ANALYSIS OF BROWNFIELDS CLEANUP ALTERNATIVES
Keku Cannery
Kake, Alaska
March 19, 2018

1.0 Introduction

This Analysis of Brownfields Cleanup Alternatives (ABCA) is intended as a screening tool to ensure and document that the appropriate type of cleanup is selected to address hazardous building materials at the Keku Cannery in Kake, Alaska. The referred remedial action considers site characteristics, the surrounding environment, potential future uses, and cleanup goals.

2.0 Site Description

The Keku Cannery is located at 541 Keku Road, Kake, Alaska and is owned by the Organized Village of Kake (OVK). Specifically, it is located at 56° 57’ 12” N and 133° 55’ 34” W. The subject property is located within Section 25, Township 56 South, Rnage 72 East, Cooper River Meridian (please see Figure 1.).

The Keku Cannery consists of a single 14-acre parcel of land comprising what has been referred to as the “cannery district,” a complex of what had included 18 buildings constructed between 1912 and 1940 (S&W 2014). The main cannery building was constructed in 1912 and operated from that time until its closure in 1977. Over time, the building was expanded and/or updated, adding a fish sorting area, boiler house, machine shop, egg room, store room, and retorts. Cannery structures that were included in a recent TBA, and will subsequently be addressed as part of this hazardous materials abatement effort, consist of the large over-water cannery building constructed on pilings, along with the attached former diesel house and blacksmith shop, a large storage building constructed in the upland area immediately east of the cannery building, and an electrical generator house containing four generators that had been fueled by diesel. The location of the site and select buildings are depicted in figure 2 and 3. (EPA TBA, 2015)

3.0 Previous Investigations

Between 1993 and 2016, multiple phases of environmental investigation, review, and cleanup work have occurred on and adjacent to the Keku Cannery site. Reports related to that work are summarized below with regards to the hazardous building materials and solid waste issues at the site:

Targeted Brownfields Assessment – EPA 2016

In May of 2016 fieldwork was conducted in coordination with the Organized Village of Kake, ADEC, and EPA. A hazardous building materials survey was performed at the site. The work

included collecting 166 building materials samples to be analyzed as potential ACM, screening 180 painted surfaces with an X-Ray Fluorescence (XRF) detector for the potential presence of lead in surface finishes, and collecting 13 paint chip samples for fixed laboratory confirmation analysis as potential LBPs. EHSI's field survey efforts also included visual review of light fixtures for the potential use of PCB-containing light ballasts, and the quantification of mercury-containing light bulbs, switches, and thermostats. Additional details on analysis and screening procedures utilized by EHSI are provided below:

ACM: A total of 166 building materials samples, including nine split samples for QA/QC purposes, were collected for analysis as potential ACM. All samples were analyzed using polarized light microscopy/dispersion staining techniques, in accordance with EPA Method 600/R-93/116. A total of 166 ACM samples were analyzed by Seattle Asbestos Test, LLC, a National Voluntary Laboratory Accreditation (NVLAP)-certified laboratory located in Bellevue, Washington. The nine QA/QC samples were submitted to NVL Laboratories, Inc. (NVL), an NVLAP-certified laboratory located in Seattle, Washington. Seattle Asbestos Test then reanalyzed five ACM samples using the 400-point "Point Count" method. NVL performed 400 point "Point Count" reanalysis on five of the ACM samples.

XRF: A total of 191 XRF screening results were generated during the field survey. This included screening 180 painted surfaces and generating 11 calibration results. All XRF screening for the presence of lead was performed using a Niton Model XLp XRF Spectrum Analyzer to measure lead content on interior and exterior paint coatings and other suspected lead-containing building materials (LCM). Measurements using the XRF were representative of all layers of paint and/or LCM.

LBP: Thirteen paint chips were collected from XRF screened locations and submitted to a fixed laboratory for QA/QC verification analysis. These samples were sent to NVL in Seattle, Washington, for analysis using EPA Method 7000B. NVL is certified by the American Industrial Hygiene Association under the Environmental Lead Laboratory Accreditation Program to perform Atomic Absorption Spectrometry.

This work identified 11 general types of ACM, including gaskets used for a variety of purposes and applications. Bakelite type electrical backing a board and other electrical board components, caulking/sealant material, pipe wrap, interior boiler insulation board components, cement asbestos board siding debris, mudded thermal system insulation elbows, pipe insulation patching material, exhaust pipe insulation, and asphaltic roof sealant. In additional, paint screening and analysis identified 125 painted surfaces with detectable lead concentrations, 21 of which had lead concentration greater than or equal to 1 mg/cm^2. The light survey portion of field tasks identified 50 light bulbs that will require specialized disposal under RCRA and approximately 25 suspected PCB –containing light ballasts. Seven (7) oil-filled transformers were noted during the survey. None of these were labeled as PCB-free, all were assumed to utilize PCB-containing cooling oil. Six (6) mercury filled thermostats and two mercury-filled conveyor line switches were also noted during the survey.

Phase I Environmental Site Assessment – Shannon & Wilson, 2014

In early 2014, Shannon and Wilson, Inc. (S&W) performed a Phase I Environmental Site Assessment (ESA) on the Keku Cannery site. The purpose of this work, was to identify recognized environmental conditions in connection with the site. For the purposes of their assessment, the "subject property" was limited to the cannery building and warehouse and did not include the remaining land area associated with the Keku Cannery site, or other buildings present on the site.

