November 2, 2017

Mr. Dennis Marker
City of Caribou
25 High Street
Caribou, Maine 04736

RE: Updated/Draft Analysis of Brownfields Cleanup Alternatives | Former Birdseye Plant
27 Birdseye Avenue, Caribou, Maine

Mr. Marker:

CES, Inc. (CES) has updated an Analysis of Brownfields Cleanup Alternatives (ABCA) for the former Maine Frozen Foods Property located on Birdseye Avenue in Caribou, Maine (the Site). The original ABCA was submitted on January 22, 2015. Since this submission, additional activities have taken place onsite which have changed site conditions and characteristics. This ABCA update addresses those changes and provides current options for remedial alternatives. The purpose of this ABCA is to develop, evaluate, and recommend remedial alternatives to reduce the risk of human exposure to contaminants identified in surficial soils at concentrations exceeding respective Maine Department of Environmental Protection (MDEP) Remedial Action Guidelines (RAGs) and/or background concentrations. This ABCA also addresses the threat from asbestos containing materials (ACM) remaining in the site facilities. Contaminated surficial soils (designated within Areas of Concern [AOC] 5, 7 and 8) were characterized during Phase II Environmental Site Assessment (ESA) activities outlined in County Environmental Engineering's (CEE) report entitled *Phase II Environmental Site Assessment, Former Maine Frozen Foods Property, 27 Birdseye Avenue, Caribou Maine,* dated February 25, 2014. Additional characterization and delineation of surface soils in AOC 5 is outlined in a Limited PCB Soil Testing Report, submitted by CES in January 2015. An Asbestos Demolition Impact Survey Report was submitted by CES in January 2015 and a Limited Asbestos Demolition Impact Survey, focusing on the (now demolished) Sand Shed was completed in February 2015. This ABCA develops, evaluates, and recommends remedial alternatives to address impacts associated with the three AOCs and remaining ACM.

The ABCA was updated at the request of the City of Caribou (The City) in order to apply for a Brownfields Cleanup Grant from the United States Environmental Protection Agency (USEPA).

SECTION 1.0 | INTRODUCTION

1.1 Site Location

The Site consists of an approximately 21.62-acres and is located at the southwest corner of the Route 1 and Fort Street intersection in Caribou, Maine. Refer to **Figure 1** for a Site Location Map. Current Site development consists of an 83,600-square foot concrete block industrial building (the Main Production Building), a bioethane building, oil silos and boiler

house. Site developments and location of current structures as well as recently demolished structures (the Frozen Foods Building, a Scale House and Sand Shed) is illustrated on the Site plan included as **Figure 2**. The southwest corner of the property is commonly referred to as the Upper Cooler Yard and the southernmost portion of the property is known as the Boneyard. The Site is identified by the City of Caribou Tax Assessor's Office as Lots 74, 74A, 74B, 74C, and 74E on Tax Map 27, Lot 57 on Map 28, and Lots 2B and 146 on Map 25. A legal description of the property is recorded at the Aroostook County Registry of Deeds in Book 3799 on Pages 193 and 198. According to the deed, the Site property is subject to several easements and rights-of-way. The property is within the Industrial 2 Zone and is currently vacant. According to the *Structural Inspections* report submitted by Criterium Brown Engineers on January 7, 2015, site structures range in condition from fair to poor (dilapidated). Miscellaneous debris is reportedly piled north of the "Boneyard" and unnatural mounding and depressions with partially buried debris has been reported in the wooded area at the southern site boundary. Additionally, records reviewed indicate that public water lines, sanitary sewer lines, and stormwater lines, as well as process waste piping, are located at the Site. Other subsurface structures include a concrete trench west of the former Frozen Foods Building footprint and pits below the floor of the Blast and Freon tunnels and the Plant's pump room.

The area surrounding the Site consists of commercial and residential properties served by municipal water and sewer. Two inactive bedrock wells are located on-site, north and south of the Plant; however, the Site is serviced by municipal water and sewer.

General topography at the Site is flat, with regional topography gradually sloping eastward towards the Aroostook River. The United States Geological Survey (USGS) Caribou, Maine 7.5 Minute Topographic Quadrangle Map includes the Site and surrounding properties and shows the Site is at an approximate elevation of 460 feet above mean sea level. According to the 1985 *Bedrock Geologic Map of Maine*. Bedrock at the Site is identified as interbedded pelite and limestone and/or dolostone of the Spragueville Formation (Sspr). According to the 1985 *Surficial Geologic Map of Maine*, the primary geologic unit in the area of the site is till (t), which is described as a heterogeneous mixture of sand, silt, clay, and stones. According to boring logs included in CEE's Phase II ESA, surficial soils at the Site primarily consist of gravel fill overlying native till.

1.2 Site History

Review of available information indicates that the Site was operated as a vegetable freezing and potato product plant between the years of 1943 and 1991. Prior to development in 1943, the site was reportedly undeveloped farmland.

1.3 Previous Environmental Site Assessments

A Phase I Site investigation performed by County Environmental Engineering (CEE) in July of 2013 reported the following Recognized Environmental Conditions (RECs):

1. Documented contamination in the Boneyard
2. Documented soil contamination in the Upper Cooler Yard
3. Documented soil contamination at the Quonset Buildings
4. Registered #6 Fuel Oil USTs at the Boiler Room
5. Registered #6 Fuel Oil USTs at the High-Pressure Boiler Room

6. Registered Gasoline UST at the Security Office
7. Debris pile north of the Boneyard
8. Partially Buried Debris South of the Boneyard
9. Potential petroleum contamination from offsite-sources to the west
10. Transformers at the northwest corner of the Storage Freezer Building

Based on the findings of the Phase I ESA and identified RECs, CEE concluded that additional assessment and investigation was warranted. Specifically, CEE recommended performing a Phase II subsurface investigation. On November 25 and 26, 2013, CEE performed the following work as part of a Phase II ESA for the Site:

- Collected 15 soil samples;
- Collected six groundwater samples;
- Collected two water samples from off-site downgradient private water supply wells; and
- Collected three transformer oil samples.

Samples collected from the on-site water supply wells, downgradient monitoring wells, and nearest active private water supply wells indicate that groundwater at the site does not exceed the Maine Center for Disease Control (CDC) Maximum Exposure Guidelines (MEGs).

Laboratory analysis of soil samples reported petroleum contamination in site surficial soils above the MDEP Tier 1 leaching to groundwater and direct contact guidelines.

Based on the data collected during this Phase II ESA, CEE recommended the following:

1. Develop a Soil Management Plan for the Site that addresses the identified contamination in accessible soils and potential contamination at depth in the Boneyard and UST areas. See **Figure 2** for a Site Plan depicting the Areas of Concern.
2. Properly secure the on-site water supply wells by capping and locking.
3. On-site debris, partially buried debris, and any remaining universal waste should be managed for disposal or recycling in accordance with Maine Solid and Universal Waste Regulations.
4. Conduct a complete asbestos survey of the entire site prior to reuse, renovation, or demolition.
5. Submit a Voluntary Response Action Program (VRAP) application to the MDEP to obtain liability protections.

