eight transformers and one capacitor are in Building 4, and seven transformers are in Building 6. These transformers are known to contain polychlorinated biphenyl (PCB) oil. Transformers were knocked over and stripped of copper by vandals, releasing the liquid material they contained. Staining and strong odor was observed in Buildings 4, 6, and in the basement of Buildings 6 and 7 where the oil leaked through the floor and flowed down to the wall.
- Soil staining was observed below the former equipment location in Building 1 and in Building 2.
- Standing liquid/water was observed in the main AST containment room in Building 4, and free product was observed floating in a trough below hydraulic fluid barrels in Building 4. A sheen was observed at both locations.
- Three concrete containment pits were observed on the site. An oily sludge was observed in the containment pit in Building 2 and unknown liquid filled the containment pits in Building 6, indicating a release occurred.

DWEE reported the transformer release to the U. S. Environmental Protection Agency (EPA) Toxic Substances Control Act (TSCA) program. Due to the release or threat of release of PCBs at the site, the TSCA program submitted a memorandum referral to the Superfund & Emergency Management Division (SEMD), which was accepted and signed on June 29, 2021. EPA SEMD issued an Action Memorandum on August 18, 2021, amended on October 19, 2021, to address the PCB waste identified at the site.

June 2021 – Supplemental Phase II Environmental Site Assessment

Due to the release of PCB fluid from the vandalized transformers, the City of Beatrice postponed the purchase of the site and requested a Supplemental Phase II ESA from DWEE. DWEE tasked the QEP to complete an ASTM E1903-19 compliant Phase II ESA to collect soil and wipe samples to analyze for PCBs. The Phase II activities consisted of two discrete soil samples and six wipe samples. PCBs were detected in both soil samples at concentrations of 65,000 micrograms per kilogram ($\mu\text{g}/\text{kg}$) and 34,500 $\mu\text{g}/\text{kg}$. PCBs were detected in all six wipe samples at concentrations ranging from 54 to 484,100 $\mu\text{g}/\text{kg}$.

November 2021 – EPA Removal Action #1

On November 1, 2021, two EPA On-Scene Coordinators (OSC), three Emergency and Rapid Response Services (ERRS) contractors, and one Superfund Technical Assessment and Response Team (START) contractor mobilized to the site. PCB-contaminated dielectric fluids were pumped and/or drained from all transformers, capacitors, and associated components. PCB fluids were bulked in 55-gallon steel drums; emptied transformers were palletized and

wrapped; ceramic-top capacitors were consolidated in drums; and all other PCB-contaminated solid waste was packaged in lined and palletized cubic-yard boxes. All wastes were staged inside a locked conex for secure storage pending disposal. Dielectric fluid on flooring inside the two transformer rooms was collected with granular oil sorbent material and bulked for disposal. The flooring was cleaned to the extent practicable, although TSCA confirmation sampling was not conducted.

Further site reconnaissance was conducted during the course of the response action, and other potential Comprehensive Environmental Response Compensation, and Liability Act (CERCLA) hazardous substances that may represent a substantial threat of release to the environment were observed. Additional site investigation/removal site evaluation activities were proposed to further assess site conditions and determine whether additional response actions are warranted.

April 2022 – EPA Removal Site Evaluation

In April 2022 EPA conducted a removal site evaluation to inventory containers and sample pits and free materials at the site. The EPA identified approximately 500 small containers (8 ounces to less than five gallons in size), 70 5-gallon containers, 25 drums less than 55 gallons, 20 55-gallon drums, and a partially full 10-cubic-yard vat. The small containers were grouped into suspected waste streams based on labels, if available. All other containers were sampled, field screened, and categorized into like-waste streams for representative sampling. Field screening of containers identified the following waste streams: basic liquids, basic solids, flammable liquids, flammable solids, neutral liquids, neutral solids, organic halides, organic liquids, and organic solids. Bench-scale compatibility tests were conducted prior to waste profile sampling. Field screening of containers identified characteristically corrosive liquids and CERCLA-listed hazardous substances including ammonium hydroxide, tetrachloroethene, phosphoric acid, and sulfuric acid. Laboratory results confirmed that CERCLA hazardous substances and RCRA hazardous waste for tetrachloroethylene, a D039-listed waste are present at the Site. Analysis of a sample collected from the 10-cubic-yard vat indicated the presence of the CERCLA-listed hazardous substances cyanide compounds, o-cresol, m-cresol, and p-cresol.

