

Stewardship Implementation on the ORR

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Stewardship Defined

- Defined as the set of activities necessary to protect human health and the environment from physical hazards, residual contamination, and wastes remaining following remediation
- Over 50 completed remedial actions on the ORR require stewardship and/or monitoring

Stewardship Objective

- Stewardship is designed to 1) prevent the receptor from encountering the residual hazard (generally through land use controls), 2) prevent the residual hazard from migrating to the receptor (generally through engineering controls)
- Stewardship requirements for remedies are documented in legally enforceable agreements and include Records of Decision and Action Memoranda

Elements of Stewardship

- Stewards
- Operations
- Information Management
- Research
- Public Participation

Remedies

- Decision documents include both engineering controls and land use controls
- Engineering controls include:
 - Caps on residual contamination
 - Groundwater extraction systems
 - Groundwater treatment systems
- LUCs include:
 - Deed restrictions
 - Deed notices
 - Zoning
 - Permit programs
 - Advisories
 - Fences and signs
- Stewardship efforts are implemented to ensure continued effectiveness of these measures

Engineering Controls



Land Use Controls



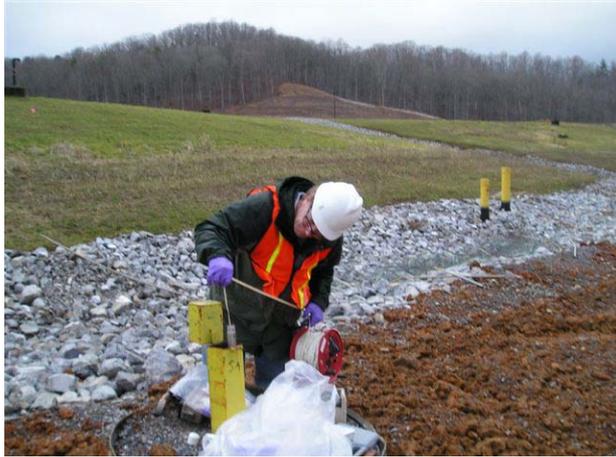
Stewardship Obligation

- DOE has a dedicated stewardship project in their baseline at ~ \$19M/year (unescalated) > 50 FTE's/year
- Stewardship requirements are reevaluated every 5 years as part of the ORR Five-Year Review
- Operations, Principal Steward, and portions of Information Management and Public Participation are legally enforceable
- Stewardship activities now implemented by DOE, will become part of SC and NNSA scope once EM is complete (select activities are already part of SC and NNSA)

Media Monitoring

- Environmental media monitoring assures that the remedy is functioning as intended and protectiveness is maintained
- DOE ORO has a comprehensive monitoring program for determining remediation effectiveness that does the sampling, evaluates the data, and summarizes the data in the annual Remediation Effectiveness Report and Five-Year Review

Media Monitoring



Stewardship Implementation

- Elements of stewardship are performed by:
 - County, state and federal government entities
 - Citizens
- Ultimate responsibility meeting stewardship obligations fall on DOE/Federal Government