Phase II investigations, findings and recommendations summarized above were reported in the *Phase II Environmental Site Assessment – Former Frozen Foods Property, 27 Birdseye Avenue Caribou, Maine* dated February 25, 2014.

Additionally, a review of the Phase II ESA by CES observed that the Polychlorinated Biphenyls (PCB) concentrations identified in the soil samples require notification to the USEPA Toxic Substance Control Act (TSCA) unit and remediation to less than 1 ppm. Based on the findings of the Phase II ESA, additional soil samples were collected by CES to further delineate the extent of PCB concentrations within AOC 5. On December 3, 2014, CES performed the following work as part of a Limited PCB Soil Testing Investigation:

- Collected surficial soil samples (0-6 inches below ground surface) from 10 discrete locations surrounding surface soil location SS08 in AOC 5 from the Phase II ESA.

Need to add a discussion about the results and cite the report. This is why the PCN cleanup is now in the ABCA, although dismissed in the Phase II.

An Asbestos Demolition Impact Survey Report was submitted by CES in January 2015. Completion of the survey included: review of previously completed asbestos-containing materials (ACM) surveys, visual identification of suspect ACM on the interior and exterior of each structure, collection of 75 bulk samples of suspect ACM in accordance with MDEP regulations, and quantification of ACM identified by laboratory analysis. The following ACM were identified by CES:

Main Production Building

- 616 square feet of 9x9 floor tile and associated adhesive;
- 805 linear feet of pipe insulation;
- 60 square feet of water tank end cap insulation;
- 2 cubic yards of ACM debris.

Frozen Foods Building

- 320 square feet of 12x12 floor tile and associated adhesive;
- 42 linear feet of pipe insulation; and
- 3 mud insulated pipe fittings.

Oil Silos

- 1,500 square feet of tank insulation;
- 20 linear feet of pipe insulation; and
- 4 mud insulated pipe fittings.

Boiler House

- 640 linear feet of pipe insulation;
- 2 cubic yards of cementitious wall board debris;
- 1 cubic yard of gasket material; and
- 2 cubic yards of ACM debris.

Scale House

The Scale House roof was not accessible at the time of the assessment due to the presence of built up ice. Suspect ACM was not identified on the interior of the building however, suspect ACM asphalt shingle roofing is present on the exterior of the building and requires future sampling.

Sand Shed

Suspect ACM was not identified on the interior of the building however, suspect ACM asphalt shingle roofing was present on the exterior of the building and required future sampling. At the request of the City, CES conducted a subsequent Limited Asbestos Demolition Impact Survey, focusing specifically on the Sand Shed building. This survey was conducted on February 10, 2015 by a Maine-State certified asbestos inspector. According to the Limited Asbestos Demolition Impact Survey Report, submitted by

CES on February 26, 2015, laboratory analysis did not identify any of the sampled materials collected from the Sand Shed as ACM.

Since this survey was conducted, the Frozen Foods Building, Scale House and Sand Shed have been demolished and no longer exist on the site.

Some quantities of ACM were removed and properly disposed of by Statewide Asbestos Removal between September 24, 2015 and December 14, 2015. Removed ACM consisted of 2,800 square feet of transite/paneling and 60 linear feet of pipe from the Boiler House, and 500 square feet of boiler covering from the Main Production Building.

CES also identified suspect ACM roofing (all site structures) and within debris piles on exterior portions of the Site. Due to the limitations of the survey outlined in CES' report, these materials were unable to be sampled; therefore, a supplemental investigation will be required to characterize these items.

Additionally, as part of the facility assessment, CES attempted to quantify potentially hazardous materials that, upon demolition, may be considered to be hazardous or universal waste. The following items were identified: fluorescent light ballasts, fluorescent light tubes, mercury thermostat, emergency light batteries, sodium vapor lamps, computer monitors, miscellaneous electrical components, a large AST (size and former usage unknown), a 275-gallon fuel oil AST, a 1,000 –gallon Glycol AST, and a 2,000-gallon ammonia AST.

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1.4 REMEDIAL OBJECTIVES

The purpose of this ABCA is to develop, evaluate, and recommend remedial alternatives for: Mitigating the risk of human exposure to PCB and petroleum compounds identified in surficial soils at concentrations exceeding their respective MDEP RAGs and/or background concentration, and identified ACM within or on the interior or exterior of the site structures. The remedial objectives for the AOCs are to minimize the possibility of human and ecological receptor exposure to contaminated soils and/or ACM to facilitate re-use and/or rehabilitation of the existing site structures and development/redevelopment of the property.

Remedial alternatives that do not result in complete removal of contaminated soils will require a deed restriction. The restriction will prohibit excavation activity in areas of known contamination without first notifying MDEP to receive permission.

1.5 REGIONAL AND SITE VUNERABILITIES

According to the US Global Change Research Program (USGCRP), many of the recent global climate trends observed by research institutions and organizations have also been observed in the northeastern US. These trends include average temperature and extreme precipitation. The northeast has experienced a greater recent increase in extreme precipitation than any other region in the US. As such, flooding has become a more common occurrence, especially in coastal communities and communities near rivers.

According to the Federal Emergency Management Agency (FEMA), the Site is located within a Zone C of the Aroostook River, the nearest major water body to the Site. Zone C areas are described as areas of minimal flooding. Although greater flood waters may be observed in the Aroostook river based on the frequency of extreme precipitation events, no recent historical flooding of the Aroostook river has been recorded as impacting the Site.

Since the majority of the site is covered by vegetated and permeable surfaces, stormwater runoff and the potential for erosion is minimal.

Based on the current nature of the property and its potential future use, changes in climate, including temperature and extreme precipitation are not expected to significantly impact the Site.

SECTION 2.0 | EVALUATION OF REMEDIAL ALTERNATIVES

The remedial objectives for this ABCA are to prevent human dermal contact with reported PCB, PAH, and VOC-contaminated soil and to mitigate the potential for human receptor exposure to asbestos fibers.

2.1 CONSIDERED ALTERNATIVES: CONTAMINATED SOIL REMEDIATION

Extractable Petroleum Hydrocarbons (EPH) and Volatile Organic Compounds (VOCs) were identified in site surficial soils at concentrations exceeding MDEP RAGs for direct contact and site background levels in Areas of Concern 7 and 8. PCBs were identified in surficial soils in AOC 5 surrounding the former transformer pad in exceedance of TSCA clean-up guidance concentrations. The primary risk associated with this contamination is direct human contact with the soil. Three (3) remedial options have been identified to meet the remedial objectives for each Area of Concern:

AOC 5 – Transformer Pad at the High-Pressure Boiler Room

Sampling of surficial soils surrounding the former transformer pad identified PCB impacts at concentrations above 1 ppm. Impacts to soil resulted from a source with an unknown PCB concentration; therefore, TSCA rules mandate that the concentration of the unknown source be assumed to be greater than 50 ppm. In this scenario, the only option under TSCA rules is to conduct a focused soil excavation for complete removal of impacted soils and subsequent confirmatory sampling of remaining soil in the removal area.

