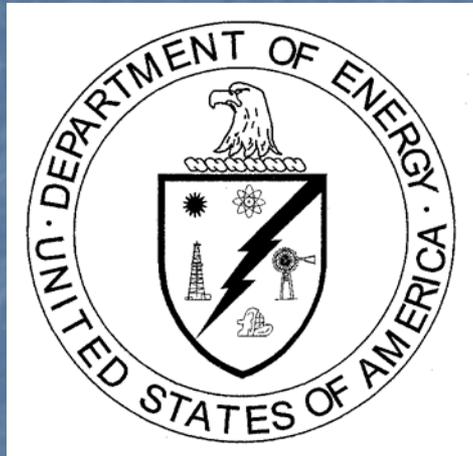


# Overview of Stewardship Tracking and its Automation on the ORR



Jason Darby DOE,  
Water Resources Restoration Program Staff  
October 10, 2012

# Land Use Manager?

- Land Use Manager is an automation tool that tracks land use controls/engineering controls
- Long Term Stewardship
- Why do we need it now
- How it works

# Long-Term Stewardship

- Protects human health and the environment from physical hazards, residual contamination, and wastes remaining following remediation
- Prevents receptors from encountering residual hazard (generally through land use controls)
- Prevents residual hazard from migrating to receptors (generally through engineering controls)
- Is longest phase of Environmental Management Program

# Elements of Long-Term Stewardship

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

# Land Use Controls/Eng. Controls/ Media Monitoring

- Activities required to ensure the integrity of the remedies
  - Engineering controls
    - Capping
    - Groundwater treatment
  - Land use controls
    - Administrative
      - Deed restrictions, zoning notices, excavation/penetration permits, GW use controls
    - Physical
      - Fences, gates, signs
  - Media Monitoring

# Engineering Controls



Capped burial ground



Groundwater treatment facility

# Land Use Controls



Advisory

# Media Monitoring



# Long-Term Stewardship Operations

	remedy	maintain	track	report
<b>Land Use Manager</b>	<b>Land Use Controls</b>			<b>ANNUAL REMEDATION EFFECTIVENESS REPORT</b>  <b>FIVE-YEAR REVIEW</b>
	<u>Administrative</u> <ul style="list-style-type: none"> <li>• Deed Restrictions</li> <li>• Property/Zoning Notices</li> <li>• Excavation/Penetration Permits</li> <li>• GW Use Controls</li> <li>• Dredging Permits</li> <li>• Use Surveys</li> </ul>	<ul style="list-style-type: none"> <li>• LOCAL GOVERNMENT</li> <li>• INTER-AGENCY WORKING GROUP</li> <li>• DOE</li> </ul>	ANNUAL VERIFICATION	
	<u>Physical</u> <ul style="list-style-type: none"> <li>• Access i.e., fences, gates</li> <li>• Signs</li> <li>• S&amp;M</li> <li>• TDEC Postings</li> <li>• CA Postings</li> </ul>	<ul style="list-style-type: none"> <li>• SURVEILLANCE &amp; MAINTENANCE</li> </ul>	MONTHLY, QUARTERLY, SEMI, ANNUAL INSPECTIONS	
	<b>Engineering Controls</b>			
	<u>Engineering Controls</u> <ul style="list-style-type: none"> <li>• Cap</li> <li>• Groundwater</li> <li>• Excavation</li> <li>• Demolition</li> </ul>	<ul style="list-style-type: none"> <li>• SURVEILLANCE &amp; MAINTENANCE</li> <li>• OPERATIONS &amp; MAINTENANCE</li> </ul>	WEEKLY, MONTHLY, QUARTERLY, SEMI, ANNUAL INSPECTIONS	
	<b>Media Monitoring</b>	• MONITORING	VIA SAP	

# Water Resources Restoration Program

- Monitoring
- Tracks Stewardship Controls
  - Land Use Controls
  - Engineering Controls
- Remediation Effectiveness Report

# History of Controls on the ORR

- 1991 the WOC Embayment Structure
- 1995, 1996, 1997 LEFPC, Lower Watts Bar, Clinch River/Poplar Creek
- 1996 First RER – status of controls
- 2001 FYR identifies the need to conduct standardized checks with centralized records for LUC verification
- 2007 MV Watershed RAR approved
- 2011 – over 200 checksheets collected yearly
- Fall 2011 SSAB stewardship committee recommends automation of process
- 2012 work proceeds to automate system
- FY 2013 inspections start with LUM

# ORR LTS Verification/Tracking

## Physical LUCs and Engineering Controls

LTS requirements identified



Implementing organizations complete checksheets to verify controls are maintained.

