



**INTERIM LAND USE CONTROL IMPLEMENTATION PLAN**



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

**FACILITY:** Components Refurbishment and Chemical Analysis Facility  
Solid Waste Management Unit 041

**CONTAMINANTS:** Volatile Organic Compounds in Groundwater and Polychlorinated Biphenyls in Soil

**CONTROL:** Prohibit Groundwater Use and Residential Use Access to Soil

**PURPOSE OF LAND USE CONTROL IMPLEMENTATION PLAN**

This Interim Land Use Control Implementation Plan (LUCIP) has been prepared to inform current and potential future users of the Components Refurbishment and Chemical Analysis (CRCA) Facility of institutional controls that have been implemented at the site<sup>1</sup>. Although there are no current unacceptable risks to human health or the environment associated with CRCA, certain land use controls (LUCs) are necessary to prevent the potential for future risks at the site. Controls will include periodic inspection, condition certification, and agency notification.

**WHY LAND USE CONTROLS ARE NEEDED**

Confirmation Sampling (CS) identified five Locations of Concern (LOCs) at the CRCA site. No Further Action was approved for LOCs 3, 4, and 5 in the CS Report. Polychlorinated biphenyls (PCBs) were identified in shallow soils at concentrations exceeding the Florida Department of Environmental Protection (FDEP) residential

Soil Cleanup Target Levels (SCTLs) but less than industrial SCTLs at LOC 1. The Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) in 2005 and 2006 confirmed that at LOC 1 there are no leachability, industrial, or groundwater concerns and that the extent of soil with the PCB concentrations exceeding residential SCTLs was defined. The RFI also identified volatile organic compounds (VOCs), specifically, cis-1,2-dichloroethene (cDCE), trans-1,2-dichloroethene (tDCE), and vinyl chloride, in groundwater at CRCA at concentrations greater than FDEP Groundwater Cleanup Target Levels (GCTLs) and Natural Attenuation Default Concentrations (NADCs) at LOC 2. Based on the CS and RFI results, the source of groundwater impacts appeared to be located in the vicinity of the Chemical Processing Area (CPA) near Building K6-1696B.

**SITE DESCRIPTION**

SWMU 041 includes the CRCA building (K6-1696), dry chemical storage building (K6-1748 and 1748A), a waste water treatment plant (K6-1696A), and a parts

<sup>1</sup> This Interim LUCIP summarizes institutional controls regarding the NASA CRCA site. For detailed information on the site, consult the CRCA administrative file, which is available for review by contacting the KSC Environmental Assurance Branch at telephone number (321) 867-8402.

decontamination building (K6-1747). The site was vacant undeveloped land prior to construction of the CRCA Facility in 1996. The CRCA building contains a laboratory for analysis of environmental media obtained from the KSC facility. The majority of solvent use and storage was east of the CRCA building in the CPA. The solvent was formerly stored in bulk tanks in a containment area east of the CPA for use in cleaning of various spacecraft components. A solvent is currently used for cleaning operations in the northeastern corner of the property. The surface in the area is concrete and asphalt with adjacent storm drains for collection of precipitation. The primary contaminants in groundwater at CRCA are trans-1,2-dichloroethene (tDCE), cis-1,2-dichloroethene (cDCE), and vinyl chloride (VC).

#### **SITE LOCATION**

CRCA is located east of Contractor Road, approximately 1 mile north of Schwartz Road (Figure 1). CRCA is located in Section 18, Township 22S, Range 37E, as shown on the 7.5-minute Orsino topographic quadrangle map. The groundwater and soil use control areas covered by the Interim LUCIP are shown on Figure 2. Coordinates of the corners of the LUC are provided on Figure 2 in the State Plane Coordinate System, North

<sup>2</sup> By separate MOA effective February 23, 2001, with the EPA and FDEP, 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 EPA and 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, EPA 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.*

American Datum (NAD) of 1983, Florida East, meters.

#### **SITE CONTAMINATION AND CONTROL**

Concentrations of COCs in groundwater and soil are greater than FDEP GCTLs and SCTLs, respectively. The past, current, and projected future land use of CRCA is industrial in nature. LUCs are therefore required at LOC 1 to restrict use of this area to industrial activities and at LOC 2 to prohibit the use of groundwater until cleanup levels are achieved. The asphalt currently present at LOC 1 prevents exposure to soil in this area. The current and projected land use of CRCA does not include the use of site groundwater; therefore, there is no current or projected groundwater exposure risk.

#### **DECISION DOCUMENT**

The Kennedy Space Center (KSC) Remediation Team determined that interim institutional controls should be implemented at CRCA. The interim institutional controls are temporary while investigation, interim measures, and corrective measures are in progress.

#### **IMPLEMENTATION**

Institutional controls will be implemented by the KSC Environmental Assurance Branch in

accordance with their RCRA permit and a Land Use Control Assurance Plan included in a Memorandum of Agreement (MOA)<sup>2</sup> between NASA, FDEP, and EPA, effective February 23, 2001. Property transfer (if implemented 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 survey coordinates of the LUC areas. 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.