All of the abandoned containers and the hazardous substances within were stabilized, segregated, and secured during the removal site evaluation. Containers between 30 and 55 gallons were overpacked into 85-gallon steel overpacks, and smaller containers were placed within individual spill containment areas inside. A locked 6-foot chain-link fence was constructed around the spill containment area.

Additional liquid and solid phase samples were collected from three pits and two piles of free materials (piles on unknown solids) observed inside the building. Analytical results from those samples did not indicate the presence of any CERCLA hazardous substances or RCRA hazardous waste that warrant removal. Additional assessment samples of groundwater, surface soil, surface water, and sediment were collected at locations surrounding the site to determine if off-site migrations of contaminants had occurred. Analytical results yielded no significant concentrations of contaminants attributable to the Dempster Industries site in off-

site environmental media.

Two 10,000-gallon ASTs reside inside the building. Analytical samples collected from the tanks yielded chemical constituents native to diesel fuel. The facility has been abandoned since 2018 and has been reported to be in steady decline since the 1970s and is subject to frequent vandalism. Although the ASTs are inside the building, no temperature or weather controls are in place to prevent further deterioration of the tanks and associated piping. Average temperatures in Beatrice range from as low as 18° F in January to as high as 89° F in July. The freeze and thaw of water that has intruded into the sump pit will continue to cause significant deterioration of the piping connected to the tanks. The EPA OSCs assessed the buildings, ASTs, and site drainage and determined a substantial threat for discharge of diesel fuel exists to nearby navigable waters. The site is located approximately 1,000 feet north of the Big Blue River, a major tributary to the Turtle Creek Reservoir and the Kansas River. The EPA opened an Oil Spill Liability Trust Fund project on May 25, 2022, for \$50,000 to initiate actions at the site.

October 2022 through September 2023 – EPA Removal Action #2

On October 18, 2022, one OSC, one START contractor, and five ERRS contractors mobilized to the site to begin removal operations including receipt of overpack drums and heavy equipment.

On October 19, 2022, ERRS personnel overpacked seven 55-gallon drums that remained on the second floor of the facility. Once overpacked, the drums were then brought to ground level through a 2nd story bay door using a telehandler. ERRS personnel then overpacked the remaining containers less than 55 gallons in volume. During operations, START personnel documented container packaging and ensured that like wastes were packaged together. All overpacked wastes were then placed inside containment and secured behind a locked chain-link fence. In addition, ERRS personnel began preparations for work to clean out the 10-yard vat.

On October 20, 2022, ERRS crews began removal of 19 55-gallon drums inside of the 10-yard vat. Each drum was overpacked in a lined 85-gallon overpack. Approximately 250 gallons of creosote tar remained in the bottom of the 10-yard vat that had leaked from the drums. That material was scraped from the vat and placed in 85-gallon overpacks. Diesel and gasoline were used as a solvent during operations to clean the vat and keep the bucket of the mini excavator from becoming heavily contaminated with the tar.

On October 21, 2022, ERRS crews staged all overpacked wastes inside the containment area and behind the locked chain-link fence. All equipment and personnel demobilized.

On May 23rd and 24th, 2023, the nonhazardous containers of waste were loaded onto a truck for transportation to an offsite approved disposal facility. The remaining small containers were inventoried for appropriate lab packaging and profiling in accordance with disposal facility policy.

On June 5th, 2023, the proposed disposal facility received regional offsite policy clearance to receive the shipment of remaining containers.

During the week of September 11, 2023, the prime and subcontractor personnel met at the site to complete loading of the hazardous materials for transport and disposal. The remaining solid wastes from the storage and packaging were loaded into a roll-off for local landfill disposal. The hazardous materials were transported to a storage facility prior to secondary shipping to the final disposal at a Heritage Environmental operated incinerator in Michigan.