### Site Inspection Checksheets

- UCOR Y-12 S&M Project
- UCOR ORNL S&M Project
- UCOR ETTP S&M Project

### Treatment System Checksheets

- UCOR ORNL S&M Project
- UCOR Waste Ops or subcontractors
- UCOR Y-12 Liquid Waste Ops
- UTB Facilities

### ETTP Rad Survey Data/Storm Water Monitoring Data

- UCOR Radiation Protection Organization and Environmental Compliance Organization at ETTP

### MSRE Daily Inspections Data

- UCOR MSRE



Major repairs or downtimes are immediately brought to WRRP management's attention. Management reviews checksheets with issues noted.



Checksheets and electronic data submittals reviewed and tracked by the WRRP.



Begin LTS reporting

# ORR LTS Verification/Tracking

## Administrative LUCs

LTS requirements implemented according to decision documentation.

Verified by the WRRP

\* MV LUCIP specified LUC requiring annual certification by DOE in the RER

Property Record Restrictions and Property Record Notices\*

- Verify filing at the County Register of Deeds Office

Zoning Notices

- Verify filing at the City Planning Commission

Excavation/Penetration Permit Program\*

- Verify implementation through Project Engineers

Fish Consumption Advisories/Postings\*

- Verify implementation and maintenance by TDEC

Periodic Use Surveys of LEFPC and CR/PC

- Verify shallow GW use along LEFPC through TDEC Division of Water Supply
- Verify fish use along CR/PC through public survey

Verified by the DOE-ORO Realty Office and UCOR Property Management Office

Union Valley Groundwater Use:

- Ensure License Agreements in place
- Annual Property Owner Notification
- Annual Title Searches
- Annual Water Use Surveys
- Annual Notification to Well Drillers