Option 1 – Focused Soil Excavation and Off-Site Disposal: Surficial contaminated soil within the AOC will be removed to a depth of two (2) feet and disposed off-site at a licensed solid waste facility (Juniper Ridge Landfill in Old Town, Maine). The excavation will be backfilled with clean fill and topsoil, then seeded and mulched.

AOC 7 – Debris Pile North of Boneyard

Option 1 – Focused Soil Excavation and Off-Site Disposal: Surficial contaminated soil within the AOC will be removed to a depth of two (2) feet and disposed off-site at a licensed solid waste facility. The excavation will be backfilled with clean fill and topsoil, then seeded and mulched.

Option 2 – Excavation, On-Site Consolidation and Covering with On-Site Material: Following excavation of a consolidation area at the center of the Site (Boneyard), surficial

contaminated soil within the AOC will be removed to a depth of two (2) feet and placed in the excavation. A marker layer will be placed over the consolidated material and the excavation backfilled with non-impacted fill and topsoil, then seeded and mulched. Any buried debris that is encountered will be excavated and segregated for off-site disposal. A deed restriction would be required as a portion of this option to acknowledge impacted soil as remaining on-site.

Option 3 – "No Action": The Site will remain as currently developed.

AOC 8 – Partially Buried Debris South of Boneyard

Option 1- Focused Soil Excavation and Off-Site Disposal: Surficial contaminated soil within the AOC will be removed to a depth of two (2) feet and disposed of off-site at a licensed solid waste facility. Encountered debris will be segregated and stockpiled for disposal. The excavation will be backfilled with clean fill and topsoil, then seeded and mulched.

Option 2 – Excavation, On-Site Consolidation and Covering with On-Site Material: Following excavation of a consolidation area at the center of the Site (Boneyard), surficial contaminated soil within the AOC will be removed to a depth of two (2) feet and placed in the excavation. A marker layer will be placed over the consolidated material and the excavation backfilled with non-impacted fill and topsoil, then seeded and mulched. Any buried debris that is encountered will be excavated and segregated for off-site disposal. A deed restriction would be required as a portion of this option to acknowledge impacted soil as remaining on-site.

Option 3 – "No Action": The Site will remain as currently developed. A deed restriction would be required as a portion of this option to acknowledge impacted soil as remaining on-site.

These alternatives were selected based upon their 1) implementability, 2) cost associated with completion of the alternative, and 3) effectiveness of the alternative. The estimated costs provided for these options are based on information obtained from a limited number of sources; actual costs may vary based upon bid results.

2.1.1 AOC 5 Option 1: Soil Remediation via Focused Excavation and Off-Site Disposal

A focused soil excavation will be conducted to remove contaminated surficial soils within the AOC as indicated on **Figure 2**. Removal will be to a maximum depth of 2 feet below ground surface. A 2-foot excavation will result in an estimated 75 cubic yards (in-place volume) of contaminated soil requiring disposal. A 2-foot excavation within the footprint of AOC 5 would result in approximately 75 cubic yards of removed soil.

The excavation will then be backfilled with up to 20 inches of clean common borrow covered with a minimum 4-inch-thick topsoil (loam) layer. Disturbed surfaces on the Site will be seeded and mulched.

Effectiveness

This option will meet remedial objectives. Protection of human health and the surficial environment will be achieved by off-site disposal of excavated contaminated soils, with

remaining subsurface soils covered by 24 inches of clean soil. The potential for future direct exposure and migration will be removed from the Site. This option will provide long-term effectiveness and permanence.

Implementation of this alternative could have potential short-term adverse effects on site workers. Risks to site workers during relocation of contaminated soil activities will be minimized by an "awareness training program" and the development and adherence of a site-specific Health and Safety Plan (HASP). The HASP will also address the reduction of potential risks to Site workers during excavation and backfilling activities, as well as during the loading of materials for off-site disposal. Excavation and handling of contaminated soils could result in particulate emissions and must be managed by implementing dust control measures.

Implementability

This alternative uses well-demonstrated and readily available technologies. It is anticipated that excavation, relocation and/or off-site disposal of contaminated soils can be completed safely. An excavation contractor using trained personnel will conduct soil removal, backfill and Site restoration activities.

Removal of contaminated soils will require using both an excavator and hand labor, resulting in a longer than normal construction period. This method will also require establishment of a temporary stockpile location if direct loading of contaminated soils is not utilized.

Site restoration activities will be consistent with existing conditions of both lawn and developed areas. Placement of clean fill, grass cover and mulch will provide erosion and sediment control for excavated areas.

Resilience to Potential Adverse Impacts

Due to the removal of contaminated soils, as well as proper seeding and mulching of the disturbed surfaces, extreme weather events are not expected to significantly impact the Site by using this remedial option.

Cost

Costs for this alternative consist of direct and indirect costs. In determining the cost of this option, the estimated quantity of soil to be removed and disposed off-site was based on the AOC delineated on **Figure 2**. The provided estimate does not consider the cost of future development.

The cost of this work is estimated at $33,000 for AOC 5. **Table 1** summarizes the cost estimate for this alternative.

Table 1 | Option #1 Estimate of Probable Costs for AOC 5

Work Items	Unit Price	Unit	Quantity	Estimated Cost
Mobilize/Demobilize	$2,000.00	Unit	1	$2,000.00
Erosion & Sediment Controls	$1,000.00	LS	1	$1,000.00
Common Excavation (Equipment and Labor)	$12.00	CY	75	$900.00
20" Common Borrow (In-place measure)	$20.00	CY	56	$1,120.00
4" Topsoil (In-Place Measure)	$24.00	CY	19	$456.00
Seed & Mulch	$50.00	UNIT	1	$50.00
Haul and Dispose of Impacted Materials	$150.00	TN	115	$17,250.00
Subtotal				**$22,776.00**
Contingency	15%	% Total		$3,416.40
Health & Safety	1%	% Total		$227.76
Construction Observation	$125.00	Hours	20	$2,500.00
Analytical (PCBs)	$90.00	Each	41	$3,690.00
Estimated Total				$32,610.16
	Estimated Total			**$33,000.00**

2.1.1 AOC 7 Option 1: Soil Remediation via Focused Excavation and Off-Site Disposal

A focused soil excavation will be conducted to remove contaminated surficial soils within the AOC as indicated on **Figure 2**. Removal will be to a maximum depth of 2 feet below ground surface. A 2-foot excavation will result in an estimated 3,200 cubic yards from AOC 7 for a total in-place volume of 4,800 cubic yards (in-place measure)

The excavation(s) will then be backfilled with up to 20 inches of clean common borrow covered with a minimum 4-inch-thick topsoil (loam) layer. Disturbed surfaces on the Site will be seeded and mulched.