### **MONITORING**

Quarterly inspections to monitor that the LUCs specified herein are in place and operating and will be conducted by KSC's Environmental Assurance Branch. The inspections will verify that no groundwater use is occurring and that exposure to subsurface soils is restricted.

### **REPORTING**

KSC's Environmental Assurance Branch will submit annual reports to FDEP certifying retention of the implemented LUCs.

### **ENFORCEMENT**

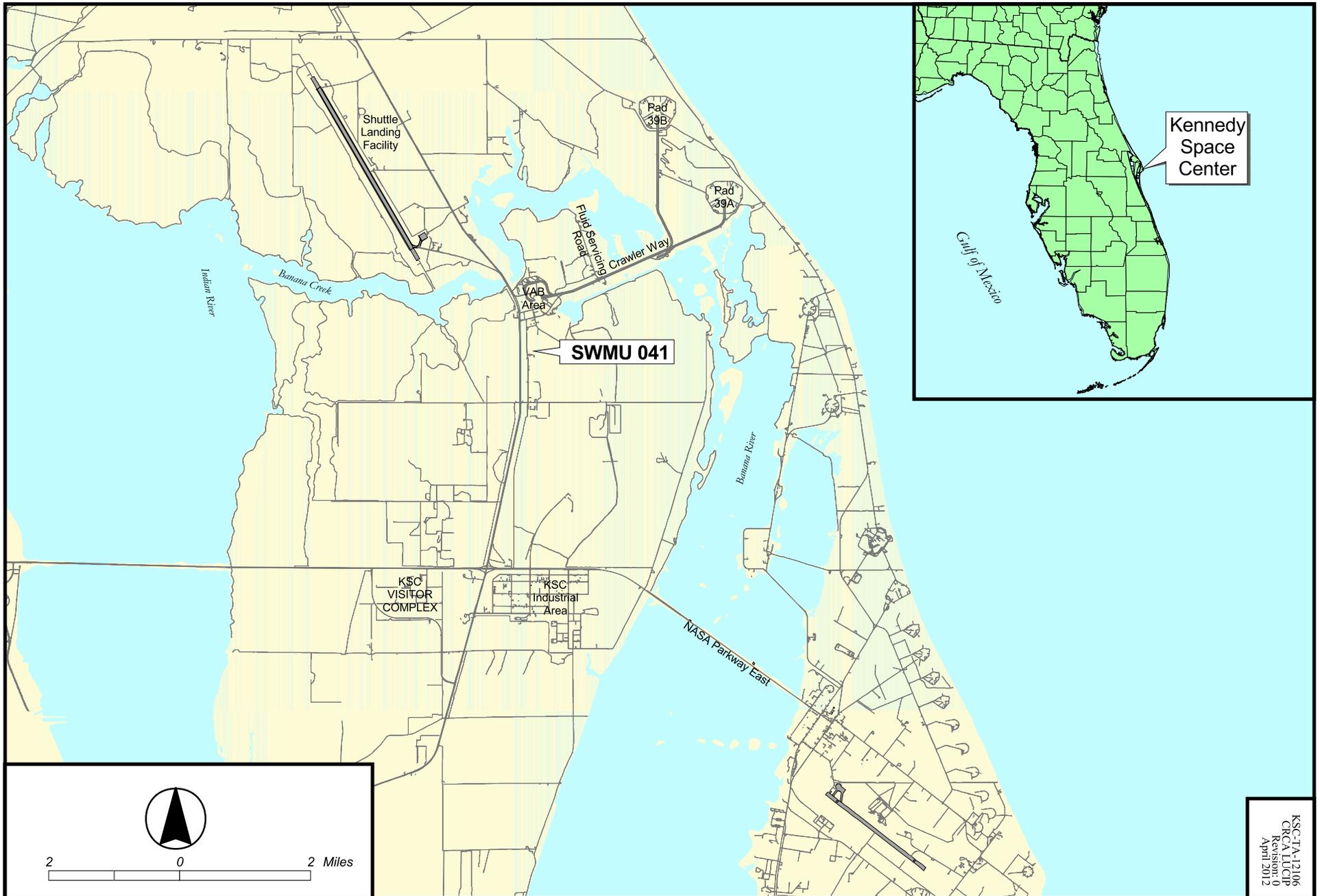
KSC's Environmental Assurance Branch will be responsible for stopping any activities at KSC that are not compliant with this Interim LUCIP.

