



Stormwater Basin Remediation and Stabilization

Location: Operating Refinery

Port Arthur, Texas

Project Value: \$6.7 Million

LWR was contracted by a major oil refiner to stabilize impacted soil and previously stabilized sediment in an area formerly occupied by a stormwater retention basin. The basin had been closed under Standard 3 of the TCEQ Risk Reduction Rules beginning in 1994. Besides sludge previously stabilized in situ, the basin also contained sludge and sediment from an Aeration Basin and impacted soils from various other areas of the refinery. The impacted material within the basin was capped with a clay layer, geotextile and limestone rock. This work was completed in 2001. Soft materials placed in the basin eventually created maintenance issues and refinery expansion plans drove the refinery to reclaim this area by removing and treating materials within the basin and berms to meet Standard 2 of the TCEQ Risk Reduction Rules.

The initial project scope called for stabilization of 145,000 cubic yards of impacted material from the basin. Stabilization operations on this site utilizing LWR's cold mix pugmill units adding a reagent admixture commenced in late 2007. The efficiency of LWR's process led to an expansion of the project scope as the client delivered additional impacted materials from the refinery property for processing. At completion in early 2009, LWR had produced 347,000 tons of recycled product that was utilized by LWR to construct perimeter berms and a cap to close the former basin area in accordance with Standard 2. By reducing the amount of purchased engineered fill from off-site sources, the refinery estimated that the recycled product reduced construction costs by greater than \$6MM.

This project is an excellent example of achieving sustainable remediation goals as it reclaimed 12 acres of refinery property for construction. Compared with off-site disposal of the material that was recycled, the project covered 684,000 gallons of diesel fuel and 280,000 cubic yards of virgin off-site soil. On-site recycling also eliminated over 3,000,000 trucking miles and 7,600 tons of CO₂ emissions associated with off-site options. LWR's ex situ stabilization process consistently produced a recycled material that met Standard 2 Risk Reduction criteria and construction geotechnical objectives. The recycled product became the preferred select fill material for the refinery's expansion project civil construction contractors.