Verified by the DOE-ORO

Annual Land Use Survey at Dean Stallings Ford Auto Dealership

- Verify land use of parking lot through visual survey

Permits for Sediment Disturbing Activities in the Watts Bar Reservoir

- Verify implementation by the Watts Bar Interagency Working Group

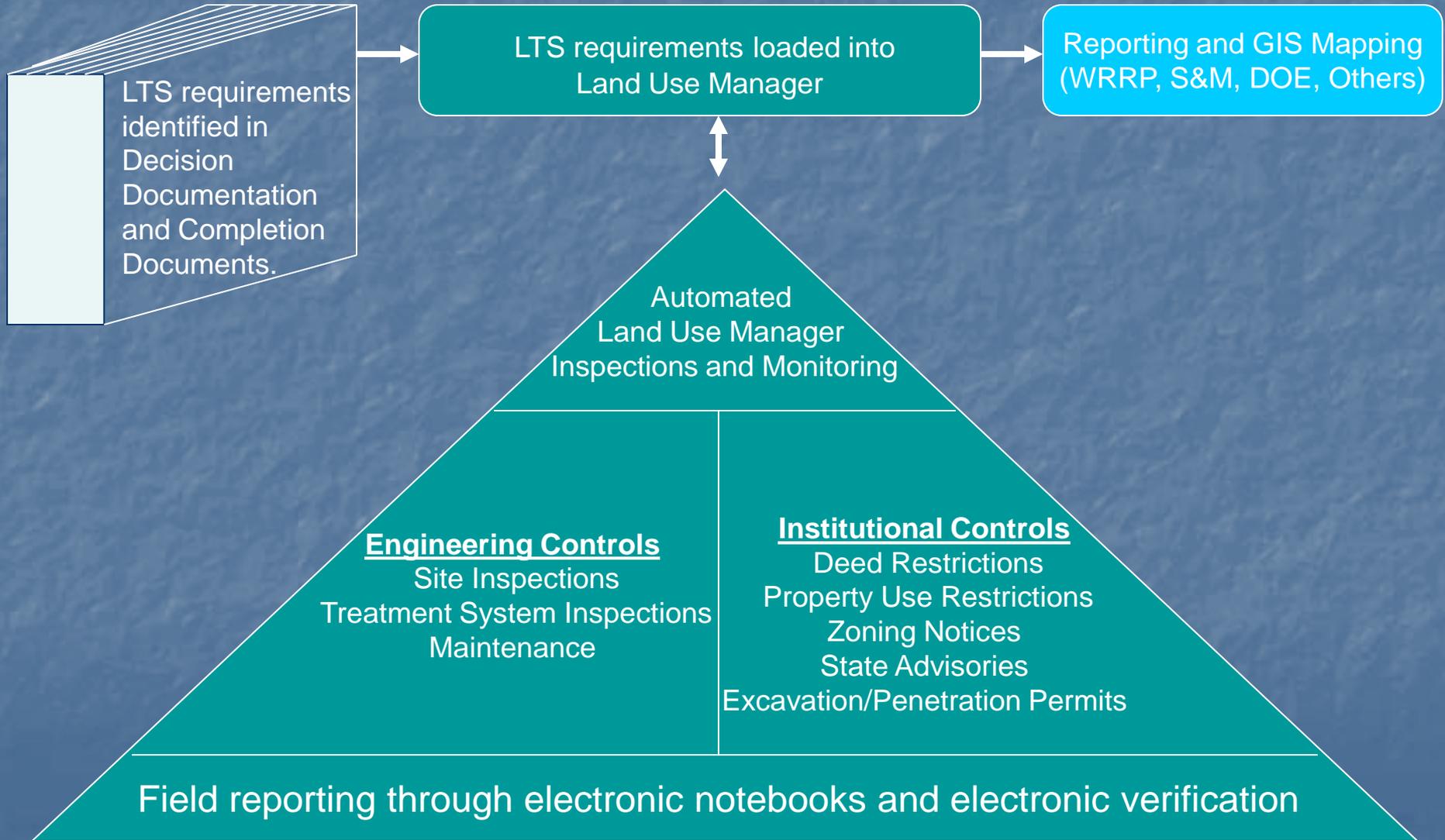
Data submittals reviewed and tracked by the WRRP.

Begin LTS reporting

# Land Use Manager

- The LUM automates the stewardship tracking process by inputting all the CERCLA requirements into the system in order to collect, maintain, and track their status.
  - Tracks over 50 CERCLA sites
  - Provides site descriptions
  - Provides inspection notifications
  - Tracks deficiencies/corrective actions
  - Queries/GIS
  - Based on the proven Navy system

# Land Use Manager *Tracking Process*



# Land Use Manager

## *Advantages*

- Centralized data storage
- Standardized data content and reports
- Easy access in field/paperless OR standard inspection template
- Accountable record of inspections
- Tracking ensures nothing is missed