Effectiveness

This option will meet remedial objectives. Protection of human health and the surficial environment will be achieved by off-site disposal of excavated contaminated soils, with remaining subsurface soils covered by 24 inches of clean soil. The potential for future

direct exposure and migration will be removed from the Site. This option will provide long-term effectiveness and permanence.

Implementation of this alternative could have potential short-term adverse effects on site workers. Risks to site workers during relocation of contaminated soil activities will be minimized by an "awareness training program" and the development and adherence of a site-specific HASP. The HASP will also address the reduction of potential risks to Site workers during excavation and backfill activities, as well as during loading material for off-site disposal. Excavation and handling of contaminated soils could result in particulate emissions and must be managed by implementing dust control measures.

Implementability

This alternative uses well-demonstrated and readily available technologies. It is anticipated that excavation, relocation and/or off-site disposal of contaminated soils can be completed safely. An excavation contractor using trained personnel will conduct soil removal, backfill and Site restoration activities.

Removal of contaminated soils will require using both an excavator and hand labor, resulting in a longer than normal construction period. This method will also require establishment of a temporary stockpile location if direct loading of contaminated soils is not utilized.

Site restoration activities will be consistent with existing conditions of both lawn and paved areas. Placement of clean fill, grass cover and mulch will provide erosion and sediment control for excavated areas.

Resilience to Potential Adverse Impacts

Due to the removal of contaminated soils, as well as proper seeding and mulching of the disturbed surfaces, extreme weather events are not expected to significantly impact the Site by using this remedial option.

Cost

Costs for this alternative consist of direct and indirect costs. In determining the cost of this option, the estimated quantity of soil to be removed and disposed off-site was based on the AOC delineated on **Figure 2**. The provided estimate does not consider the cost of future development.

The cost of this work is estimated at $405,000 for AOC 7. **Table 2** summarizes the cost estimates for this alternative.

Table 2 | Option #1 Estimate of Probable Costs for AOC 7

Work Items	Unit Price	Unit	Quantity	Estimated Cost
Mobilize/Demobilize	$2,000.00	Unit	1	$2,000.00
Erosion & Sediment Controls	$1,000.00	LS	1	$1,000.00
Common Excavation (Equipment and Labor)	$12.00	CY	3,200	$38,400.00
20" Common Borrow (In-place measure)	$20.00	CY	2,670	$53,400.00
4" Topsoil (In-Place Measure)	$24.00	CY	530	$12,720.00
Seed & Mulch	$50.00	UNIT	44	$2,200.00
Haul and Dispose of Impacted Materials	$45.00	TN	4,800	$216,000.00
Subtotal				**$325,720.00**
Contingency	15%	% Total		$48,858.00
Health & Safety	1%	% Total		$3,257.20
Waste Characterization Samples	$1,000.00	Each	20	20,000.00
Construction Observation	$125.00	Hours	50	$6,250.00
Analytical (EPH & VPH)	$300.00	Each	4	$1,200.00
Estimated Total				$405,285.20
	Estimated Total			**$405,000.00**

2.1.2 AOC 7 Option 2 - Soil Remediation via Excavation and Relocation On-Site

This option requires construction of an area to consolidate impacted surficial soils excavated from the Site. The proposed consolidation area is identified as the Boneyard and is located on the southern portion of the property (refer to **Figure 2**). According to the Phase II ESA, contaminated surficial soils are not present in the area. An estimated 230 foot by 230 foot area, excavated to a depth of 6 feet, would accommodate the 7,825 cubic yards of impacted material anticipated from AOCs 7 and 8, while allowing for replacement of 2 feet of existing clean fill. An excavator will be utilized to load haul-trucks with non-impacted soils for temporary stockpiling onsite until the material is needed for reuse as cover.

Following excavation of the consolidation area to a depth of 6 feet, surficial contaminated soil within the select AOC(s) (refer to **Figure 2**) will be removed to a depth of 2 feet and placed in the excavation. Based on the anticipated available volume, the excavation will

be filled with approximately 2 feet of impacted soil, to approximately 24 inches below ground surface. A marker layer will be placed over the consolidated material and the remaining excavation will be backfilled with approximately 20 inches of previously removed non-impacted soil and 4 inches of topsoil. The topsoil layer will be graded to drain, then seeded and mulched.

The remaining non-impacted soil removed from the consolidation area will be used as 20 inches of backfill within those areas where surficial soils were removed. A marker layer will be placed prior to backfill. This clean soil will be covered with 4 inches of topsoil to match existing grade, then seeded and mulched. Grades will be adjusted as necessary to achieve a balanced cut and fill.

Effectiveness

This option will meet remedial objectives. Protection of human health and the environment will be achieved by relocating impacted soils beneath a soil cover system. The potential for future direct exposure and migration will be minimized at the Site. This option will provide long-term effectiveness and permanence unless unauthorized excavation/disturbance of the covered soil occurs. Institutional controls requiring MDEP approval will be required before conducting activities that may disturb the capped soil.

Implementation of this alternative could have potential short-term adverse effects on site workers. Risks to site workers during relocation of impacted soil activities will be minimized by an "awareness training program" and the development and adherence of a site-specific HASP. The HASP will also address the reduction of potential risks to Site workers during excavation and consolidation activities. Removal and handling of contaminated soils could result in particulate emissions and must be managed by implementing dust control measures.

Implementability

This alternative uses well-demonstrated and readily available technologies. It is anticipated that removal and relocation of impacted soils can be completed safely. An excavation contractor using trained personnel will conduct soil removal and soil cover system construction activities.

The location and final grade of the consolidation area may limit site drainage and development options; although the non-impacted cover soil could be removed and covered with pavement (e.g., driveway/parking area). Future Site redevelopment activities will need to consider that contaminated soils and other environmental concerns (as reported in the Phase II ESA) remain at the Site.

The excavation, handling, and placement of impacted soils will be performed using conventional construction equipment and technologies. Groundwater is estimated at approximately 8 to 10 feet below ground surface and should not be encountered if excavation depth does not exceed 6 feet.

Removal of non-impacted soils will require using an excavator and a haul trucks and establishment of temporary onsite stockpile location.

Placement of clean fill, grass cover and mulch will be consistent with existing site landscaping and provide long-term erosion and sediment control for excavated areas and the soil cover system.

Resilience to Potential Adverse Impacts

Due to the burial of contaminated soils at least 2 feet below ground surface, as well as placement of clean fill, grass cover and mulch on disturbed surfaces, extreme weather events are not expected to significantly impact the Site by using this remedial option.

Cost

Costs for this alternative consist of direct and indirect costs. The cost of this work is estimated at $243,000 for AOC 7. **Table 3** summarizes the cost estimate for this alternative.

