



# Determining Land Use and On-site/Off-site Determinations

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FEDERAL FACILITIES ACADEMY WEBINAR

OFFICE OF SUPERFUND AND EMERGENCY MANAGEMENT

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# Course Overview

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- ❑ Determining Land Use
  - EPA guidance on land use determinations
- ❑ Site Reuse
  - Beneficial Reuse
  - Reuse Assessments
- ❑ On-site/ Off-Site Determinations
  - Role of permit requirements
  - Offsite Rule (OSR)



# Determining Land Use

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Recreational



Agricultural



Industrial



Residential



Land use assumptions affect the exposure pathways that are evaluated for current risk assessments and future potential threats.



# Initial Poll

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When selecting a CERCLA remedy at a federal facility, who determines the reasonably anticipated land use?

- A. EPA
- B. The lead cleanup agency
- C. The State
- D. The public
- E. All of the above

# Initial Poll

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Can the land use determination at a federal facility change?

- A. Yes
- B. No
- C. Never



Example of playground built over a former Superfund Site



Former Nuclear Reactors at the Hanford Site in Washington state.

# Land Use Determinations

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- ❑ Important part of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process.
  - Helps develop remedial action objectives
- ❑ Community Involvement has a critical role.
- ❑ Needs to be documented in the administrative record.

# EPA Guidance on Land Use

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- ❑ **“Land Use in the CERCLA Remedy Selection Process”** dated May 1995 (Land Use Directive)
- ❑ **“Reuse Assessments: A Tool To Implement the Superfund Land Use Directive”** dated June 2001 (Reuse Assessment)
- ❑ **“Considering Reasonably Anticipated Future Land Use and Reducing Barriers to Reuse at EPA-lead Superfund Remedial Sites”** dated March 2010 (Reuse Directive)

# Land Use Directive, 1995

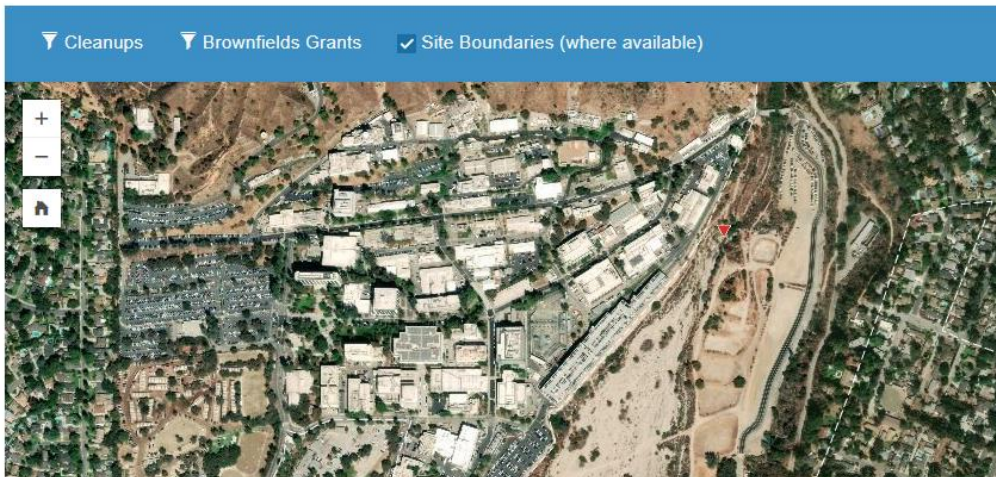
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- ❑ Discussions with local land use planning authorities, local officials, and the public should be conducted as early as possible during the scoping phase of the Remedial Investigation/Feasibility Study (RI/FS).
- ❑ Public meetings and discussions with community members should be conducted and existing information should be used.
  - E.g., zoning laws, population growth patterns, natural resources information, institutional controls currently in place, etc.
- ❑ Consideration of anticipated future land use should be documented in the administrative record for each site.

# Land Use Directive, 1995

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- ❑ Informed future land use assumptions allow the baseline risk assessment and the feasibility study to be focused on developing practicable and cost-effective remedial alternatives.
- ❑ Available land use types following completion of the remedial action are determined as part of the remedy selection process.



