

# **Analysis of Brownfield Cleanup Alternatives – Preliminary Evaluation Former Louisiana Pacific Mill Site - Crescent Mills**

15690 Highway 89, Crescent Mills, California, 95934

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Prepared by:



## **I. Introduction & Background**

### ***a. (1) Site Location***

The Site is located at 15690 Highway 89, Crescent Mills, California, 95934. The geographic coordinates for the approximate center of the Site are 40° 05' 39" North Latitude and 120° 54' 37" West Longitude. The Site includes 26.27 acres of land within Assessor's parcel numbers 111-050-065, 111-050-066, and 111-050-067.

### ***a. (2) Climatic Setting***

Like most of the Sierra Nevada region of California, the climate in Crescent Mills is seasonal with generally dry summer months between June and September and wetter winter months between October and May. Monthly average temperatures in the nearby town of Quincy range from a low of 48° and high of 89° Fahrenheit in July to a low of 26° and high of 44° Fahrenheit in December (WorldClimate.com). According to the Plumas County Geographic Information Systems Division (2012), annual precipitation in Crescent Mills amounted to 39 to 47 inches of rain between the years 1971 and 2000. Crescent Mills lies at approximately 3,530 feet above sea level; at this elevation snow is infrequent but possible in winter months.

### ***b. Previous Site Use(s)***

The Site was initially developed as a lumber mill in the late 1940s to early 1950s. Before the lumber mill was built, the property was likely used for agriculture. The Site was purchased by Louisiana Pacific (LP) Corporation in the early 1970s and the mill was expanded. Louisiana Pacific Corporation operated the Site as a lumber mill until it was closed in 1986. The Lehman family of Cinderlite Trucking Co. purchased the property from Louisiana Pacific Corporation in 1998. Sierra Institute purchased the property on October 25, 2017.

### ***c. Site Assessment Findings***

Previous investigations performed at the Site include:

- Preliminary Assessment/Site Inspection Report (California Environmental Protection Agency Department of Toxic Substances Control [DTSC], 1990)

- Property Transfer Site Assessment (CH2M Hill, Inc. [CH2M Hill], 1991)
- Supplemental Site Investigation Report (Geocon Consultants, Inc. [Geocon], 2002)
- Phase I ESA (E&E, 2014)
- Targeted Brownfield Assessment (E&E, 2014)
- Targeted Site Investigation (Geosyntec Consultants, 2017)
- Site Characterization Report, Removal Action Workplan and Appendices (Sierra Institute, Sierra Streams Institute, and EKI Environment & Water Inc., 2019)

Copies of more recent reports can be found at: <https://sierrainstitute.us/program/ivwpc/>

Following several site assessments, it was determined that there were two primary constituents of potential concern (COPCs) within the Site; arsenic and TPH-d (total petroleum hydrocarbons in the diesel range). Arsenic in the soil is the most widespread COPC, appearing in several areas throughout the site above the Regional Screening Level (RSL) or site-specific background concentration of 9.8 milligram per kilogram (mg/kg). Groundwater sampling has indicated that arsenic in the soil has not resulted in groundwater impacts at the Site. The source of arsenic that is present throughout the Site may be related to historic lumber mill operations and practices (such as spreading incinerator ash on the roadways for dust suppression purposes), but could also potentially have been present in the import fill material brought to the Site to raise the surface grade. The import fill may have been derived from off-Site mining operations, as the Crescent Mills area has several reported gold mines and arsenic is commonly found to be associated with gold deposits. Regardless of source, arsenic concentrations in shallow soil exceed the established background concentration across much of the site.

TPH-d have also been reported in soil in throughout the Site in exceedance of RSLs. TPH-d was reportedly stored at the Site when the sawmill was in operation, and was used to operate the boiler and various other machinery, and may have been spread on former mill roads along with waste oil for dust suppression.

Several potential contaminants were thought to be in groundwater samples in areas near the old locations of the sawmill and boiler building, including dioxins and furans; however, the reported concentrations of groundwater constituents were narrowly above the screening levels and may have been influenced by elevated turbidity introduced by the collection method.

More recent site assessments do not include evaluation or investigation of any adjacent or off-Site properties that may or may not be contaminated, which is particularly pertinent as the neighboring properties to the north and east were part of the former LP lumber mill and therefore had similar use as the Site. There is a possibility that the source of impacts observed along the property boundaries may originate off-Site.

The consultants that performed the Targeted Site Investigation (TSI) certified that the data indicates that COPCs in soil and groundwater are sufficiently delineated and the potential risk to human health in a commercial/industrial land use scenario was adequately evaluated. The consultants recommended the following:

- 1) Further investigation is not necessary and the data should be used to prepare a Feasibility Study/Remedial Action Plan for selection and implementation of an appropriate remedial alternative to facilitate the development and re-use of the Site.
- 2) Though arsenic concentrations remained below the background concentration established for the Site in some of the soil and wood waste stockpiles, the material in the stockpiles should be suitable for unrestricted use only in areas where background arsenic concentrations in soil are similar.
- 3) Erosion control structures should be placed around the existing stockpiles to control run-off of sediment from the piles into the nearby storm water drop inlets and/or Indian Creek.
- 4) The existing log deck supply well and any other wells identified on the property should be decommissioned in accordance with the Plumas County Environmental Health Department (PCEHD) and state regulations.

