

I-11739-0615

DOE/OR/01-2381

COVENANT DEFERRAL REQUEST

FOR THE PROPOSED TRANSFER OF LAND
PARCEL ED-8 AT THE EAST TENNESSEE
TECHNOLOGY PARK, OAK RIDGE,
TENNESSEE

FINAL

May 2009



This document is approved for public release per review by:

Al M. Bal
BJC ETTP Classification and Information
Control Office

9/26/06
Date

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ATTACHMENT A – ENVIRONMENTAL BASELINE SURVEY REPORT FOR
PARCEL ED-8

**Covenant Deferral Request for the Proposed
Transfer of Land Parcel ED-8
at the East Tennessee Technology Park, Oak Ridge, Tennessee**

Introduction

The United States Department of Energy (DOE) is proposing to transfer a land parcel (hereinafter referred to as “the Property”) designated as Land Parcel ED-8 at the East Tennessee Technology Park (ETTP) in Oak Ridge, Tennessee, by deed, and is submitting this Covenant Deferral Request (CDR) pursuant to Section 120(h)(3)(C) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, and applicable U. S. Environmental Protection Agency (EPA) guidance. The Oak Ridge Reservation (ORR), which includes ETTP, was placed on the National Priorities List (NPL) in November 1989. Environmental investigation and cleanup activities are continuing at ETTP in accordance with CERCLA, the National Contingency Plan (NCP), and the Federal Facility Agreement (FFA). The FFA was entered into by the DOE-Oak Ridge Office (ORO), EPA Region 4, and the Tennessee Department of Environment and Conservation (TDEC) in 1991. The FFA establishes the schedule and milestones for environmental remediation of the ORR.

The proposed property transfer is a key component of the Oak Ridge Performance Management Plan (ORPMP) for accelerated cleanup of the ORR. DOE, using its authority under Section 161(g) of the Atomic Energy Act of 1954 (AEA), proposes to transfer the Property to Heritage Center, LLC, a subsidiary of the Community Reuse Organization of East Tennessee (CROET), hereafter referred to as “Heritage Center.” CROET is a 501(c)(3) not-for-profit corporation established to foster the diversification of the regional economy by re-utilizing DOE property for private-sector investment and job creation.

The Property is located in the southern portion of ETTP and consists of approximately 84 acres proposed as the potential site for new facilities to be used for office space, industrial activities, or other commercial uses. The parcel contains both grassy fields located outside the ETTP “main plant” area and infrastructure located inside the “main plant” area. No buildings are included in the proposed ED-8 transfer. The buildings in ED-8 have already been transferred (Buildings K-1007, K-1580, K-1330, and K-1000). These buildings are not included in the transfer footprint of Land Parcel ED-8. A number of temporary structures, such as trailers and tents (non-real property), are located within the footprint. These temporary structures are not included in the transfer.

DOE would continue to be responsible for any contamination resulting from DOE activities that is present on the property at the time of transfer but found after the date of transfer. The deed transferring the Property contains various restrictions and prohibitions on the use of the Property that are subject to enforcement pursuant to State Law Tennessee Code Annotated (T.C.A.) 68-212-225 and state real property law. These

restrictions and prohibitions are designed to ensure protection of human health and the environment.

CERCLA requires that when the Federal government transfers property where hazardous substances have been stored for one year or more, released, or disposed of, the deed must contain two covenants warranting that 1) all remedial actions necessary to protect human health and the environment from hazardous substances remaining on the property have been taken before the date of the property transfer [CERCLA 120(h)(3)(A)(ii)(I)], and 2) any additional remedial action found to be necessary after the date of the property transfer shall be conducted by the United States [CERCLA 120(h)(3)(A)(ii)(II)]. The deed will contain this last covenant. However, in certain circumstances, EPA, with concurrence of the Governor of the State in which the facility is located, may defer the covenant set forth in CERCLA 120(h)(3)(A)(ii)(I) warranting all remedial actions necessary to protect human health and the environment have been taken. In order for EPA to defer the covenant requirement in CERCLA 120(h)(3)(A)(ii)(I), CERCLA Section 120(h)(3)(C) requires that the EPA determine that the property is suitable for transfer based on the following findings:

1. The property is suitable for transfer for the use intended by the transferee, and such use is consistent with protection of human health and the environment;
2. The deed proposed to govern the transfer between the United States and the Grantee of the property contains the Response Action Assurances described in Section 120(h)(3)(C)(ii) of CERCLA with regard to a release, or threatened release, of a hazardous substance for which the Federal agency is potentially responsible, including:
 - a) Provide for any necessary restrictions on the use of the property to ensure the protection of human health and the environment;
 - b) Provide that there will be restrictions on use necessary to ensure that required remedial investigations, response actions, and oversight activities will not be disrupted;
 - c) Provide that all necessary response actions will be taken, and identify the schedules for investigation and completion of all necessary response actions as approved by the appropriate regulatory agency; and
 - d) Provide that the Federal agency responsible for the property subject to transfer will submit a budget request to the Director of the Office of Management and Budget that adequately addresses schedules for investigation and completion of all necessary response actions, subject to congressional authorizations and appropriations.
3. The Federal agency requesting deferral has provided notice by publication in a newspaper of general circulation in the vicinity of the property, of the proposed

transfer and of the opportunity for the public to submit, within a period of not less than 30 days after the date of notice, written comments on the suitability of the property for transfer; and

4. The deferral and the transfer of property will not substantially delay any necessary response action at the property.

These findings are intended to ensure that there is a sound basis for the proposed transfer because the intended reuse of the property does not pose an unacceptable risk to human health or the environment. As stated in CERCLA Section 120(h)(3)(C)(iv), all statutory obligations required of and rights granted to a Federal agency remain the same, regardless of whether the property is transferred subject to a covenant deferral.

DOE hereby requests that the Regional Administrator for EPA Region 4 determine, with the concurrence of the Governor of the State of Tennessee, that the Property is suitable for transfer and that the CERCLA Section 120(h)(3)(A)(ii)(I) covenant may be deferred. Once the deferral request is granted, DOE will proceed to convey the Property while DOE continues to complete all necessary remediation at the ETTP site in accordance with CERCLA, the NCP, and the FFA. In accordance with CERCLA Section 120(h)(3)(B), this covenant deferral request pertains solely to the transfer of this Property or any portion thereof to a non-Potentially Responsible Party.

1.0 Property Description

The area proposed for title transfer is comprised of approximately 84 acres and is located in the southern portion of the ETTP. Land Parcel ED-8 is divided into multiple tracts. Approximately 78 acres will be transferred to Heritage Center, LLC; the remaining acres are roadways, which are proposed for transfer to the City of Oak Ridge at a future date. Land Parcel ED-8 contains four prominent buildings that have been transferred (Buildings K-1007, K-1580, K-1330, and K-1000). These buildings are not included in the transfer footprint of Land Parcel ED-8. A number of temporary buildings, such as trailers and tents (non-real property), are located within the footprint. These temporary structures are not included in the transfer.

The ETTP is located on the ORR within the City of Oak Ridge in Roane County, Tennessee, and is owned by the U. S. Government and managed by Bechtel Jacobs Company LLC (BJC). Prior to construction of the Oak Ridge Gaseous Diffusion Plant (ORGDP), the area was used as farmland. For many years, the DOE enriched uranium at the ORGDP. However, uranium enrichment operations at the site have been shut down since the mid-1980s. ORO is now performing cleanup at ETTP in preparation for its closure as a DOE site. At the same time as cleanup, ETTP is being developed into a private-sector, brownfield, mixed-use commercial and industrial park. General descriptions of the Property are contained in the Environmental Baseline Survey (EBS), which is included as Attachment A and summarized below.



Figure 1. The Parcel ED-8 Area, circa 2009

The ED-8 area was predominately used for the location of existing and former buildings and infrastructure, including administrative buildings (e.g., former K-1001, K-1000, K-1330, and K-1580), a computer support building (K-1007), parking lots, and sidewalks. There are several maintained lawns around current buildings and former building sites and two small ponds designated K-1007-P4 and K-1007-P5. The existing buildings in the footprint are not included in the transfer. Although no uranium enrichment facilities were constructed in this area, all the land area in this parcel was developed in support of site operations. In the discussions below, the construction and demolition of buildings formerly located in the parcel are described for thoroughness of the history of the land parcel. A map showing the former locations of demolished buildings is included as Figure 2.

The Environmental Management (EM) Program has divided approximately 1,400 acres at ETTP into 80 exposure units (EUs) for the purposes of evaluating risk and making remedial decisions under the Zone 1 Record of Decision (ROD). Zone 2 of ETTP, consisting of approximately 800 acres, has been divided into 43 EUs for purposes of evaluating risk and making remedial decisions under the Zone 2 ROD. Of the approximately 84 acres of land in Parcel ED-8, 49 acres are contiguous within Zone 1 and include portions of EUs Z1-01, Z1-04, and Z1-05 and all of EU Z1-03. The balance of the acreage, 35 acres, is comprised of two portions of Zone 2 and includes all of EUs Z2-34 and Z2-43 and a portion of EU 24. See Figure 3, which shows the EU boundaries within the transfer footprint.