# NASA Jet Propulsion Laboratory (JPL)

- Primary land use in surrounding area - residential and light commercial.
- The baseline risk assessment evaluated hypothetical on-facility resident, commercial worker, and construction worker.
- Although NASA has no intent to use JPL for residential purposes in the foreseeable future, the HHRA included a hypothetical residential use scenario to provide the most conservative and protective results.



# Land Use Directive, 1995

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- ❑ In general, remedial action objectives should be developed in order to develop alternatives that would achieve cleanup levels associated with the reasonably anticipated future land use over as much of the site as possible.
- ❑ In cases where the future land use is relatively certain, the remedial action objective generally should reflect this land use.
  - Example: At a landfill site, it is highly likely that the future land use will remain unchanged from a long-term waste management area.



**NPL-BRAC: Former Marine Corps Air Station El Toro, California, Region 9**



**Naval Industrial Reserve Ordnance Plant, Fridley, Minnesota, Region 5**

# Site Reuse

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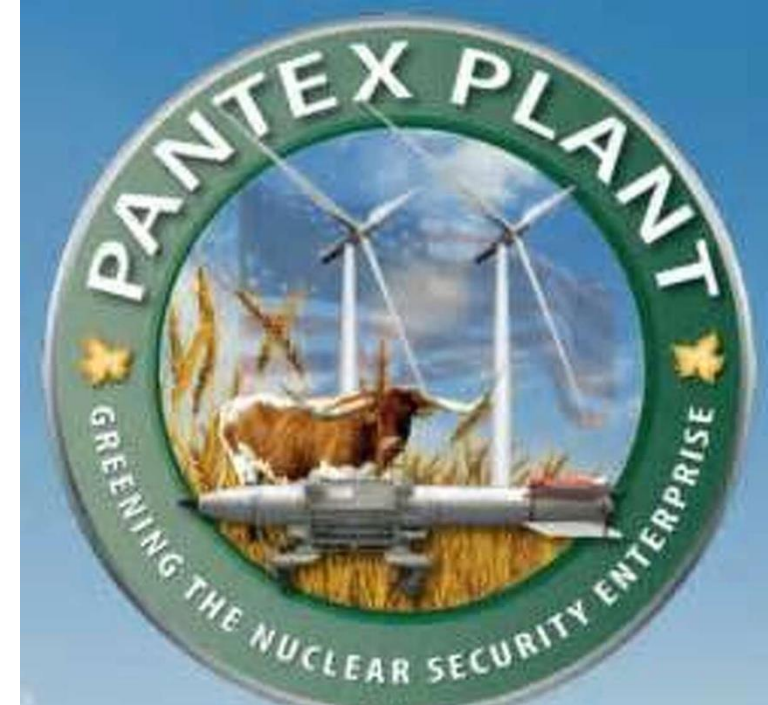
# Economic Analysis and Inventory

A 2024 economic analysis of 102 Federal Facility Superfund Sites identified more than 2,800 businesses that generated nearly \$31 billion in annual sales, provided more than 675,000 jobs and \$70 billion in estimated annual employment income.

| Number of Sites Supporting Each Reuse and Spotlight Category (2021-2023 sites) |                        |                         |                        |
|--------------------------------------------------------------------------------|------------------------|-------------------------|------------------------|
| <i>Reuse Category</i>                                                          | <i>Number of Sites</i> | <i>Spotlight</i>        | <i>Number of Sites</i> |
| Public Service                                                                 | 74                     | Cultural / Historical   | 27                     |
| Residential                                                                    | 62                     | Environmental Education | 8                      |
| Commercial                                                                     | 97                     | Alternative Energy      | 39                     |
| Federal - Other                                                                | 55                     | Core Infrastructure     | 10                     |
| Federal - Military                                                             | 80                     |                         |                        |
| Agricultural                                                                   | 18                     |                         |                        |
| Recreational                                                                   | 90                     |                         |                        |
| Ecological                                                                     | 97                     |                         |                        |
| Industrial                                                                     | 60                     |                         |                        |

