Environmental Site Assessments

Blase Leven – KSU TAB Program
Mickey Hartnett – MAP/Envirofields
Mary Ahlstrom – MAP/MA Environmental

May 21-23, 2012
Site Inventory to Cleanup

Cleanup & Verification

Public Record

Site Discovery

Inventory

Assessment

Prioritization

T R P
Know the alphabet soup of assessment & cleanup
Acronyms & Terms

- **TBA**: Targeted Brownfields Assessments
- **TRP**: Tribal Response Program
- **DQO**: Data Quality Objectives
- **QMP**: Quality Mgt. Plan
- **QAPP**: Quality Assurance Project Plan
- **FSP**: Field Sampling Plan

- **Phase I**: 1st Phase of a formal brownfield assessment with no sampling
- **Phase II**: 2nd Phase of a formal brownfield assessment with sampling
- **Phase III**: Cleanup plan development / cost estimate
- **SHPO**: State Historic Preservation Office
Stephanie Wallace – Why Do Assessments: former US EPA Region 8 MT Office
Site Assessments

Why should a Tribe do Site Assessments prior to acquisition of properties?

- To perform “All Appropriate Inquiry” or “Due Diligence”;
  - Required for federal grants and loans,
  - Required by private lenders and corporations
  - Required by government agencies

- To know the condition of a property or building prior to the acquisition;
- To possibly impose remediation prior to acquisition;
- To know the cost of any necessary remediation;

5/21/2012
Site Assessments

Why should a Tribe do Site Assessments prior to acquisition of properties?

✓ To negotiate a better price;
✓ Facilitate Transfer of land to “Trust Status”

And most importantly:
✓ To protect public health and the environment!
Why do it?

The best way to develop tribal capacity to conduct oversight of assessment and response actions is to actually conduct such activities.

This site specific work will therefore increase the knowledge and experience of the staff and therefore increase the number of response actions conducted or overseen by a tribal response program.
US EPA Approach

- Attend necessary training
- Understand the (EPA) process and guidance before you conduct a tribal response action (cleanup);
- Avoid making a problem bigger or worse;
- Have your “ducks in a row”
  - Prioritize sites
  - Establish authorities & processes
  - Obtain all necessary approvals
  - Conduct Assessments
  - Conduct Cleanup
  - Verify & Certify

5/21/2012
Getting Ducks in a Row
Bob Killian, TRP Coordinator – Southern Utes, CO
TRP fundable site-specific activities must establish and/or enhance the response program and be tied to the four elements:

- I - survey & inventory
- II - oversight & enforcement
- III - public participation
- IV - cleanup plan approval process, verification & certification

5/21/2012
Site-Specific Activities & the “Four Elements” of TRPs

1) Survey & Inventory
   - Site Discovery

2) Oversight & Enforcement
   - Procedures

3) Public Participation

4) Cleanup & Verification
   - Assessment
   - Prioritization

Inventory

Public Record

Assessment

Prioritization
SITE-SPECIFIC ACTIVITIES

Inventory of Possible Assessment / Cleanup Sites
- Sites of Environmental and/or Re-use Interest
- Collect Basic Site Information

Prioritize Sites
- Risk to Public Health & Environment
- Public & Tribal Council Input
- Access & Eligibility for Funding
- Re-use Potential

Conduct Phase I Assessments
- Use Previous Data
- Meet AAI / ASTM Standards
- Determine Recognized Environmental Conditions (RECs)

TRP Assessment Process

PROGRAM ACTIONS

Survey & Inventory

Oversight & Enforcement
- Train Environmental Agency Staff
- Request for Proposals (RFP)
- Hire Contractor
- Quality Assurance & Sampling Plan
- Establish Administrative Record

Public Participation:
- Community Involvement Plan
- Notice of assessments & planned cleanup
- Public comment
- Add to Public Record
- Ongoing communication
**Recognized Environmental Conditions (RECs) Determined during Phase I Assessment**

- Conduct Phase II Assessment
  - Confirm or Rule out RECs from Phase I
  - Define Levels and Extent of Contamination, if present
  - Decide if Cleanup is Needed