During their Phase I ESA site visit, S&W personnel observed a large amount of debris in the cannery building, including vehicles; drums and containers in various states of disrepair; metal scraps; unused/discarded equipment; the canning retorts and associated steam plants; and a variety of Asbestos Containing Materials (ACM). Staining was noted on some wood floors and other surfaces within the cannery building, the cannery machine shop, and the beach/shoreline area beneath the building. A "white powder" was also noted on floor in other areas of the building (S&W 2014). Though not explicitly stated in the Phase I ESA, given the historic presence of asbestos-containing thermal system insulation (TSI) in the building, this powder may have damaged the TSI.

In concluding their work, S&W identifies the presence of ACM and the likely use of LBP and PCB-containing ballasts in the building.

Asbestos Survey and Hazard Assessment – Med-Tox Northwest, 1993

In 1993, Med-Tox Northwest (Med-Tox) performed an Asbestos Survey and Hazard Assessment on the cannery complex for the OVK. Med-Tox's assessment was undertaken to evaluate the current status of and cleanup costs for abatement of ACM at the Keku Cannery facility. The assessment identified multiple ACMs, including gaskets, cement asbestos board, stove insulation, brake and shoes, and TSI on pipes and boilers. Med-Tox also provided a basic review of light fixtures that were presumed, based on their apparent date of manufacture, to include PCB-containing light ballasts. Med-Tox identified a total of 75 "PBC-containing" light-ballasts at the site (Med-Tox, 1993).

Post-Project Hazard Abatement Submittal for Kake Keku Cannery – Absolute Services, Inc., 2014.

In 2014, Absolute Services, Inc. (ASI) completed abatement efforts at the cannery site on behalf of the OVK. Abatement focused on ACM identified by Med-Tox during their 1993 survey of the cannery. This included removing TSI from three boilers, multiple pipe runs, and one of the canning retorts, and collecting and disposing of various asbestos-containing belts, gaskets, and debris within the building. Asbestos-containing fire bricks used in the boiler(s) were left in place; in an effort to mitigate this occupant exposure hazard, ASI treated these bricks with a spray-applied encapsulate (ASI 2014).

4.0 Remedial Alternatives Considered

This section identifies the remediation alternatives that may be used to address the environmental contamination at the site. The "No Action Alternative" is used as the baseline against which the other alternatives will be analyzed. Both of the alternatives will be evaluated with respect to Chapter 75 of Title 18 of the Alaska Administrative Code (18 AAC 75).

The following broad categories of evaluation criteria were considered in assembling remediation alternatives at the site:

- Overall protectiveness to public health and welfare of the environment
- Feasibility in achieving site redevelopment

The preliminary cleanup action area covers approximately 35,000 square feet of the site.

4.1 No Action Alternative – Alternative #1

The "No Action Alternative" would leave potentially harmful hazardous building materials in the Keku Cannery. This would not address the exposure risk at the site. Hazardous building materials are located throughout the cannery. Some of the hazardous building materials are "friable" which means they will need to be removed before the site can be safely used. Give the proposed use of this property for community functions, this property would remain both a physical and environmental hazard if no action was taken. The no action alternative has no associated cost.

4.2 Hazardous Building Materials Abatement and Combined Local and Off-island Disposal – Alternative #2

The "Hazardous Building Materials Abatement and Combined Local and Off-island Disposal Alternative #2" includes abatement of hazardous building materials and a combination of disposal locally and off-island. The asbestos waste would be disposed of in a permitted monofil. Some of the hazardous building materials would still have to be shipped off island because there is no location that can accept some of the hazardous building materials. The estimated costs for this option are $115,000. Securing a piece of property for a monofil would most likely add a considerable amount to the estimated cost.

4.3 Hazardous Building Materials Abatement and Disposal Off-Island – Alternative #3

The "Removal and Disposal Alternative #2" will remove hazardous building from the site and dispose of it off-island at an estimated cost of $97,597.00.

5.0 Preferred Remedial Alternative

The remedial alternatives were evaluated based on overall protectiveness to public health and welfare of the environment, and feasibility in achieving site redevelopment.

The “Hazardous Building Materials Abatement and Disposal Alternatives #2 and #3” are considered reasonable, technically feasible and capable of protecting human health and the environment. However, alternative #3 is more economical and logistically feasible. Kake is a small community and there is limited availability of land and it’s unlikely that a piece of property to construct the asbestos monofil can be easily obtained and approved by the community. The landfill in Kake is not permitted and cannot accept any hazardous waste. Even with the construction of the asbestos monofil some of the hazardous waste would still have to be shipped off-island.

The “No Action Alternative” would leave hazardous building materials in place at the site exposing members of the community to potential health hazards, and hampering redevelopment at the site.

The DEC has consulted with the OVK during telephone conversations and they have determined that the “Hazardous Building Materials Abatement and off-island Disposal Alternative #2 is the preferred remedial strategy for the site due to cost restraints and availability of land for a monofil in Kake.

6.0 Figures

7.0 References

Ecology and the Environment. December 2016. Keku Cannery (former) Targeted Brownfields Assessment, Technical Direction Document: 15-05-0003.