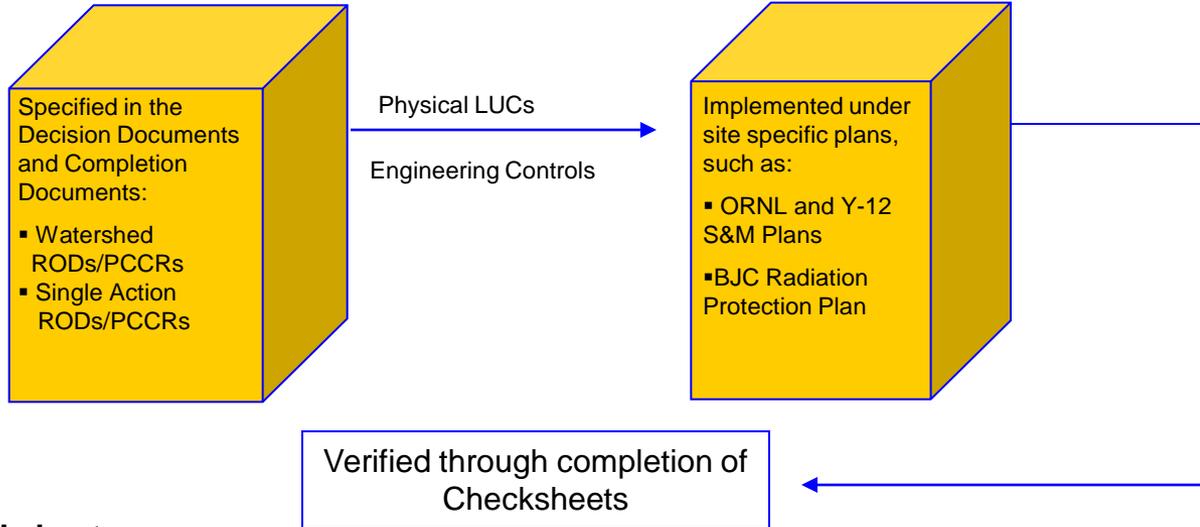
Stewardship Implementation on the ORR

- Anderson and Roane County Register of Deeds – Property Record Restriction and Property Record Notices
- Oak Ridge City Planning Commission – Zoning notice for transferred land
- TDEC – Fish Consumption Advisories
- DOE ORO Realty Office – License agreements, property owner notifications, title searches
- DOE/TVA/EPA/TDEC/COE – Review of reservoir dredge requests (26A applications)
- DOE Field Office – other LUC's, engineering controls, tracking
- Regulatory – Remediation Effectiveness Report and Five-Year Review
- SSAB – Review Remediation Effectiveness Report, Five-Year Review

Stewardship Tracking

- One Comprehensive Stewardship Tracking System implemented
- Integrates all elements of stewardship
- Entails reviews of all DOE CERCLA decision documents to capture stewardship activities

Stewardship Tracking



Site Inspection Checksheets

- BJC Y-12, ORNL, and ETPP S&M Projects
- MSRE Project

Treatment System Checksheets

- BJC ORNL S&M Project (CH8)
- BJC Waste Ops (MV GW Collection System)
- B&W Y-12 (BSWTS, CMTS, EEVOC)

MSE CONTRACT: West 8-000-0740-02P
WAG 13 Cesium Plots
QUARTERLY
CERCLA Part-BA
Page 1 of 1

Inspected By: _____ Date: _____
Reviewed By: _____ Date: _____

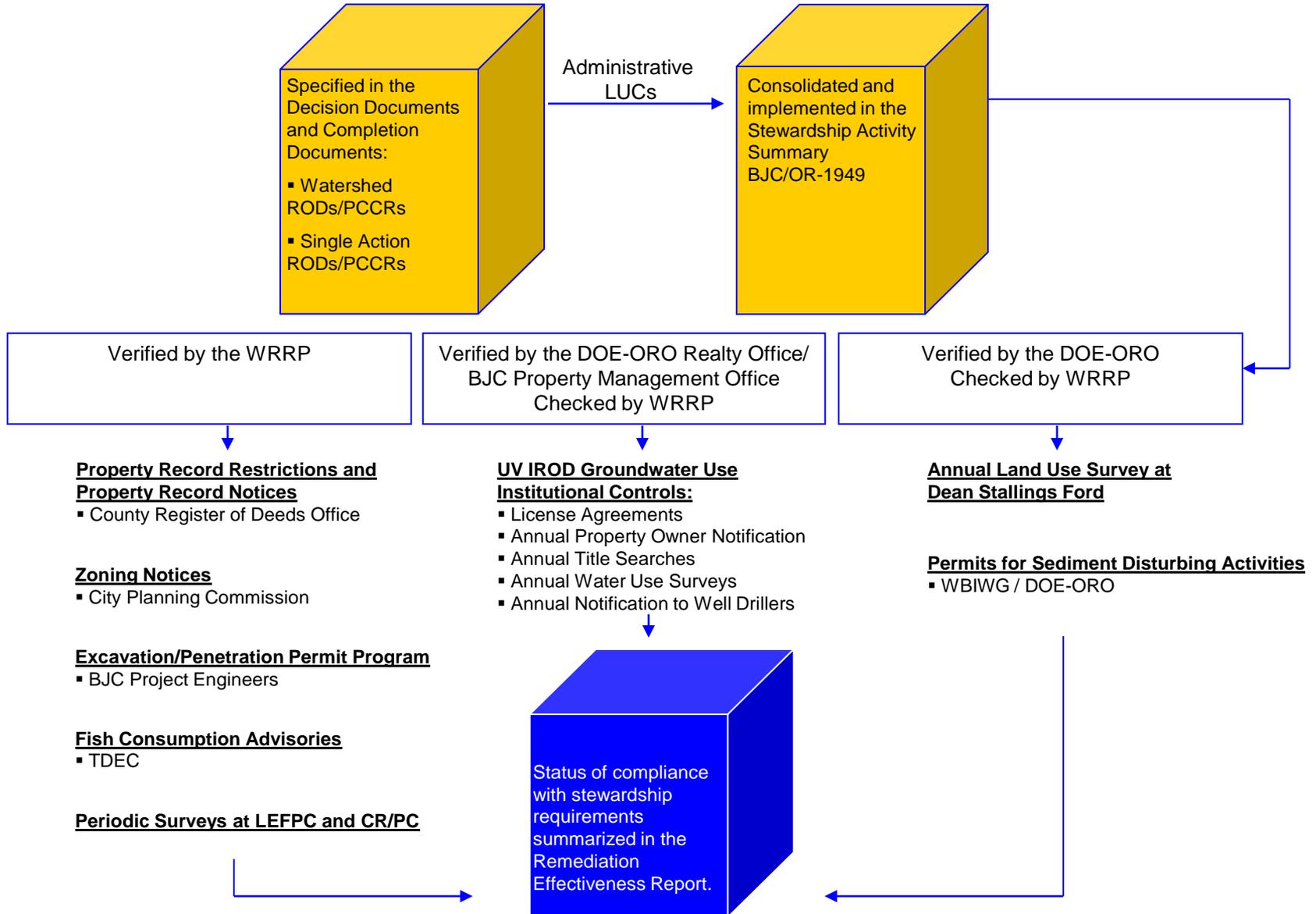
Inspection Item	Page of 17/18/19	ACC	ACC	IF NOT Applicable, describe other action in progress	IMP Tracking Number
1. Are all gates to the site closed and locked?					
2. Are there no piles of debris, debris, or other materials in the site?					
3. Are there no piles of debris, debris, or other materials in the site?					
4. Are there no piles of debris, debris, or other materials in the site?					
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19. Are there no piles of debris, debris, or other materials in the site?					
20. Are there no piles of debris, debris, or other materials in the site?					