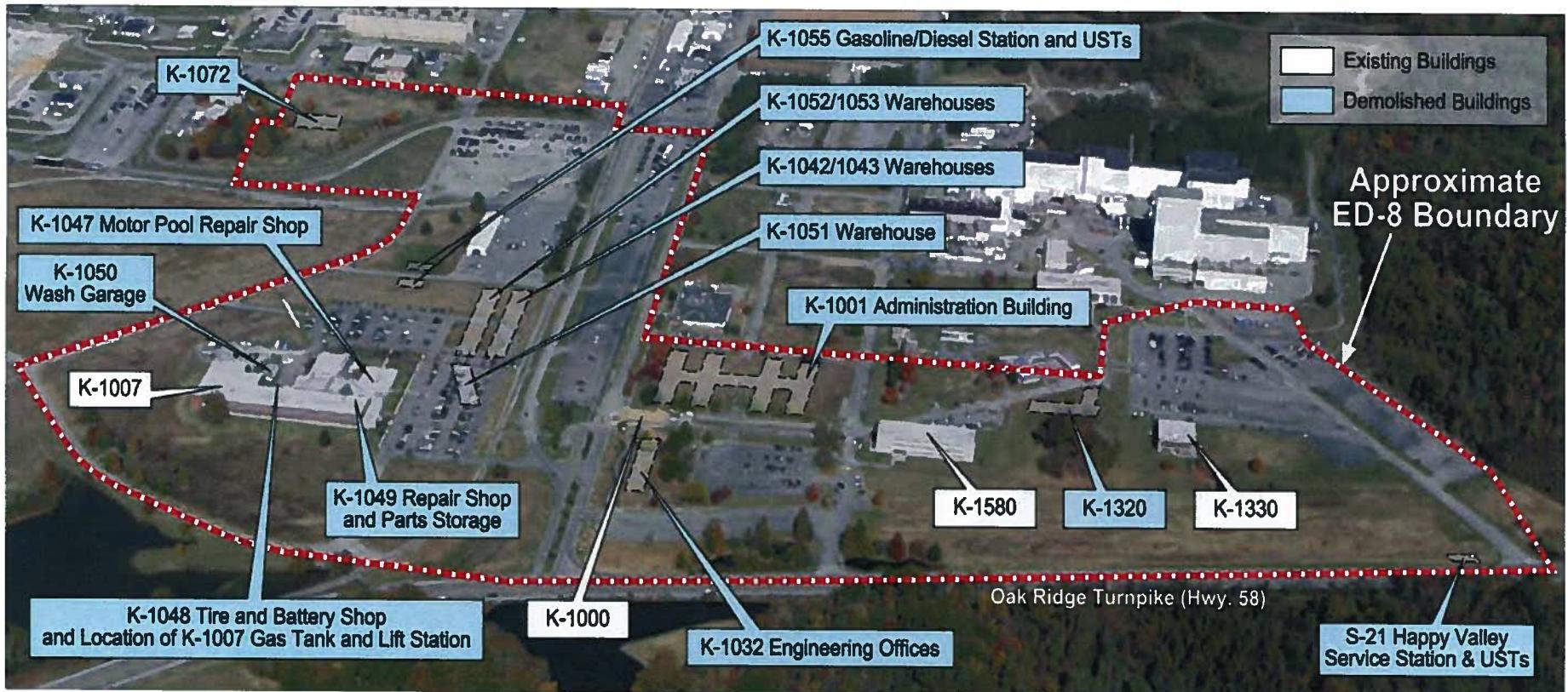


Figure 2. Aerial photo of buildings formerly located in the western portion of Parcel ED-8, circa 2009

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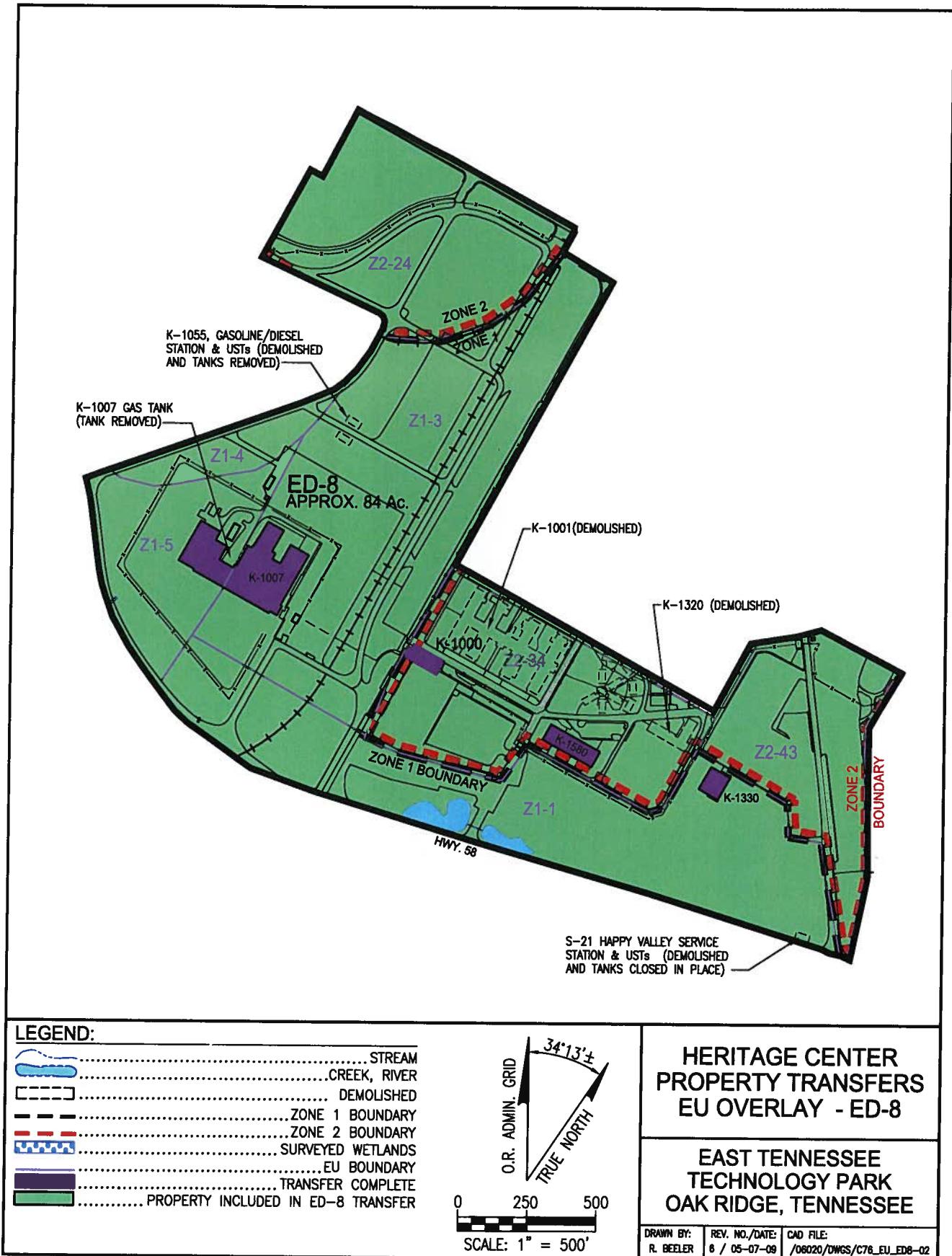


Figure 3. Map of Land Parcel ED-8 components

The ED-8 EBS (Attachment A) was developed using the regulatory-approved documentation prepared pursuant to the RODs for Zones 1 and 2, as documented in three Phased Construction Completion Reports (PCCRs). The PCCRs provide the foundational information to support transfer. The PCCRs were prepared as part of the EM Dynamic Verification Process (DVS) and are decision documents supporting “No Further Action” in the EUs that comprise ED-8. This process is in use for remedial action (RA) decision-making across the ETTP.

2.0 Nature/Extent of Contamination

In accordance with CERCLA Section 120(h), reviews of government records, title documents, and aerial photographs, visual and physical inspections of the Property and adjacent properties, and interviews with current and former employees were conducted to identify any areas on the Property where hazardous substances and petroleum products or their derivatives were stored for one year or more, known to have been released, or disposed of. Additionally, radiological survey and environmental sampling was conducted under the DVS process to assess the condition of the Property. The summary details of these evaluations, including discussions of the nature and extent of contamination, are presented in Section 6.0 of the EBS Report (Attachment A). The findings of the evaluations are summarized in Subsections 2.1 through 2.2 below.

EPA Guidance presumes that the CDR includes the results of a completed Remedial Investigation and Risk Assessment. The Guidance allows for the transferring federal agency to demonstrate why a completed Remedial Investigation or Risk Assessment is not necessary before the land is transferred. In support of the DVS process, the EM Program prepared a risk evaluation using all available data for the respective EUs comprising the ED-8 transfer footprint, and the risk evaluation is summarized in Section 4.0.

