EXPLANATION OF SIGNIFICANT DIFFERENCES
LIPARI LANDFILL SUPERFUND SITE

SITE NAME AND LOCATION

Lipari Landfill Superfund Site
Mantua Township, Gloucester County, New Jersey

INTRODUCTION

The purpose of this Explanation of Significant Differences (ESD) is to explain the changes made by the U.S. Environmental Protection Agency (EPA) to the remedies selected for the Lipari Landfill Superfund Site (Site). Under Section 117 (c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA or Superfund), as amended, EPA is required to publish an ESD when, after issuance of a Record of Decision (ROD),[1] subsequent enforcement or remedial actions lead to significant, but not fundamental, changes in the selected site remedy. Sections 300.435(c)(2)(i) and 300.825(a)(2) of the National Oil and Hazardous Substances Contingency Plan (NCP) set forth the criteria for issuing an ESD and requiring that an ESD be published if the remedy is modified in a way that differs significantly in either scope, performance or cost from the remedy selected for the site.

This ESD and the documents that provide the basis of the ESD decision will be incorporated into the Administrative Record for the Site in accordance with Section 300.825(a)(2) of the NCP. The Administrative Record is available for review during business hours at EPA Region 2, 290 Broadway, New York, New York 10007 and at the information repository in the Pitman Library, 15 Pitman Ave, Pitman, NJ 08071.

This ESD presents a summary of the significant differences between the remedial actions selected for the Site in: the 1982 ROD for Operable Unit 1 (OU1); the 1985 ROD for Operable Unit 2 (OU2), as modified by a 1986 clarification letter and 1992 ESD; the 1988 ROD for Operable Unit 3 (OU3), as modified by a 1993 ESD; and additional actions that have been implemented or that will be required at the Site. A brief history of the Site, description of the original remedies, an explanation of information upon which the differences are based and the rationale for these changes are presented for each Operable Unit.

The 1982 OU1 ROD called for construction of a containment system to encapsulate a 16-acre area and to prevent migration of landfill contamination. This ESD describes the technical modification made to the northern portion of the containment wall to encompass additional contaminated material and to add the requirement for the imposition of institutional controls (ICs)[2] at the Site so that exposure to the contaminants remaining on-site will be appropriately limited.[3]

The 1985 OU2 ROD called for construction of a leachate pretreatment plant and water injection/leachate extraction wells to flush the containment system of water transportable contaminants. This ESD documents the decision to choose the alternative outlined in the 1985 OU2 ROD, which states that, in the event that the limits of technology are reached and the groundwater would not meet applicable standards, the flushing could be modified such that the flushing of the system would be terminated and an enhanced containment system maintained to prevent migration of contaminated water. Because with this change, the ROD remedy is no longer actively

[1] A ROD documents the EPA's remedy decision.
[2] ICs are non-engineered controls, such as property or groundwater use restrictions imposed by a property owner by recorded instrument or by a governmental body by law or regulatory activity for the purpose of reducing or eliminating the potential for human exposure to contamination and/or protecting the integrity of a remedy.
[3] The imposition of ICs in the form of deed restrictions and/or a Classification Exception Area/Well Restriction Area is a Significant Difference which applies to both OU1 and OU3 and is mentioned throughout these sections.

remediating to relevant and applicable groundwater criteria, the Site will require long-term Operation and Maintenance (O&M), which will be performed by the State.

The 1988 OU3 ROD called for the cleanup of off-site areas impacted by landfill contaminants through: collection and treatment of contaminated groundwater; and excavation and treatment of contaminated soil and sediments. This ESD describes the requirement for the imposition of ICs to protect and provide access to the off-site drainage collection systems and associated infrastructure which is necessary to collect and transport contaminated groundwater for long-term O&M activities.

SITE HISTORY, SELECTED REMEDIES, BASIS FOR AND DESCRIPTION OF SIGNIFICANT DIFFERENCES

History

The Site is an inactive landfill located in the Town of Mantua and the Borough of Pitman, adjacent to the Borough of Glassboro, Gloucester County, New Jersey (see Figure 1). It is located in the southwestern part of New Jersey, approximately 20 miles south of Philadelphia. The Site is approximately 47 acres in size and consists of a 16-acre area, designated as the “on-site area” and 31 acres of neighboring impacted surface waters and wetlands that have been designated as the “off-site area.” The 16-acre on-site area includes a six-acre inactive landfill.

