



DLA San Joaquin Tracy Site

San Joaquin County, CA
2017 Region 9 Winner

Key Project Lesson: Partnering with the Federal and State regulatory agencies allowed for the acceptance of innovative approaches, accelerated document reviews and enhanced community protectiveness.

Overview

The Defense Logistics Agency (DLA) Tracy Site consists of a 448-acre industrial parcel with an adjacent 460-acre parcel of agricultural land to the north. The site stores, handles, preserves, packages and ships food, medical, construction, clothing, electronic, industrial, and general supplies to military services within the western United States (U.S.) and throughout the Pacific Rim.

Past depot missions resulted in environmental contamination from vehicle maintenance, material stockpiling, drum storage, waste disposal and wastewater management. Release of chemicals and hydrocarbon fuels have leached into the soil and groundwater with degreasing solvents, heavy metals, pesticides, and petroleum-based oils and lubricants. Environmental studies have been ongoing at the Tracy Site since 1980 when soil and groundwater contamination were first detected. In 1990, the Tracy Site was listed on the Comprehensive Environmental Response, Compensation and Liability Act's (CERCLA) National Priority List (NPL) as a superfund site.

In 2010, the U.S. Environmental Protection Agency (EPA) placed the Tracy Site on a listing to have construction complete in 2 years. With the need for design and construction of three additional remedial actions and preparation of three additional decision documents, this seemed impossible at the time. The team rose to the challenge – shortening formal document reviews from 60 to 30 days and recommending and implementing remedial action enhancements that saved \$20 million and 27 years of treatment operations and monitoring.

Featured Partners

- DLA, Defense Distribution Center
- U.S. EPA, Region 9
- California Department of Toxic Substances Control (DTSC)
- California Regional Water Quality Control Board Central Valley (RWQCB)

Primary Reason for Redevelopment

Soil and soil gas contamination impacted redevelopment plans for warehouses and office buildings thereby impacting DLA's mission. Identification and mitigation of the environmental contamination allowed DLA and U.S. ACE architects to be able to plan, design and construct new facilities so that DLA could continue meeting its obligations to the U.S. Armed Forces.

Approach

In 2010, the EPA requested that construction be completed in 2 years. With the need for design and construction of three additional remedial actions and preparation of three additional decision documents, the team rose to the challenge and implemented the following approaches:

1. Document reviews specified in the Federal Facilities Agreement for both regulatory agencies and DLA were shortened from 60 to 30 days.
2. Aggressive optimization of the groundwater monitoring, extraction and treatment system.
3. Implementation of innovative pneumatic fracturing combined with soil vapor extraction (SVE) to accelerate vadose zone remediation.
4. Application of risk assessment combined with administrative controls to ensure human health protectiveness.

Innovative Techniques

Pneumatic Fracturing – a process in which high pressure gas is injected into the subsurface, creating a “spider web” of cracks throughout, allowing contaminated soil to be vacuumed out with a SVE system – resulted in the removal of 170 percent more mass than estimated in the feasibility study. The innovative technique also helped attain clean-up goals after only 10 months of operation, 14 months ahead of schedule.

Green Remediation – two 1,000-lb carbon vessels and 1,500 feet of 6-inch high density polyethylene piping (HDPE) for water conveyance that were idle were repurposed. This equipment was left over from a pilot study performed years earlier.

Challenges

Regulatory compliance is administered by the federal government (U.S. EPA) and by two State of California agencies (i.e., RWQCB and the DTSC requiring compliance with both Federal and State of California regulatory criteria, which have become increasingly stringent over the last 33 years.

For example, when the 1998 record of decision was finalized, vapor intrusion was not a contaminant exposure pathway requiring evaluation. However, since the record of decision was signed, the DLA has been required to implement vapor intrusion protectiveness measures.

As another example, when the 1998 record of decision was signed, the pesticide dieldrin was listed as a contaminant of concern in groundwater and currently there is still no federal drinking water standard for this contaminant. Nevertheless, the DLA was required to implement a groundwater remedy for the mitigation of this contaminant in groundwater based upon the State of California drinking water action level.