# Land Use Manager

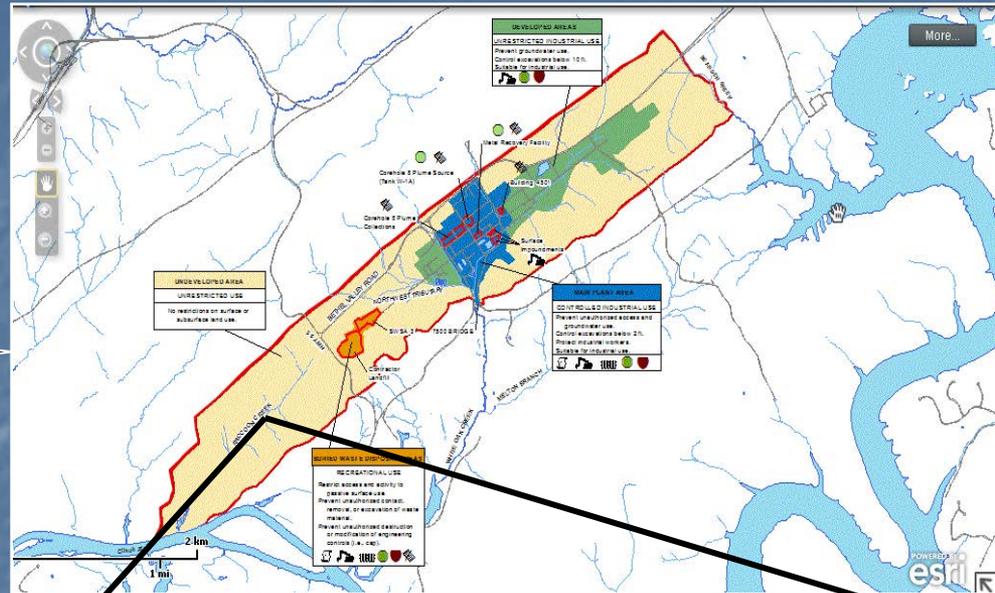
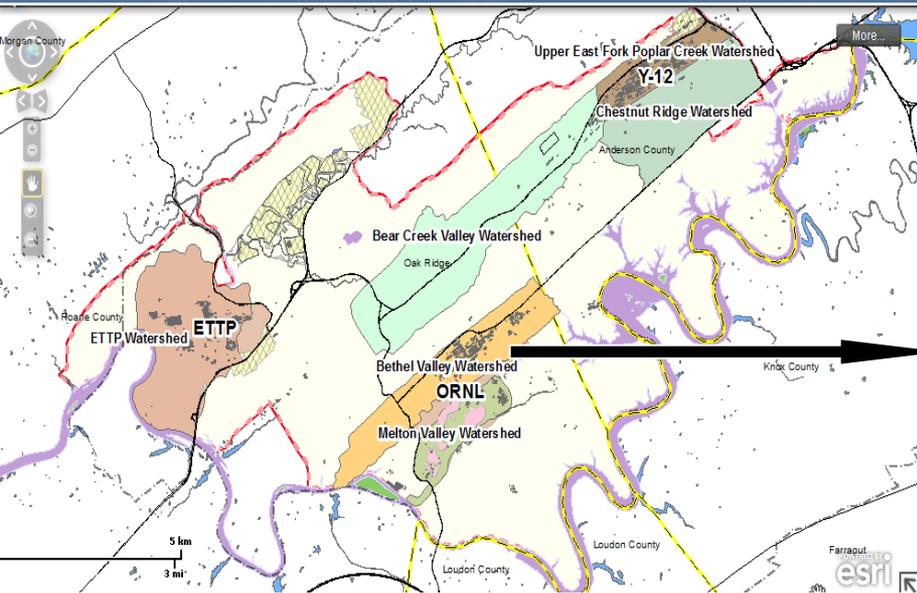
## *Public Accessibility*

- Interactive maps that provide summary reports of where controls are required and why.
- Data entry portion – for trained individuals conducting inspections