# Pantex Plant (USDOE)

- Pantex Renewable Energy Project (PREP) is a
  - 1,500-acre wind farm
  - Five 2.3-megawatt turbines that generate about 11.5 megawatts of power
  - 47 million kilowatt-hours of electricity per year
  - Enough power for 3,500 homes
- Nation's largest federally-owned wind farm
- Video (2:46 mins)



# Reuse Assessment, 2001

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The scope and level of detail of the reuse assessment should be site-specific and tailored to the complexity of the site, the extent of the contamination, and the level of redevelopment activity that is already underway.

Reuse assessments should have greatest applicability to sites with waste materials on the surface and/or contaminated soil.

Generally, groundwater use is determined independently from land use. The need to protect groundwater quality may drive the soil cleanup levels.

# Reuse Assessment, 2001

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Where another federal agency is performing a CERCLA-based remedial action or non-time-critical removal, it should develop assumptions of reasonably anticipated future land use as part of the response process consistent with the Superfund Land Use Directive, where appropriate.

Future land use assumptions can support site characterization, risk assessment, and the development, evaluation and selection of response actions.

# DOE – Fernald Preserve

- Former Uranium Processing Facility in southwest Ohio
- Now a publicly accessible ecological preserve with wetlands, prairie and forest ecosystems which provide valuable wildlife habitat



# Reuse Directive, 2010 – Changes in Future Land Use

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- ❑ Future land use assumptions or designations may change at any stage of the CERCLA response process.
- ❑ Changes before ROD signature may require additional documents and/or revisions to standing key documents
  - Baseline risk assessment
  - Remedial Investigation/Feasibility Study
  - Proposed plan

# Post-ROD Changes in Land Use

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- ❑ After the ROD signature, an evaluation should be done to see if the protectiveness of the remedy would be impacted.
  - Will the remedy still be protective with this land use change?
  - Would this change in land use require a change to the remedy?
- ❑ ROD requirements do not change based on land use changes
  - Modifications to RODs should be made as required
- ❑ Land use changes should also be considered during the five-year review
  - Determining status of remedy protectiveness is key

# Apply Your Understanding

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Land along a river is part of a federal facility NPL Superfund Site and is currently under federal ownership. The area was primarily used for chemical processing activities and is being cleaned up under CERCLA. The city is interested in developing the land for hiking trails.

**What is the anticipated future land use for this site?**

- A. Residential
- B. Agricultural
- C. Industrial
- D. Recreational

# Apply Your Understanding

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Laboratory X is located on a military base and is currently under federal ownership. The area is part of a NPL Superfund Site and is primarily used for laboratories, office space, and parking lots. The military base plans to transfer ownership of the lab and its associated buildings to city ownership in the future.

**What is the anticipated future land use for this site?**

- A. Residential
- B. Agricultural
- C. Industrial
- D. Recreational

# Reuse Directive, 2010

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- ❑ Productive reuse of a site can provide many benefits to a community and support the effectiveness of a remedial action.
  - For example, reusing a site productively can avoid inappropriate activities, such as illegal dumping or off-road vehicle use, and extend the remedy's protectiveness.
- ❑ Wide-spread support of the property's reuse activities may also result in increased interest in maintaining the effectiveness of the remedy.
- ❑ Reuse can benefit communities through quality-of-life improvements and/or financially.