ACC - As required
IF NOT Applicable, describe other action in progress
IMP - Impairment Management Plan
Date: _____

Checksheets tracked and compiled

Status of compliance with stewardship requirements summarized in the Remediation Effectiveness Report.

Stewardship Tracking



Stewardship Tracking

- Stewardship controls are tracked monthly, quarterly and yearly
- Stewardship requirements and their status for each year are included in the Remediation Effectiveness Report

Stewardship Tracking

Example of Stewardship Requirements in Remediation Effectiveness Report

Site/Project	LTS Requirements		Status	RER section
	LUCs	Engineering controls		
<i>Watershed-scale actions</i>				
ROD for Interim Actions for the MV Watershed ■SWSA 4 and IHP PCCR ■SWSA 5 PCCR ■SWSA 6 PCCR ■Seepage Pits and Trenches PCCR ■Trenches 5 and 7 PCCR ■Soils and Sediments PCCR ■Hydrofracture Well P&A PCCR ■NHF D&D PCCR ■OHF D&D PCCR ■HRE Ancillary Facilities D&D PCCR ■7841 Equipment Storage Area and 7802F Storage Shed D&D PCCR	<u>Watershed LUCs</u> Administrative: ■land use and groundwater deed restrictions ■property record notices ■zoning notices ■permits program Physical: ■state advisory / postings ■access controls ■signs ■security patrols	<u>Hydrologic Isolation Projects^a PCCRs specific:</u> ■Maintain caps	<u>Watershed LUCs implemented under LUCIP:</u> ■Physical LUCs in place. ■Administrative LUCs in place. ^b ■RCRA required notices complete. <u>Hydrologic Isolation Projects^{a,b} PCCRs specific:</u> ■Engineering controls remain protective.	3.2.5
<i>Completed single project actions</i>				
White Oak Creek Embayment Sediment Retention Structure		■Inspection and maintenance of SRS	■Engineering controls remain protective.	3.3.1.1
WAG 13 Cesium Plots Interim Remedial Action	■Long-term S&M of the fenced enclosure		■LUCs in place.	3.3.2.1
MSRE D&D (Uranium Deposit) Removal Action		■Ongoing S&M	■Engineering controls remain protective.	3.3.3.1

