



LAND USE CONTROL IMPLEMENTATION PLAN

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

FACILITY: KSC/Schwartz Road Active and Closed Class III Landfills,
Solid Waste Management Unit 002
CONTAMINANTS: Ammonia, Benzene, and Vinyl Chloride in Groundwater
CONTROL: Prohibit Groundwater Use

PURPOSE OF THE LAND USE CONTROL IMPLEMENTATION PLAN

This Land Use Control Implementation Plan (LUCIP) has been prepared to inform current and potential future users of the Kennedy Space Center (KSC)/Schwartz Road Active and Closed Class III Landfills (KSC Landfills) of institutional controls that have been implemented at the site¹. Although there are no current unacceptable risks to human health or the environment associated with these landfills, institutional land use controls (LUCs) are necessary to prohibit groundwater use at the site. Controls will include periodic inspection, condition certification and agency notification.

WHY LAND USE CONTROLS ARE NEEDED

During landfill permit-required monitoring, three analytes (ammonia, benzene, and vinyl chloride) exceeded the Florida Department of Environmental Protection (FDEP) ground water cleanup target levels (GCTLs).

SITE DESCRIPTION

The KSC Landfills are owned and operated by National Aeronautics and Space Administration (NASA) for the Class III waste disposal requirements of KSC. The KSC Landfills have been designated as Solid Waste Management Unit (SWMU) 002 under the KSC Resource Conservation and Recovery Act (RCRA) Hazardous Waste Operating and Corrective Action permit. Both landfills share a common ground water and surface water monitoring plan.

The KSC/Schwartz Road Closed Class III Landfill occupies approximately 61.5 acres on the southwest end of the site and is in the post-closure care period under a landfill permit issued by the FDEP (Permit/Certification Number: SF05-0150308-005, expiring 9/2/2015). The landfill received Class III, commercial, and industrial wastes. Original waste disposal at the site was accomplished using trench fill methods. Trenches ran in the east-west direction across the site. Area fill (high-rise) methods were later used over the

¹ This LUCIP summarizes institutional controls regarding the KSC Landfills. For detailed information on the site, consult the KSC Landfills administrative file, which is available for review by contacting the KSC Environmental Assurance Branch at telephone number (321) 867-9081.

filled trenches. The official date of closing for this landfill is June 12, 2001.

The KSC/Schwartz Road Active Class III Landfill occupies approximately 51 acres on the east end of the site and actively accepts Class III wastes under a permit issued by the FDEP (Permit/Certification Number: SO05-0150308-006, expiring 3/10/2015).

SITE AND LUC AREA LOCATION

The KSC Landfills are located mostly in Section 20 and part of Section 29, Township 22 South, Range 37 East; south of the Vehicle Assembly Building Area, and east of the intersection of NASA Parkway and Schwartz Road (Figure 1). The landfills are bordered by Schwartz Road to the north with undeveloped land located on the east, west, and south sides. The LUC area covered under this LUCIP is shown on Figure 2 and includes the two landfill areas along with several acres to the west of the KSC/Schwartz Road Closed Class III Landfill. Coordinates of the corners of the LUC area are provided on Figure 2 in the US State Plane Coordinate System NAD 1983, meters, Florida East.

SITE CONTAMINATION AND CONTROL

The concentrations of ammonia, benzene and vinyl chloride present in groundwater are

above the FDEP's GCTLs but are less than the FDEP Natural Attenuation Default Concentrations. Land Use Controls prohibiting the use of groundwater are required until the cleanup levels are achieved. The current and projected land uses of the KSC Landfills do not include the use of site groundwater; therefore, there is no current or projected exposure risk.

IMPLEMENTATION

Institutional controls will be implemented by the KSC Environmental Assurance Branch in accordance with their RCRA Corrective Action permit and a Land Use Control Assurance Plan included in the Memorandum of Agreement (MOA)² between NASA and the FDEP, effective February 23, 2001. Upon approval of this LUCIP, it will be incorporated into the permit by reference. Property transfer (if conducted in the future) will be conducted in accordance with Section X of the MOA.

