

**SOIL MANAGEMENT PLAN  
FOR  
CRESCENT MILLS INDUSTRIAL SITE  
15690 CALIFORNIA HIGHWAY 89  
CRESCENT MILLS, CALIFORNIA**

Prepared for:

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# **SOIL MANAGEMENT PLAN**

## **INTRODUCTION**

The Soil Management Plan is an element of the Removal Action Workplan (RAW) for remediation activities at the Crescent Mills Industrial Site (site) located in Crescent Mills, California. The Site is located in Crescent Mills, California in the southwestern portion of Indian Valley, to the west of Indian Creek. The Site comprises three parcels identified by the Plumas County Assessor's Parcel Numbers (APNs) as 111-050-065, 111-050-066, and 111-050-067. Site topography is relatively flat, with drainage from the Site to the east towards Indian Creek. Surface drainage at the Site is likely directed towards the creek.

The Site is currently vacant with the exception of lumber mill remains including stockpiles of wood waste and soil, asphalt paving, concrete floor slabs, building foundations, and residual construction and industrial debris. The property is secured with a perimeter fence.

Remedial activities proposed for site include excavation and relocation of wood waste stockpiles, excavation and processing of concrete and asphalt pavement, excavation and fill placement in clean utility corridors and excavation and on-site placement of clean fill or processed concrete over areas of impacted soil.

This Soil Management Plan provides recommendations for soil management during the excavation, handling and on-site transportation and fill placement process. Protocol for reducing dust emissions and conducting decontamination during excavation and/or handling is presented in the Dust Control and Decontamination Plan (DCDP) included as Appendix F to the RAW.

## **PURPOSE**

Surface soil in portions of the site to be remediated by placement of cover fill soil contains concentrations of lumber mill contaminants, notably arsenic which is elevated above background concentrations and to a lesser extent TPH-diesel and other contaminants as described in the RAW and Human Health Risk Assessment. Thus, the exposed soil which exceeds cleanup goals is to be capped in place on-site to limit exposure to future receptors. Specific soil management procedures such as dust control and decontamination procedures are recommended to reduce the chance of human exposure to site contaminants during implementation of the RAW.

## **WOOD WASTE STOCKPILE RELOCATION**

Wood waste stockpiles located along the eastern edge of the site in the on-site borrow area will be excavated and relocated on-site. Stockpiled wood waste and fill will be loaded onto end dump trucks and transported to the large wood waste stockpile in the

southern portion of the site where no remediation or redevelopment is proposed. The wood waste will be dumped on the top of the stockpile in areas at least 10 feet from the stockpile edges to limit potential erosion. After completion of stockpile relocation, fiber rolls will be installed around the base of the newly placed stockpiled wood waste and disturbed areas of the existing stockpiles to limit erosion in accordance with the Stormwater Pollution and Prevention Plan (SWPPP).

## **PREPARATION OF SOIL PLACEMENT AREAS FOR CAPPING**

Prior to placement of fill as a cap, the designated fill placement areas will be graded using a bull dozer or grader to level the area as recommended by the project engineer. Prior to fill placement, placement areas will be moisture conditioned and compacted to at least 90 percent of the maximum dry density per ASTM D1557.

## **CLEAN UTILITY CORRIDORS**

Designated clean utility corridors will be delineated on the grading plan prepared by the project engineer to facilitate proposed and future development and protect site workers. Utility corridors will be excavated to the maximum width and depth anticipated for future development (approximately 3 foot wide and 2 foot deep) and backfilled with clean fill or bedding sand. Excavation spoils will be spread in the fill placement area and compacted prior to placement of clean fill by the procedures described below. Clean utility corridors will be lined with a marker fabric as a visual aid for future utility workers and surveyed to facilitate future development.

## **ON-SITE FILL SOIL EXCAVATION AND PLACEMENT**

Clean imported fill and or soil excavated from the on-site borrow area will be placed as fill in the designated cover soil placement areas including all proposed Phase 1 redevelopment areas over soil exceeding cleanup goals. Fill from the on-site borrow area will be placed in maximum 6-inch loose lifts to achieve a soil cover with a minimum compacted thickness of 12-inches in accordance with the engineers recommendations. Based on Phase 1 volume estimates included in this report, it is anticipated that the fill placement will cover a surface area of approximately 5-acres (217,800 square feet) and will be placed to a minimum depth of one foot (approximately 8,100 cubic yards fill volume). As directed by the project engineer, the placement areas will be gently sloped to maintain positive drainage toward the east and south toward Indian Creek and to allow areas to the west of the site to drain to Indian Creek. A detailed grading plan will be prepared by the project engineer prior to remedial implementation.

## **PROCESSED CONCRETE/EXCAVATED SOIL FILL PLACEMENT**

Processed concrete and AC fill and or soil excavated from the on-site borrow area will be placed as fill over all exposed soil in the Area 2 and Area 3 fill placement areas where no structural development is proposed during Phase 1 cleanup. Fill will be placed in maximum 6-inch loose lifts to achieve a soil cover with a minimum compacted thickness of 6-inches in accordance with the engineer's recommendations. Based on Phase 1 volume estimates included in this report, it is anticipated that the fill placement will cover a surface area of approximately 1.5-acres (65,340 sf) and will be placed to a minimum depth of 6-inches (approximately 1,200 cy fill volume). Figure 5 in the RAW shows the Area 2 and 3 fill placement areas. A detailed grading plan will be prepared by the project engineer prior to remedial implementation.

