

November 2004

FACT SHEET

FORMERLY USED SITES REMEDIAL ACTION PROGRAM (FUSRAP)

DuPont Chambers Works

Deepwater, New Jersey

LOCATION: The DuPont Chambers Works site is a 700-acre active chemical plant located in Pennsville and Carneys Point Townships on the southeastern shore of the Delaware River, north of the I-295 Delaware Memorial Bridge, and adjacent to the residential community of Deepwater, Salem County, N.J. The plant is owned and operated by E.I. duPont de Nemours & Company. Current zoning is industrial. Land use in the surrounding area is both industrial and residential.

STUDY/PROJECT DESCRIPTION: The FUSRAP program was transferred from the Department of Energy (DOE) to the Corps of Engineers (COE) by the Energy and Water Development Appropriations Act for FY98 (P.L. 105-62), 13 October 1997. DOE created FUSRAP to address radiological contamination at sites used by DOE's predecessor agencies, the Manhattan Engineer District (MED) and the Atomic Energy Commission (AEC) from the 1940s through the 1960s.

Operations involving uranium at the Chambers Works site began in 1942. As part of its work on the Manhattan Engineer District (MED) Program, DuPont worked on developing a process for converting uranium oxide to produce uranium tetrafluoride and small quantities of uranium metal. Other research activities were also performed. All MED activities were transferred to the Atomic Energy Commission (AEC) in 1946. DuPont continued its research for AEC until late 1947. In 1948 and 1949, AEC conducted radiological surveys and decontamination of building surfaces at the site. Following a radiological survey based on then-existing criteria, AEC released the buildings back to DuPont in 1949.

In March 1977, another radiological survey was conducted by Oak Ridge National Lab (ORNL). The 1977 results indicated that elevated concentrations of uranium were present and resulted in its designation as a FUSRAP site. In 1983, Bechtel National Inc. (BNI) and its radiological subcontractor, Eberline Analytical Corp (EAC) conducted a designation survey to define the locations and boundaries of the contamination. The Survey was not conducted site-wide. The only areas investigated were those determined to be of interest through historical MED documents. Six separate areas were surveyed: (1) Building J-26 Area; (2) F Corral Parking Area; (3) Building #845 (interior and exterior); (4) East Burial Area; (5) Lagoon A; and (6) Central Drainage Ditch (Fig. 2). Surface and subsurface measurements in the J-26 and Lagoon A areas indicated that the areas were not contaminated above DOE 5400.5 guidelines and did not require remedial action. The remaining areas were contaminated above guidelines. In

some areas, subsurface contamination exists at depths greater than 3 meters. Due to the high water table, contamination below the water line could not be quantified. The major on-site contaminant is U-238, both in soil and water samples.

The DuPont facility is an identified RCRA site currently being remediated by DuPont under an Administrative Consent Order (ACO) with the State of New Jersey, Dept of Environmental Protection (NJDEP). The six known areas of MED activity are included in RCRA Solid Waste Management Unit (SWMU) #33. DuPont has collected and documented RAD contamination in water samples in the course of pumping and treating groundwater at the site under the ACO. In January 1997, DuPont filed a lawsuit against various U.S. Government agencies regarding Potentially Responsible Party (PRP) determinations for both RAD and non-RAD chemical contamination at the site. In August 1998 the Corps and DuPont executed a License (Real Estate) Agreement providing access to the Chambers Works Site to perform FUSRAP activities. In October 1998 the Corps and DuPont executed a General Release Agreement removing FUSRAP activities at the site from the nationwide litigation.

STUDY/PROJECT STATUS: An overview of the project as received from DOE when the FUSRAP program was transferred to the Corps is as follows:

(1) Bldg J-26 was built on the former site of a demolished building. DOE's assessment concluded that the site appears to have sufficiently low levels of radioactive contamination as to be releasable for Unrestricted Use, but confirmatory investigations are required. Intrusive sampling effort was completed in FY03 and indicated that "No Further Action" is necessary.

(2) F Corral - an area approx 250' x 375' under a paved parking lot built over the former site of another demolished building. Uranium is present; confirmatory investigations are required. Intrusive sampling effort was completed in FY 02 and indicated remediation is necessary. A Final Remedial Investigation Report may be completed in FY06.

(3) Bldg #845 (Misc Stores) - a four-story, 50,000 sq ft steel- frame building. Nine (9) barrels of mixed waste from transferable radioactive surface decontamination of the building in 1996 by DOE were stored by DOE on the first floor of the building, along with 40 bags of Personal Protection and other decontamination equipment. The COE removed the drums and bagged PPE/equipment in September 1998 and disposed them at Waste Control Specialists in Andrews County, Texas, to continue DOE's ongoing remedial action. Intrusive sampling effort was completed in FY 02.

DOE had also agreed to dispose of fixed-contaminated structural steel after demolition of the building by DuPont. The COE agreed to honor DOE's previous commitment. DuPont demolished the building in February 1999 and stockpiled the structural steel on-site for subsequent removal/disposal by the

COE. An Action Memorandum for removal of the structural steel was approved in June 1999. A contract to remove and dispose of the structural steel was awarded to Radian International in July 1999, and is currently underway.