Accessible

Protected

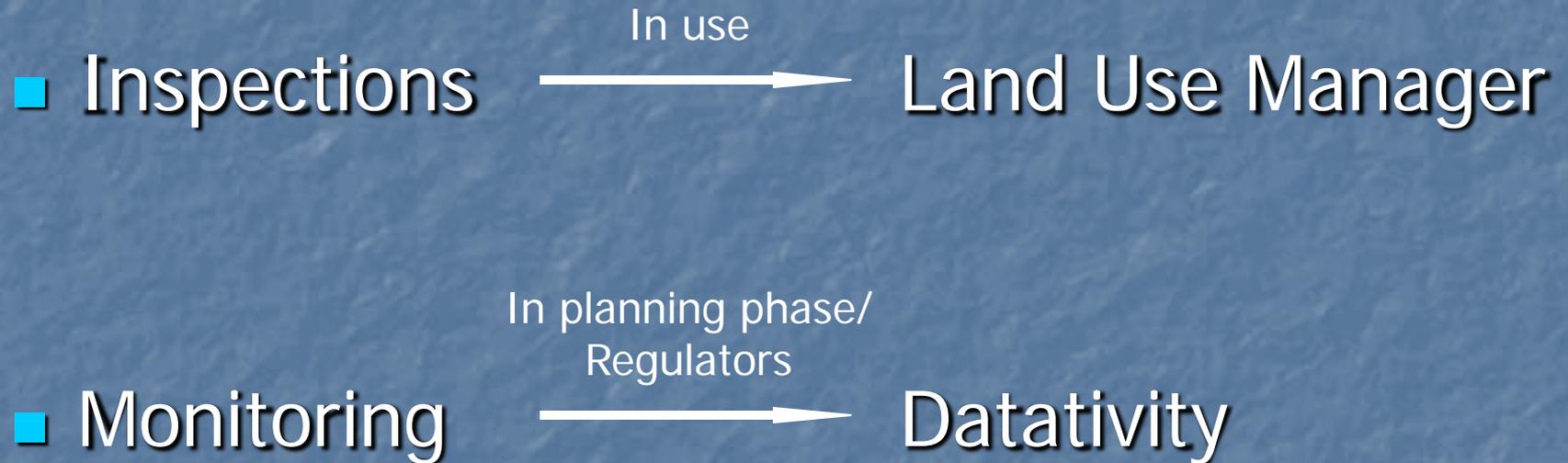
# Land Use Manager



Plant: ORNL  
 Site: Bethel Valley  
 Project: ROD for Interim Actions in Bethel Valley Watershed  
 Requirement: CERCLA  
 Site Inspection/Compliance Details: [\[\[insert link to RER – site summary\]\]](#)

Drivers/Contaminants of Concern	Controls	
	Institutional Inspection Items <i>Reviewed Annually</i>	Engineering Inspection Items <i>Reviewed Annually</i>
<ul style="list-style-type: none"> <li>Remaining Subsurface Contamination</li> <li>Landfill/Buried Waste</li> <li>Radiological</li> <li>Strontium 90</li> <li>Tritium</li> <li>Cesium 137</li> <li>Mercury</li> </ul>	<ul style="list-style-type: none"> <li>Land and Groundwater Deed Restrictions</li> <li>Property Record Notice</li> <li>Zoning Notice</li> <li>Excavation/Penetration Permit</li> </ul>	<ul style="list-style-type: none"> <li>Surveillance</li> <li>Site Access</li> <li>Signs</li> <li>Maintain Caps</li> <li>Treatment System Operations</li> </ul>

# Field Implementation



# Data Entry

- Panasonic Toughbook – rugged laptops
  - Weatherproof (including screen visibility)
  - Engineered to withstand 6' drops, spills, dust and grime, and to perform in the harshest environments
  - Approved by Security for use on ORR (excluding PIDAS)
  - Password protected



# Land Use Manager

- Inspections
  - Provides inspection form for each site
  - Prompts inspectors schedules
  - Sends automatic email to Facility Manager
  - Statuses Site Maintenance Requests

# Land Use Manager Inspections

REGION: Bear Creek Valley Watershed Site: Spoil Area 1 Administrator | Home | Search | SM

Site Land Use Inspections Engineered Inspections

Inspections

- Open
  - 2012-MAY-30 CERCLA-Quarterly
  - 2012-JUN-05 CERCLA-Quarterly
- Closed

### Inspection Report: MAY-30 CERCLA/2012

**Area:** Spoil Area 1  
**Type Of Inspection:** CERCLA-Quarterly  
**Inspected By:** Bailey Bunch  
**Inspection Date:** May/30/2012  
**Report Status:** OPEN