August 2025 – Phase I Environmental Site Assessment with Soil Sampling

The City of Beatrice reached out to DWEE in 2025 to request a Phase I ESA for Gage County Parcel ID 014665000. This parcel is one of five comprising Dempster Industries, and the final parcel that was not yet owned by the City of Beatrice. Due to the recent arson in a building that contained ACM, DWEE offered to contemporaneously collect surficial soil samples at locations near the main industrial building where the fire occurred. The soil sampling consisted of 20 ten-point composite samples collected from the top 1-inch of soil. All soil samples tested negative for asbestos fibers.

e) Project Goal

The City of Beatrice aims to transform the remediated land into a vibrant community asset—a multi-purpose park that will enhance quality of life, promote health and wellness, and align with the broader revitalization plans for the city. The proposed park will include a fitness course, canoe dock, soccer fields, lighted baseball fields, and solar-powered benches and picnic tables, creating a dynamic hub for recreation and community gatherings.

II. Applicable Regulations and Cleanup Standards

a) Cleanup Oversight Responsibility

The DWEE will be the entity overseeing the cleanup of arsenic, lead, and PAHs in soil, while all PCB remediation will adhere to the self-implementing procedures and notification requirements outlined in 40 CFR 761.61. The city plans to enroll the property into the DWEE VCP for environmental guidance and oversight throughout the remediation process. Cleanup standards will be compared to the residential/recreational DWEE VCP RGs for direct contact in soil. In addition, all documents prepared for this site are submitted to the DWEE under Facility ID 23051 and made available to the public via DWEE's online public database.

b) Cleanup Standards for Major Contaminants

Residual contamination requires remediation or mitigation for protection from direct contact with arsenic, lead, PAHs, and PCBs in soil. The city will use the residential/recreational DWEE VCP RGs for the cleanup standards for lead, PAHs, and PCBs, and the natural background concentration for Gage County for arsenic.

Although the ESAs completed for the site identified contaminated groundwater and soil gas, these RECs do not pose an imminent threat to human health and the environment based on the following information:

Groundwater

The Site has been classified as a Remedial Action Class-3 (RAC-3) by DWEE. The RAC-3 category includes sites where groundwater has little or no potential to be used as a public or private drinking water supply and is justified based on a combination of factors, including: the water is of such poor quality that it is unfit for human consumption; there is insufficient yield; the groundwater has been rendered unsuitable for drinking and uneconomical to treat; and/or the groundwater is in areas of concentrated industrial development and is likely to be contaminated.

In 1994, the city of Beatrice adopted changes to its municipal codes prohibiting private domestic wells in the city. All registered wells within 2,000 feet of the site are for groundwater monitoring purposes or heat pump use only. The city wellhead protection area is about four miles northwest of the city. The closest domestic wells present at the time the city adopted changes to the municipal code are about 2,000 feet southwest of the Site, across the Big Blue River.

Based on the aforementioned information, the exposure pathway for contaminated groundwater is incomplete; therefore, no contaminated groundwater will be addressed with this cleanup funding. Remedial activities will include an Environmental Covenant to prohibit the use of underlying groundwater.

Soil Gas

Future use of the site is green space/recreational use with no development of enclosed structures. The exposure pathway for vapor intrusion is incomplete; therefore, no soil gas contamination will be addressed with this cleanup funding. Remedial activities will include an Environmental Covenant to restrict the use to green space/recreational use only with no enclosed structures.

c) Laws and Regulations Applicable to the Cleanup

At a minimum, the regulations or codes that may apply to the cleanup activities include the following:

- Resource Conservation and Recovery Act
- Toxic Substances Control Act
- 40 CFR 761
- Department of Transportation, Hazardous Materials Regulations
- Occupational Safety and Health Act, Hazardous Waste Operations and Emergency Response Standard and applicable Safety and Health Regulations for Construction.
- Remedial Action Plan Monitoring Act, Nebraska Revised Statute 81-15, 181-188
- DWEE Title 128 – Nebraska Hazardous Waste Regulations
- DWEE Title 132 – Integrated Solid Waste Management
- DWEE Title 178 – Environmental Health
- City of Beatrice, Nebraska Code of Ordinances, Chapter 22 – Solid Waste
- City of Beatrice, Nebraska Code of Ordinances Article Four – Zoning District

Regulations

- City of Beatrice, Nebraska Zoning Ordinance, Article Five – Special and Overlay Districts

The DWEE has also issued a policy directive entitled Investigation-Derived Waste and Remediation Waste Consideration (Revised January 2025). This policy applies to the “active management” of waste materials generated during an environmental investigation or remediation project and specifies stringent waste management requirements.