# Reuse Directive, 2010 – Institutional Controls

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- ❑ Future land use should be considered when considering institutional controls (ICs)
- ❑ Local governments can play a vital role in identifying ICs available in their jurisdiction.
- ❑ ICs are an important consideration for federal facilities when land will be transferred outside of federal ownership

# BRAC Success at Myrtle Beach

Former 3,936-acre Myrtle Beach AFB now hosts

- Myrtle Beach International Airport
- Over 1,200 new homes
- Parks; walking paths and sporting facilities
- Golf course
- A college
- Technology and aerospace business park
- Commercial district



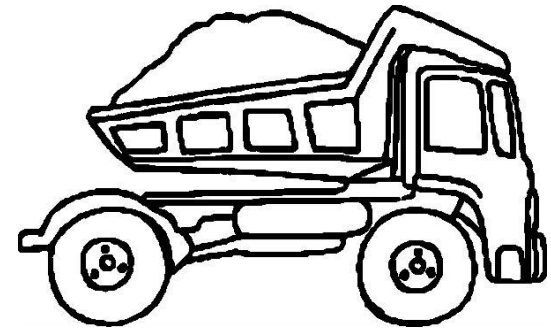
# Base Closure Considerations

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- ❑ Land use assumptions at sites undergoing base closure may be different than at sites where a Federal Agency will be maintaining control of the facility.
- ❑ Base Closure Scenarios
  - Base Closure where land remains in DOW ownership with no plans for transfer.
  - Base Closure where there are established plans to transfer the land considers zoning.
  - Base Closure where land will be transferred back to another federal agency.

# On-site / Off-site Determinations

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A large, stylized green cloud shape with a thin black outline, centered on a white background. Inside the cloud, the text "Group Poll: What challenges have you dealt with in on-site/off-site determinations?" is written in white, sans-serif font, arranged in four lines.

Group Poll: What  
challenges have you dealt  
with in on-site/off-site  
determinations?

# Off-site Determinations

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## □ What is the Off-Site Rule (OSR)?

- Applies to any CERCLA response action involving the off-site transfer of any hazardous substance pollutant or contaminant (CERCLA wastes)
- CERCLA wastes may only be placed in a facility operating in compliance with the Resource Conservation and Recovery Act (RCRA) or other applicable Federal or State requirements

## □ OSR Purpose – ensure CERCLA wastes **do not** contribute to present or future environmental problems

# Off-site Determinations

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## □ What actions are affected?

- Any remedial or removal action involving the off-site transfer of any hazardous substance, pollutant or contaminant (CERCLA wastes) that is conducted by **EPA, States, private parties, or other Federal agencies** and/or if the action is Superfund-financed

## □ Who is affected?

- Anyone who, through a CERCLA authorized or CERCLA-funded removal or remedial action, wants to transfer CERCLA wastes from the cleanup site to any U.S. off-site facility (e.g., treatment, storage disposal facilities)



## Permitted Facilities Located On-Site Hanford Example

- ❑ Liquid Waste Processing Facilities (LWPF) store, treat and dispose of large volumes of liquid waste at Hanford
  - Liquid Effluent Retention Facility (LERF)
  - Effluent Treatment Facility (ETF)
- ❑ RCRA-Permitted facility used to treat wastewater
- ❑ Geographically on Hanford 200 Area NPL site, but considered “off-site” for remedial actions

# Springhill Landfill

- Receives waste from Tyndall Air Force Base and other CERCLA response actions
- Approximately 68 miles away from Tyndall AFB



- Determinations expire and need to be reissued
- Each EPA Region has an OSR Coordinator



# Permit Requirements

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- ❑ Permits are required for CERCLA work conducted off-site but not on-site.
- ❑ The National Contingency Plan (NCP) (40 CFR 300.400) CERCLA §121(e)(1) states:
  - (1) No federal, state, or local permits are required for **on-site** response actions conducted pursuant to CERCLA Sections 104, 106, 120, 121, or 122. The term on-site means the areal extent of contamination and all suitable areas in very close proximity to the contamination necessary for implementation of the response action.
  - (2) Permits, if required, shall be obtained for all response activities conducted **off-site**.