The PCCRs and back-up documentation to the PCCRs have already evaluated the environmental data in the parcel, evaluated the potential risk to industrial receptors, documented the remedial actions completed within the boundaries of the parcel, and concluded that no further remedial actions are needed within the component EUs/ED-8. The PCCRs that address Parcel ED-8 are as follows:

- *PCCR for the K-1007 Ponds Area and Powerhouse Area in Zone 1 at ETTP, Oak Ridge, Tennessee (DOE/OR/01-2294&D2), August 2006;*
- *FY 2007 PCCR for the Zone 2 Soils, Slabs, and Subsurface Structures at ETTP, Oak Ridge, Tennessee (DOE/OR/01-2723&D2), September 2007; and*
- *FY 2008 PCCR for Exposure Units Z1-01, Z1-03, Z1-38, and Z1-49 in Zone 1 at the East Tennessee Technology Park, Oak Ridge, Tennessee (DOE/OR/01-2367&D2), March 2008.*

Two of the PCCRs (the *FY 2008 PCCR for EUs Z1-01, Z1-03, Z1-38, and Z1-49* and the *K-1007 Ponds/Powerhouse PCCR*) cover the four ED-8 EUs located in Zone 1. The remaining PCCR (the *FY 2007 Soils, Slabs, and Subsurface Structures PCCR*) covers the three ED-8 EUs located in Zone 2.

Two groundwater plumes containing low levels of volatile organic compounds (VOCs) are located in the subsurface of Land Parcel ED-8. Groundwater will be addressed in the Sitewide ROD.

2.1 Evaluation of Potential Contamination in the ED-8 Footprint

The results of the evaluation are as follows:

- Geophysical surveys at two former service stations and subsequent sampling at these locations within the footprint revealed underground storage tanks (USTs) previously used for storage of fuels. These locations underwent remedial actions. In 2007, USTs at the former K-1055 Gasoline/Diesel Station were removed and USTs at the former Happy Valley Service Station were closed in place, both according to requirements of the State of Tennessee UST regulations. Closure of these sites has been approved and a No Further Action (NFA) decision made (*FY 2008 PCCR for Exposure Units Z1-01, Z1-03, Z1-38, and Z1-49 in Zone 1*).
- The K-1007 Gas Tank, a 200-gallon gasoline UST located in the “U” formed by the wings of the K-1007 building and used for the K-1007 emergency generator, is a third UST located within the Parcel ED-8 footprint. In 1986, it was discovered that the UST was leaking, and the tank and 14 tons of contaminated soil were subsequently removed. The excavated area was filled and asphalt was placed on top. The tank closure was prior to external regulation and is documented in an Unusual Occurrence Report. As reported in the PCCR for the K-1007 Ponds Area and Powerhouse Area in Zone 1 at ETTP and noted in Table 3.1 of the EBS, sampling and analysis of the site for residual contamination resulted in NFA concurrence from EPA.
- Two areas of groundwater containing low levels of volatile organic compounds (VOCs) are located in the subsurface of Land Parcel ED-8. An identified groundwater plume located north of Building K-1000 is from a source outside of ED-8. The source of the sporadic occurrence of VOCs in the second area, located in the vicinity of Building K-1007, is unknown. Only two VOCs, tetrachloroethene and trichloroethene, have occurred above federal drinking water maximum contaminant levels in samples collected from wells in both areas. The groundwater contamination identified beneath ED-8 is included within the scope of the Sitewide ROD.
- Data collection and risk evaluations were conducted under the DVS process.

Based on the results of these evaluations, and the remedial actions completed, all of the EUs in ED-8 have been recommended for unrestricted industrial use to 10 feet bgs.

2.2 ETTP Soil and Groundwater Contamination

As of the end of FY 2007, of the 2,200 acres within Zones 1 and 2 at ETTP, approximately 1,800 acres had been characterized. To support characterization activities, over 2,100 samples have been collected and evaluated by EM. These activities have resulted in determinations of “No Further Action” for approximately 1,240 acres of the 2,200 within the zones.

The seven EUs that comprise Land Parcel ED-8 and/or the associated FFA sites listed in Table 4.1 were assessed under a Work Plan prepared and approved according to the DVS protocol. The Work Plan was approved by EPA on December 13, 2007. All verified and validated data used to make regulatory decisions have been placed in the Oak Ridge Environmental Information System database and are available for review. These data were deemed sufficient to reach NFA decisions for each EU, encompassing the entire ED-8 land parcel. All real property within the ED-8 footprint has been characterized.

The ETTP site has known contaminated groundwater plumes consisting mainly of volatile organic compounds (VOCs) with concentrations ranging from a high of approximately 15 parts per million in the far northeast portion of the site to non-detectable concentrations that resulted from past operations. Hydrogeologic characterization data for the ED-8 area are somewhat limited because the number of groundwater monitoring wells that exist in the immediate vicinity of this parcel, which consists of approximately 84 acres, is limited. As stated above, a plume of contaminated groundwater has been identified beneath ED-8. Monitoring well BRW-113, which is completed in bedrock, is located within the ED-8 footprint approximately 250 feet north of the K-1000 Complex. This well intersects the southwestern tip of a VOC plume and has shown contaminant concentrations in the range of 2.7 to 15 $\mu\text{g}/\text{L}$ in March 2005 and March 2007 (most recent available) sampling events. The VOCs tetrachloroethene (PCE) and trichloroethene (TCE) occurred above a federal drinking water maximum contaminant level (MCL) and Tennessee Department of Environment and Conservation (TDEC) domestic water supply criteria in the samples collected from this well. This plume occurs in bedrock, and groundwater flow paths in bedrock are difficult to determine due to the complex geology and geologic structure underlying the ETTP. The source of the contamination appears to be off-parcel to the northeast.

Four unconsolidated zone monitoring wells (UNW-047, located north of Building K-1007, and UNW-070, UNW-071, and UNW-072, located south of Building K-1007) and three bedrock wells (BRW-036, BRW-042, and BRW-043, all located north of Building K-1007) have been installed in the ED-8 land parcel.

Groundwater samples have been collected from these seven wells on an annual basis from 1994 to 2000, and well BRW-042 has been sampled periodically through 2005. Analytical results for samples collected from these wells have indicated sporadic occurrences of concentrations of TCE and other VOCs. The source of the contamination is unknown. Only TCE has occurred in concentrations greater than the MCL, and that

occurred only three times in the mid-1990s. The concentration of all VOCs in the vicinity of K-1007 has decreased in recent sampling events, the most recent of which occurred in 2005.

2.2.1 Vapor Intrusion Sampling

Because of the occurrence of VOCs in known contaminated groundwater plumes at ETTP, EPA Region 4 recommended investigation of the potential vapor intrusion pathway for site facilities that are targeted for transfer under a CERCLA Section 120(h) CDR. In accordance with EPA's *Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils* (EPA 530-F-02-052, November 2002), and through consultation with representatives from EPA Region 4, ORO developed a process to evaluate the potential for vapor intrusion at ETTP properties to be transferred to the private sector. In 2006, EPA Region 4 provided additional guidance to ORO on evaluation of the vapor intrusion pathway ("Proposed Modifications to the Evaluation of the Vapor Intrusion Pathway in Support of Property Transfers at the East Tennessee Technology Park (ETTP), January 6, 2006, Oak Ridge, Tennessee," EPA 2006). No sampling was necessary at ED-8 because DOE has agreed that the Quitclaim Deed for the property will include a requirement that all future buildings constructed on the property will incorporate engineered barriers to protect against vapor intrusion. The Quitclaim Deed condition addressing this is found in Section 6.2, Condition (11). ORO, EPA Region 4, and TDEC have agreed that vapor intrusion will be addressed in the ETTP final Sitewide ROD.

2.3 ETTP Building Demolition Activities

As part of the accelerated cleanup of the ETTP, numerous facilities are being demolished. Facilities that formerly occupied portions of ED-8, but have been demolished, include Buildings K-1001 and K-1320, both previously located within the south-central portion of the Property, as shown in Figure 2. All of the buildings within Parcel ED-8 have been transferred from DOE ownership or are in the process of being transferred. There are no other buildings in the parcel. Demolition planning and execution for other ETTP facilities proposed for demolition will include appropriate work controls that will be utilized to minimize and control the release of hazardous substances during demolition activities, such that surrounding properties and persons are protected.

3.0 Analysis of Intended Land Use During the Deferral Period

The Property proposed for transfer is situated within an industrial site (ETTP) that is owned by the Federal government. As stated previously, the ETTP is being remediated to allow for its conversion to a brownfield, mixed-use commercial and industrial park. The Property proposed for transfer is currently vacant with the exception of three buildings that have already been transferred and one building that is proposed for transfer and several temporary facilities that are not part of the transfer. During the deferral

period, the Property may be left vacant, or facilities may be constructed on it as allowed by the deed. A risk evaluation was performed to determine whether the Property is acceptable for industrial uses by the private sector. The results of the risk evaluation are presented in Section 4.0 below.

4.0 Risk Evaluation Results

Both Zone 1 and Zone 2 remedial action objectives were developed by the DVS to support the future use of ETTP as a mixed use commercial and industrial park. Therefore, remediation criteria were designed for the protection of the future industrial worker under the assumption the worker normally would not be exposed to soils at depths below 10 feet bgs.

Within that constraint of no exposures below 10 feet bgs, the decision rules established in the DVS were based on one or more of the following criteria:

- exceedance of a maximum RL at any location,
- exceedance of an average RL across the EU,
- unacceptable future threat to groundwater, or
- unacceptable cumulative excess lifetime cancer risk of $> 1 \times 10^{-4}$ and hazard index > 1 across the EU.