All waste material that will be transported or discharged off the site must be conducted in compliance with regulations listed above.

In addition, all appropriate permits (e.g., 811, soil transport/disposal manifests) will be obtained prior to work commencing.

III. Evaluation of Cleanup Alternatives

Alternatives will focus on soil remediation and include capital costs related to soil excavation and disposal.

a) Cleanup Alternatives Considered

Three different alternatives were considered to address contaminated soil at the site, including:

- **Alternative #1 – No Action**
- **Alternative #2 –** Excavation and disposal of contaminated soil exceeding proposed cleanup standards to a depth of **two feet below ground surface (bgs)**; placement of a visual demarcation layer at the base of excavation; confirmation sampling of excavated side walls for verification of contamination removal; backfilling the excavation with 20 inches of clay-rich backfill and four inches of topsoil; and implementation of an Environmental Covenant (EC). The EC will impose the following Activity and Use Limitations (AULs).
 - Prevent groundwater use.
 - Maintain the protective soil cap.
 - Restrict land use to parks, greenspace, and recreational use.
 - Adhere to a DWEE-approved Materials Management Plan (MMP) for any necessary subsurface work required below the demarcation barrier. The MMP will be used to guide proper waste handling, characterization and disposal; repairs to the demarcation layer and clay/soil cap; and to inspect and repair any damage to the cap following flooding events.
- **Alternative #3 –** Excavation and disposal of contaminated soil exceeding proposed cleanup standards down to a depth of **15 feet bgs***; confirmation sampling of excavated side walls of the excavation in areas where the vertical extent is not

defined; backfilling the excavated areas with clay rich backfill and four inches of topsoil; and implementation of an Environmental Covenant. The covenant will impose the following AULs:

- Prevent groundwater use.

**DWEE considers excavation of contaminated soils to a depth of 15 feet suitable for unrestricted use. Excavations required for utility installations generally do not occur below this depth; therefore, exposure to any residual contamination below 15 feet is not likely.*

b) Evaluation of Cleanup Alternatives

Effectiveness – Including Climate Considerations

- **Alternative #1** – This alternative is not effective in controlling or preventing the exposure of receptors to contamination at the site, particularly in light of the site’s location in a flood plain. Frequent flooding and extreme weather events may cause contaminated surface soils to be carried offsite as the water recedes.
- **Alternative #2** – This alternative is an effective way to prevent receptors from coming into contact with contaminated soils if the soil cap and demarcation barrier are properly maintained. Long-term effectiveness would be achieved through implementation of the Environmental Covenant and the Materials Management Plan. This alternative is also effective for the proposed reuse plan. Based on the location within the 100-year flood plain, additional engineered measures may be required to maintain the integrity of the cap.
- **Alternative #3** – This is an effective way to prevent receptors from coming into contact with contaminated soils. Based on the location of the site within the 100-year flood plain, this alternative is more effective than Alternative #2. The additional excavation and backfill would make ongoing cap maintenance unnecessary.

General Climate Consideration Notes:

Park design planning will consider best management practices regarding green infrastructure in parks and other engineering controls to limit the amount of flood water pooling at the Site.

Implementability

- **Alternative #1** – This alternative is easily implemented because no actions will be completed.
- **Alternative #2** – This alternative is relatively easy to implement, as an excavation depth

of two feet is easily managed. The ongoing monitoring and maintenance of the cap that will be outlined in the Materials Management Plan will require periodic coordination and reporting to the DWEE to effectively control the site and future development. The time required to complete the monitoring, maintenance, and reporting would not be particularly time-consuming. Most maintenance activities would occur following a 100-year flood event.

- **Alternative #3** – This alternative will be more difficult to implement than Alternative #2 due to the substantial amount of excavation that will be required to achieve unrestricted use. This alternative also needs to consider potential landfill volume limitations.