KSC's Environmental Assurance Branch will provide KSC's Master Planning Office with coordinates of the LUC area. Restrictions will specify limitations on development and reuse for the area for as long as LUCs are necessary to protect human health and the environment.

² By separate MOA effective February 23, 2001, with the FDEP and KSC, on behalf of NASA, agreed to implement Center-wide, certain periodic site inspections, condition certification, and agency notification procedures designed to ensure the maintenance by Center personnel of any site-specific LUCs deemed necessary for future protection of human health and the environment. A fundamental premise underlying execution of that agreement was that through the Center's substantial good faith compliance with the procedures called for herein, reasonable assurances would be provided to the FDEP as to the permanency of those remedies which included the use of specific LUCs.

Although the terms and conditions of the MOA are not specifically incorporated or made enforceable herein by reference, it is understood and agreed by NASA KSC and FDEP that the contemplated permanence of the remedy reflected herein shall be dependent upon the Center's substantial good faith compliance with the specific LUC maintenance commitments reflected herein. Should such compliance not occur or should the MOA be terminated, it is understood that the protectiveness of the remedy concurred in may be reconsidered and that additional measures may need to be taken to adequately ensure necessary future protection of human health and the environment.

MONITORING

Semiannual monitoring of ground water quality will occur in accordance with the conditions of the landfill permits issued by FDEP. Quarterly LUC inspections will occur to verify that the institutional controls specified herein are in place. The inspections will verify that no ground water use is occurring at the site.

REPORTING

Ground water monitoring reports will be submitted to FDEP in accordance with landfill permit requirements. Quarterly LUC inspection results will be provided to FDEP annually.

ENFORCEMENT

KSC's Environmental Assurance Branch will be responsible for stopping any activities that are not compliant with this LUCIP.

MAINTENANCE

This LUCIP shall remain in place until the concerns managed by the LUCIP are mitigated, or until there is a discovery, based upon analytical evidence, that scenarios managed by the LUCIP are no longer a concern. Any change in LUC management must be approved by the FDEP.

Should ground water contamination levels increase or extend beyond the boundaries of the LUC area, NASA and FDEP can reach an agreement on whether to expand the LUC area or conduct an interim assessment and/or remedial action.

Should ground water contamination persist at the site after the post closure care period ends for both landfills, KSC will investigate and remediate this SWMU under the RCRA Corrective Action program.