The Site is in a mixed agricultural, educational, commercial and residential area. A technology park associated with Rowan University borders the Site to the northwest and southwest. A tractor sales and mulch business is located to the southeast. A residential development within the Borough of Pitman is located across the Chestnut Branch several hundred feet east northeast of the Site.

The 16-acre on-site area is fenced to restrict access and is being used to implement the Site remedy. The Site is bordered by two streams, Rabbit Run to the northwest and Chestnut Branch to the northeast. The two streams converge just north of the Site and flow into the 26-acre Alcyon Lake, about 1,500 feet downstream of the Site. Surface waters from Alcyon Lake, Chestnut Branch and Rabbit Run are not used as potable water and are also tested annually for potential site impacts. To date, there is no indication of site impacts to surface water. Municipal water systems serve the Borough of Pitman and surrounding communities. Groundwater outside the areas of remedial action is tested regularly and is not impacted by the Site.

The property that the landfill is now situated on was purchased by Nicholas Lipari in 1958 for use as a sand and gravel pit. As sand and gravel was removed, Mr. Lipari backfilled the excavated portions of the land with municipal, industrial and chemical wastes. Approximately six acres of the Site were used for these operations. The nature and quantity of the wastes that were received at the landfill are not known since detailed records were not maintained, although it is reported that cleaning solvents, vinyl record cutting oil, paint thinners, paints, dirty waste solvents, phenol or amine wastes, and resins and ester press cakes were disposed there, as well as other chemical wastes in 55-gallon drums buried in trenches in the landfill. Estimates based on parties known to have used the landfill indicate that 12,000 cubic yards of solid wastes and 2.9 million gallons of liquid wastes were disposed of on the property. At least one explosion and two fires occurred during the landfill’s period of operation. Liquid wastes were reportedly no longer accepted after December 1969 or January 1970 because of the concern of continued fire and explosion hazards.

In 1970, the New Jersey Department of Health observed leachate seeping out from the landfill and discharging into Chestnut Branch and the adjoining marsh area. Leachate seeps were visible along the east and northeast slopes. The seeps were characterized as brown and viscous in appearance and had an odor that was noticeable to area residents. The landfill was closed in May 1971 by the New Jersey Solid Waste Administration with an affidavit, signed by local residents, which complained of intolerable odors, headaches, nausea and the residents’ inability to breathe.

In July 1971, the New Jersey Department of Environmental Protection (NJDEP) required Mr. Lipari to take action to address the contamination. The actions that he took to construct surface water diversions, regrade the landfill and spread fresh dirt and lime failed to mitigate the problem. EPA and the State of New Jersey performed sampling of groundwater and surface water and took interim measures to prevent access to the Site and the adjacent wetlands.

The Site was included on the EPA's National Priorities List on September 8, 1983. The Site was addressed in three phases or operable units, each covered by a ROD, as described in detail below for each OU.

OU1 Selected Remedy – Containment System

On August 3, 1982, EPA signed a ROD for OU1 of the Site. The selected remedy included:

- Phase I: Emplacement of a 360-degree soil bentonite cutoff wall with synthetic impermeable cap over 16 acres, which encompassed the six-acre landfill site and 10 additional acres of contaminated property; and
- Phase II: Installation of groundwater collection wells located both within the contaminated zone and waste body itself, with treatment of the groundwater contained within the cutoff wall.

While the 1982 OU1 ROD required the construction of a cutoff wall and cap for source control, EPA deferred implementation of the groundwater collection and treatment portion of the 1982 OU1 ROD until the compatibility of the pretreated discharge with the local publicly owned treatment works (POTW) was evaluated. A treatability study confirmed the compatibility of raw leachate with the treatment systems used at the local POTW. Therefore, pretreated leachate would have no adverse effects on the POTW treatment process.

The cutoff wall was constructed in 1983 through 1984. The wall consisted of a 30-inch thick wall of low-permeability bentonite slurry keyed into the Kirkwood clay formation underlying the landfill completely surrounded the landfill and adjacent contaminated areas. A 40-mil thick synthetic cap of high-density polyethylene (HDPE) was placed over the landfill to prevent infiltration of precipitation and to stop contaminated vapor migration.