**Conduct Phase III or Supplemental Assessments**
- Additional Sampling, if needed
- Develop Cleanup Alternatives & Cost Estimates
- Develop Cleanup Plan and Cost

**PROGRAM ACTIONS**

**Survey & Inventory**
- Update with Phase I, II, III Results

**Oversight & Enforcement**
- Request for Proposals (RFP)
- Hire Contractor
- Quality Assurance & Sampling Plan
- Add to Administrative Record

**Public Participation:**
- Community Involvement Plan
- Notice of planned cleanup
- Public comment
- Add to Public Record
- Ongoing communication
Inventory of Possible Assessment / Cleanup Sites

- Make a list of **Potential** sites of Environmental and/or Re-use Interest, from:
  - Reported incidents, complaints, or requests?
  - Is there interest in redevelopment?
  - Sites not yet inventoried in existing regulatory programs?
- Use excel spreadsheet to list your sites
Elders Identifying Brownfield Sites
Inventory of Possible Assessment / Cleanup Sites (Continued)

• Collect Basic Site Information
  • Regulatory program (solid waste, tanks, brownfields, etc.)
  • Size and location, ownership / occupancy
  • Past and current use, on and near the site
  • Potential of release, on and near the site
  • Important receptors on or near the site
  • Existing infrastructure (roads, utilities, etc.)
  • Potential new use, value, jobs
Prioritize Sites for Assessment

- Decide on ranking criteria
- Examples:
  - Risk to Public health and the environment
    - Known vs. potential spills / releases
    - Type of site (e.g., industrial, waste, public)
    - Distance to receptors (e.g., schools, water wells)
  - Public / Tribal Council Input
  - Re-use potential
  - Site access and eligibility for funding
Elders Identifying Brownfield Sites
Eligibility for Funding

Prioritized Sites for Assessment:
1. Asbestos in School
2. Moldy House A
3. Moldy House B
4. UST B
5. Leaking Landfill
6. Former Factory to Casino
7. UST A
8. UST C

Determine what funds to use:

- Tribal Funding
- BIA Funding
- Private Funding
- EPA Funds
- Other

5/21/2012
EPA Funds for Brownfield Site Assessment

- Brownfields Assessment Grant
- TRP Grant Funds
- TBA Application

Site Specific Request to EPA

EPA Approval

5/21/2012
Brownfield(s) Site Assessment

- EPA Site Approval
  - TRP Grant Funds Assessment
    - Tribe Hire/Task Contractor (RFP)
    - Phase I Assessment
  - TBA Assessment
    - EPA Contractor

- Brownfields Assessment Grant
Brownfield(s) Site Assessment

Tribe Hire/Task Contractor (RFP)

Tribal TRP Files

Conduct Phase I Assessment

Phase I Report

EPA Contractor

EPA File copy

5/21/2012
Federal Standards for Conducting All Appropriate Inquiries Requirements in 40 CFR §312.10

U.S. EPA Brownfields Program
Applicability of the Rule

The final rule is applicable to:

- Parties who may potentially claim protection from CERCLA liability as:
  - an innocent landowner,
  - a bona fide prospective purchaser, or
  - a contiguous property owner; and

- Parties who receive grants under the EPA’s Brownfields Grant program to assess and characterize properties

  - A due diligence requirement for loans, shareholders, governments . . .
Overview of Requirements:

- Definition of Environmental Professional
- Objectives and Performance Factors
- Interviews
- Reviews of Historical Sources of Information
- Searches for Institutional and Engineering Controls
- Reviews of Government Records
- Visual Inspection
Site Assessment Protocols

- All Appropriate Inquiries final rule (40 CFR 312)
- American Society for Testing and Materials (ASTM) Standards
  - Phase I Environmental Assessment (ASTM 1527-97 or most current)
  - Phase II ESA (E1903-97)
  - ASTM E2247-08 ESAs for Forestland or Rural Property
  - NEPA for Cultural, Wetlands, & Endangered Species?
Site Assessments

The person who supervises or oversees the conduct of an ASTM assessment and signs the final report must meet the definition of an “Environmental Professional” as defined under 40 CFR §312.10.