Table 3 | Option #2 Estimate of Probable Costs for AOC 7

Work Items	Unit Price	Unit	Quantity	Estimated Cost
Mobilize/Demobilize	$2,000.00	Unit	1	$2,000.00
Erosion & Sediment Controls	$1,000.00	LS	1	$1,000.00
Common Excavation (excavate Impacted Soil and construct consolidation area)	$12.00	CY	6,400	$76,800.00
Place Impacted Soil in Consolidation Area	$12.00	CY	3,200	$38,400.00
Place Marker Layer (Plastic Safety Fence)	$0.10	SF	21,609	$2,160.90
Place Cover in Consolidation Area and backfill Excavation area(Machine)	$18.00	CY	3,200	$57,600.00
4" Topsoil (In-place measure)	$24.00	CY	800	$19,200.00
Seed & Mulch	$50.00	UNIT	66	$3,300.00
Site Restoration	$500.00	LS	1.0	$500.00
Subtotal				**$200,960.90**
Contingency	15%	% Total		$30,144.14
Health & Safety	1%	% Total		$2,009.61
Construction Observation	$125.00	Hours	70	$8,750.00
Analytical (EPH & VPH)	$300.00	Each	4	$1,200.00
Estimated Total				$243,064.64
	Estimated Total			**$243,000.00**

2.1.3 Option 3: No Action

No action would be taken, and the Site would remain unchanged.

Effectiveness

Contaminated soil is present at the ground surface within AOC 7; therefore, the potential for direct exposure exists. A No Action alternative will not provide long-term effectiveness and permanence.

Implementability

This alternative does not mitigate exposure to existing contaminated surficial soils known to be present on the Site.

Resilience to Potential Adverse Impacts

Potential adverse impacts would not change from current site conditions under an option of No Action.

Cost

There are no costs associated with Option 3.

The No Action Alternative is not consistent with remedial goals or the reuse goals of the City.

2.1.4 AOC 8 Option 1: Soil Remediation via Focused Excavation and Off-Site Disposal

A focused soil excavation will be conducted to remove contaminated surficial soils within AOC 8 as indicated on **Figure 2**. Removal will be to a maximum depth of 2 feet below ground surface. A 2-foot excavation within the footprint of the AOC would result in 4,625 cubic yards from AOC 8 for a total in-place volume of 6,398 cubic yards (in-place measure).

The excavation(s) will then be backfilled with up to 20 inches of clean common borrow covered with a minimum 4-inch-thick topsoil (loam) layer. Disturbed surfaces on the Site will be seeded and mulched.

Effectiveness

This option will meet remedial objectives. Protection of human health and the surficial environment will be achieved by off-site disposal of excavated contaminated soils, with remaining subsurface soils covered by 24 inches of clean soil. The potential for future direct exposure and migration will be removed from the Site. This option will provide long-term effectiveness and permanence.

Implementation of this alternative could have potential short-term adverse effects on site workers. Risks to site workers during relocation of contaminated soil activities will be minimized by an “awareness training program” and the development and adherence of a site-specific HASP. The HASP will also address the reduction of potential risks to Site workers during excavation and backfill activities, as well as during loading material for off-site disposal. Excavation and handling of contaminated soils could result in particulate emissions and must be managed by implementing dust control measures.

Implementability

This alternative uses well-demonstrated and readily available technologies. It is anticipated that excavation, relocation and/or off-site disposal of contaminated soils can be completed safely. An excavation contractor using trained personnel will conduct soil removal, backfill and Site restoration activities.

Removal of contaminated soils will require using both an excavator and hand labor, resulting in a longer than normal construction period. This method will also require establishment of a temporary stockpile location if direct loading of contaminated soils is not utilized.

Site restoration activities will be consistent with existing conditions of both lawn and paved areas. Placement of clean fill, grass cover and mulch will provide erosion and sediment control for excavated areas.

Resilience to Potential Adverse Impacts

Due to the removal of contaminated soils, as well as proper seeding and mulching of the disturbed surfaces, extreme weather events are not expected to significantly impact the Site by using this remedial option.

Cost

Costs for this alternative consist of direct and indirect costs. In determining the cost of this option, the estimated quantity of soil to be removed and disposed off-site was based on the AOC delineated on **Figure 2**. The provided estimate does not consider the cost of future development.

The cost of this work is estimated at $583,000 for AOC 8. **Table 4** summarizes the cost estimates for this alternative.

Table 4 | Option #1 Estimate of Probable Costs for AOC 8

Work Items	Unit Price	Unit	Quantity	Estimated Cost
Mobilize/Demobilize	$2,000.00	Unit	1	$2,000.00
Erosion & Sediment Controls	$1,000.00	LS	1	$1,000.00
Common Excavation (Equipment and Labor)	$12.00	CY	4625	$55,500.00
20" Common Borrow (In-place measure)	$20.00	CY	3855	$77,100.00
4" Topsoil (In-Place Measure)	$24.00	CY	770	$18,480.00
Seed & Mulch	$50.00	UNIT	63	$3,150.00
Haul and Dispose of Impacted Materials	$45.00	TN	6938	$312,210.00
Subtotal				**$469,440.00**
Contingency	15%	% Total		$70,416.00
Health & Safety	1%	% Total		$4,694.40
Waste Characterization Samples	$1,000.00	Each	28	$28,000.00
Construction Observation	$125.00	Hours	70	$8,750.00
Analytical (EPH & VPH)	$300.00	Each	6	$1,800.00
Estimated Total				$583,100.40
	Estimated Total			**$583,000.00**

2.1.5 AOC 8 - Option 2: Soil Remediation via Excavation and Relocation On-Site

This option requires construction of an area to consolidate impacted surficial soils excavated from the Site. The proposed consolidation area is identified as the Boneyard and is located on the southern portion of the property (refer to **Figure 2**). According to the Phase II ESA, contaminated surficial soils are not present in the area. An estimated 230-foot by 230-foot area, excavated to a depth of 6 feet, would accommodate the 7,825 cubic yards of impacted material anticipated from AOCs 7 and 8, while allowing for replacement of 2 feet of existing clean fill. An excavator will be utilized to load haul-trucks with non-impacted soils for temporary stockpiling onsite until the material is needed for reuse as cover.

Following excavation of the consolidation area to a depth of 6 feet, surficial contaminated soil within the select AOC(s) (refer to **Figure 2**) will be removed to a depth of 2 feet and placed in the excavation. Based on the anticipated available volume, the excavation will

be filled with approximately 2 feet of impacted soil, to approximately 24 inches below ground surface. A marker layer will be placed over the consolidated material and the remaining excavation will be backfilled with approximately 20 inches of previously removed non-impacted soil and 4 inches of topsoil. The topsoil layer will be graded to drain, then seeded and mulched.