Cost

- **Alternative #1** – There will be no cost under this alternative.
- **Alternative #2** – The estimated cost to complete Alternative #2 is approximately \$3,926,662.75.
- **Alternative #3** – For the purposes of this ABCA, Alternative #3 was liberally estimated to assume that excavation of 15 feet bgs will be required for the entire site. (Contamination may not extend to this depth across the Site, which would significantly decrease the total project cost.) Estimated cost to complete this alternative is \$18,924,630.75.

c) **Recommended Cleanup Alternative**

The recommended cleanup alternative is **Alternative #2**. No action associated with Alternative #1 cannot be recommended because it does not address the site risks. The substantial amount of excavation, analytical, waste hauling, and backfill costs associated with Alternative #3 makes this alternative financially unfeasible. Additionally, Alternative #3 needs to consider potential landfill volume limitations. Alternative #2 prevents exposure to residual contamination and allows for the productive reuse of the property at a fraction of the cost.

Green and Sustainable Remediation Measures for Selected Alternative:

The city plans to ask bidding cleanup contractors to propose green remediation techniques, such as those outlined in *ASTM E2893 – Standard Guide for Greener Cleanups* in their response to the Request for Proposals for the cleanup contract. The city will also be soliciting feedback from community members during the scheduled Public Meeting regarding preferred greener cleanup practices.

Dempsters Cost Estimate – Two-foot Excavation and Back Fill Costs

Item	Unit	Quantity	Unit Rate	Total Cost
Site Mobilization	LS	1	\$125,000	\$125,000
DWEE Voluntary Cleanup Program Oversight Costs	LS	1	\$25,000	\$25,000
Traffic Control for Construction	LS	1	\$25,000	\$25,000
Environmental Oversight	LS	1	\$150,000	\$150,000
Hazardous and Toxic Waste Excavation, Hauling and Disposal	TON	300	\$303	\$90,895
Special Waste Excavation, Hauling, and Disposal	TON	23,000	\$43	\$989,000
Building Demo Bid	LS	1	\$1,000,000	\$1,000,000
Landfill Fees	LS	1	\$150,000	\$150,000
Environmental Cap - Clay (Fill)	CY	17,100	\$24	\$416,377
Environmental Cap - Topsoil (Fill)	CY	3,400	\$31	\$104,294
Visual Barrier	AC	6.4	\$7,000	\$44,800
SWPPP Controls	LS	1	\$20,000	\$20,000
Waste Characterization and Decontamination Sampling	LS	1	\$350,000	\$350,000

