



Project Application Profile

Project: Naval Weapons Industrial Reserve Plant, McGregor Texas
Contractor: Arrowhead Contracting Inc.
Engineer: CH₂M Hill Constructors, Inc.
Product Used: Con Cover 180, SW and Super Seal
Date: December 2003 thru July 2004

Naval Weapons Industrial Reserve Plant Areas Excavation and Disposal of Areas M and F Metals and Explosive Contaminated Soils

Under contract to the US Navy, Arrowhead Contracting Inc. (ACI) was responsible to provide construction services to execute the removal of 2,240 cubic yards of metals and explosive contaminated soils from settling lagoons, building drainage basins, and drainage ditches from Areas M and F, spread across 650-acres of the McGregor Naval Weapons Industrial Reserve Plant (NWIRP).



(Conventional Erosion Control before application of Con Cover on Area M Landfill)

The design required soils to be removed and transported to a designated location adjacent to a Class II Landfill. The engineer required the contractor to construct a long-term, 160' X 150' HDPE soil storage cell to prevent cross-contamination of subsurface soils below and to prevent the migration of stockpiled soils resulting from high winds or storm water erosion. This

cell was limited to stage only the specified volume of material on a 40-mil HDPE underliner. Under a future contract, a landfill construction contractor would remove the soil cell cover and use the stockpiled soils for a sub-grade preparation material for final landfill closure.

Additionally, the design required the contractor to use polyethylene liners and sandbags to secure open excavations and to cover stockpiled soils at the end of each work shift to prevent potential migration of contaminants.

Immediately after excavation commenced, confirmation analysis identified substantial increases to the volume of contaminated soil requiring removal. This condition rendered the HDPE storage cell design obsolete, and presented logistical problems for compliant

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storage of large stockpiles. Consequently, the Navy was faced with an engineering challenge to identify a flexible, cost effective and durable alternative to offset the potential for unforeseen changes to volume and/or stockpile management. Arrowhead turned to New Waste Concepts (NWC) and the Con Cover product line.

NWC representatives worked diligently with Arrowhead to integrate soil excavation, transportation and stockpile requirements, soil types, contaminants, and regulatory requirements for Storm Water Pollution Prevention, to develop a technically sound and fiscally responsible approach that integrated best management practices and ConCover products.



Final Restoration of Area M Landfill after Con Cover SW and seed application

Landfill Storage

After further characterization sampling was completed, the Navy estimated the volume of soil to be in excess of 15,000 cubic yards. Therefore, NWC and ACI recommended that the Navy consider a revised stockpile management plan which proposed direct placement of contaminated soils directly on the existing 9-acre landfill cover.

The soils would be dumped, spread and compacted to elevate and level exposed areas of the cap. Once brought to grade, engineered stockpiles could be groomed to manage surface water flow and runoff. This approach offered exceptional flexibility and reduced the overall cost to erect the stockpile.

The Navy communicated concerns that storm water erosion and dust migration of contaminants from the uncovered stockpiles would create an unacceptable human health

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and ecological risk. To eliminate this concern, NWC proposed the application of ConCover SW with a Super Seal 40 amendment to provide daily cover for the stockpiles or working face of the landfill. These products eliminated labor and material costs associated with conventional liner and sandbag maintenance, and extended ACI's flexibility to groom the height and width of stockpiled soils to based on the terrain.

Ultimately, Arrowhead transported in excess of 20,000 cubic yards of soil to the Area M Landfill. Encompassing nearly 4-acres, the application of ConCover allowed for continued expansion and compliant SWPPP. Upon completion of soil stockpiling, the final ConCover batches were ified seed mixtures. The progressive cavity pump on the CAPS 900 applicator was ideal to apply hulled Bermuda and Rye seed and amendments for interim stabilization of the soil cap. This best management practice provided sufficient protection of surface soils and maintained compliance with SWPPP requirements for nearly 4-months without maintenance.

Excavations

The ConCover products also proved invaluable for interim protection of open excavations and stockpiles of soil awaiting analytical results from the laboratory. Con Cover SW was applied for daily maintenance and shorter term protection of the working face of the excavation. When weather forecasts identified severe storms or heavy precipitation, ConCover 180 and Super Seal 40 were applied for added protection against storm water runoff. Arrowhead estimated that this practice saved the Navy approximately \$60,000 in labor, materials and SWPPP compliance monitoring over a six month period.



Applying ConCover 180 to PCB Contaminated Soils

The portability of the CAPS 900 and the durability of the Con Cover SW and 180 products, combined with Super Seal 40, an acrylic polymer sealant, provided exceptional

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flexibility to work crews responsible to secure piles at the end of each work shift. Quite simply, a two man crew mixed a 900-gallon batch of product in 40-minutes. Using a 4WD pickup truck, the CAPS 900 was easily towed to each excavation site. Each stockpile was encapsulated with a water resistant outer shell.

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