

Miami Drum Service
(Biscayne Aquifer Area-Wide Groundwater Contamination)
7049 Northwest 70th Street
Miami, Florida
County: Miami – Dade
District: Southeast
Site Lead: EPA
Placed on National Priorities List: October 23, 1981
HWC # 003
ERIC ID # 3776

Site Description and History

Miami Drum Service is an inactive drum recycling facility located on approximately 1.5 acres in a predominately industrial area about 2 miles north of the Miami International Airport in Township 53S, Range 40E, Section 14 at 25° 50' 15.1241" N, 80° 18' 45.6040" W. The facility operated for approximately 15 years until Dade County, through a court order, required it to cease operations in June 1981. While in operation, as many as 5,000 drums of various chemical wastes including corrosives, solvents, phenols, and toxic metals were observed on the site. During the recycling operation, drums were washed with a caustic cleaning solution which along with drum residues, were disposed of onsite, resulting in contamination of the soils and underlying Biscayne Aquifer groundwater by metals, organic solvents and other industrial chemicals. The former Miami Drum Service facility lies within an 82-acre property owned by the Miami-Dade County Transit Authority (Transit Authority). The Transit Authority property has operated as an operation and maintenance center for the County's light rail system since January 1982.

The Biscayne Aquifer is a highly productive aquifer and the sole source of drinking water for the millions of residents in southeast Florida. The aquifer is vulnerable to contamination because of its limestone composition and its close proximity to the land surface. Contamination from this site, other Superfund sites and non-Superfund sites has resulted in widespread low-level groundwater contamination in the underlying Biscayne Aquifer. Groundwater contamination has been significant enough to shut down several well fields including the Medley well field, and also reduced production at the Preston and Hialeah water treatment plants.

There are four public well fields in the study area: 1) Medley well field; 2) Miami Springs well field; 3) Preston well field; and 4) Northwest well field. The Medley well field has been closed since 1982. The Northwest well field, with an installed capacity of 150 million gallons per day (Mgd), became operational in mid-1983. After installation of the Northwest Well Field, production at the Miami Springs and Preston well fields were reduced to approximately 10 Mgd.

Threat

Contamination by volatile organic compounds from this site has contributed to the area-wide groundwater contamination of the Biscayne Aquifer, the sole source of drinking water for residents of southeast Florida. The Medley well field is situated 250 yards west of the site, and the Miami Springs-Preston well fields are located one mile southeast of the site. Groundwater contamination poses a potential threat to public health where private wells may withdraw groundwater for potable use.

Well head treatment at the Miami Springs and Preston municipal well fields is being conducted for the dual purpose of groundwater remediation and providing potable water to the community. Dade County regulates construction of new or existing wells in the study area, thus controlling installation of new wells and minimizing potential exposure to contaminated groundwater.

Response Strategy and Status (December 2016)

The Miami Drum Service, Varsol Spill and Northwest 58th Street Landfill Superfund sites have been collectively addressed by the EPA through the Biscayne Aquifer Study, as one risk management unit. The Biscayne Aquifer Study supported selection of remedial actions to address the three Superfund sites, in addition to area-wide groundwater contamination in the Biscayne Aquifer study area.

Between 1981 and 1982, Dade County excavated 10,000 cubic yards of hazardous debris and soil from the Miami Drum Service site. These materials were transported to an authorized hazardous waste disposal site in Emelle, Alabama. In addition, 9.2 million gallons of contaminated groundwater were treated and discharged into the Biscayne Aquifer.

In September 1982, a Record of Decision (ROD) was signed for contaminated soil, which indicated that the previous soil removal actions were adequate for source control at the site, and that no further onsite soil removal actions were necessary.

In October 1982, EPA and the Florida Department of Environmental Regulation (FDER, now DEP) entered into a cooperative agreement. The agreement covered reimbursement to Dade County for costs associated with the past soil removal and groundwater treatment, and provided funds for the site remedial investigation (RI). The RI was completed in November 1983 and reported dispersed levels of volatile organic contaminants (VOCs) in the groundwater above drinking water standards, but with no concentrated groundwater plume emanating from any of the three Superfund sites in the study area. The low levels of several pesticides, herbicides and extractable organic compounds detected in onsite groundwater were below both state and federal primary drinking water standards. Remedial alternatives were evaluated in the feasibility study (FS) for Miami Drum during Phase III of the Biscayne Aquifer Study.

A Record of Decision (ROD) was signed by the EPA in September 1985, documenting the selected groundwater remedy. Due to widespread low-level groundwater contamination associated with this site and other areas of the Biscayne Aquifer in northwest Dade County, the dispersed groundwater contamination will be addressed by treatment of groundwater recovered at the Preston and Miami Springs well fields using air stripping towers, for the dual purpose of aquifer remediation and providing potable drinking water to the community. Total present worth cost for implementation of this remedy is \$39.4 million. In addition, the Biscayne Aquifer Protection Plan implemented by Dade County, will insure adequate control or elimination of potential sources of contamination.

In September 1986, a contract was signed with Dade County to design the system. A prototype air stripper was completed in November 1987, and the design was completed in March 1988. In October 1988, Dade County received a cooperative agreement from the EPA for partial funding of the remedy. In March 1989, construction bid requests for the Preston and Hialeah water treatment plants were conducted. In October 1989, construction began for the air stripping towers at the Preston and Hialeah water treatment plants. Construction of the 64 tower air stripping system was completed in June 1992. Treatment has been ongoing since September 1992. The air stripping towers have the capacity to treat almost 150 million gallons per day.

Schedule

No further onsite remedial action for source control (soils) is necessary at the Miami Drum Service site. Operation and maintenance of the area-wide Biscayne Aquifer groundwater treatment system is ongoing. Five-Year Reviews (FYR) are conducted by EPA to confirm the effectiveness and protectiveness of the overall site remedy.

The Third FYR was completed in 2013 and concluded that the remedy is functioning as intended and remains protective in the short term. However, to ensure protectiveness in the long term, several activities were recommended prior to initiation of construction of additional tracks on the Transit Authority property including: review of soil excavation criteria used during the previous Miami Drum removal actions; and identification and surveying of areas of site related soil contamination remaining on the property, including mercury contaminated soil. In addition, institutional controls are to be established which restrict land use to commercial/industrial on the former Miami Drum Services site, consistent with the site remedy.