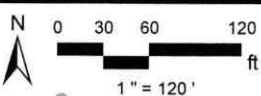
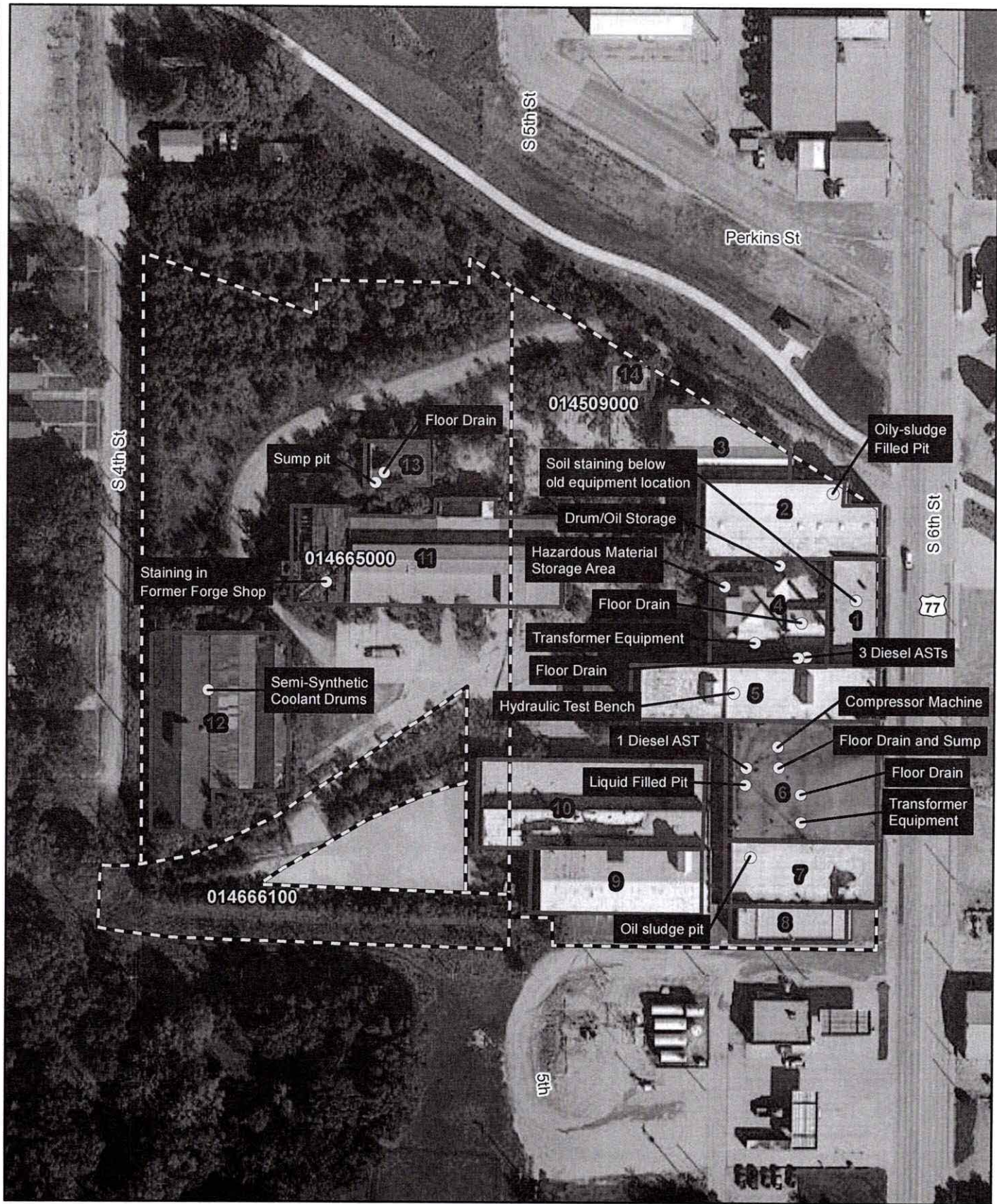
Total	\$ 3,490,366.00
Contingency 12.5%	\$ 436,295.75
Grand Total	<u>\$ 3,926,661.75</u>

Dempsters Cost Estimate – Fifteen-foot Excavation and Back Fill Costs

Item	Unit	Quantity	Unit Rate	Total Cost
Site Mobilization	LS	1	\$206,150	\$206,150
DWEE Voluntary Cleanup Program Oversight Costs	LS	1	\$25,000	\$25,000
Traffic Control for Construction	LS	1	\$25,000	\$25,000
Environmental Investigation and Oversight	LS	1	\$250,000	\$250,000
Hazardous and Toxic Waste Excavation, Hauling and Disposal	TON	2,250	\$303	\$681,750
Special Waste Excavation, Hauling, and Disposal	TON	172,500	\$43	\$7,417,500
Building Demo Bid	LS	1	\$1,000,000	\$1,000,000
Landfill Fees	LS	1	\$1,125,000	\$1,125,000
Environmental Cap - Clay (Fill)	CY	165,300	\$24	\$3,967,200
Environmental Cap - Topsoil (Fill)	CY	3,400	\$31	\$104,294
SWPPP Controls	LS	1	\$20,000	\$20,000
Waste Characterization and Decontamination Sampling	LS	1	\$2,000,000	\$2,000,000

Total	\$	16,821,894.00
Contingency 12.5%	\$	2,102,736.75
Grand Total	\$	<u>18,924,630.75</u>

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olsson

- Recognized Environmental Condition
- Property
- Area purchased previously and not included in this Phase I ESA.
- Building w/ ID Number (Determined by Order of Site Recon Visit)

Dempster Industries
 Beatrice, Nebraska
 Olsson Project No. 021-01831
**Building Identification and
 REC Location Map**
 Figure 3