A person that does not qualify as an “Environmental Professional” may assist in the conduct of the investigation if he or she is under the responsible charge of a person meeting the definition. (This is a good way to get the experience to become an “EP”)

Note: Some qualified Tribal staff have conducted Phase I & II Assessments.
Phase I ESA

- Identifies potential or known recognized environmental conditions (RECs)

- Involves:
  - Records review
  - Site reconnaissance
  - Interviews
  - Report
The Phase I Site Assessment is based upon visual site inspection, oral history, records, past reports and various other sources of information on current past practices or conditions at the site. However, it does not include actual media sampling and analysis for contaminants. (That is a component of a Phase II Site Assessment)
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<th>PHASE 1 INFORMATION</th>
<th>SITE NAME:</th>
<th>HANDOUT</th>
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Enter information collected during the Phase 1 site assessment in the spaces below. Check all boxes that apply.

**Site Description:**

Address (include county/state):

Lat/Long:

Section/Township/Range:

Current Property Owner
(Include Manager, Occupant and contact info.)

Current Use of Property:
Future Use of Property:

Neighborhood: □ Residential □ Industrial □ Rural □ Other _________________

Site & vicinity general characteristics (include terrain, elevation, general land use in area, vegetation, location to nearest town)

**Physical Setting:**

Geologic information
- geologic formations/thickness
- bedrock name/ depth
- faults/structural features (within 4 miles)

Hydraulic information:
- depth to groundwater
- aquifers under site
- aquifer matrix
- hydraulic conductivity
- confined/unconfined
- recharge area
- interconnections
HANDOUT

Phase I Environmental Site Assessment Quality Assurance Review

This Phase I Environmental Site Assessment (ESA) Guidelines Review checklist is to be completed for the quality assurance purpose of verifying the substantive compliance of an ESA report with the ASTM Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, E-1527. Except where noted otherwise, this review is based entirely on the report and does not include an independent confirmation of information.

PROJECT NAME
REPORT PREPARED BY
ADDRESS
PHONE NUMBER
FAX NUMBER
DATE OF REPORT
DATE OF REVIEW

RECORDS REVIEW

YES  NO  N/D

. Does the report reference ASTM E-1527 or later Std.? ( ) ( ) ( )

. Was the ESA conducted by an environmental professional? ( ) ( ) ( )

. Is a resume or statement of qualification attached? ( ) ( ) ( )
EXERCISE – COLLECT BASIC SITE INFORMATION
1701 E Street, Lincoln, NE 68508
Phase I Exercise

- Region 7 Examples?
- Exercise: Collect Basic Site Information
  - Begin filling out a Phase I Checklist for Ponca Tribal Office and other sites
    - Goal – gather information to prepare for a site visit (terrain, features of interest on or near site)
      - Question: what is easy to determine, what is difficult?
  - Conduct site walkthrough
Recognized Environmental Conditions (RECs) Determined during Phase I Assessment

Conduct Phase II Assessment
- Confirm or Rule out RECs from Ph I
- Define Levels and Extent of Contamination, if Present
- Decide if Cleanup is Needed

Conduct Phase III or Supplemental Assessments
- Additional Sampling, if needed
- Develop Cleanup Alternatives & Cost Estimates
- Develop Cleanup Plan and Cost

TRP Assessment Process

PROGRAM ACTIONS

Survey & Inventory
- Update with Phase I, II, III Results

Oversight & Enforcement
- Request for Proposals (RFP)
- Hire Contractor
- Quality Assurance & Sampling Plan
- Add to Administrative Record

Public Participation:
- Community Involvement Plan
- Notice of planned cleanup
- Public comment
- Add to Public Record
- Ongoing communication
The Phase II Environmental Site Assessment involves investigation of Recognized Environmental Conditions (RECs) usually by on-site sampling of media (air, water, soil, paint, sediment and groundwater) and analysis of the samples for contamination from releases of hazardous substances, pollutants and contaminants.

