

## Case Studies Using Apollo Greenzyme™ Technology

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**Client:** Pilot plant studies of K-waste (K-049) from TWI Inc.

**Operator:** Joint programs by TWI Inc. and Syndetix Inc.

**Location:** Syndetix plant in Mesquite, New Mexico.

**Time:** August 1994.

**Problems:** A pilot plant study for cleanup of an aged slop oil tank, which contained about 600 barrels of K-049 wastes. This waste was comprised of about 80% by volume of heavily aged hydrocarbons, with 20% by volume of bottom water and sediments. The waste had a high viscosity, similar to 15 degree API crude, with high solid content and solid precipitations.

A pilot plant unit was built and run in Syndetix plant in Mesquite, New Mexico, the plant was rated at 10 GPM (gallon per minute) flow rate. Equipments included mixing and reacting tank for AG-280, Apollo Greenzyme™ process, a solid-liquid centrifuge separator, a 10 GPM Apollo oil-water separator and other Syndetix manufactured and rental equipment.

**Solutions** Apollo Greenzyme™ AG-280 (3% solution) was added to the slop oil tank with rigorous mixing and agitation, followed by solid-liquid separation and oil-water separation using the Apollo oil-water separator.

After the treatment process, effluent water and oil samples were collected from Apollo oil-water separator for laboratory analysis; the solid sediments were cleanup during the Greenzyme process for land disposal.

**Results:** This field test was a complete success. The formal laboratory analysis shows the complete recovery of hydrocarbon oil and Apollo Greenzyme™ solution, as well as cleaned solid sediment, which meets legal land disposal permits.