Basis for Significant Differences – OU1

The primary purpose for this ESD for OU1 is to memorialize the need for ICs to be put in place for the land and groundwater use at the Site. In addition, this document explains additional investigations and construction modifications for a portion of the containment cutoff wall.

The original 1982 OU1 ROD did not limit usage of the Site property or impose groundwater restrictions. Because of the nature of the contamination remaining on-site, ICs must be put in place to restrict groundwater use at or in the vicinity of the Site and to limit the re-use of the property to non-residential use in a manner that will maintain the integrity of the wall, cap, piping and containment infrastructure at the Site.

As a result of contaminants detected in the soil and sediment in the upper portion of Rabbit Run, EPA undertook investigations from 1996 to 2008, and found that there was an area of trash and contaminated soil located outside of the original soil bentonite cutoff wall, upgradient of Rabbit Run. An interim Rabbit Run underdrain was installed in 2002 to capture contaminated groundwater. In 2011 and 2012, a 750-foot long addition to the cutoff wall was constructed by keying into the Kirkwood clay beneath the Site, the existing sheetpile which was installed as part of the off-site drainage collection system and the original cutoff wall at depths from 20 to 45 feet below the ground surface, in order to surround the area. The wall was designed consistent with the remedial action objectives (RAOs) for OU1 with a minimum thickness of three feet and a permeability of $1x10^{-7}$ centimeters per second (cm/sec) or less. A low-permeability cap consisting, from the surface down, of six inches of topsoil, 18 inches of barrier protection material, a triplanar geo-composite layer, a 40-mil HDPE geomembrane and a 16-oz geotextile cushion was simultaneously placed over this area and tied into the existing cap. Seven soil vapor extraction (SVE) wells and four air injection galleries were also installed in the area surrounded by the

cutoff wall and tied into the existing SVE system at the Site, consistent with OU1. As a result of these changes, the course of Rabbit Run was relocated. Once the wall and cap were installed the volume of water being sent to the POTW as part of the OU2 remedy was reduced by about 50 percent through sealing the contaminated area and additional cap improvements which corrected infiltration.

Description of Significant Differences – OU1

The actions proposed in this ESD do not fundamentally alter the basic features of the selected containment remedy.

In this ESD, EPA is proposing and documenting:

- Imposition of institutional controls to limit land usage at the Site;
- Imposition of institutional controls on groundwater usage at the Site; and
- Modifications for a portion of the containment cutoff wall.

These changes to the selected remedy are not considered by EPA and NJDEP to have fundamentally altered the OU1 ROD containment goal to prevent the migration of waste and leachate along with affected groundwater from the Site. Because this remedy will result in hazardous substances remaining on-site above health-based levels, reviews of the remedy will continue to be conducted every five years to ensure that the remedy is performing as anticipated and continues to provide adequate protection of human health and the environment.

OU2 Selected Remedy – Batch Flushing & On-Site Pretreatment

On September 30, 1985, a ROD was signed for OU2 of the Site covering the second of three cleanup phases. The selected remedy included:

- Construction of a leachate pretreatment plant and water injection/leachate extraction wells to cleanse the landfill containment system of water transportable contaminants. The containment system included a cap and a 360-degree slurry wall keyed to an underlying clay layer;
- Operation to cleanse the landfill containment system of water-transportable contaminants by batch flushing to the limits of its technology, i.e., alternatively emptying the landfill of leachate by pumping to an on-site pretreatment plant, and filling the landfill with fresh water to form more leachate; discharge of the pretreated leachate to a local POTW, pending approval by the State of New Jersey and the POTW; and coordination of the operation with the off-site OU3 remedial action, especially with regard to leachate treatment; and
- Groundwater monitoring downgradient of the Site within the Kirkwood aquifer, which underlies the clay layer beneath the Site.

On-site aqueous pretreatment facility processes included: 1) precipitation, flocculation, settling, clarification, and filtration for removal of metals; and 2) carbon polishing of the liquid stream to reduce the remaining organic compounds. In addition, in the original design of the pretreatment plant, volatile organic compounds (VOCs), were also treated by heated air strippers followed by liquid phase carbon adsorbers. The effluent of the heated air strippers was then sent through a 6000-cubic feet per minute (cfm) thermal oxidizer followed by an acid scrubber. The effluent from the pretreatment facility was then sent to the Gloucester County Utilities Authority (GCUA) plant, the local POTW, for final treatment.