**Comments:**

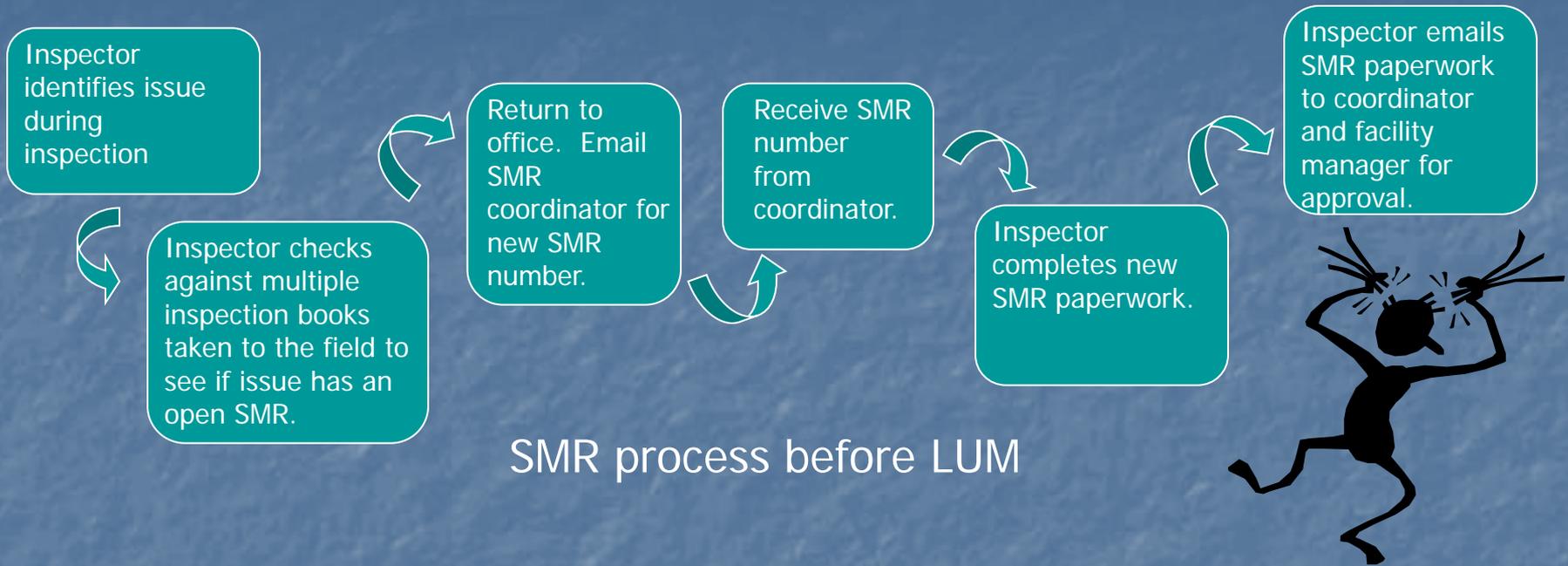
#### A. Current Inspection Section

Inspection Item	Item Description	In Compliance	Existing Open SMRs	Open New SMR
DRAINAGE CONTROL SYSTEM	No evidence of settlement, ponding (> 25 ft2 in area) or blockage or erosion of run-on or run-off drainage features.	NOT INSPECTED	SMR-2012-00001	<input type="button" value="Assign SMR"/>
INTERMITTENT SEEP	No evidence of excessive erosion below seep.	NOT INSPECTED		<input type="button" value="Assign SMR"/>
RODENT DAMAGE	No evidence of burrowing and other damage from rodents.	NOT INSPECTED		<input type="button" value="Assign SMR"/>
SIGNS	No evidence of missing, damaged, or deteriorated signs or incorrect contact information.	NOT INSPECTED		<input type="button" value="Assign SMR"/>
SITE ACCESS	No evidence of deteriorated access road condition or open gate.	NOT INSPECTED		<input type="button" value="Assign SMR"/>
SUBSIDENCE OR SETTLEMENT	No evidence of visible subsidence or settlement of the cover over six inches deep and > 25 ft2 in area.	NOT INSPECTED		<input type="button" value="Assign SMR"/>
UNAUTHORIZED MATERIALS	No evidence of unauthorized materials (e.g., debris, trash, or containers) placed within the area.	NOT INSPECTED		<input type="button" value="Assign SMR"/>
VEGETATIVE COVER	No evidence of dead spots > 25 ft2, gullies or rills around perimeter, excessive weeds, or deep-rooted vegetation.	NOT INSPECTED		<input type="button" value="Assign SMR"/>

