HYPERGOL MAINTENANCE FACILITY HAZARDOUS WASTE SOUTH STAGING AREAS REMEDIATION FACT SHEET

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
KENNEDY SPACE CENTER
BREVARD COUNTY, FLORIDA

Location

Hypergol Maintenance Facility (HMF) Hazardous Waste South Staging Area is located in the NASA industrial area south of the NASA Parkway on G Avenue Southeast.

History

The HMF was constructed between 1964 and 1985 to support the Apollo and Space Shuttle Programs at Kennedy Space Center (KSC). The HMF Facility includes the East Hypergol Module Storage Building (M7-1412), West Hypergol Module Storage Building (M7-1410), Hazardous Waste Staging Shelter, Hazardous Waste Staging Area (formerly the Liquid Oxygen Fuel Pad), former Liquid Hydrogen Fuel Pad, two leaching ponds, and two equipment shelters. Past operations at the HMF include cryogenic testing for the Apollo Space Program and "hot-testing" of the solid Rocket Booster Aft Skirt. In addition, from 1981 to 1998, the Hazardous Waste Staging Area operated as a permitted RCRA Temporary Storage and Disposal (TSD) Facility. The TSD was closed in 1998 and the facility is currently inactive and used for the storage of miscellaneous equipment.

In 1998 a RCRA Facility Assessment (RFA) was conducted to evaluate potential sources of contamination at this site. Based on the RFA Confirmation Sampling was performed which determined surface soil contaminants to be polychlorinated biphenyls (PCBs), trichlorofluoromethane (TCFM) and aluminum. A RCRA Facility Investigation was conducted in 2002 and determined that vinyl chloride was above the Groundwater Cleanup Target Levels (GCTL). In 2003 an Interim Measure was performed to remove approximately 200 tons of soil impacted by PCBs.

Treatment

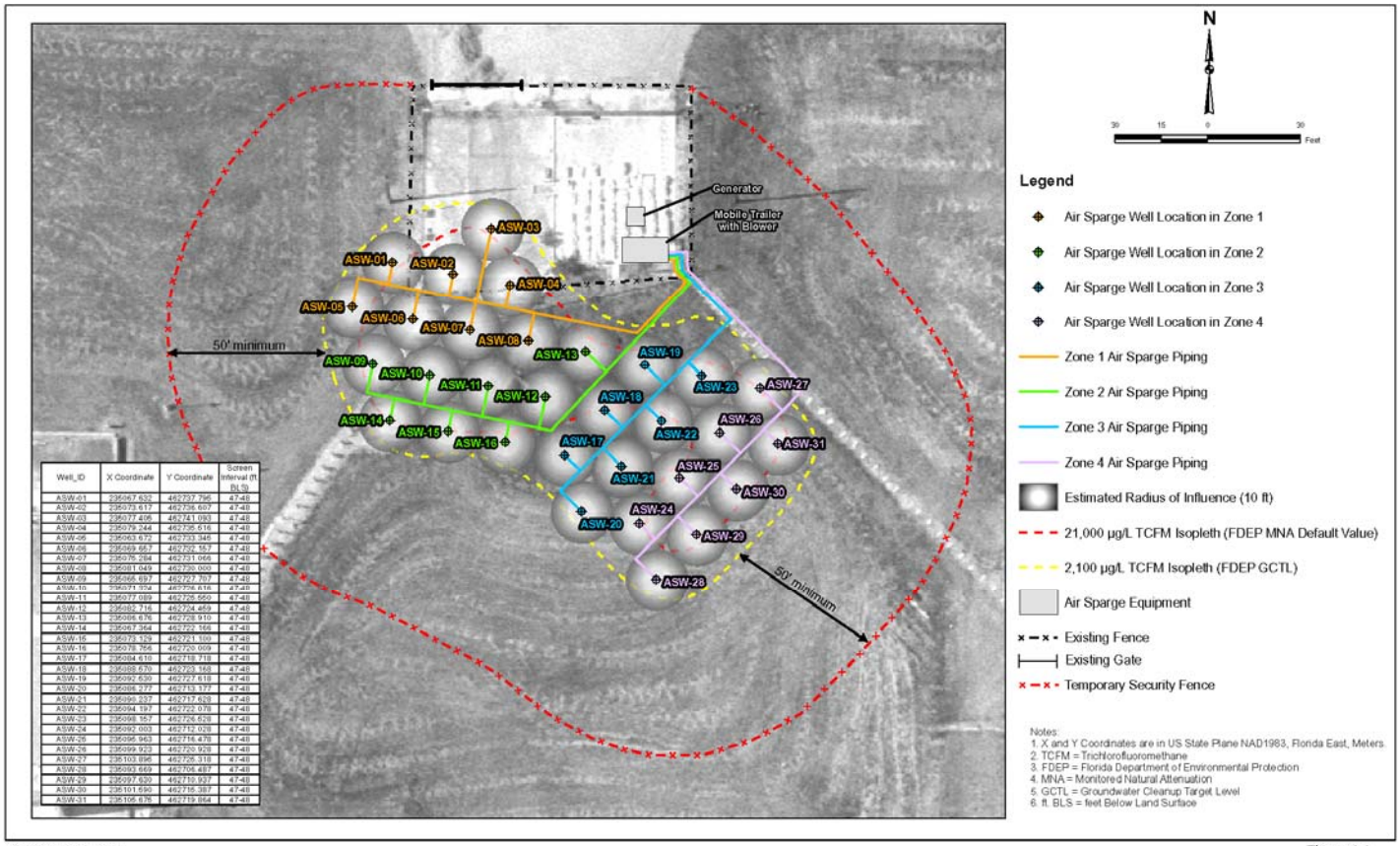
Air sparging (AS) was chosen as the final corrective measure for groundwater throughout the TCFM plume and monitored natural attenuation (MNA) for aluminum and vinyl chloride (VC) impacts.