The OU2 ROD was followed by a letter from the EPA, dated February 6, 1986, clarifying the OU2 ROD. The 1986 OU2 ROD clarification explained that, by increasing leachate pumping and treatment rates, the duration of the flushing program may be halved. The letter also indicated EPA's intent to investigate further, during design, the potential for a greater reduction in flushing program duration. In addition, the letter described the cost estimate increase from $8.9 to $12 million.

A 1992 ESD addressed modifications made to the 1985 OU2 ROD. The ESD affirmed that the remedy selected in the 1985 OU2 ROD, as clarified in 1986, was still the most appropriate. However, it called for an increase in the pumping capacity of the well system to 160 gallons per minute (gpm) from the 80 gpm rate that was called for in a 1986 ROD clarification letter. An increase in the size of the air stripper and granular activated carbon (GAC) adsorption unit and additional facilities as part of the pretreatment operation were also required. The OU2 ESD indicated that these changes to the remedy would increase the associated costs from about $12 million to approximately $36 million.

Basis for Significant Differences – OU2

Construction of a batch flushing system began in 1990 and was put into operation in 1992. The process consisted of injecting uncontaminated water from the Mt. Laurel aquifer, located more than 100 feet below the landfill, into the contained landfill area, extracting contaminated water from the contained landfill area, treating the extracted water at the on-site treatment facility, and discharging the treated water to the GCUA.

The batch flushing method was modified in August 1996 to inject clean water into the containment system and extract contaminated water by pumping of the extraction wells simultaneously. The injection and extraction continued to occur continuously and simultaneously, but at different pumping rates so that the containment system water levels could be varied intentionally. The modified flushing method was used from September 1996 to May 2008.

Subsequent to the issuance of the 1985 OU2 ROD and after a number of years of operation, several changes were suggested to enhance the operations of the groundwater treatment system. It was determined that the air strippers could be removed and the liquid phase carbon adsorbers became the primary treatment for all organics. The thermal oxidizer was similarly taken out of service and carbon contactors used as the primary treatment process. These changes were both acceptable for meeting the effluent permit requirements for the POTW.

Subsequent to the issuance of the 1992 OU2 ESD and after a number of years of operation, data showed that the contaminant recovery from the batch flushing system was not attaining the anticipated results. In addition, monitoring data provided indications of potentially larger amounts of COCs within the containment system than originally anticipated. As a result, EPA investigated modifications or enhancements that could increase or further accelerate contaminant recoveries. To determine whether contaminant recoveries could be further enhanced, EPA undertook a pilot study of dual phase extraction-soil vapor extraction (DPE-SVE) that served to remove contaminants that were contained in vapor within the containment system. In 1997 and 1998, EPA conducted two pilot tests to evaluate potential application of vapor extraction technologies at the site. Based on the favorable pilot test results and the cost analysis, EPA requested a long-term (six month) SVE pilot test and selected the dual phase extraction (DPE) technology for full-scale design.

The full-scale DPE/SVE system, including a thermal oxidation unit (TOU) for on-site vapor treatment, was installed in 1999 to 2000. After testing discovered operational problems, the TOU was shut down, dismantled, and shipped back to the manufacturer for modification. The modification was completed and the TOU was started up again on January 18, 2001. The system began full operation in April 2001.

From 2003 through 2005, the DPE/SVE system operated at reduced capacity or was shut down due to several technical problems. From November 2005 when the TOU was put into more continuous operation until July 2006, the soil gas was extracted from the SVE system for treatment through the TOU because of the high methane gas concentration in the landfill. Soil gas was extracted from both the SVE and DPE system in the latter half of 2006 and onward.

In 2008, when batch flushing operations ceased and landfill interior water levels dropped, new areas of vapor contamination were exposed resulting in additional vapor contamination removal. More than 350,000 pounds of vapor phase contaminants have been removed to date. The continued operation of the SVE/DPE extraction blower provides several benefits to the on-site remedy, as follows: it maintains a negative pressure on the containment

system which prevents the release of landfill vapors into the neighborhood; it maintains an aerobic environment that allows naturally occurring microorganisms to degrade bis (2-chloroethyl) ether (BCEE) the Site's primary contaminant of concern (*Lipari Landfill Microcosm Report, Phase I,* Shaw, 2006); and it prevents the buildup of potentially explosive methane concentrations.