The National Contingency Plan (NCP) preamble (*55 Federal Register* 8716, March 8, 1990) describes the process used to establish the remediation goal for environmental media as consisting of a two-step approach. First, an individual lifetime excess cancer risk of 10^{-6} is used as a starting point for establishing remediation goals for the risks from contaminants at specific sites. The second step involves consideration of a variety of site-specific or remedy-specific factors, which enter into the determination of where within the risk range the cleanup standard for a given contaminant will be established. The factors considered in the development of the Zone 1 and Zone 2 RODs and subsequent steps in the implementation of the RODS, such as the DVS, included an acceptable *cumulative* risk level of E-04, which is the upper bound of the EPA acceptable risk range. From the Zone 1 ROD (Section 1.4): “The remedial action objective (RAO) for Zone 1 is to ‘*Protect human health under an unrestricted industrial land use to a risk level not to exceed 10^{-4} .*’” Both Zone 1 and Zone 2 RAOs were developed by the DVS to support the future use of 10^{-4} cumulative excess lifetime cancer risk across the EU as one of the decision criteria. To achieve the RAO, constituent-specific cleanup goals were developed. Per the NCP preamble, these cleanup goals are to be based on a risk level of 1E-06 for individual constituents unless site-specific or remedy-specific factors exist to suggest modifications are appropriate. For the Zone 1 ROD, these factors include the following:

- Site-Specific Exposure Factors

- exposure of the industrial worker is limited to soil-related pathways only (multiple media exposures are not applicable to this scenario), and
- the limited COC list indicates that the potential for a large number of remedial goal exceedances is unlikely, allowing for a higher risk level for each COC considered, while still achieving a cumulative risk <E-04.
- Remedy-Specific Technical Factors
 - remedial goals for particular COCs were generated at a risk level >1E-05 due to cost prohibitiveness and impracticality of remediation to a lower concentration, and
 - remedial goals for particular COCs were revised to reflect consideration of elevated background levels.

Incorporation of the factors above provided remediation levels that reflect the RAO of achieving a cumulative human health risk that will not exceed E-04 for a given EU or FFA site.

Table 4.1 summarizes the decisions for the seven component EUs within Land Parcel ED-8 and/or the decisions for the FFA sites located within the EUs. While all of EU Z1-03 and EU Z2-34 and Z2-43 are in ED-8, only portions of EUs Z1-01, Z1-04, Z1-05, and Z2-24 are within ED-8. However, for purposes of risk evaluation, the entire EU is considered because there are no barriers or impediments preventing access to the balance of the EUs that are not in ED-8.

The risk evaluation results for ED-8 (found in Section 7.0 of Attachment A of the CDR) indicate that all risks, doses, and hazards are considered within acceptable levels of EPA's target risk range for an industrial worker.

DOE also considered risks from exposure to the larger ETTP site through evaluation of a "roving worker" who may access multiple areas at ETTP. The purpose of this effort was to evaluate the risk posed to workers when they are not inside the buildings. The roving worker scenario is considered to be applicable to all facilities at ETTP, including those transferred.

This evaluation was based on certain assumptions, including: (1) the worker will not be exposed to areas that are inaccessible due to radiological or other controls, such as fences or other barriers, or postings that prevent casual entry by a worker at a nearby building and (2) there are no "hotspots" of contamination at ETTP that are accessible to these workers.

Table 4.1. Land Parcel ED-8 risk evaluation results

EU	Associated FFA sites	Decision rule evaluation				Risk evaluation
		Max RL	Avg RL	Risk	GW	
Z1-01	S-21 Happy Valley Service Station ^a	NFA	NFA	NFA	NFA	Passes
Z1-03	K-1027 Service Station ^b	NFA	NFA	NFA	NFA	Passes
	K-1047 Motor Pool Repair Shop ^b	NFA	NFA	NFA	NFA	Passes
	Bldg. 665 Steam Shed ^b	NFA	NFA	NFA	NFA	Passes
	South Plant Area Lab Drain Lines ^b	NFA	NFA	NFA	NFA	Passes
	K-1055 Gas/Diesel Station ^b	NFA	NFA	NFA	NFA	Passes
Z1-04	Bldg. 569 Heavy Equipment Shop ^a	NFA	NFA	NFA	NFA	Passes
Z1-05	K-1007 Gas Tank (Residual Contamination) ^a	NFA	NFA	NFA	NFA	Passes
	K-1048 Tire and Battery Shop ^a	NFA	NFA	NFA	NFA	Passes
	K-1050 Wash/Paint/Grease Shop ^a	NFA	NFA	NFA	NFA	Passes
	600 Series Oil Storage Area ^a	NFA	NFA	NFA	NFA	Passes
Z2-24 ^c	None	NFA	NFA	NFA	NFA	Passes
Z2-34 ^c	None	NFA	NFA	NFA	NFA	Passes
Z2-43 ^c	None	NFA	NFA	NFA	NFA	Passes

^aDecision rule and risk evaluation information are from DOE/OR/01-2294&D2.

^bDecision rule and risk evaluation information are from DOE/OR/01-2367&D0.

^cDecision rule and risk evaluation information are from DOE/OR/01-2723&D2.

FFA = Federal Facility Agreement.

GW = groundwater.

NFA = No Further Action.

RL = remediation level.

The results of the roving worker risk screen, which used all available data, show that risks/hazards are within EPA's acceptable risk range. As a part of the on-going ETTP cleanup, soil data and confirmatory sampling continue to be collected and have been used to support numerous NFA decisions in Zone 1. Cleanup and confirmatory sampling work in Zone 2 are also on-going. All of the EU components to Land Parcel ED-8 have obtained NFA concurrence; therefore, the entire footprint of the land parcel is suitable for transfer for the intended industrial use so long as the other use restrictions (e.g., groundwater well installation and excavation restrictions) are obeyed.

4.1 Vapor Intrusion Pathway Evaluation

The EPA Region 4 has provided guidance to ORO on evaluation of the vapor intrusion pathway ("Proposed Modifications to the Evaluation of the Vapor Intrusion Pathway in Support of Property Transfers at the East Tennessee Technology Park (ETTP), January 6, 2006, Oak Ridge, Tennessee," EPA 2006). Based on this guidance, no sampling was necessary in ED-8 because DOE has agreed that the Quitclaim Deed for the property will include a requirement that all future buildings constructed on the property will incorporate engineered barriers to protect against vapor intrusion.

5.0 Response/Corrective Action and Operation and Maintenance Requirements

The FFA parties divided the ETTP into two smaller operating units to facilitate site CERCLA decisions. The two operating units are Zone 1 (outside the main plant area) and Zone 2 (inside the main plant). ED-8 is located entirely within Zones 1 and 2. The Zone 1 ROD was signed on November 8, 2002 and the Zone 2 ROD was signed on April 19, 2005; remedial actions are underway for both Zone 1 and Zone 2.

Located within some of the Zone 1 and Zone 2 EUs are sites designated as requiring special attention because they were listed in the Federal Facility Agreement (FFA) as having the potential for contamination. These FFA sites have been the focus of several RAs across the ETTP. Table 5.1 summarizes the regulatory status of each of the seven EUs located within ED-8 and summarizes any action taken at their associated FFA sites.

The contiguous Zone 1 component of Land Parcel ED-8 is located within the K-1007 Ponds Geographic Area. Land Parcel ED-8 contains four EUs in Zone 1 (EU Z1-01, EU Z1-03, EU Z1-04, and EU Z1-05). EU Z1-01 is part of the Happy Valley Service Station Group, and the other three EUs are part of the K-1007 Group.

The Zone 2 components of Land Parcel ED-8 are not contiguous, with one portion located in the northwest corner of the parcel and a second portion in the northeast part of the parcel. EU Z2-24 is located in the northwest corner of Parcel ED-8 and is part of the Main Plant Group. EU Z2-34 is located in the north-central portion of the parcel, and EU Z2-43 is located in the eastern portion of the parcel.

ORO plans to address the key sources to the contaminated groundwater plumes at the site to ensure protection of human health and the environment. The decision for groundwater will also be made through the CERCLA process. The final Sitewide ROD, which will include groundwater, is expected to be signed by September 30, 2013, and any needed remedial action is expected to be completed by 2016. Any measures planned to address groundwater contamination are not expected to impact the Property.

In order to ensure the protection of human health by preventing exposure to contaminants present in the groundwater, the deed for the Property prohibits the extraction, consumption, exposure, or use, in any way, of the groundwater without the prior written approval of ORO, EPA Region 4, and TDEC. Additional provisions are included to prevent inadvertent exposure to contaminated groundwater and/or any contamination that could possibly be present in the soils. Such provisions include: requiring the Grantee to adhere to the Grantor's excavation and penetration permit program prior to disturbing soils; requiring adherence to applicable Federal, State, and local laws with respect to any development of the property; and not disturbing the soil in the transfer footprint below 10 feet without the prior written approval of the ORO, EPA Region 4, and TDEC.