Stewardship Tracking

- A comprehensive stewardship tracking map is maintained and updated as new stewardship requirements are formalized
- Sampling and monitoring data is maintained in the Oak Ridge Environmental Information System (OREIS)

Stewardship Tracking

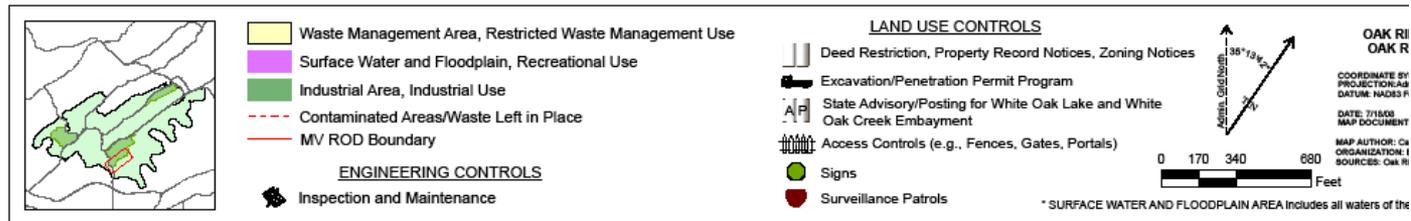
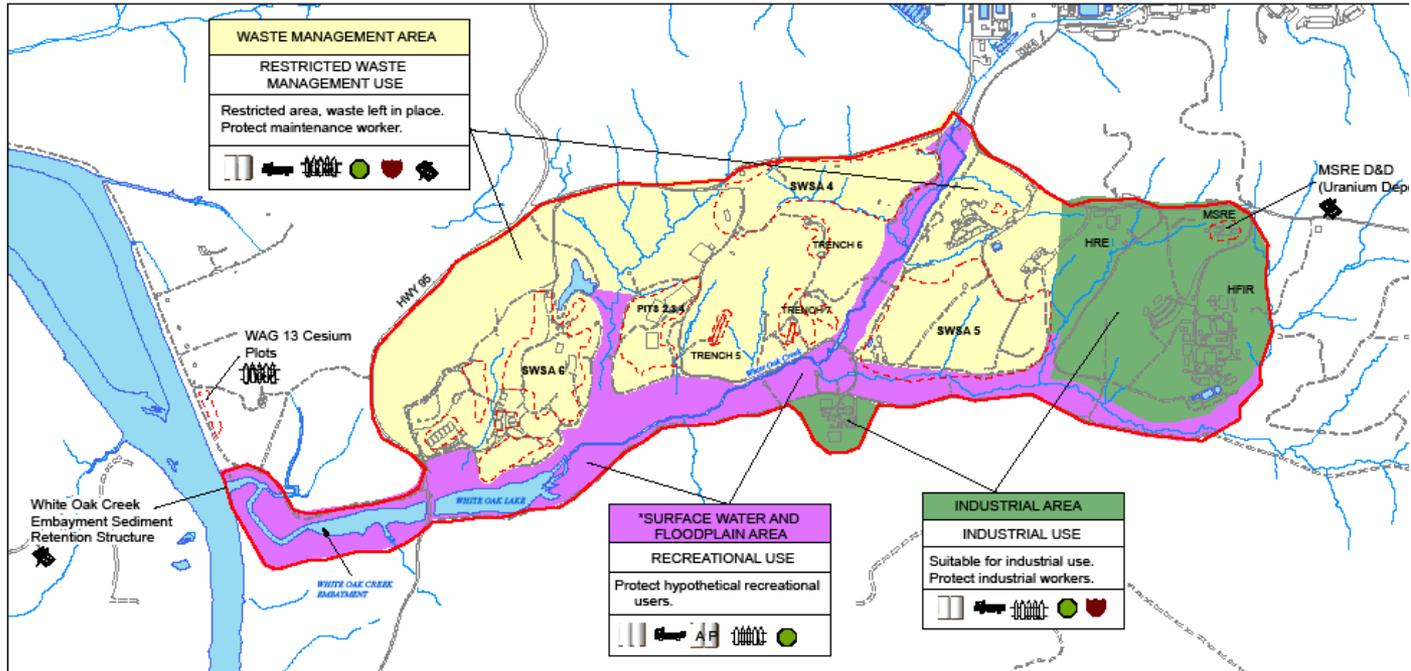


Fig. 3.2. Melton Valley ROD designated land use and interim controls.