Evaluation of analytical results in annual reports from 1992 to 2010 demonstrated that all but one of the Site's aqueous groundwater contaminants had reached the OU2 ROD cleanup criteria and that all contaminant removal trends were asymptotic. BCEE concentrations have maintained a steady level of about 1,000 parts per billion (ppb) for more than five years, while its ROD cleanup criterion is 1.4 ppb. A bench-scale column study evaluated various flushing scenarios on actual landfill material and showed that BCEE removal reached an asymptotic level similar to the actual trends in the annual reports. The study also reported similar BCEE removal trends. Consequently, it was determined that the flushing activities had reached the limits of technology.

EPA then evaluated the impacts and feasibility of ceasing the flushing operations in a series of investigations. One study evaluated the Site's raw influent and found that it would meet the GCUA permit requirements (*Specific Operational Alternatives Feasibility Study at the Lipari Landfill Superfund Site,* CDM, 2008). In 2008, groundwater modeling was performed to determine the effects of ceased pumping from within the landfill on the original slurry wall and found that the water level inside the landfill would reach equilibrium once pumping ended without impacting the integrity of the wall. This model evaluated the effectiveness of three cut-off wall configurations to supplement the current containment system. The modeling was performed assuming discontinued or significantly reduced Mt. Laurel well pumping and discontinued extraction and flushing operations within the containment area. The final groundwater model report concluded that a combination of reduced pumping (Mt. Laurel and landfill wells) and the addition of a partial cut-off wall to reinforce the existing wall would provide significant benefits in terms of the protection of public health and surrounding water bodies, while minimizing annual operating costs. Additional model findings presented in the final report confirmed that, under existing conditions, the off-site collection systems are capable of capturing the contaminated groundwater flow leaching through the slurry wall.

On-site pretreatment of leachate and groundwater, except for equalization and pH adjustments, ceased in 2008 in coordination with GCUA.

In September and October of 2015, operation of the TOU was terminated and vapor phase GAC (VGAC) became the method for organic compound removal from the SVE stream. This change to the SVE treatment utilized the three existing 500 pound VGAC units.

In May 2016 a 250 cfm blower was installed replacing a 1000 cfm blower that had become unserviceable. The new blower was found to help keep temperatures down in the warmer months extending the life of the VGAC.

In order to optimize the use of vapor phase carbon at the Site, a heat exchanger was installed in the SVE system upstream of the VGAC units in May 2016. The heat exchanger automatically lowers the vapor temperature through the use of temperature sensors and a variable speed fan motor to keep landfill gas in the optimal range for the VGAC units. In the summer months both the heat exchanger and the smaller 250 cfm blower are needed together to keep temperatures in the proper range.

<u>Description of Significant Differences – OU2</u>

The actions described in this ESD were anticipated in the 1985 OU2 ROD and, consequently, EPA has determined that they do not fundamentally alter the basic features of the selected remedy. The 1985 OU2 ROD described that:

- Throughout the operation of the remedy, evaluations will be made to determine the effectiveness of the flushing program, as well as the need to continue this program or to take other actions; and

- In the event that the limits of technology were reached and the groundwater would not meet applicable standards, the flushing alternative could be modified so that the flushing of the system would be terminated and the containment system maintained by lowering of the water table within the enclosure and maintaining the inward gradient to prevent migration of the water out of the containment wall.

EPA modified the flushing system and also implemented DPE/SVE to enhance effectiveness. Because of the consistent low percentage of recovery of contaminants from the groundwater, EPA made the determination that the batch flushing system had reached the limits of technology. After review of the foregoing investigations, the following evaluation and decisions were made:

- The remedy selected in the 1985 OU2 ROD, clarified in the 1986 letter, and explained in the 1992 ESD is still the most appropriate means of protecting human health and the environment;
- The operation of the batch flushing system at the Site has reached the limits of technology;
- Because the batch flushing is no longer effective in removing contaminants from the groundwater within the containment wall, the operation will be changed permanently to discontinue batch flushing; and
- The continued operation of the soil vapor extraction system to remove contaminants present in the soil vapor within the containment wall will decrease the overall contamination.