The remaining non-impacted soil removed from the consolidation area will be used as 20 inches of backfill within those areas where surficial soils were removed. A marker layer will be placed prior to backfill. This clean soil will be covered with 4 inches of topsoil to match existing grade, then seeded and mulched. Grades will be adjusted as necessary to achieve a balanced cut and fill.

Effectiveness

This option will meet remedial objectives. Protection of human health and the environment will be achieved by relocating impacted soils beneath a soil cover system. The potential for future direct exposure and migration will be minimized at the Site. This option will provide long-term effectiveness and permanence unless unauthorized excavation/disturbance of the covered soil occurs. Institutional controls requiring MDEP approval will be required before conducting activities that may disturb the capped soil.

Implementation of this alternative could have potential short-term adverse effects on site workers. Risks to site workers during relocation of impacted soil activities will be minimized by an “awareness training program” and the development and adherence of a site-specific HASP. The HASP will also address the reduction of potential risks to Site workers during excavation and consolidation activities. Removal and handling of contaminated soils could result in particulate emissions and must be managed by implementing dust control measures.

Implementability

This alternative uses well-demonstrated and readily available technologies. It is anticipated that removal and relocation of impacted soils can be completed safely. An excavation contractor using trained personnel will conduct soil removal and soil cover system construction activities.

The location and final grade of the consolidation area may limit site drainage and development options; although the non-impacted cover soil could be removed and covered with pavement (e.g., driveway/parking area). Future Site redevelopment activities will need to consider that contaminated soils and other environmental concerns (as reported in the Phase II ESA) remain at the Site.

The excavation, handling, and placement of impacted soils will be performed using conventional construction equipment and technologies. Groundwater is estimated at approximately 8 to 10 feet below ground surface and should not be encountered if excavation depth does not exceed 6 feet.

Removal of non-impacted soils will require using an excavator and a haul trucks and establishment of temporary onsite stockpile location.

Placement of clean fill, grass cover and mulch will be consistent with existing site landscaping and provide long-term erosion and sediment control for excavated areas and the soil cover system.

Resilience to Potential Adverse Impacts

Due to the burial of contaminated soils at least 2 feet below ground surface, as well as placement of clean fill, grass cover and mulch on disturbed surfaces, extreme weather events are not expected to significantly impact the Site by using this remedial option

Cost

Costs for this alternative consist of direct and indirect costs. The cost of this work is estimated at $301,000 for AOC 8. **Table 5** summarizes the cost estimate for this alternative.

Table 5 | Option #2 Estimate of Probable Costs for AOC 8

Work Items	Unit Price	Unit	Quantity	Estimated Cost
Mobilize/Demobilize	$2,000.00	Unit	1	$2,000.00
Erosion & Sediment Controls	$1,000.00	LS	1	$1,000.00
Common Excavation (excavate Impacted Soil and construct consolidation area)	$12.00	CY	9,250	$111,000.00
Place Impacted Soil in Consolidation Area	$12.00	CY	4,625	$55,500.00
Place Marker Layer (Plastic Safety Fence)	$0.10	SF	31,329	$3,132.90
Place Cover in Consolidation Area and backfill Excavation area(Machine)	$9.00	CY	4,625	$41,625.00
4" Topsoil (In-place measure)	$24.00	CY	1,160	$27,840.00
Seed & Mulch	$50.00	UNIT	94	$4,700.00
Site Restoration	$500.00	LS	1.0	$500.00
Subtotal				**$247,297.90**
Contingency	15%	% Total		$37,094.69
Health & Safety	1%	% Total		$2,472.98
Construction Observation	$125.00	Hours	96	$12,000.00
Analytical (EPH & VPH)	$300.00	Each	6	$1,800.00
Estimated Total				$300,665.56
	Estimated Total			**$301,000.00**

2.1.6 Option 3: No Action

No action would be taken, and the Site would remain unchanged.

Effectiveness

Contaminated soil is present at the ground surface within AOC 8; therefore, the potential for direct exposure exists. A No Action alternative will not provide long-term effectiveness and permanence.

Implementability

This alternative does not mitigate exposure to existing contaminated surficial soils known to be present on the Site.

Resilience to Potential Adverse Impacts

Potential adverse impacts would not change from current site conditions under an option of No Action.

Cost
There are no costs associated with Option 3.

The No Action Alternative is not consistent with remedial goals or the reuse goals of the City.

2.2 Considered Alternatives: Asbestos Abatement

2.2.1 ACM Option 1: Removal and Off-Site Disposal

Under this option, asbestos abatement will be conducted to remove friable and non-friable ACM from the Site structures identified during the previously conducted ACM surveys or the more recent survey. The work area will be secured with temporary gates and fencing as necessary. Selective demolition will be utilized to target only areas of identified ACM. ACM will be removed in accordance with MDEP Asbestos Management Regulations and properly disposed of at a licensed off-site facility.

Effectiveness
Removal and off-site disposal of ACM will meet remedial objectives; therefore, will provide protection to human health and the environment by removing the potential for airborne asbestos from the Site. Additionally, the potential for future indirect exposure will be eliminated as the source materials will be permanently removed.

Implementation of this alternative could have potential short-term adverse effects on site workers. Removal and handling of ACM could result in particulate emissions. Risk to site workers during abatement activities will be minimized by adhering to the MDEP Asbestos Management and OSHA regulations. Off-site transportation of ACM will comply with MDEP Asbestos Management Regulations and U.S. Department of Transportation (DOT) regulations to reduce potential exposure of the general public during transport to the disposal facility.

Implementability
This alternative uses well demonstrated and readily available technologies. It is anticipated that removal of ACM can be completed safely with selective demolition. A MDEP licensed Asbestos Abatement Contractor using trained and licensed personnel will conduct asbestos removal activities.

Removal of ACM will facilitate future actions at the Site. Building demolition will be performed using conventional construction equipment and technologies. ACM removal, handling and transportation of ACM will be performed using current abatement methods as required by MDEP regulations. ACM will be properly wetted, bagged, and containerized for hauling and disposal at a secure landfill facility licensed to accept asbestos waste.

An Asbestos Project Notification to MDEP will be required prior to commencement of selective demolition and asbestos removal.
Resilience to Potential Adverse Impacts

The abatement of friable and non-friable ACM will remove any potential adverse impacts on ACM from extreme weather events.

Cost

Costs for this alternative consist of direct and indirect costs. The cost of this work is estimated at $87,000. **Table 6** summarizes the cost estimate for this alternative.