Table 5.1. Land Parcel ED-8 components^a

Zone	Geographic area	Group	PCCR	EU (acreage)^b	Associated FFA sites	Decision	
Zone 1	K-1007 Ponds	Happy Valley Service Station Group	FY 2008 PCCR for EU ^s Z1-01, Z1-03, Z1-38, and Z1-49 in Zone 1 at ETTP	Z1-01 (28.3 acres)	S-21 Happy Valley Service Station	Completed RA under TN UST regulations; NFA concurrence from EPA.	
		K-1007 Group		Z1-03 (24.4 acres)	K-1027 Service Station K-1047 Motor Pool Repair Shop Bldg. 665 Steam Shed South Plant Area Lab Drain Lines K-1055 Gas/Diesel Station	Completed RA at the K-1055 Gas/Diesel Station; NFA concurrence from EPA.	
				Z1-04 (20.8 acres)	Building 569 Heavy Equipment Shop 600 Series Oil Storage Area	Completed RA at the Building 569 Heavy Equipment Shop under TN UST regulations; NFA concurrence from EPA.	
				Z1-05 (19.3 acres)	K-1007 Gas Tank (Residual Contamination) K-1048 Tire and Battery Shop K-1050 Wash/Paint/Grease Shop	Sampling and analysis of site resulted in NFA concurrence from EPA.	
Zone 2	Main Plant	Main Plant Group	FY 2007 PCCR for Zone 2 Soils, Slabs, and Subsurface Structures at ETTP	Z2-24 (22 acres)	None	Sampling and analysis of sites resulted in NFA concurrence from EPA.	
	South Park	South Park Area Group		Z2-34 (13.2 acres)	None	Sampling and analysis of EU resulted in NFA concurrence from EPA.	
				Z2-43 (8.7 acres)	None	Sampling and analysis of EU resulted in NFA concurrence from EPA.	

^a Component names and acreages as provided in the PCCRs listed in Sect. 3.2.1.

^b Acreages given are total for the EU. Only three EU^s (Z1-03, Z2-34, and Z2-43) are totally located within the ED-8 boundary.

CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act of 1980.

EPA = U. S. Environmental Protection Agency.

ETTP = East Tennessee Technology Park.

EU = exposure unit.

FFA = Federal Facility Agreement.

FY = fiscal year.

NFA = No Further Action.

PCCR = Phased Construction Completion Report.

RA = remedial action.

TN = Tennessee.

UST = underground storage tank.

Vapor intrusion will be addressed in the ETTP final Sitewide ROD, which includes groundwater. Any new building or structure built on the Property that will be occupied must be designed and constructed to minimize potential exposure of workers to VOC vapors, including the use of engineered barriers as noted in Section 6.1 and in the Quitclaim Deed, Condition (11).

6.0 Contents of Deed/Transfer Agreement

This section includes the Quitclaim Deed clauses and/or exhibits required to enable EPA's determination that the property is suitable for transfer. The following items are included:

- a. Notice – A copy of the notice as required by CERCLA Section 120(h)(1) and (3) and in accordance with regulations set forth at 40 CFR Part 373;
- b. Covenant – A copy of the covenant warranting that any additional remedial action found to be necessary after the date of transfer shall be conducted by the United States as required by CERCLA Section 120(h)(3)(A)(ii)(II);
- c. Access – A copy of the clause that reserves the United States access to the property in any case in which an investigation, response, or corrective action is found to be necessary after the date of transfer as required by CERCLA Section 120(h)(3)(A)(iii); and
- d. Response Actions Assurances – A copy of the response action assurances that must be included in the deed or other agreement proposed to govern the transfer as required under CERCLA Section 120(h)(3)(C)(ii).

6.1 Background Introduction

The Quitclaim Deed for the Property includes various prohibitions and restrictions intended to ensure that the proposed transfer is protective of human health and the environment. In addition, in accordance with the National Environmental Policy Act Environmental Assessment (EA), *Final Environmental Assessment for Lease of Land and Facilities Within the East Tennessee Technology Park, Oak Ridge, Tennessee*, DOE/EA-1175, and its Addendum, *Environmental Assessment Addendum for the Proposed Title Transfer of East Tennessee Technology Park Land and Facilities*, DOE/EA-1175-A, for the proposed lease and transfer of ETTP land and facilities, the allowable property uses are industrial and are as follows: 1) light and heavy manufacturing and processing plants; 2) research and development facilities; 3) laboratory services; 4) waste management including recycling, waste treatment, and packaging; 5) warehousing and wholesaling facilities; 6) public or semipublic utility structure or related use; 7) offices, excluding any on-site daycare facilities; and 8) industries related to operation and maintenance of the industrial park.

The deed prohibits the use of the Property in a manner inconsistent with the land use assumptions of “industrial use.” Industrial use is defined by the Zone 1 and Zone 2 RODs as potential exposure to surface conditions down to 10 feet below ground surface for 2,000 hours/year for 25 years. In addition, the deed specifically prohibits residential use, which includes residential housing, elementary or secondary schools, or any child care facility or children’s playground.

In order to prevent inadvertent exposure to possible site soil contaminants, the Grantee is required, prior to disturbing soil on the Property, to comply with DOE’s excavation and penetration permit program. The deed also specifies that DOE will retain this program until it has been determined that all necessary remedial action on the property has been taken. The ORO EM organization will be in the approval chain for the excavation and penetration permits. Use of the property below 10 feet without prior approval by DOE, EPA, and TDEC is prohibited. This restriction will be reevaluated and potentially removed from the deed if, upon completion of all characterization activities for this portion of Zone 1 and Zone 2 of the ETTP, it is demonstrated to or by DOE, EPA, and TDEC that remediation is not required for the area occupied by the Property. The deed requires that any buildings newly constructed on the Property, which are intended to be occupied by workers eight hours or more per scheduled work day or by public visitors, will be designed and constructed to minimize exposure to volatile organic contaminant vapors. To ensure the protection of human health from exposure to contaminants in groundwater plumes throughout the site, the deed prohibits the Grantee from extracting, consuming, or using, in any way, the groundwater underlying the Property without the prior written approval of DOE, EPA, and TDEC. Finally, the deed requires compliance with all applicable Federal, State, and local laws and regulations with respect to any development on the Property.

6.2 Selected Excerpts from the Quitclaim Deed

THIS QUITCLAIM DEED, made between the UNITED STATES OF AMERICA, its successors, transferees and assignees, hereinafter referred to collectively as the GRANTOR, acting by and through the Secretary of the Department of Energy, under and pursuant to the powers and authority contained in Section 161g of the Atomic Energy Act of 1954, as amended (42 U.S.C. § 2201(g)) and Heritage Center, LLC, a Tennessee non-profit corporation, organized under the laws of the State of Tennessee, its successors, transferees and assignees, hereinafter referred to collectively as the GRANTEE. The GRANTOR and GRANTEE have agreed that in order to assure enforceability of land use restrictions, this Quitclaim Deed, including all of its exhibits, shall serve as a Notice of Land Use Restrictions pursuant to Tennessee Code Annotated 68-212-225, having all the effectiveness and enforceability of such Notice. By acceptance of this Quitclaim Deed or any rights hereunder, the Grantee, for itself, its successors and assignees forever, agrees that the transfer of all the Property transferred by this Deed is accepted subject to all terms, obligations, restrictions, reservations, covenants and conditions set forth in this Quitclaim Deed and all exhibits hereto, and that these terms, obligations, restrictions, reservations, covenants and conditions shall run with the land.

(1). It is the intent of the GRANTEE to utilize the property conveyed herein for purposes consistent with the mission of economic development for the community. All activities and development of the real property by the GRANTEE shall be consistent with the requirements contained within Exhibits "B" and "D" to this Quitclaim Deed.

(9). The GRANTEE shall comply with all applicable Federal, State, and local laws and regulations with respect to any present or future development of the property herein conveyed, including, but not limited to, those laws and regulations which govern sewage disposal, facilities, water supply, and other public health requirements.

(10). All structures, facilities, and improvements requiring a water supply shall be required to be connected to an appropriate regulatory approved water system for any and all usage. GRANTEE covenants not to extract, consume, expose, or use in any way the groundwater underlying the property or water from any streams or ponds located on the property without the prior written approval of the GRANTOR, the United States Environmental Protection Agency and the Tennessee Department of Environment and Conservation.

(11). The GRANTEE covenants and agrees that any buildings intended to be occupied by workers eight hours or more per scheduled work day or by public visitors will be designed and constructed to minimize exposure to volatile organic contaminant vapors using EPA/625/R-92/016 (January 1993), *Radon Prevention in the Design and Construction of Schools and Other Large Buildings*, as guidance. The GRANTEE may seek a waiver of this covenant from the GRANTOR, the United States Environmental Protection Agency, and the Tennessee Department of Environment and Conservation based upon alternative commitments or new information. If such waiver is granted, the provisions of this covenant shall no longer apply. The scope of such waiver shall extend only to the building in question unless expressly stated otherwise in the waiver.

(15). The GRANTOR acknowledges that the Oak Ridge Reservation has been identified as a National Priorities List Site under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended. The GRANTEE acknowledges that the GRANTOR has provided it with a copy of the Oak Ridge Reservation Federal Facility Agreement (FFA), effective on January 1, 1992, and relevant amendments entered into by the GRANTOR, Region 4 of the United States Environmental Protection Agency, and the Tennessee Department of Environment and Conservation. The GRANTEE agrees that should any conflict arise between the terms of such agreement as it presently exists or may be amended and the terms of this Quitclaim Deed, the terms of the FFA will take precedence.

An Addendum addressing requirements of Section 120(h)(3), including response action assurances and use restrictions, is attached as Exhibit "D" and is made a part of this Quitclaim Deed and all provisions of that Addendum are fully incorporated herein.