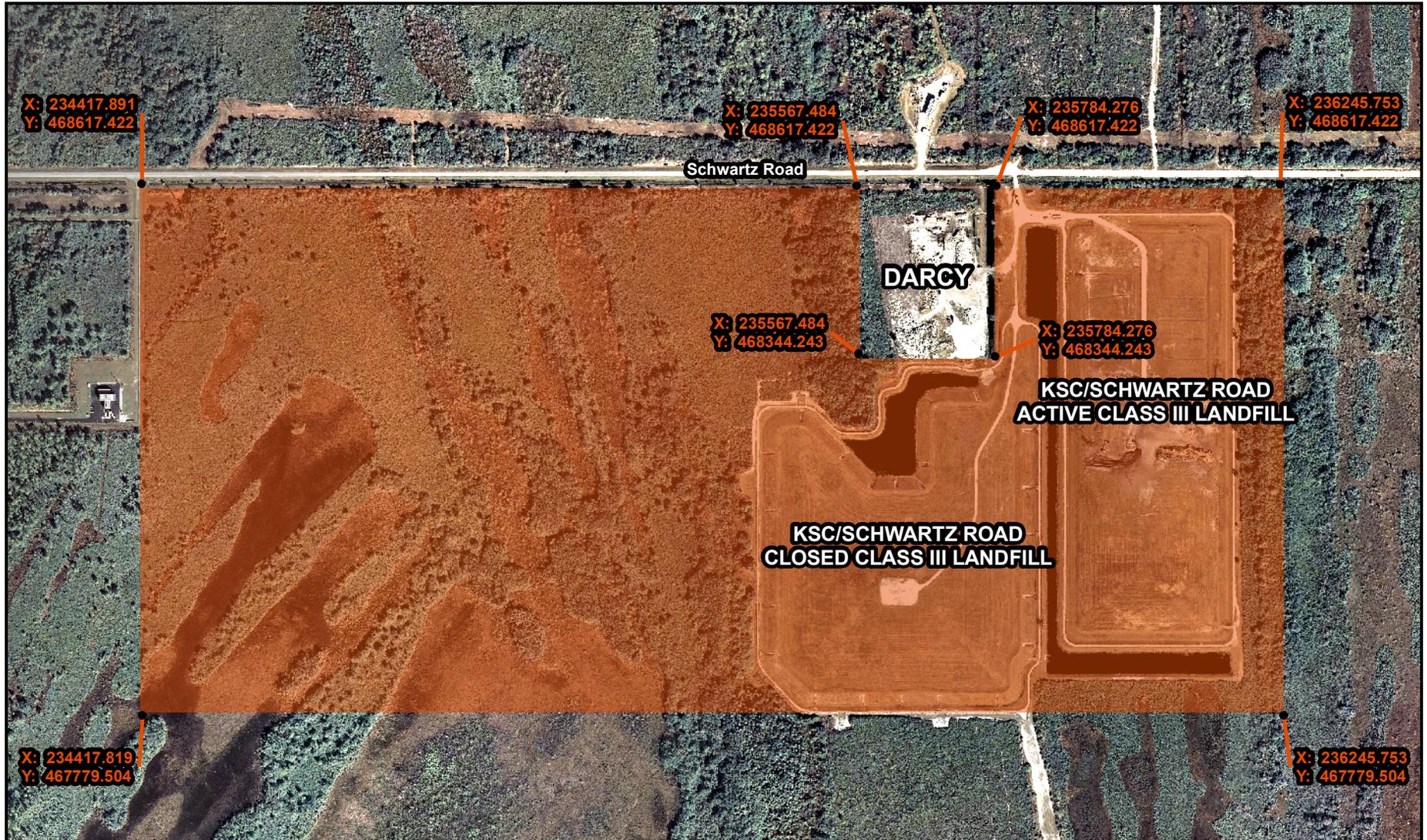
Notes:

- CCAFS - Cape Canaveral Air Force Station
- DARCY - Diverted Aggregate Reclamation and Collection Yard
- KSC - Kennedy Space Center
- LUCIP - Land Use Control Implementation Plan
- NASA - National Aeronautics and Space Administration
- SRLF - KSC/Schwartz Road Class III Landfill
- SWMU - Solid Waste Management Unit
- VAB - Vehicle Assembly Building

**Site Location Map - SWMU 002
Land Use Control Implementation Plan**

KSC/Schwartz Road Class III Landfills
NASA Kennedy Space Center, Florida

Figure 1

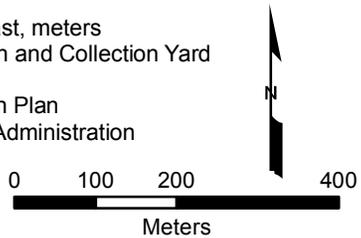


Legend

Land Use Control Area

Notes:

- Coordinates are in Florida State Plane East, meters
- DARCY - Diverted Aggregate Reclamation and Collection Yard
- KSC - Kennedy Space Center
- LUCIP - Land Use Control Implementation Plan
- NASA - National Aeronautics and Space Administration
- SRLF - Schwartz Road Landfill
- SWMU - Solid Waste Management Unit



**Area Under Institutional Controls - SWMU 002
Land Use Control Implementation Plan**

KSC/Schwartz Road Class III Landfills
NASA Kennedy Space Center, Florida

Figure 2