There are ASTM guidelines for conducting Phase II Environmental Site Assessments.
ANY grantee utilizing EPA grant funds to conduct sampling & analysis (assessments or a response action) are required to comply with the U.S. EPA procedures and technical requirements*, which may include, but are not limited to:

- Quality Assurance Project Plans (QAPP) to include:
  - Data Quality Objectives (DQOs)
  - Field Sampling Plans (FSPs)
  - Health & Safety Plans (HSPs)


{new 2012 EPA QAPP guidance in final draft}
Phase II ESA

- Evaluates known or potential conditions

- Tailored to site-specific situation
  - Limited sampling and laboratory analysis to confirm or rule out concerns
  - Extensive sampling and analysis to define nature and extent of contamination
  - Recommendations regarding cleanup
Contaminants are rarely distributed evenly

- Neither horizontally, nor vertically
- Assessment estimates between available sample points

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Midwest Assistance Program

serving rural communities since 1979

RCAP NETWORK MEMBER
What is a QA Project Plan?

EPA: “A document that describes the technical and quality activities of an environmental data operations project that should be implemented to ensure that the results of the work performed will satisfy the data user’s needs.”
QA Project Planning and QA Project Plan Preparation

Usually written by party performing the sampling.

However, it Should be A Team Effort
Data Quality Objectives

(DQOs)
What are DQOs?

- Planning Tool
- Cost Management
- Decision Identification
- Clear Goals
- Contingency Planning
Where are the DQOs?

They are in the QAPP
Who Drafts the DQOs?

- the party doing the sampling

Typically the TBA contractor or your Contractor(s)
Who can provide input into the DQOs?

✓ TRP
✓ BF Grantee
✓ Property Owner
✓ Contractor(s)
✓ Local Govt. (Tribe)
✓ Regulator(s) (Tribe)
✓ Other Decision Makers (EPA)
✓ Public?
Who Approves the DQOs?

✓ the Tribe (TRP)*

* When using an EPA TBA Contractor only EPA can direct the contractor
What are the problems that need to be assessed or resolved and the overall objectives of the assessment?

- planned reuse?
- timing?
- big picture?
What specific decisions need to be made or questions need to be answered based on the data collected?

- Cleanup needed?
- Land use planning?
- Institutional Controls?
STEP 3: DESCRIBE INPUTS TO THE DECISION(S)

What types of data are required, how will the data be obtained & managed, and how will the data be used to make decisions?

✓ known contaminants?
✓ costs?
✓ Tribal requirements?
What are the spatial (property) boundaries of the study area?

- property lines known?
- one or multiple areas?
- media types (soil, water, etc.)?
How will data collected be summarized (reported) and used to make decisions?

- ✔ Report format?
- ✔ screening levels?
- ✔ minimum detects?
- ✔ action levels?
- ✔ type of analysis?
What are the constraints or levels of uncertainty in the data that will be considered acceptable?

- Degree of accuracy needed?
- Field data vs. modeling?
- All data needs met?
STEP 7: OPTIMIZE THE STUDY DESIGN

What is the most cost-effective design that is expected to meet the data quality objectives?

✓ Time & Budget realistic?
✓ Analytical costs reasonable?
✓ Need to refine scope?
✓ Need to phase field work?
Where are the DQOs?

They are in the QAPP
Phase II Assessment Planning Process

Task Contractor for Phase II

Phase I Report

Future Land Use(s)?