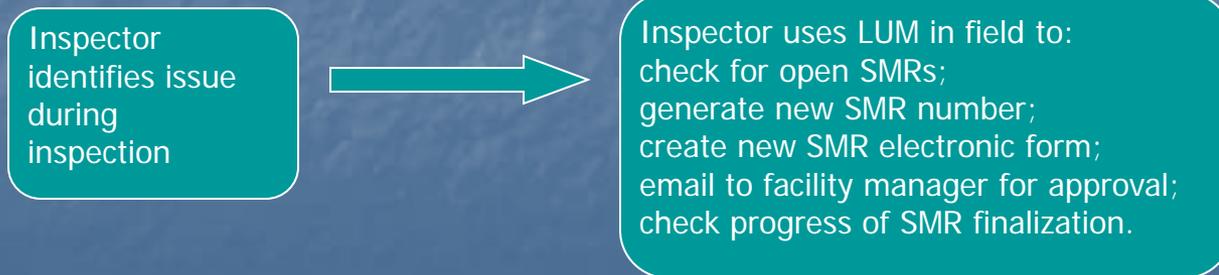
#### B. Open SMRs for Spoil Area 1

SMR #	Inspection Item	Deficiency Description	SMR Assigned Date	Problem Corrected
SMR-2012-00001	DRAINAGE CONTROL SYSTEM	drain blocked	2012-06-05	<input type="button" value="Corrected"/>

# Site Maintenance Request Process



## SMR process after LUM



# Datativity

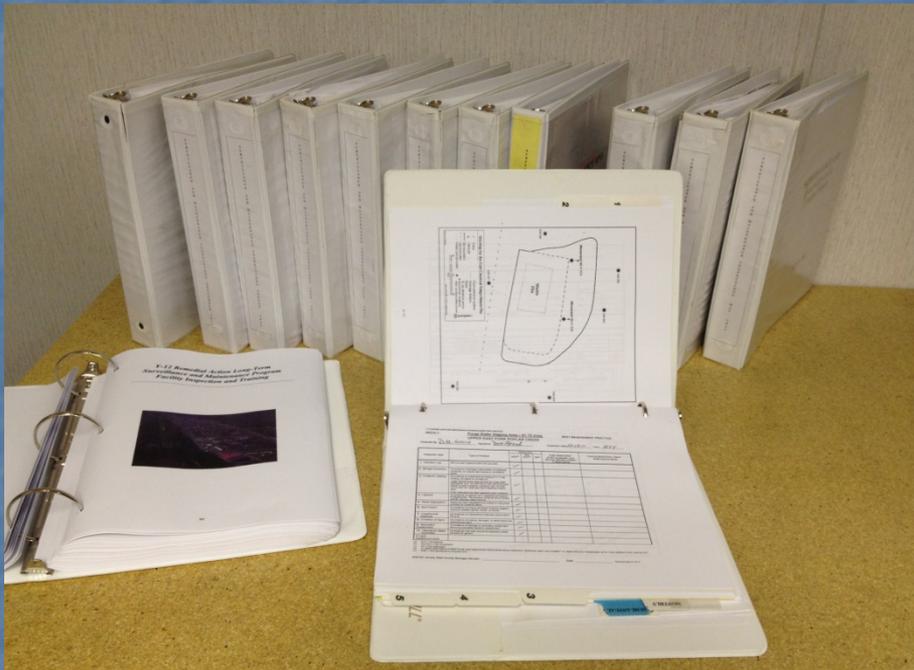
- Electronic field data collection system
- Will require coordination with EPA
- Provides electronic notebooks and forms
- Guides workflow and process

# Land Use Manager and Datativity

## ■ Benefits

- Data accuracy and quality (by eliminating human error, automated calculations)
- Time savings / cost savings
- Real time monitoring (access to weather radar)
- References previous events per location
- Instant access to plans, procedures, manufacturers instructions
- Consistency of methods
- One source of technical support for both systems (Mijara)
- Mapping (GIS)
- Offline capability

# The future... going electronic



- ★ Meeting goals for DOE in Executive Order 13514
- ★ Meeting Pollution Prevention goals with paperless processes