EXHIBIT "A"
TO QUITCLAIM DEED
BETWEEN
DEPARTMENT OF ENERGY
AND
HERITAGE CENTER, LLC

SURVEY PLAT SHOWING THE TRANSFER FOOTPRINT

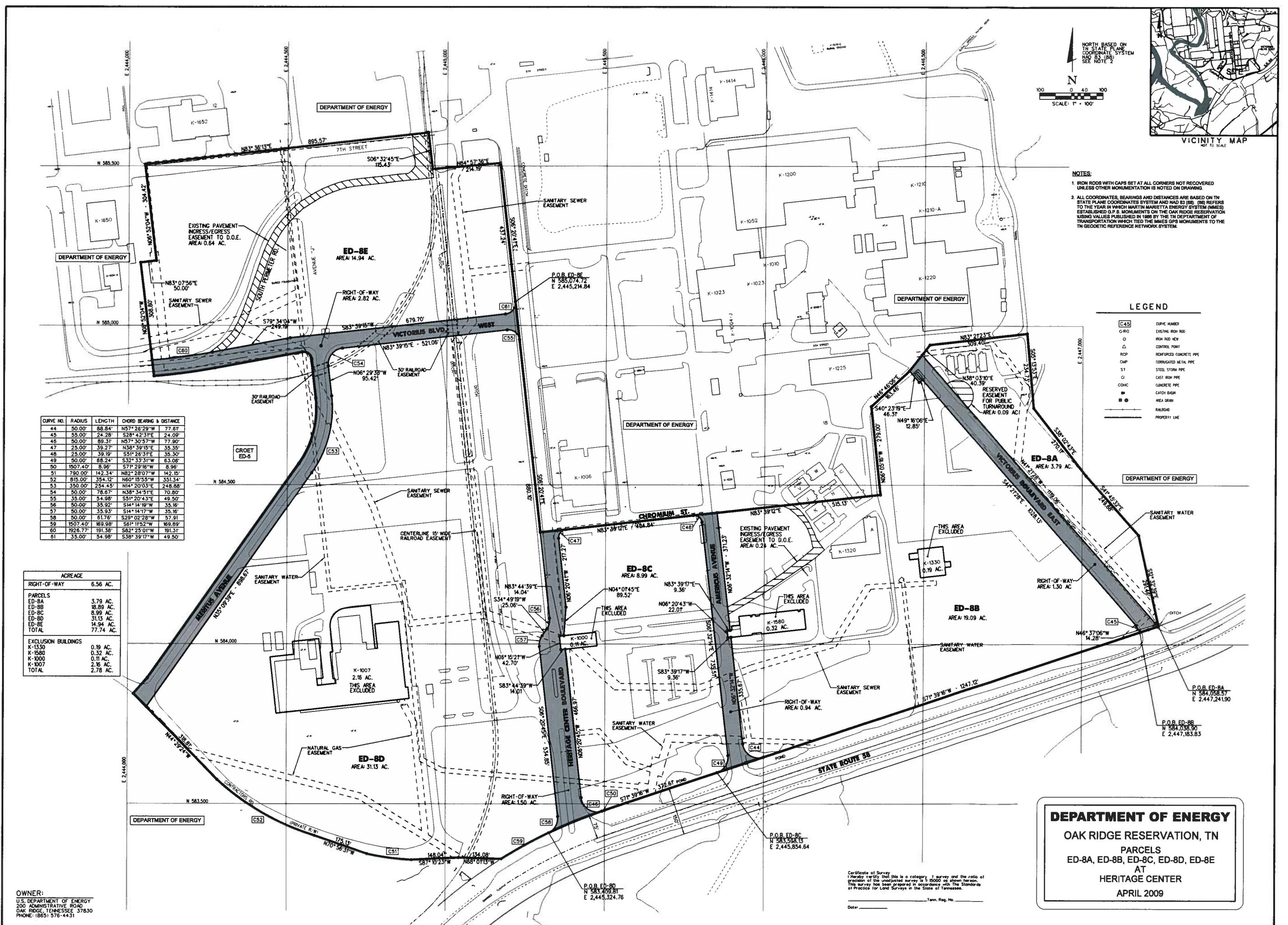


EXHIBIT "B"
TO QUITCLAIM DEED
BETWEEN
DEPARTMENT OF ENERGY
AND
HERITAGE CENTER, LLC

USES OF REAL PROPERTY

A) National Environmental Policy Act (NEPA)

In accordance with the Environmental Assessment dated November 1997, and the Addendum to the Environmental Assessment dated June 2003, the real property may be used for the following activities:

- a. Light and heavy manufacturing and processing plants;
- b. Research and development facilities;
- c. Laboratory services;
- d. Waste management including recycling, waste treatment and packaging;
- e. Warehousing and wholesaling facilities;
- f. Public or semipublic utility structure or related use;
- g. Offices, excluding any onsite daycare facilities;
- h. Industries related to operation and maintenance of the industrial park.

B) Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

The Grantee covenants that the property shall not be used or developed in a manner inconsistent with the land use assumptions of "industrial use" contained in approved applicable Records of Decision. Grantee covenants that it will not at any time cause or allow any portion of the property to be used for any residential housing, any elementary or secondary school, or any child care facility or children's playground.

EXHIBIT "D"
ADDENDUM TO QUITCLAIM DEED
BETWEEN
DEPARTMENT OF ENERGY AND HERITAGE CENTER, LLC

CERCLA SECTION 120(h) REQUIREMENTS AND ASSURANCES

A. In accordance with CERCLA Section 120(h)(1) and (3) and 40 CFR Section 373, and based on a complete search of agency files, the Grantor provides notice that:

Two areas of groundwater containing low levels of volatile organic compounds (VOCs) are located in the subsurface of Land Parcel ED-8. An identified groundwater plume located north of Building K-1000 is from a source outside of ED-8. The source of the sporadic occurrence of VOCs in the second area, located in the vicinity of Building K-1007, is unknown; however, it is considered a release. Two VOCs, tetrachloroethene and trichloroethene, have occurred above federal drinking water maximum contaminant levels in samples collected from wells in both areas. The deed (Condition 10) includes a prohibition for use of the groundwater, in any way, unless such use is approved in advance by the Federal Facility Agreement (FFA) parties. Additional provisions are included to prevent inadvertent exposure to contaminated groundwater and/or any contamination that could possibly be present in the soils. Such provisions include requiring the Grantee to adhere to the Grantor's excavation and penetration permit program prior to disturbing soils; requiring adherence to applicable Federal, State, and local laws with respect to any development of the property; and not disturbing the soil in the transfer footprint below 10 feet without the prior written approval of the U. S. Department of Energy (DOE) Oak Ridge Office (ORO), U. S. Environmental Protection Agency (EPA) Region 4, and Tennessee Department of Environment and Conservation (TDEC). Further information on the nature and extent of the VOC contamination is contained in Section 4.3 of the Environmental Baseline Survey (EBS) Report issued in **DATE TO BE DETERMINED**, which is incorporated by reference into this Quitclaim Deed as Exhibit F. Said Report shall be placed within the permanent historical realty audit files of the DOE-ORO, within the Grantor's Oak Ridge Office Information Center, and within the Grantee's realty records. ORO plans to address the key sources to the contaminated groundwater plumes at the site to ensure protection of human health and the environment. The decision for groundwater will be made through the CERCLA process. The final Sitewide Record of Decision (ROD), which will include groundwater, is expected to be signed by September 30, 2013, and any needed remedial action is expected to be completed by 2016.

B. The Grantor warrants that any additional response action found to be necessary after the date of transfer for contamination on the property existing prior to the date of this transfer will be conducted by the United States. The obligation of the United States under this warranty will be limited to the extent that a response action is required by an act or omission of any Grantee which either a) introduces new contamination or

b) increases the cost or scope of the required response action by negligently managing any contamination present on the property at the time of the initial transfer by the United States.

C. The Grantor reserves a right of access to all portions of the property for environmental investigation, remediation or other corrective action. In the event the Grantor must access the property, the Grantor must provide notice to and coordinate access with the Grantee or its successors and any authorized occupants of the property. Any such entry, including such activities, responses or remedial actions, shall be coordinated with the Grantee or its successors, assignees, and tenants and shall be performed in a manner which minimizes, to the extent practicable, interruption with Grantee's activities on the property. The Grantor's right to access the property shall be exercisable in any case in which a response action or corrective action is found to be necessary by the Grantor or applicable regulatory authority after the date of conveyance of the property, or in which Grantor determines access is necessary to carry out a response action or corrective action on adjoining property. Pursuant to this reservation, the United States and its officers, agents, employees, contractors and subcontractors shall have the right (upon reasonable notice to and coordination with the Grantee or the then-owner and any authorized occupant of the property) at the direction of the Grantor to enter upon the property and (1) conduct investigations and surveys, including but not limited to sample collection, drilling, data and record compilation, and other activities related to environmental investigation and (2) to carry out any other response and/or corrective actions as required or necessary under CERCLA and other applicable authorities, including but not limited to installation and operation of groundwater monitoring and/or restoration wells, and any treatment of hazardous substances or materials required under CERCLA and other applicable authorities.

D. The Grantee covenants that the property shall be used in accordance with the covenants set forth in Exhibit B.

E. The Grantee covenants that, prior to soil disturbance, it will comply with the Grantor's excavation and penetration permit program. The Grantor covenants that it will retain this program until it has been determined that all necessary soil remedial action on the property has been taken. As part of the Grantor's implementation of work under the FFA, the Oak Ridge Office of Environmental Management (EM) must approve any permit under this program for disturbance of soil on the property located 10 feet or less below the surface prior to Grantor's issuance of that permit. The EM organization will submit any permit package it proposes to approve to Region 4 of the EPA and the TDEC for notification no later than 15 business days prior to giving approval for the permit.