Table 6 | Option #1 Estimate of Probable Costs for ACM Abatement

Identified ACM	Total Estimated Quantity	Unit Cost	Estimated Abatement Cost
Main Production Building			
9x9 inch floor tile and associated adhesive in office space (SF)	616	$8.00	$ 4,928.00
Assumed pipe insulation in Peel Room Line II assumed (LF)	30	$25.00	$ 750.00
Assumed water tank end caps in office bathrooms (SF)	20	$25.00	$ 500.00
Turbo Room Pipe insulation, assumed (LF)	50	$25.00	$ 1,250.00
Pipe Insulation in boiler room (LF)	725	$25.00	$ 18,125.00
Water tank end caps n boiler room (SF)	40	$50.00	$ 2,000.00
ACM Debris in boiler room (CY)	2	$150.00	$ 300.00
Freezer Building			
12x12 inch floor tile and associated adhesive in office space (SF)	320	$8.00	$ 2,560.00
Pipe insulation in loading dock area (LF)	42	$25.00	$ 1,050.00
Mud insulated pipe fittings in loading dock (EA)	3	$150.00	$ 450.00
Oil Silos			
Insulation on oil silos (SF)	1,500	$10.00	$ 15,000.00
Pipe insulation in valve house (LF)	20	$25.00	$ 500.00
Mud insulated pipe fittings in fuel silo valve house (EA)	4	$150.00	$ 600.00

Table 6 continued on next page

Table 6 | Option #1 Estimate of Probable Costs for ACM Abatement *(continued)*

Boiler House				
Gasket material within interior of boiler house (CY)	1	$50.00	$	50.00
ACM Debris within interior of boiler house (CY)	2	$150.00	$	300.00
Pipe insulation in interior of boiler house(LF)	640	$25.00	$	16,000.00
Cementitious siding debris on exterior ground of boiler house (CY)	2	$150.00	$	300.00
SUBTOTAL				**$64,663.00**
Contingency		15% of total		**$9,699.45**
Design & Bidding (Assume Work Plan Format)				**$4,500.00**
Supplemental Investigation (Roof and Exterior Debris Piles)				**$4,000.00**
Construction Observation				**$4,500.00**
Estimated Total				**$87,362.00**
		Estimated Total		**$87,000.00**

2.2.2 ACM Option 1: No Action

Under this option, no remedial action would be taken, and the Site would remain unchanged, with the exception of minor improvements to existing fencing and associated locks.

Effectiveness

Friable and damaged ACM is present within the Site structures, which are relatively unsecured and open. Improving the existing fencing, while limiting access, will not prevent the migration of asbestos fibers.

The potential for direct exposure to the public from airborne asbestos fibers does currently exist. Therefore, a No Action alternative may not be consistent with protection of the environment and future use and development of the property.

Implementability

Re-use, redevelopment, or demolition of the existing site structures would not be allowed with damaged and friable ACM present. This alternative does not address the existing hazards known to be present at the Site and implementation would result in the potential exposure to humans and the environment. The No Action alternative is not consistent with remedial goals.

Resilience to Potential Adverse Impacts

Potential adverse impacts would not change from current site conditions under an option of No Action.

Cost

There is no cost, outside of ongoing maintenance to existing security fence, associated with the No Action alternative.

SECTION 3.0 | SELECTION OF PREFERRED REMEDIAL ALTERNATIVES

A summary of the proposed remedial alternatives is presented in **Appendix A**. Based upon the review of the options discussed in Section 2, CES has created the following matrix for the evaluated alternatives provided below in **Table 7.**

Table 7 | Comparison of Alternatives

Option	Contamination Removed	Contamination Covered On-Site	Contamination Migration Mitigated	Deed Restriction Required for Future Excavation	Ranking of Costs (1 to 4) 1 = low 4=high
AOC 5					
#1: Focused Soil Excavation & Off-Site Disposal	√	√	√		**2**
AOC 7					
#1: Focused Soil Excavation & Off-Site Disposal	√		√		**3**
#2: Excavation and Relocation On-Site		√	√	√	**2**
#3: No Action				√	**1**
AOC 8					
#1: Focused Soil Excavation & Off-Site Disposal	√		√		**3**
#2: Excavation and Relocation On-Site		√	√	√	**2**
#3: No Action				√	**1**
ACM Abatement					
#1: Removal and Offsite Disposal	√		√		**2**
#2: No Action					**1**

Utilizing Option #1 for AOC 5 and Option #2 for AOCs 7 and 8, and Option #1 for ACM Abatement provides the most cost-effective approach to remediate contaminated soil and identified ACM at this time while future use and/or rehabilitation/redevelopment timelines are unclear. Under this option a portion of contaminated soils will be removed from the property for disposal while the majority will be relocated and buried onsite. Additionally, a supplemental ACM survey will be conducted to finalize material characterization, at which point selective demolition will be employed to remove and dispose of ACM at a licensed off-site facility.

VRAP Application

Following alternative selection, the property Owner should apply to the MDEP's Voluntary Response Action Program (VRAP) to request a Release of Liability letter for the Site.

The VRAP program attempts to provide liability protection for owners, buyers and/or sellers of property that may contain environmental impacts. In conjunction with implementation of the selected remedial alternative, the VRAP will complete the necessary objectives as detailed throughout this ABCA process.

SECTION 4.0 | SUMMARY OF REMEDIAL ALTERNATIVES

Table 8 summarizes the recommended remedial alternatives and associated costs for the AOCs discussed above.

Table 8: Summary of Recommended Remedial Alternatives and Estimated Costs

Area	Proposed Remedial Alternative	Estimated Cost
AOC 5	Focused Soil Excavation and Off-Site Disposal	$33,000.00
AOC 7	Focused Soil Excavation & On-Site Relocation	$243,000.00
AOC 8	Focused Soil Excavation & On-Site Relocation	$301,000.00
ACM Abatement	Removal & Offsite Disposal	$87,000.00
VRAP	VRAP Application	$500.00
	Total Estimated Cost	**$664,500.00**

Please feel free to contact either of the undersigned with questions concerning the remedial alternatives presented in this focused ABCA.

