

JOB SAFETY ANALYSIS

Safety Information for the University of California, Berkeley

RICHMOND FIELD STATION

HAND TOOL EXCAVATION

| TASK | HAZARDS | CONTROLS |
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| 1. Assess work area | Soil containing heavy metals, polychlorinated biphenyls or other contaminants of concern (COCs) may cause a health hazard if a significant amount is inhaled as a dust or absorbed through the skin. | Prior to excavation, consult with EH&S to determine what control measures |
| 2. Assemble tools and engineering controls appropriate for the type of soils to be excavated. | If a Hudson type airless sprayer is used as an engineering control, it may contain residues of pesticides or defoliants from prior use. These residues could be inhaled or absorbed through the skin. | Clean the sprayer with an appropriate solvent or surfactant to neutralize residues from previous use. |
| 3. Pre-wet the surface of the soil to be excavated. | No health and safety hazards foreseen. | |
| | Environmental pollution possible. | To avoid the potential discharge of silty water or chloraminated water to local waterways, do not over water. |
| 4. Begin excavation | Foot injury | Steel (or similar) toed shoes with metal shank arches are required. |
| | Muscle Strain | Don't rush. Use the tools with the advantage of your weight. Keep the weight of shovelfuls manageable. Don't pitch the shovelfuls a long distance. |
| | Impact on other people from use of hand tools. | If you are using tools such as an ax or pick that require swinging to provide sufficient impact on the soil or roots, be sure you are clear of someone else and you announce, "heads up" or something similar before you start swinging |

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| | | Impact from the separation of part of tools such as ax, pick, or shovel heads. | Check the tools prior to use to determine the parts are securely attached. |
| | | Exposure to dust. | Keep the soil damp while it is being disturbed. If pre-wetting has not sufficiently dampened the soil it should be misted or sprayed during disturbance. |
| | | Exposure to pyrite cinders (skin contact) or pyrite cinder dust (inhalation). | If previously unknown pyrite cinders are found during excavation, suspend activities and report the location to the RFS Superintendent. Don't resume operations until has been determined by EH&S that the hazard has not increased due to the presence of significant amounts of cinders. Once work resumes, use dust control procedures and PPE to avoid unnecessary exposure to cinders. |
| | | Falling into the hole. | Stay aware of where you are in relation to the hole. Marking the hole with 2 X 4's or similar material can act as a limit for foot travel and a limit to oil piles from the excavation. |
| | 5. Cover the hole with a walkable surface and make a barrier around it if it can't be filled immediately after completion of the work or if it has to be left unattended. | Muscle strain from the weight of the cover and angle of the placement of the cover. | Two persons should place a panel unless it can be dragged into place. |
| | | Falling into the hole. | Stay aware of where you are in relation to the hole. Marking the hole with 2 X 4's or similar material can act as a limit for foot travel and a limit to soil piles from the excavation. |

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| | <p>Required Training:</p> <ol style="list-style-type: none"> 1. Lifting loads 2. Hazards associated with the disturbance of soil. 3. Procedures for reporting previously unknown locations of soil that may contain pyrite cinders. | <p>Required Personal Protection Equipment (PPE) and Procedures</p> <ol style="list-style-type: none"> 1. Gloves 2. Hard toed and steel shank boots 3. Standard work clothes (coveralls etc to be used at work only) 4. Wash hands after work. 5. Change out of work clothes prior to going home. Launder clothes after work. |
| <p>Other Information: Contributors: Created: JSA Library Number:</p> | <p>EH&S Construction Health & Safety Specialist, Gary Bayne July 2005. August 2006 update.</p> | |
| <p>For more information about this JSA, contact the <i>Office of Environment, Health and Safety</i> at UC Berkeley, 317 University Hall #1150, Berkeley, CA 94720-1150 (510) 642-3073 • http://www.ehs.berkeley.edu</p> | | |