***d. Project Goal***

Remediation of the Crescent Mills Site will enable the development of a multi-business, wood products campus (Indian Valley Wood Utilization Campus [IVWPC]). The IVWPC will employ various methods to process and convert low-value biomass material from surrounding forestland into value-added timber and biomass products. Development of a market for this low-value material will help to improve socioeconomic and forest health conditions by: 1) facilitating the generation of sustainable forest product industry jobs, 2) creating and maintaining a reliable outlet for forest restoration byproducts, and 3) enabling forest managers to implement forest/watershed restoration and fuels reduction projects at the pace and scale necessary to establish healthy, resilient landscapes.

Creating a market for utilizing low-value forest biomass is a high priority for this region of California, as the compounding stressors of drought, insect, disease, climate change, and catastrophic wildfire clearly establish a need to improve forest and watershed health, increase resiliency of communities within the wildland-urban interface to wildfire, and promote the socioeconomic well-being. Planned biomass facilities include wood chip processing, firewood, bioenergy, and other wood products businesses that utilize forest restoration byproducts and other woody waste. The IVWPC will create employment opportunities in Plumas County (a rural and socioeconomically disadvantaged county), and contribute to reduced fire risk and increased forest and watershed health throughout the Upper Feather River Watershed - the headwaters of the California State Water Project, which not only provides reliable water to approximately 27 million Californians and 750,00 acres of farmland, but also has the benefit of providing flood management, power generation, recreation, and critical fish and wildlife habitat. Furthermore, wood chips imported to and produced at this facility will fuel a network of biomass boilers that heat critical institutions around the county, including a heating system at the county Health and Human Services Center in Quincy. Overall, the Site has the potential to bring between 15 and 30 new jobs to the rural community, depending on how many and what types of businesses are created.

## **II. Applicable Regulations and Cleanup Standards**

### *a. Cleanup Oversight Responsibility*

The cleanup will be overseen by the United States Environmental Protection Agency (EPA). The site is currently listed on the DTSC EnviroStor database as Site number 32240003 and project code 102305 and on the EPA Envirofacts as EPA Registry Id number 110070068960.

### *b. Cleanup Standards for Major Contaminants*

It is anticipated that state standards for industrial re-use will be used as the cleanup standards for this property.

### *c. Laws and Regulations Applicable to the Cleanup*

Laws and regulations applicable to this cleanup may include the Federal Small Business Liability Relief and Brownfields Revitalization Act, the federal Davis-Bacon Act, and federal, state, and local laws regarding procurement of contractors to conduct the cleanup. Appropriate permits for cleanup, if any, will be acquired from the Plumas County Building Department.

## **III. Cleanup Alternatives**

### *a. Cleanup Alternatives Considered*

To address contamination at the site, three different alternatives were considered, including:

Alternative #1: No Action

Alternative #2: Excavation with Offsite Disposal and Institutional Controls

Alternative #3: Capping and Institutional Controls

### *b. Evaluation of Cleanup Alternatives*

1. The No Action Alternative is included as a baseline for comparison to other proposed alternatives. This alternative assumes that the impacted areas would remain in place without treatment. This alternative would not provide mitigation of the actual or potential risks posed. If no corrective action is taken, the site may not be suitable for the planned reuse.

i. No costs would be incurred during the implementation of this alternative.

2. The Excavation with Offsite Disposal and Institutional Controls Alternative includes excavation of one foot of soil from unpaved surfaces, focused on the northern half of the property. Gravel (aggregate base) would be placed as backfill to the current grade. Institutional controls in the form of land use covenants may need to be recorded limiting future use of the property to industrial use. For this Alternative, contaminated and potentially contaminated soil would be removed from areas with contamination documented in exceedance of RSL or site-specific background levels.

- i. Cost of this treatment per acre estimated<sub>1</sub> to be \$546,000.
- ii. Much of this cost is associated with transportation and disposal of excavated soil to an offsite landfill.

**3.** The Capping and Institutional Controls includes placing a layer of fill as a barrier to cap the contaminated soil. Institutional controls in the form of land use covenants may need to be recorded limiting future use of the property to industrial use. In this Alternative, a clean barrier would be developed over contaminated and potentially contaminated soils, but would also require ongoing monitoring and maintenance of the cap over time.

- i. Cost of this treatment per acre estimated<sub>2</sub> to be \$61,000.
- ii. The cost of this option is significantly less than Alternative #2 as it does not involve transportation and disposal of excavated soil to an offsite landfill. The cost per acre includes material and equipment time.

*c. Recommended Cleanup Alternative*

The recommended cleanup alternative is Alternative #3: Capping and Institutional Controls, as this provides the most cost effective and efficient method to remediate the property, enable the timely redevelopment of the property, and effectively ensure the health and safety of future workers on the site. Cost effectiveness is a priority for the Sierra Institute as the cleanup will need to be fully grant funded given the limited financial capacity of this community-based non-profit organization in the context of Brownfield cleanup. In addition, the expedited timeframe for redevelopment provided by this alternative is critical to increasing the socioeconomic well-being of this rural community through the creation of jobs, and increase in pace and scale of forest/watershed restoration projects.