### **MAINTENANCE**

The Interim LUCIP shall remain in place until a land use change is implemented and

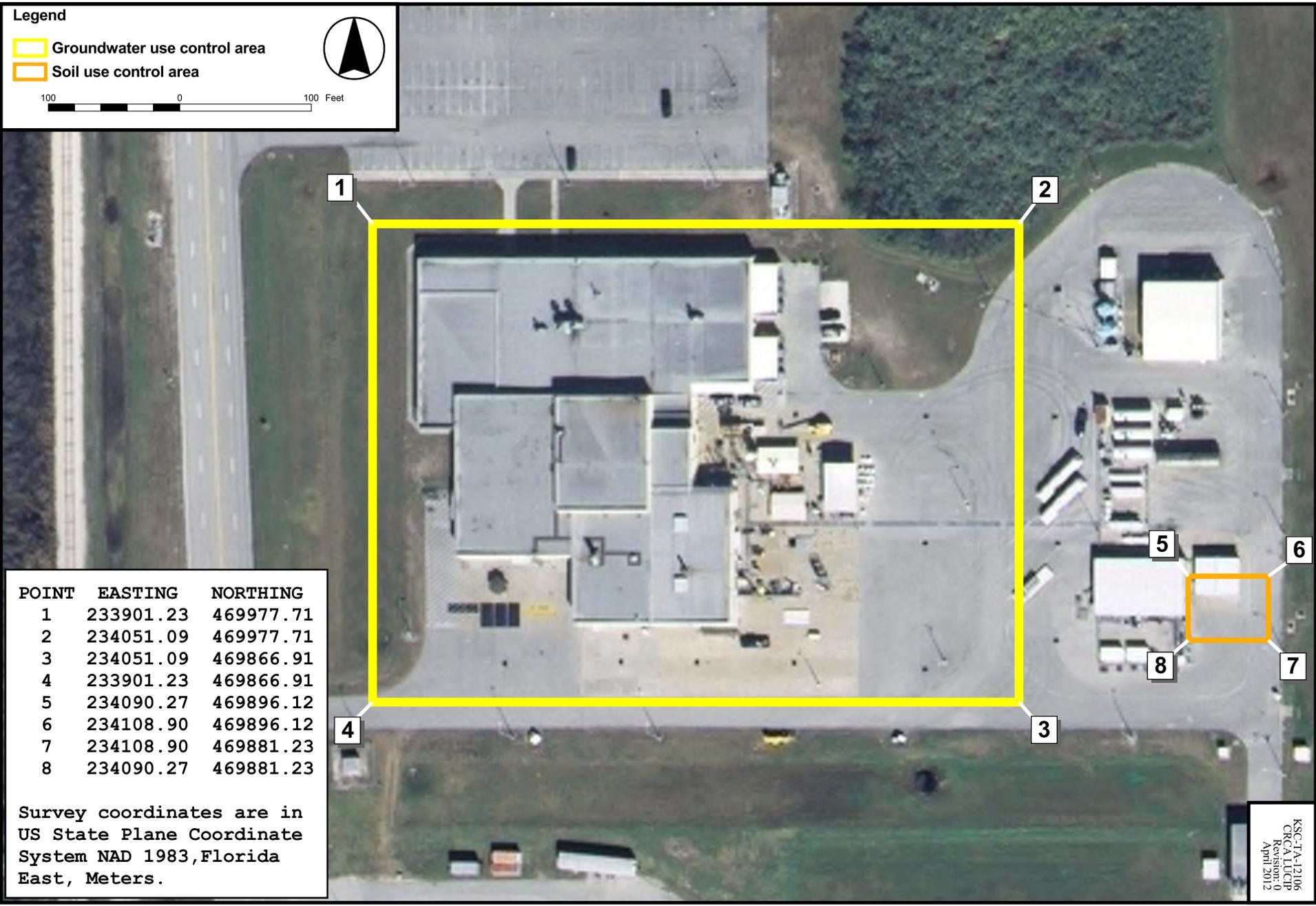
the concerns managed by the Interim LUCIP are mitigated, or until there is a discovery, based on analytical evidence, that scenarios managed by the Interim LUCIP are no longer a concern.

FIGURE 1 LOCATION OF KENNEDY SPACE CENTER AND SWMU 041  
 SWMU 041 - COMPONENT REFURBISHMENT AND CHEMICAL ANALYSIS FACILITY, KENNEDY SPACE CENTER, FLORIDA



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**FIGURE 2 LAND USE CONTROL AREA**  
 SWMU 041 - COMPONENT REFURBISHMENT AND CHEMICAL ANALYSIS FACILITY, KENNEDY SPACE CENTER, FLORIDA



**Legend**

Groundwater use control area

Soil use control area

  
 100      0      100 Feet

POINT	EASTING	NORTHING
1	233901.23	469977.71
2	234051.09	469977.71
3	234051.09	469866.91
4	233901.23	469866.91
5	234090.27	469896.12
6	234108.90	469896.12
7	234108.90	469881.23
8	234090.27	469881.23

Survey coordinates are in US State Plane Coordinate System NAD 1983, Florida East, Meters.

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 CRCA LLCIP  
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