Weldon Spring Chemical Plant During Operations



Stairway to an observation platform on 75-foot-tall permanent disposal cell

## Former Weldon Spring Ordnance Works - Missouri

# Former Weldon Spring Ordnance Works

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- ❑ In 1994, Missouri invoked dispute regarding the state's authority to require permits for the incinerator, contaminated wastewater treatment, and storm water runoff activities described in a ROD
- ❑ Army asserted that permits are not required for on-site CERCLA activities
- ❑ Missouri also argued that EPA's view of on-site was overbroad since the response actions will inevitably result in extended off-site discharge beyond the on-site area, and thus require state permits

# Former Weldon Spring Ordnance Works

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- ❑ Nothing in the statutory language requires that substances discharged or released from response actions on-site must remain entirely on-site to qualify for permit exemption
- ❑ EPA Administrator Carol Browner's decision stated that EPA interprets CERCLA section 121(e)(1) and the corresponding provisions of the NCP as exempting response actions conducted entirely on-site **even if the actions involve discharges or emissions that result in some subsequent migration of contaminants beyond the site boundaries.**

# On-Site Determinations

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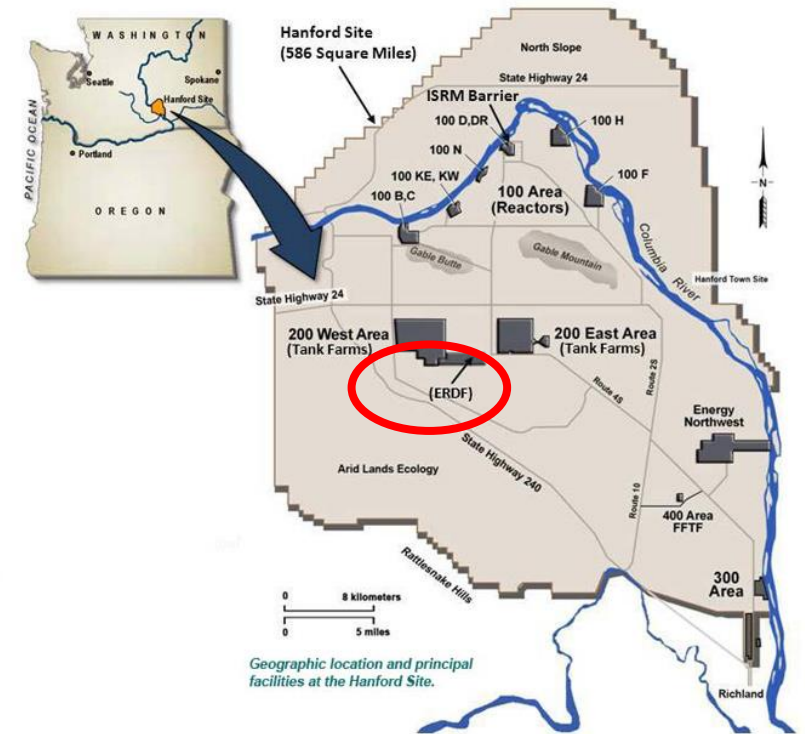
- ❑ On-site work does not require permits, but lead federal agencies need to meet the requirements of various statutes that apply.
- ❑ Example: Resource Conservation and Recovery Act (RCRA) requirements
  - RCRA - covers the generation, transportation treatment, storage, and disposal of hazardous waste
  - Must follow RCRA requirements when handling hazardous waste on-site
  - Example: on-site disposal cell

# Hanford Environmental Restoration Disposal Facility

- Established under a Record of Decision
- Hanford RODs state that ERDF is on-site for the purpose of that remedial action
- ERDF meets the substantive requirements of RCRA, but is not a RCRA-permitted landfill



*Since operations began in 1996, more than 19 million tons of waste have been disposed of at the ERDF.*



Geographic location and principal facilities at the Hanford Site.