F. The Grantee covenants that it will not at any time cause or allow any other use or disturbance of any portion of the property located more than 10 feet below ground surface level without the prior written approval of the Grantor, EPA, and TDEC.

G. The Grantee covenants that it will not inhibit or hinder the Grantor from required remedial investigations, response actions, or oversight activities including, but not limited

to, properly constructing, upgrading, operating, maintaining and monitoring any groundwater treatment facilities or groundwater monitoring on the property or adjoining property. Further, the Grantee covenants that it will not tamper with or willfully destroy any monitoring wells or other monitoring or remediation systems that may be located in the vicinity of the property.

H. The Grantor shall submit on an annual basis, through established channels, appropriate budget requests to the Director of the Office of Management and Budget that adequately address those agreed upon schedules for investigation and completion of all necessary response actions required by the FFA until such time that all necessary remedial action has been taken. The actual amount available for such activities is subject to congressional authorizations and appropriations.

I. When all response actions necessary to protect human health and the environment with respect to any substance remaining on the property on the date of transfer have been taken, the United States shall execute and deliver to the transferee an appropriate document containing a warranty that all such response actions have been taken.

J. After notice and coordination with the Grantee as set forth in Item C, above, any response actions taken by the Grantor will be in accordance with schedules developed and included in Appendix E and J of the FFA for the Oak Ridge Reservation, approved by the Grantor, Region 4 of the EPA, and TDEC. The Grantor will take all necessary action to remediate the East Tennessee Technology Park (ETTP), including groundwater contamination where applicable. The schedule for completion of the remedial action activities addressing Zones 1 and 2 of ETTP and the groundwater (addressed in the Sitewide ROD) is set forth in the following milestones which are subject to adjustment through amendment pursuant to Chapter XVIII, *Scoping Work Priorities* of the FFA:

Zone 1 Record of Decision

Completion of Remedial Action – August 1, 2010

Zone 2 Record of Decision

Completion of Remedial Action – 2017

Sitewide Record of Decision

Record of Decision – September 30, 2013

Completion of Remedial Action – 2016

EXHIBIT "F"
TO QUITCLAIM DEED
BETWEEN
DEPARTMENT OF ENERGY
AND
HERITAGE CENTER, LLC

ENVIRONMENTAL BASELINE SURVEY REPORT

The Environmental Baseline Survey Report for Land Parcel ED-8 was issued in **DATE TO BE DETERMINED**, by the GRANTOR. Said Report is incorporated by reference to this Quitclaim Deed as noted in Exhibit D, Paragraph A.

7.0 Responsiveness Summary

This CDR was issued in draft form for regulator review on September 30, 2008. Comments were received from EPA Region 4 on October 30, 2008, and December 18, 2008. Comments were received from TDEC on December 16, 2008.

7.1 Regulator Comments

The comments received from EPA on October 30, 2008, are addressed below.

COVENANT DEFERRAL REQUEST

EPA Comment 1:

The PCCRs that address ED-8 should be reviewed to confirm that the documents have met with EPA concurrence.

DOE RESPONSE: The PCCRs referenced for ED-8 have been reviewed to confirm that the documents have met with EPA concurrence. EPA's concurrence letters have been incorporated as Appendix C to the EBS attachment to this CDR. In addition, TDEC approval letters for the PCCRs have been reviewed and are also included in Appendix C.

Additional EPA comments received on December 18, 2008, are addressed below:

EPA Comment 1:

Introduction. On page 1, last paragraph, second sentence, please add, "and state real property law" after "212-225."

DOE RESPONSE: The requested change has been made.

EPA Comment 2:

Section 1.0, Property Description. On page 5, the last two paragraphs discuss the property that comprises ED-8. It appears from looking at Figure 2 that there is a portion of ED-8 contiguous and just to the east of EU Z2-43 that lies outside of Zone 2. Please clarify whether this is just an issue of the scale of the map or whether it indeed lies outside of Zone 2. If outside, please insert text which describes the remedial zone or document of which this area would be part.

DOE RESPONSE: The map has been corrected to make it clear that the eastern portion of ED-8 is all within Zone 2 (Figure 3 in the CDR).

EPA Comment 3:

Section 2.0, Nature/Extent of Contamination. Please add text, if needed, to describe the status of information about the nature and extent of contamination in the portion of property discussed in Comment 2.

DOE RESPONSE: No additions are necessary as indicated by the response to Comment 2.

EPA Comment 4:

Section 2.0, Nature/Extent of Contamination. The third paragraph does not appear to be necessary, since both statements are included on the same page three paragraphs earlier.

DOE RESPONSE: The paragraph has been deleted.

EPA Comment 5:

Figure 2. Please review comments 2 and 3 above, and verify that the figure accurately depicts the location of the Zone 2 boundary on the east side. There appears to be a sliver of land that lies outside Zone 2. In addition, the green boundary for Zone 1 does not show up against the green background for the footprint of ED-8. Actually, neither boundary shows up very well. Please revise in order to better show this information.

DOE RESPONSE: The map for Figure 2 (now Figure 3) has been revised to make the eastern boundary of ED-8/Zone 2 clear and to make the boundaries for Zones 1 and 2 show up better.

EPA Comment 6:

Section 2.0, Nature/Extent of Contamination. It would appear to be appropriate to include in this section a statement about the nature of groundwater contamination in the ED-8 footprint. The discussion of groundwater contamination is included in the following section entitled "Evaluation of Potential Contamination in the ED-8 Footprint." While it may be appropriate to discuss the ongoing investigation of the groundwater contamination, it may be appropriate to include in Section 2.0 a few statements about the existing data that supports the existence of groundwater contamination.

DOE RESPONSE: The following text has been added to the last paragraph of Section 2.0: "Two groundwater plumes containing low levels of volatile organic compounds (VOCs) are located in the subsurface of Land Parcel ED-8. Groundwater will be addressed in the Sitewide ROD."

EPA Comment 7:

Section 2.1, Evaluation of Potential Contamination in the ED-8 Footprint. On page 7 in the third bullet, please delete “unrestricted” and “to 10 feet bgs.” In addition, it would not appear to be appropriate to state, as the text does here, that “Data collection and risk evaluations were conducted under the DVS to allow for unrestricted industrial use to 10 feet bgs.” If what is meant by the text is that data was collected and risk evaluations conducted in order to evaluate the protectiveness of industrial use, then please revise accordingly. If there is some other meaning, then please clarify. It is not critical to the discussion of nature and extent of contamination or evaluation of potential contamination whether DOE or the NEPA ROD presumed industrial use.

DOE RESPONSE: The first sentence under the third bullet has been revised to delete “unrestricted” and “to 10 feet bgs.” However, the EPA-approved DVS process was used to evaluate potential contamination, and unrestricted industrial use to 10 feet bgs is an outcome of the DVS process, as described in the PCCR documents.

EPA Comment 8:

Section 2.1, Evaluation of Potential Contamination in the ED-8 Footprint. The last sentence on page 7 contains a conclusion that appears to be premature. Please delete this sentence.

DOE RESPONSE: The sentence has been deleted as requested.

EPA Comment 9:

Section 2.2, ETTP Soil and Groundwater Contamination. It may be appropriate to clarify at the end of the first paragraph on page 8 whether all the property within the ED-8 footprint has been characterized.

DOE RESPONSE: Additional elaboration has been incorporated into the final sentence of the second paragraph of Section 2.2, noting that all of ED-8 has been characterized.

EPA Comment 10:

Section 2.2, ETTP Soil and Groundwater Contamination. The second paragraph contains a discussion of the Sampling and Analysis Plans prepared and approved according to the DVS protocol. Please clarify whether EPA approved the Sampling and Analysis Plans mentioned here.

DOE RESPONSE: The Work Plan, which addresses sampling and analysis, was approved by EPA on December 13, 2007. The text in Section 2.2 has been revised to clarify that the Work Plan addressed sampling analysis rather than Sampling and Analysis Plans.

EPA Comment 11:

Section 4.0, Risk Evaluation Results. *In the first paragraph, last sentence, please delete, “have the potential for exposure . . .” and replace with “be exposed . . .”*

DOE RESPONSE: The requested change has been made.

EPA Comment 12:

Section 4.0, Risk Evaluation Results. *In the fourth bullet, please clarify how the DVS’ use of 1×10^{-4} is consistent with the following statement from the NCP: “The 10^{-6} level shall be used as the point of departure for determining remediation goals for alternatives when ARARs are not available or are not sufficiently protective because of the presence of multiple contaminants at a site or multiple pathways of exposure.” 40 CFR 300.430(e)(2)(i)(A)(2).*

DOE RESPONSE: The DVS process was developed jointly by DOE, EPA, and TDEC, with significant input from the public. The Records of Decision (RODs) for Zone 1 and Zone 2, signed November 8, 2002, and April 19, 2005, respectively, established the remediation levels and the remedial action objectives for the site, including Parcel ED-8. The remedial action objectives include “...protect human health under an industrial land use to an excess cancer risk at or below 1×10^{-4} and non-cancer risk level at or below a hazard index (HI) of 1...” and also require DOE to “implement LUCs to prevent exposure to residual solid contamination left on-site/and or to prevent residential use of the land.”