Project Planning Meeting

TRP
Community Contractor
Other

Objectives (DQOs) for Phase II Assessment
Phase II Assessment Planning Process

DQOs for Phase II

EPA Review & Approve

Phase II Draft Workplan (QAPP & FSP)

TRP Review & Approve

Phase II Workplan (QAPP & FSP)

Public Meeting
Phase II Assessment & Reporting Process

Phase II Workplan (QAPP & FSP)

EPA Review

Draft Phase II Report

Final Phase II Report

TRP Oversight

TRP Review
Phase II Assessment & Reporting Process

- **EPA Files**
  - Phase II Report
  - EPA Files
  - TRP Files & Public Record

  **Action Decision**
  - Clean Up?
  - More Phase II or Phase III?
  - NFA?

  **(Back to Project Planning Meeting)**

  **public meeting**

5/21/2012
Determine the least number of samples needed for analysis, and from where, to adequately evaluate RECs for risk they pose to public health and the environment.
EVALUATING RISKS DURING ENVIRONMENTAL PHASE II ASSESSMENTS - FOR CURRENT AND FUTURE LAND USE

Health Risk (Human & Environmental)

- People
  - Especially sensitive populations
- Animals &/or Plants
  - Sensitive Ecological Areas (wetlands, surface water bodies, etc.)

exposure pathway and route
- Pathways: Soil, Surface Water, Ground Water & Air
- Routes: Ingestion, Inhalation & Contact

Modified after Mike Charles, IEPA, 2012

- VOCs
- SVOCs
- Inorganics
- Pesticides
- PCBs
Exercise– Plan Phase II Sampling

- Region 7 Example – Winnebago & Others?
- Conceptual Site Model as tool to set DQOs, and to plan sampling and health & safety monitoring
  - Current use & future plans/use for the site?
  - Receptors on and around the site?
  - What are the potential contaminants and what are levels that would be of concern?
  - Where should samples be collected from?
EXAMPLE: Plan Phase II Sampling

Legend:
- Purple circle: Abandoned well (approximate location)
- Blue lines: Surface drainage
- Red lines: Approximate site boundary

Source: ArcGIS Online Basemap, Bing Map, ArcGIS, 2011
EXAMPLE: Plan Phase II Sampling
EXAMPLE: Phase II Sampling Plan
EXAMPLE: Plan Phase II Sampling
Example of Auto Maintenance Garage - Conceptual Site Model

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- ✔️ Completed Pathway
- ● Possible complete pathway
- ✗ Incomplete Pathway
Historic Properties or Threatened and Endangered Species:

- Grantees are required to consult with EPA prior to conducting any on-site activity (such as invasive sampling or cleanup) that may affect historic properties or endangered species to ensure that the requirements of federal laws are met.

- There also may be related state or tribal requirements to be met such as a State or Tribal Historic Preservation Office consultation (SHPO or THPO).

   {Know what these are in advance!}
Sherry Bishop – TRP Coordinator: SHPO
Ft. Belknap Indian Community, MT
What is Phase III?

A Phase III is **NOT** another round of Phase II assessment work or the Cleanup.

There are **NO** Phase III ASTM guidelines! A “Phase III” generally consist of:

- Development of Cleanup options/alternatives;
- Development of Cost Estimate(s);
- Development of a Selected Cleanup Plan & Cost Estimate.
Other Options

- EPA or State Targeted Brownfield Assessments (TBAs) conducted using their contractor (no grant funds); or
- EPA or State “Removal Action” for elimination of an imminent hazard.
- Action by another federal agency or private party
Tribal Issues

- Determination of property ownership and status can hold up a site specific action;
- Tribal jurisdiction, or clear lack of such, can be a problem (can affect site access);
- Tribal ownership and/or liability in the contamination of a site can prevent approval of use of 128(a) grants funds;
Tribal Issues

- Many existing tribal contracting policies and procedures are not appropriate or adequate for hiring or overseeing an assessment contractor.
- Community participation not adequate
Lessons Learned

- Verify property lines, land status and ownership;
- You can never do too much community outreach about a site and the activities being conducted there (do it early and often);
- Be prepared to deal with major changes in site conditions or waste issues;
- Know how to deal with a poor performing contractor.
- Do NOT Acquire property without an Environmental Assessment!
Lessons Learned

- Determine in advance who needs to make what decisions;
- Determine in advance who will verify the site work completion and how;
- Do not overlook potential partners for funding or seeking other grants for site specific work; and
- Understand the “Big Picture” as well as local “issues”.

5/21/2012
TRP Site Specific Activities

Environmental Site Assessments

Blase Leven – KSU TAB Program
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