*The Environmental Restoration Disposal Facility supports cleanup activities across the Hanford Site.*



*Rolling containers are used to offload bulk waste into the facility's disposal cells.*



*Workers use a crane to place a large item into a Super Cell for disposal.*

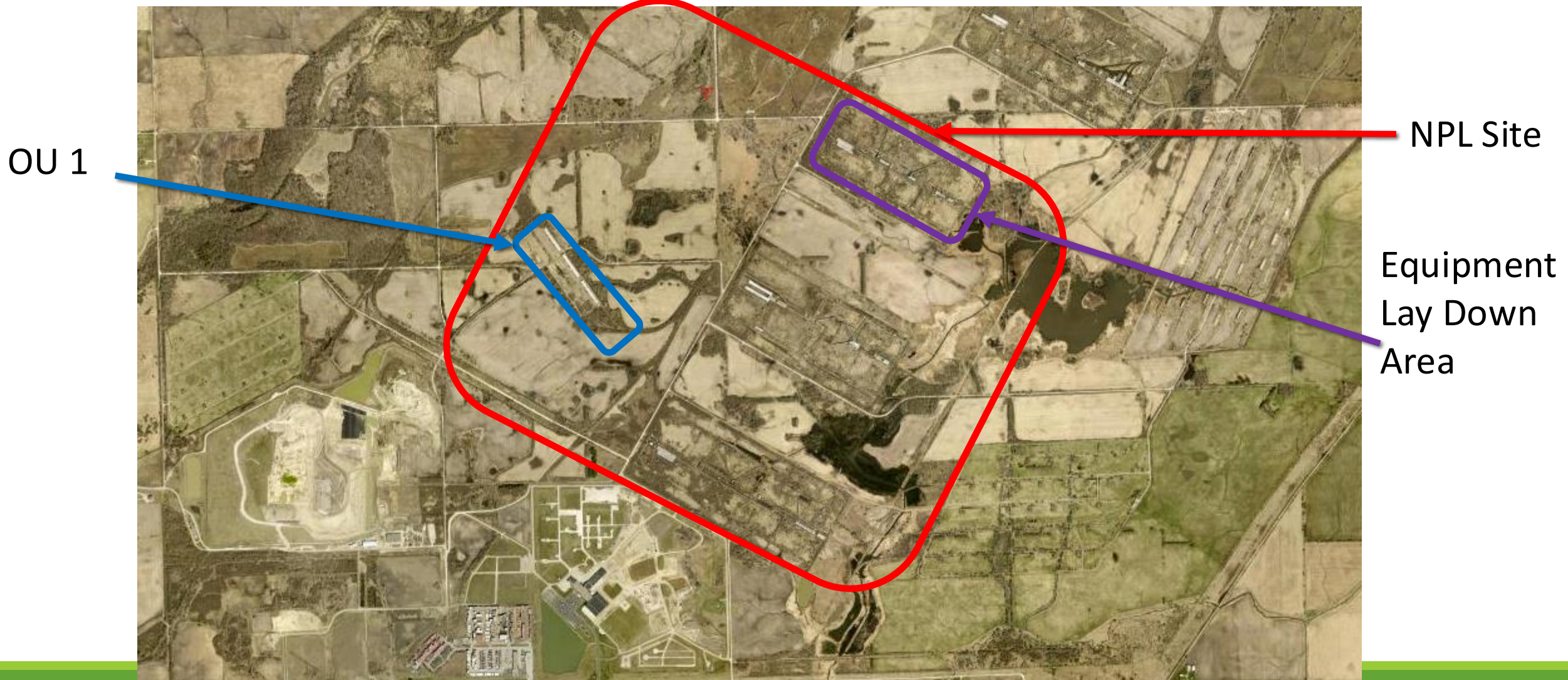
# On-site Determinations

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- ❑ On-site is defined in 40 CFR 300.400(e) as, “The areal extent of contamination and all suitable areas in very close proximity to the contamination necessary for implementation of the response action.”
- ❑ Used to determine that waste from a specific site/operable unit **can** be moved across an area outside of the OU boundary to another location technically within the larger site.

# Apply Your Understanding

In this scenario, would the lay down area be considered on-site for the purposes of an OU-1 response action?



# Summary

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- ❑ Land Use determinations are a critical part of remedy selection under CERCLA
- ❑ Identify anticipated future land use as early as possible
- ❑ Consider reuse in remedy selection
- ❑ The Off-Site Rule (OSR) ensures that CERCLA wastes **do not** contribute to present or future environmental problems.
- ❑ CERCLA does not require permits for on-site activities



Any  
Questions?

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# Contact Information

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