Because the remedy has reached the limits of technology, it is no longer anticipated that the groundwater within the containment system will meet applicable standards through active remediation. Further, these modifications require long-term O&M, which, as required by CERCLA, will be performed by the State. Consequently, within a reasonable period of time after issuance of this ESD, the Site will be turned over to the State and become a State-lead site. This change to the selected remedy is not considered by EPA and NJDEP to have fundamentally altered the OU2 ROD RAO to improve the reliability of the containment system by minimizing or eliminating the flow of contaminants through the cutoff wall and natural clay barrier. Because this remedy will result in hazardous substances remaining on-site above health-based levels, reviews of the remedy will continue to be conducted every five years to ensure that the remedy is performing as anticipated and continues to provide adequate protection of human health and the environment.

<u>OU3 Selected Remedy – Off-Site Marsh, Streams, Lake & Groundwater Contamination</u>

On July 11, 1988, a ROD was signed for OU3 of the Site for the third cleanup phase of contiguous contaminated areas outside the containment system, i.e., the Chestnut Branch, Rabbit Run and Alcyon Lake. The selected remedy included:

- Collection of groundwater/leachate in the Cohansey and Kirkwood aquifers, followed by on-site treatment and discharge to a POTW;
- Excavation of contaminated soils in the Chestnut Branch marsh, followed by thermal treatment to remove organic contaminants and placement as a non-hazardous material;
- Dredging and dewatering of contaminated sediments in Alcyon Lake, followed by thermal treatment to remove organic contaminants and placement as a non-hazardous material;
- Dredging and dewatering of contaminated sediments in Rabbit Run, followed by thermal treatment to remove organic contaminants and placement as a non-hazardous material;
- Temporary measures, if necessary, to reduce volatile emissions from leachate seepage areas in the Chestnut Branch marsh; and
- Integration of sampling in the off-site areas with the on-site monitoring plan to monitor the effectiveness of the on-site flushing action.

During the design process following the OU3 ROD, field and laboratory investigations were made to better define the quantities of contaminated materials to be handled and to obtain treatability and engineering properties data required for the design. These investigations revealed that some estimates made during the development of the 1988

OU3 ROD needed to be refined. This led to the issuance of an OU3 ESD on June 7, 1993 calling for:

- Increase of the volume of soils/sediments to be excavated from Chestnut Branch marsh, Chestnut Branch, and Rabbit Run to 58,100 cubic yards from the original ROD estimate of 31,250 cubic yards;
- Thermal treatment of Chestnut Branch marsh soils to remove BCEE, VOCs, and other organic contaminants to levels acceptable for placement on Alcyon Racetrack;
- Removal of Alcyon Lake sediments to their interface with clean lake sand;
- Removal of Alcyon Lake sediments by draining the lake and excavation rather than by hydraulic dredging, as described in the ROD;
- Placement of Alcyon Lake, Chestnut Branch, and Rabbit Run sediments directly as non-hazardous material at Alcyon Racetrack except for any sediments containing average BCEE levels greater than 180 ppb, which would require thermal treatment before placement[4];
- Increase of the wastewater flow from off-site activities from 40 gpm to approximately 120 gpm;
- Installation of a temporary wellpoint interception system alongside the future alignment of the permanent drainage system to collect leachate seepage and allow on-site cleanup to proceed; and
- Increased cost estimate to implement the remedy as modified from about $21 million up to $75 million.

Basis for Significant Differences – OU3

The original 1988 OU3 ROD did not limit usage of the Site property or impose restrictions. Because of the nature of the contamination which emanates from the on-site area, institutional controls must be put in place to protect the contaminated groundwater drainage and collection system infrastructure in a manner that will provide access to, and maintain the integrity of, the groundwater collection system necessary for long-term O&M. The collection and treatment of contaminated groundwater in Cohansey and Kirkwood aquifers will be required indefinitely due to the diffusion of contamination from the on-site Kirkwood clay (*Physical and Chemical Characterization of Kirkwood Clay and Mass Flux of Residual Source of Bis-2-Chloroethyl Ether to Kirkwood Aquifer,* O'Brien & Gere, 2009).