Subsurface uranium contamination may also exist in an area approx 130' x 150' under the building foundation and in a 330' long wooden drainage trough leading to the central drainage ditch. Intrusive sampling effort of the entire area was completed in FY 02 and indicated remediation may be necessary. A Final Remedial Investigation Report may be completed in FY06.

(4) The Central Drainage Ditch (B Ditch). DuPont performed chemical remediation of the Central Drainage Ditch between the Building 845 site and the F Corral site in the spring of 1997 and radioactive contamination appeared to be at low enough levels for the site to be releasable for unrestricted use. An Independent Verification Study was conducted by DOE's Oak Ridge National Laboratory (ORNL) and completed in December 1998. The report concluded that the remediated section of the Central Drainage Ditch successfully met DOE's remedial action objectives. Intrusive sampling effort was completed in FY03 and indicated that "No Further Action" is necessary.

(5) East Area / East Burial Area – The East Burial Area is approximately 350' x 85'. Uranium from the Manhattan project and carbon-14 not related to the Manhattan project are known to be present. Other unknown mixed wastes may also be present; confirmatory investigations are required; PRP issues are likely. The East Area, directly adjacent to the East Burial Area is a much larger area. It is believed several MED buildings were located in the area. The areas require further investigation and Cone Penetrometer Testing (CPT) was completed in FY04. Confirmatory intrusive sampling should be completed in FY05.

(6) Historical Lagoon A - This site also appears to have sufficiently low levels of radioactive contamination as to be releasable for unrestricted use; The area requires further investigation and Cone Penetrometer Testing (CPT) was completed in FY04. Confirmatory intrusive sampling should be completed in FY05.

Sufficiency and completeness of DOE's overall Site Characterization is unclear and additional studies shall be completed in the next several years. DuPont has advised of at least two additional areas of suspected RAD contamination. Previous soil and water samples / monitoring indicate that groundwater contamination may be present; DOE had not previously addressed groundwater. Additional investigations, studies and modeling are programmed and currently being completed.

FY98 funds were used to execute the License Agreement and General Release Agreement with DuPont, for interim remedial action to dispose of nine drums of decontamination waste and bagged PPE and equipment left stored in Building 845 by DOE, and to complete the verification study of the Central

Drainage Ditch. FY99 programmed work included removal and disposal of approximately 500 tons of structural steel from Building 845, initiation of overall site assessment and characterization, initiation of Remedial Investigation and Feasibility Studies (RI/FS), initiation of Geographic Information System (GIS) development, initiation of a Groundwater Modeling System (GMS), and Public Involvement activities. FY00 and FY01 programmed work continued the investigations and studies and public involvement. Intrusive sampling was completed in FY02 for the Building 845 and F-Corral areas. Central Drainage Ditch and Building J-26 intrusive sampling effort was completed in FY03. FY04 programmed work included Cone Penetrometer Testing of the entire East and Historical Lagoon A areas. In addition, FY04 programmed work included the installation of Groundwater Modeling Wells in Operable Unit #1. The preliminary and final intrusive sampling efforts of the East Burial and Lagoon A areas shall be completed in FY05. The Risk Assessment Report and Feasibility Studies can then begin for the entire site in FY05 and FY06.

PUBLIC INVOLVEMENT: Public Involvement was formally initiated with a Public Meeting held on June 9, 1999 with presentations on the FUSRAP program, the DuPont site and history, technical overview of radiation and radiological contamination at DuPont, and goals and objectives for the Public Involvement Plan. Subsequent presentations were made in August 1999 to the elected officials of the communities of Penns Grove, Carney's Point, and Pennsville, NJ and to the Salem County Board of Freeholders. The first Newsletter was issued in early September 1999 along with a mailing to residents, community leaders and officials, soliciting interest in forming a Restoration Advisory Board (RAB) as a communications forum to enable the public to provide input to the decision making process. A RAB was formed, with an initial organizational meeting, in March 2000. Nearly twelve RAB meetings have been held in the past several years. The next RAB meeting is scheduled for November 2004.

Several partnering meetings have been held with DuPont representatives, New Jersey Department of Environmental Protection and EPA Region II. A Technical Project Planning (TPP) Workshop was conducted in July 2000 among USACE personnel, and a second TPP workshop held on 23-23 October 2000 with EPA II, NJDEP, DuPont and USACE personnel. On 9 April 2002 the Corps met with EPA, NJDEP and DuPont to discuss the Work Plan for the Intrusive Sampling Effort of Operable Unit #1 (Building 845 and F-Corral area's) and OU #2 (Central Drainage Ditch and Building J-26 areas) were completed in FY02 and FY 03 consecutively. The intrusive sampling effort for OU #3 (East Burial Area) shall begin in FY05. A series of RI reports and Work Plans are currently planned for completion in FY05. The team currently schedules pre-meetings with the regulators and DuPont prior to all of the projects RAB meetings.

Groundwater modeling, GIS modeling, and RI/FS activities continue.