Air Sparging and MNA

An air sparging system will be installed to remove the TCFM plume. Air sparging is a process where air is injected below the water table in an attempt to increase the flux of dissolved VOCs into the gas phase. Vertical injection wells will be placed close enough to produce sufficient air flow to promote volatilization throughout the treatment zone. The air sparging will likely last less than one year due to the high volatility of TCFM. In addition, MNA which involves the use of natural processes will be utilized to reduce chlorinated volatile organic compound (VOC) concentrations.

Conclusion

The AS system, in conjunction with MNA will address the TCFM, aluminum, and VC groundwater impacts. This is believed to be the most cost effective way to remediate groundwater in a reasonable amount of time. To assure that the groundwater is not being used for drinking water an institutional control for this facility has been implemented.



Well_ID	X Coordinate	Y Coordinate	Screen Interval (ft BLS)
ASW-01	235067.632	462737.796	47-48
ASW-02	235073.617	462736.697	47-48
ASW-03	235077.406	462741.093	47-48
ASW-04	235079.244	462735.616	47-48
ASW-05	235063.672	462733.345	47-48
ASW-06	235069.667	462732.157	47-48
ASW-07	235075.284	462731.066	47-48
ASW-08	235081.049	462730.000	47-48
ASW-09	235066.697	462727.707	47-48
ASW-10	235071.374	462726.616	47-48
ASW-11	235077.089	462725.550	47-48
ASW-12	235082.716	462724.459	47-48
ASW-13	235086.676	462728.910	47-48
ASW-14	235067.364	462722.166	47-48
ASW-15	235073.123	462721.100	47-48
ASW-16	235078.764	462720.009	47-48
ASW-17	235084.616	462718.718	47-48
ASW-18	235088.670	462723.163	47-48
ASW-19	235092.639	462727.618	47-48
ASW-20	235084.277	462713.177	47-48
ASW-21	235090.237	462717.628	47-48
ASW-22	235094.197	462722.078	47-48
ASW-23	235098.157	462726.528	47-48
ASW-24	235092.003	462712.028	47-48
ASW-25	235095.963	462716.478	47-48
ASW-26	235099.923	462720.928	47-48
ASW-27	235103.896	462725.318	47-48
ASW-28	235093.669	462706.487	47-48
ASW-29	235097.629	462710.937	47-48
ASW-30	235101.590	462715.387	47-48
ASW-31	235105.676	462719.864	47-48

Figure 4-1
Air Sparge Layout

This Fact Sheet was written and produced by the NASA/KSC Environmental Program Office. All comments or questions can be made by calling (321) 867-8402 or by writing to the following address:

Rosaly Santos-Ebaugh, P.E.
NASA, John F. Kennedy Space Center
Environmental Program Branch
Mail Code: TA-C3
KSC, FL 32899