Since the ROD groundwater criterion for BCEE will not be met in a measurable timeframe, a Classification Exception Area/Well Restriction Area is being established as an institutional control that documents an indeterminate length of time to meet the Site's groundwater remediation goal. Public notification was conducted to provide the information to local officials and the community.

The actions proposed in this ESD for OU3 do not fundamentally alter the basic features of the selected remedy.

Description of the Significant Difference – OU3

In this ESD, EPA is proposing:

- Imposition of institutional controls to protect the remedial groundwater collection system and limit land usage, such as through deed restrictions.

This change to the selected remedy is not considered by EPA and NJDEP to have fundamentally altered the OU3 ROD goal to maintain the drainage collection system to prevent migration of contaminated water. Because this remedy will result in hazardous substances remaining on-site above health-based levels, reviews of the remedy will continue to be conducted every five years to ensure that the remedy is performing as anticipated and continues to provide adequate protection of human health and the environment.

[4]At the time of implementation, sediments were dewatered and stabilized at the Racetrack, and then removed to an offsite landfill. The site was then reconstructed for use as a park.

SUPPORT AGENCY COMMENTS

EPA is issuing this ESD after consultation with NJDEP. NJDEP concurs with the approach presented in this ESD, as the modifications significantly change but do not fundamentally alter the original remedies and their subsequent modifications.

FIVE-YEAR REVIEWS

The NCP provides that remedial actions which result in any hazardous substances, pollutants or contaminants remaining at the Site above levels that allow for unlimited use and unrestricted exposure be reviewed no less often than every five years to ensure protection of human health and the environment. A five-year review conducted in 2012 evaluated the Site remedies and concluded that the remedies were protective of human health and the environment. The 2012 five-year review recommended the development of ICs for land and groundwater use for long-term protections. The 2012 five-year review also recommended the development of a decision document to memorialize changes to the selected remedies. The next five-year review will be completed in September 2017.

AFFIRMATION OF STATUTORY DETERMINATION

When implemented, the remedies, as modified by this ESD, will continue to be protective of human health and the environment and will comply with federal and state requirements that are legally applicable or relevant and appropriate to the remedial actions. The modified remedies are technically feasible, cost-effective and satisfy the statutory requirements of CERCLA by providing for remedial actions that have a preference for treatment as a principal element and therefore permanently and significantly reduces the toxicity, mobility and volume of hazardous substances.

PUBLIC PARTICIPATION ACTIVITIES

Pursuant to the NCP, a formal public comment period is not required when issuing an ESD. In accordance with the NCP, 40 CFR 300.825(a)(2), this document will become part of the Administrative Record file, which is located at EPA Region 2, 290 Broadway, New York, New York 10007 and at the information repository in the Pitman Library, 15 Pitman Ave, Pitman, NJ 08071.

EPA provided a comprehensive Site update to the local community and Pitman Environmental Commission on February 7, 2013. About 30 people attended the meeting and a local newspaper published a story about the update. The presentation and discussion included: the containment system enhancements; ongoing SVE remediation, groundwater collection and treatment; off-site monitoring; the need for long-term O&M of groundwater collection systems which would eventually be a NJDEP responsibility; and the requirement to conduct five-year reviews to evaluate the Site's protectiveness. EPA's electronic presentation materials were posted on the EPA's Lipari Landfill Superfund Site website at http://www.epa.gov/region2/superfund/npl/liparilandfill/index.html. EPA also notified the community of the construction of additional bentonite cutoff wall by distributing flyers and holding two public availability sessions in the summer of 2011.

EPA and NJDEP are making this ESD and supporting information available to the public to inform them of the placement of institutional controls on the property, including groundwater and that the containment system and continued groundwater collection will continue to prevent the migration of contaminants from the Site. Should there be any questions regarding this ESD, please contact:

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AUTHORIZING SIGNATURE

I have determined that the remedy for the Lipari Landfill Superfund Site, as modified by this ESD, is protective of human health and the environment, and will remain so provided the actions presented in the ESD are implemented as described above. This ESD documents the significant changes related to the remedy at the Lipari Landfill Superfund Site.

A. Carpenter

Angela Carpenter
Acting Director, Emergency and Remedial Response Division

9.29.17

Date

Figure 1 – Site Location