Benefits

The approach resulted in the following success within the 2 year goal requested by the EPA:

1. Aggressive optimization resulted in 50 percent of the groundwater extraction wells being shut down because the clean-up goals were met. Curtailing the extraction network reduced the pumped and treated groundwater from 350 to 75 gallons per minute, saving \$3,300 in energy savings and reducing carbon emissions by 18 metric tons.
2. Aggressive optimization further achieved a decrease in groundwater sampling from 290 wells in 2007 to 70 in 2015 – resulting in a cost savings of \$175,000.
3. Pneumatic fracturing combined with SVE achieved 170 percent more mass removal than estimated and 14 months ahead of schedule thus allowing DLA to continue its mission.
4. Implementation of a negotiated groundwater remedial action saved \$20 million and 27 years of treatment operations and monitoring.

5. Accelerated document reviews resulted in finalization of a three decision documents (Record of Decision, Explanation of Significant differences and an Action Memorandum) with construction and shutdown of an SVE system and groundwater pump and treat system.

With site cleanup goals largely achieved, the community's risk of harmful pollutants entering their water systems or breathing in pollutants dispersed through the air has been mitigated. The employees at the Tracy Site also experience a safer and cleaner work environment as a result of the remediation activities.

After more than three decades since groundwater and soil contamination were first detected, the community surrounding and employees of DLA San Joaquin can rest easy knowing the harmful pollutants are now mitigated and the Superfund Site is on its way to being completely remediated.



Before – Before redevelopment of warehouses and office buildings



After - See left and center of the photograph where four warehouses were demolished, and three new warehouses, and an office building were constructed.

Project Address:	25600 South Chrisman Road, Tracy, CA
Contact Person:	Jim Paslak
Phone / Email:	209.839.4081 / James.Paslak@dla.mil
Names of Participants:	HDR, DLA, U.S. EPA, RWQCB, DTSC
Number of Acres:	908
Former Uses:	Industrial - Stockpiling, warehousing, vehicle maintenance
Current Uses:	Industrial - Warehousing and wastewater management.
Former number/Types of jobs:	1,000 / 1,200
New number/Types of jobs:	Engineering, planning, compliance, logistics, construction
Type of Site:	Former industrial, rehabilitated to modern industrial
Regulatory Program:	CERCLA & National Pollutant Discharge Elimination System
List of Major Contaminants:	Volatile organic compounds (VOCs), pesticides and petroleum hydrocarbons - in soil, soil gas and groundwater.
Magnitude of Contamination:	Three primary contaminant classes VOCs, pesticides and petroleum hydrocarbons present in three different media (soil, soil gas, and groundwater) with off-site contamination.
Greatest Challenge(s):	Access to contamination at off-property parcels, remediation of VOCs in deep soils, combined State and Federal regulations.
Length of Time to Remediate Site:	35 years to complete substantive remedies for redevelopment.
Primary Reason for Redevelopment:	To continue the 50 year mission supporting for U.S. troops.
Years Abandoned or Challenged:	Challenged from 1980 until 2015.
Cleaned up under Consent Decree:	Governed by CERCLA and State of California agencies
List of Financial Assistance:	Department of Defense funded
Other Financial Techniques Utilized:	None
New Tax Revenues:	None
Community Outreach Activities:	On-site / off-site information repository with community involvement through fact sheets, public meetings, on-site public affairs official.
Innovative Environmental:	Pneumatic fracturing combined with SVE. Risk assessment with land use controls.
Regulatory Techniques:	Partnering with Federal (U.S. EPA), State (RWQCB & DTSC) and local officials to achieve accelerated approvals.
Innovative Remediation Techniques:	Pneumatic fracturing of vadose zone to enhance air flow and communication of the soil vapor extraction network.
Innovative Economic Development:	None
Land Conservation:	The community's risk of harmful pollutants entering their water systems or breathing in pollutants dispersed through the air has been mitigated. The employees at the Tracy Site also experience a safer and cleaner work environment.
Sustainable Development:	None
Federal Partners:	None