## **DRAINAGE MODIFICATIONS AND EROSION CONTROL**

The existing storm drainage system will be protected in place during site preparation and fill placement. Any future work on the storm drainage system would be required to be performed by HAZWOPER workers as the existing storm drain system is within native soil and not a clean corridor. At the completion of fill placement, storm drain inlets will be extended to match final grade. Additional drainage modifications may be implemented at the direction of the project engineer. The on-site borrow area will be contoured and loosely compacted to facilitate positive site drainage and revegetation. Erosion control measures including installation of finer rolls down slope of all excavation and fill placement areas and surrounding all stockpiles will be maintained during and subsequent to site remediation.

## **RECOMMENDED SOIL MANAGEMENT PROCEDURES**

The following soil management practices should be followed during excavation, on site transport, stockpile, fill and cover soil placement.

### Soil Handling Procedures

Per the DCDP, maintain moisture content in soil to prevent generation of visible dust during preparation, placement and compaction. Additional soil handling procedures for dust control and decontamination, described in the DCDP, will also be followed.

Avoid contact with soil.

Install clean utility corridors and implement institutional controls so that no future excavation or disturbance of potentially contaminated soil will be permitted in the soil placement area by workers that are not OSHA HAZWOPER trained. Clean utility corridors shall be delineated with a subsurface marker fabric.

### Erosion Control

Exposed fill surfaces and disturbed areas in the borrow area/ drainage swale will be stabilized by application of hydroseed and planted with California Native container plants and/or hand-seeded with an appropriate seed mixture compatible with the soil and climate conditions of the site as recommended by the project horticulturist.

In accordance with the SWPPP, fiber rolls shall be installed along the down gradient perimeter of the borrow area/ drainage swale disturbed areas and surrounding the relocated stockpile in accordance with the project plans. Additional fiber rolls shall be placed on slopes steeper than 5:1, H:V, with a maximum spacing of 5 vertical feet. Fiber rolls shall be installed along the same contour elevation.

### Best Management Practices

In accordance with the SWPPP, best management practices shall be implemented to reduce the chance of potential sediment discharges from excavated areas or stockpiled soil prior to backfill and cover soil placement. Best management practice types are described below.

**Reinforced Silt Fencing:** Reinforced silt fencing shall be installed along the downslope edge of excavations or along the eastern (downslope) property boundary. Silt fencing shall be reinforced with metal T stakes placed 4 foot on center or closer. Silt fencing shall be inspected regularly during excavation activities and repaired or reinforced as needed to prevent down slope migration of sediment.

**Fiber Rolls:** Fiber rolls (wattles) shall be installed around the perimeter of stockpiles and downslope of fill placement areas and along the downslope property boundary. Fiber rolls shall be anchored with wood stakes placed 4 feet on center or closer. Additional wattles may be stored on-site during the rainy season in the event that the installed wattles are filled with sediment. Prior to fiber roll installation, the subgrade shall be prepared by removing local surface irregularities and larger rock or debris that would inhibit contact of the fiber roll with the subgrade. A contoured key trench shall be excavated 2 to 4 inches deep along the proposed installation route. Soil excavated from the key trench shall be placed on the up slope side of the fiber roll to reduce the chance of surface water undercutting the roll. When more than one fiber roll is placed in a row, the rolls shall be abutted securely to one another to provide a tight joint, not overlapped. Split, torn, unraveling or slumping fiber rolls shall be repaired or replaced. Fiber rolls shall be observed for damage when rain is forecasted, following rain events, and periodically as needed during prolonged rainfall. Fiber rolls typically do not require removal and can be abandoned in place, once permanent erosion control is established.

### Previously Unknown Subsurface Conditions

If any previously unknown subsurface conditions are encountered during site excavation or grading activities, all work in the area shall be immediately stopped and the area marked with caution tape. Work in the area shall not resume until a qualified environmental professional has been consulted. The qualified environmental

professional shall appropriate regulatory agencies, if needed, and appropriate investigation protocols shall be developed and completed in consultation with appropriate regulatory agencies. If soil sampling is warranted, laboratory analysis will include all applicable potential constituents of concern (PCOCs).

## **HEALTH AND SAFETY**

Near surface soil at the site contains elevated concentrations of contaminants, primarily arsenic and to a lesser extent petroleum hydrocarbons and dioxins and furans. Exposure to contaminants in the soil may occur through exposure routes such as ingestion of soil or soil dust, inhalation of soil dust, and dermal contact with soil or soil dust. Application of water to the affected soil is essential to control fugitive dust emissions. Exposure may be reduced by the use of personal protective equipment such as boots, long-sleeved clothing, gloves and dust mask or respirator. Proper decontamination is important to remove contaminants prior to leaving the affected areas and to limit exposure. A Site Safety plan prepared for SSI employees is included in Appendix H of the RAW.