The National Contingency Plan (NCP) preamble (55 *Federal Register* 8716, March 8, 1990) describes the process used to establish the remediation goal for environmental media as consisting of a two-step approach. First, an individual lifetime excess cancer risk of 10^{-6} is used as a starting point for establishing remediation goals for the risks from contaminants at specific sites. The second step involves consideration of a variety of site-specific or remedy-specific factors, which enter into the determination of where within the risk range the cleanup standard for a given contaminant will be established. The factors considered in the development of the Zone 1 and Zone 2 RODs and subsequent steps in the implementation of the RODs, such as the DVS, included an acceptable *cumulative risk* level of E-04, which is the upper bound of the EPA acceptable risk range. From the Zone 1 ROD (Sect. 1.4): “The remedial action objective (RAO) for Zone 1 is to ‘*Protect human health under an unrestricted industrial land use to a risk level not to exceed 10^{-4} .*’” To achieve the RAO, constituent-specific cleanup goals were developed. Per the NCP preamble, these cleanup goals are to be based on a risk level of 1E-06 for individual constituents unless site-specific or remedy-specific factors exist to suggest modifications are appropriate. For the Zone 1 ROD, these factors include the following:

- Site-Specific Exposure Factors

- Exposure of the industrial worker is limited to soil-related pathways only (multiple media exposures are not applicable to this scenario), and
- The limited COC list indicates that the potential for a large number of remedial goal exceedances is unlikely, allowing for a higher risk level for each COC considered, while still achieving a cumulative risk <E-04.
- Remedy-Specific Technical Factors
 - remedial goals for particular COCs were generated at a risk level >1E-05 due to cost prohibitiveness and impracticality of remediation to a lower concentration, and
 - remedial goals for particular COCs were revised to reflect consideration of elevated background levels.

Incorporation of the factors above provided remediation levels that reflect the RAO of achieving a cumulative human health risk that will not exceed E-04 for a given EU or Federal Facility Agreement site.

EPA Comment 13:

Section 4.0, Risk Evaluation Results. Please note the discussion of the EUs in paragraphs 3 and 7 may need to be revised if there is property outside Zone 2 on the east side of ED-8. If not, then this comment may be ignored.

DOE RESPONSE: As noted in the response to Comment 2, all property in the eastern portion of ED-8 is within Zone 2.

EPA Comment 14:

Section 4.0, Risk Evaluation Results. The final conclusion in this section is, “All of the EU components in Land Parcel ED-8 have obtained NFA concurrence; therefore, the entire footprint of the land parcel is suitable for transfer for the intended industrial use.” At a minimum, this suitability conclusion should be constrained by the caveat, “so long as the other use restrictions (e.g., groundwater well installation and excavation restrictions) are obeyed.”

DOE RESPONSE: The requested caveat has been added.

EPA Comment 15:

Section 5.0, Response/Corrective Action and Operation and Maintenance Requirements. In the first paragraph, there is a statement that ED-8 lies within Zones 1 and 2. Please clarify whether this means that ED-8 lies entirely within Zones 1 and 2.

DOE RESPONSE: The word “entirely” has been added to the first paragraph, third sentence, of Section 5.0 for clarification.

EPA Comment 16:

Section 5.0, Response/Corrective Action and Operation and Maintenance Requirements. *In the fifth paragraph, please note that remedial action on the Sitewide Groundwater ROD is not expected to be complete until 2016. The ROD is scheduled to be signed by September 30, 2013.*

DOE RESPONSE: The dates have been revised as noted in the comment.

EPA Comment 17:

Section 5.0, Response/Corrective Action and Operation and Maintenance Requirements. *On page 14 in the first paragraph, there is a statement about DOE’s belief about data. Please revisit comment 8 and change the text accordingly.*

DOE RESPONSE: The last sentence of the sixth paragraph of Section 5.0 has been deleted.

EPA Comment 18:

Section 6.1, Background Introduction. *In the last paragraph, please add this statement before the last sentence, “In addition, to ensure such protection, the deed prohibits residential use, which includes residential housing, elementary or secondary schools, or any child care facility or children’s playground.”*

DOE RESPONSE: The statement regarding the residential use prohibition has been incorporated into Section 6.1. However, to be consistent with the organization of covenants in the Quitclaim Deed, particularly paragraph B of Exhibit B, the text has been placed in a new second paragraph that also describes the CERCLA industrial use restriction. Also, please note that the phrase “to ensure such protection” has not been included because it would imply that the residential use prohibition is associated with another particular protection-related covenant (e.g., the groundwater restriction, or the industrial use restriction), while it is DOE’s understanding that the residential use prohibition is independent of, and not directly linked to, any other single covenant in particular.

EPA Comment 19:

CDR and Deed, Exhibit D. *On the first page, paragraph A, of this exhibit, please change the date that any needed remedial action is expected to be completed for the Sitewide Record of Decision to 2016. The ROD is now expected to be signed by September 30, 2013.*

DOE RESPONSE: The dates have been updated as noted.

EPA Comment 20:

CDR and Deed, Exhibit D. *In paragraph E, please see comment 19 and make any needed revision to this language.*

DOE RESPONSE: Language concerning Sitewide ROD completion dates has not been incorporated into paragraph E because the process for release of the covenant regarding the excavation and penetration permits program has not been defined. Whether this process will be EU specific, parcel specific, or sitewide has not been determined.

EPA Comment 21:

CDR and Deed, Exhibit D. *In paragraph J, please note the following corrections to the dates:*

- *Zone 2 Record of Decision; Completion of Remedial Action: 2017*
- *Sitewide Record of Decision; Record of Decision: September 30, 2013*
- *Sitewide Record of Decision; Completion of Remedial Action: 2016*

DOE RESPONSE: The dates have been revised as noted.

EPA Comment 22:

Deed. *Please provide the metes and bounds description for EPA review.*

DOE RESPONSE: The survey plat has been added to Exhibit "A." The metes and bounds survey is being developed and will be transmitted with the final CDR as a separate attachment.

The comments received from TDEC on December 16, 2008, are addressed below:

TDEC Comment 1:

Please ensure that any dates concerning site remediation activities comply with the current FFA agreements.

DOE RESPONSE: The dates have been updated per EPA comments 19 and 21.

TDEC Comment 2, CDR, page 7, Section 2.1, Evaluation of Potential Contamination in the ED-8 Footprint, First bullet:

This paragraph indicates that the [USTs] at the two former service stations underwent remedial actions in 2007 according to requirements of the State of Tennessee [UST] regulations. I think it would be good to further describe if the tanks were removed or closed in place.

DOE RESPONSE: The wording in Sect. 2.1 has been revised so that the second and third sentences now read as follows: "These locations underwent remedial actions. In 2007, USTs at the former K-1055 Gasoline/Diesel Station were removed and USTs at the former Happy Valley Service Station were closed in place, both according to requirements of the State of Tennessee UST regulations." Information about a third tank, the K-1007 Gas Tank, has been added as a new bullet in Section 2.1. This tank and contaminated soil were removed as reported in an Unusual Occurrence Report [Appendix A of K/HS-156, *RCRA Facility Investigation Plan, K-1007 Gas Tank, Oak Ridge Gaseous Diffusion Plant, Oak Ridge, Tennessee* (Energy Systems 1998)]. The former location of the tank has been added to Figures 2 and 3.

TDEC Comment 3, CDR, page 14, First paragraph:

"However, through surface and subsurface data collection in the Zone 1 portion of the ED-8 transfer footprint, DOE believes that it has obtained the data needed to enable excavations deeper than 10 feet without restrictions in the Zone 1 portion of ED-8."

Does DOE actually have the data needed to enable excavations deeper than 10 feet? If so please identify the source of these data and their availability.

DOE RESPONSE: The language in the comment that is quoted from the ED-8 CDR is consistent with statements made in the *Phased Construction Completion Report for the K-1007 Ponds Area and Powerhouse Area in Zone 1 at East Tennessee Technology Park, Oak Ridge, Tennessee* (DOE/OR/01-2294&D2), that has been approved by both EPA and TDEC. However, the text in question is superfluous to the purposes of this CDR and therefore was deleted.

TDEC Comment 4, Suggestion:

It may be useful to include figures in both documents that identify the footprints of the demolished buildings, described in Section 2.3 of the CDR, ETTP Building Demolition Activities. This same suggestion would apply to the location of the removed [USTs].

DOE RESPONSE: Figure 2 in the CDR identifies the former locations of the demolished buildings and USTs. Figure 3 in the CDR shows the locations of the former USTs and some former buildings that have been demolished. In the EBS these figures are 1.4 and 1.3, respectively.

7.2 Public Comments

The CDR package was available for public review from February 11, 2009, until March 13, 2009, and the availability of the documents for review was announced in four area newspapers. One comment was received, from Mr. Norman Mulvenon.

Comment 1:

Ref: DOE/OR/01-2381, Covenant Deferral Request for the Proposed Transfer of Land Parcel ED-8 at the East Tennessee Technology Park, Oak Ridge, Tennessee

I have studied this CDR and I find it very well done. It is well written, clear, comprehensive, and follows the proper format for CDRs.

Ref: Attachment A, DOE/OR/01-2375, Environmental Baseline Survey Report for the Title Transfer of Parcel ED-8 at the East Tennessee Technology Park, Oak Ridge, Tennessee

This Baseline Survey Report is also well done and comprehensive.

I have no comments other than those stated.

DOE RESPONSE: DOE appreciates Mr. Mulvenon's comments and appreciates his interest and time spent reviewing the documents.