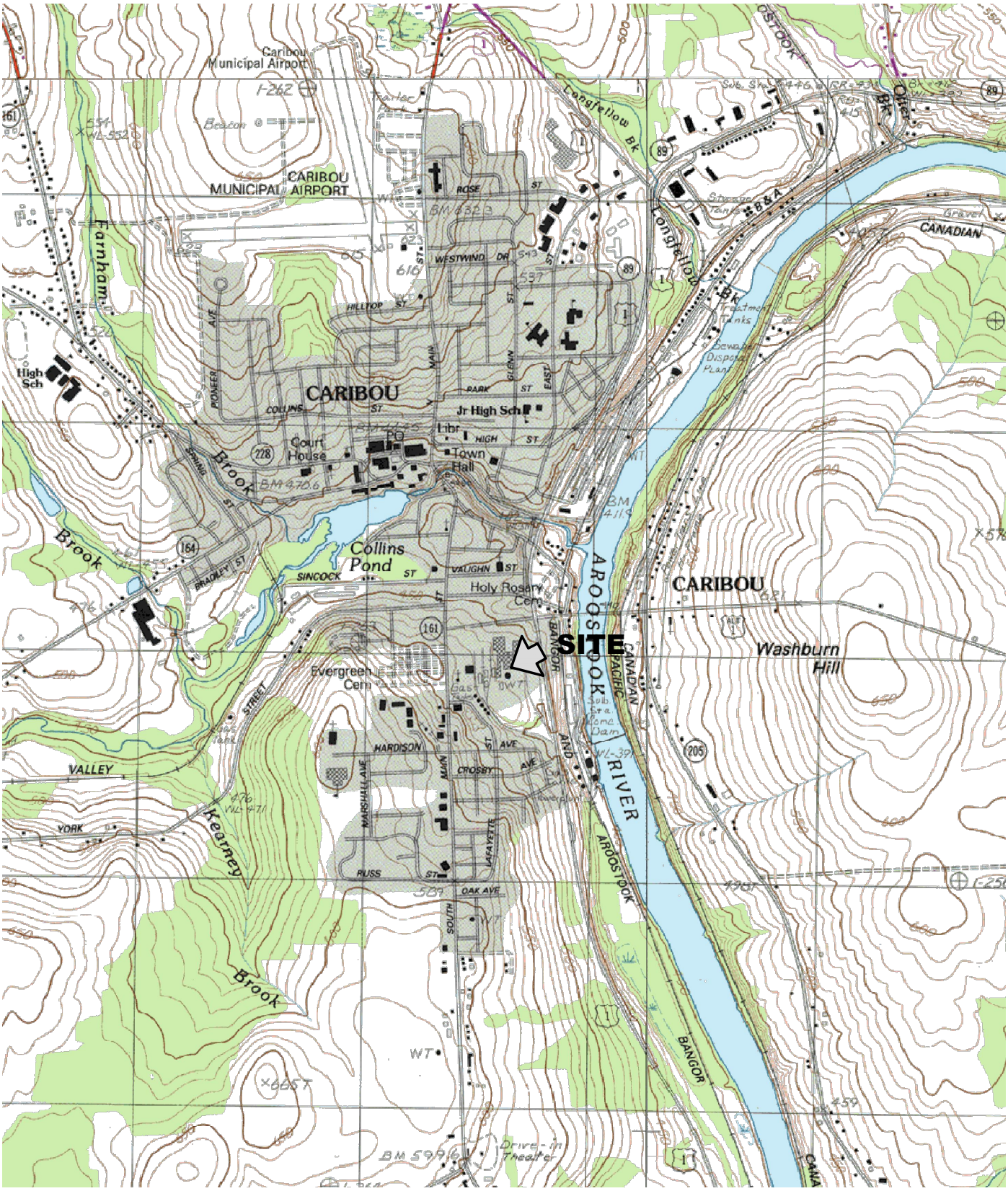
Sincerely,
CES, Inc.

David L. Chapman, C.G.
Project Geologist

David S. Hopkins, Jr., P.E., P.F.
Senior Project Manager
Environmental Engineering Services

DLC/DSH/jna
Attachments

FIGURES



SOURCE:
U.S.G.S. TOPOGRAPHIC QUADRANGLE
CARIBOU
@ 1:24,000

CES INC

FIGURE 1
32 BIRDSEYE AVENUE
LOCATION MAP

OCTOBER 2017
10963.004

BING.COM™ AERIAL IMAGERY

PROJECT TITLE: **FORMER BIRDSEYE PLANT CARIBOU, MAINE**	DWG: **FIGURE 2**	BY: WAB	CES INC
		DATE: 2014-11-19	ENGINEERING • SURVEYING • PLANNING • SCIENCES
SHEET TITLE: **SITE PLAN**	JN: 10963.004	REV:	
	SCALE: 1"=200'	REV DATE:	

APPENDIX A

SUMMARY OF REMEDIAL ALTERNATIVES

SUMMARY OF REMEDIAL ALTERNATIVES
Contaminated Surficial Soil
Former Birdseye Plant, Caribou, Maine

Remedial Alternative	Overall Protection of Human Health and the Environment	Technical Practicality	Implementability	Reduction of Toxicity, Mobility and Volume	Short Term Effectiveness	Practicability and Estimated Cost	Comments
1) Impacted Soil Removal Via Focused Excavation and Off-Site Disposal	◆ Risks to human health by direct contact, inhalation (dust), and ingestion of contaminated media are significantly reduced by removing contaminated media. ◆ Risks to the environment by stormwater runoff or groundwater leaching are reduced by removal of the impacted soil.	◆ Soil removal and off-site disposal of impacted material utilizes standard excavation and construction techniques and are therefore technically practical for the property.	◆ Removal and off-site disposal of impacted soil is an accepted form of remediation and has been proven to be effective in minimizing exposure to contamination.	◆ Impacted soil will be removed from the Site.	◆ Excavation and off-site disposal of contaminated media are effective and proven methods of remediation.	◆ Method would cost approximately $1,021,000.	◆ Approval of City will be required for access.
2) Excavation, On-Site Consolidation, and Covering with Barrier Layer and Off-site disposal of ACM and soil in AOC 5	◆ Risks to human health by direct contact, inhalation (dust), and ingestion of contaminated media are significantly reduced by removing contaminated media and relocating beneath a soil barrier layer on a portion of the Site. ◆ Risks to the environment by stormwater runoff or groundwater leaching are reduced by placing the contaminated media beneath a soil barrier layer.	◆ Soil removal and an on-site cover system utilize standard excavation and construction techniques and are therefore technically practical for the property.	◆ Removal and a cover system for contaminated soil is an accepted form of remediation and has been proven to be effective in reducing contamination.	◆ The contaminated soil will be placed beneath a soil barrier layer; therefore, mobility of the contaminants is reduced.	◆ Removal and construction of a cover system over contaminated media is an effective and proven method of remediation.	◆ Impacted soil removal, on-site consolidation and placement beneath a soil barrier layer (cap) and offsite disposal of material from AOC 5 will cost approximately $576,000	◆ Non-Impacted soils excavated from the consolidation area will be temporarily stockpiled off-site. Eventually, these soils will be used as backfill in areas where surface soils were excavated and in the consolidation area cap. ◆ Construction on the property will be limited to the areas outside of the cover system to prevent access to the impacted soils. ◆ A marker layer will be placed in the consolidation area prior to backfill. ◆ Approval of Town and abutting residences will be required for access.
3) No Action	◆ No reduction in risks. ◆ Potential risks to human health by direct contact, inhalation (dust), and ingestion will remain. ◆ Stormwater runoff may introduce contaminated sediments to the unnamed stream and wetland, and increase risks to the environment.	◆ Not applicable.	◆ Not applicable.	◆ No reduction in toxicity, mobility or volume of the contaminated media.	◆ Not applicable.	◆ Implementation of this alternative will have no cost.	◆ This alternative does not reduce identified health or environmental risks and does not support proposed site development plans. This alternative was not selected due to these reasons

Notes: Shaded area indicates selected remedial alternative.