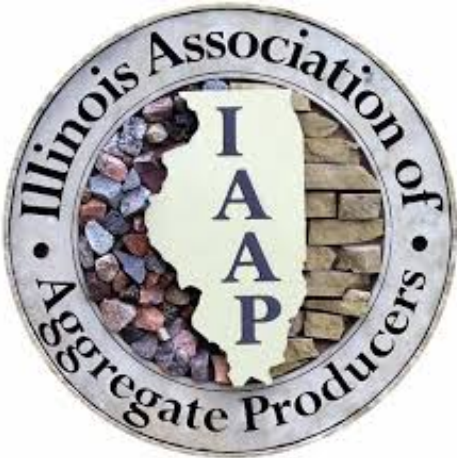




CCDD DOCUMENTATION PROCESS FROM OWNER / CONSULTANT PERSPECTIVE



Wednesday November 30, 2016
Elgin Community College, Elgin IL

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Huff & Huff, Inc.
A subsidiary of GZA GeoEnvironmental



OVERVIEW



- Ø Applicability of CCDD Regulations
- Ø Statute / Remaining Issues
- Ø Testing Considerations
- Ø Characterization Purpose & Process
- Ø Documentation for CCDD Disposal
- Ø Project Example
- Ø Take Home Messages

The CCDD regulations only apply to disposal of soils at permitted CCDD & Uncontaminated Soil Facilities

*Uncontaminated soil fill operation means a current or former quarry, mine, or **other excavation** where uncontaminated soil is used as fill material but does not include a CCDD fill operation.*



UNCONTAMINATED SOIL

*Means soil generated during construction, remodeling, repair or demolition of utilities, structures, and roads that does not contain **contaminants in concentrations that pose a threat to human health and safety and the environment.***





PUBLIC ACT 96-1416

EFFECTIVE JULY 30, 2010

The First Part of the Act was modeled after the Phase I Environmental Site Assessments (ESAs):

- Ø Phase I ESA due diligence identifies *Recognized Environmental Conditions* (RECs), for CCDD considered *Potentially Impacted Properties* (PIPs).
- Ø Sample & Test **only** when REC/PIP present.
- Ø Develop standards and procedures to protect groundwater.



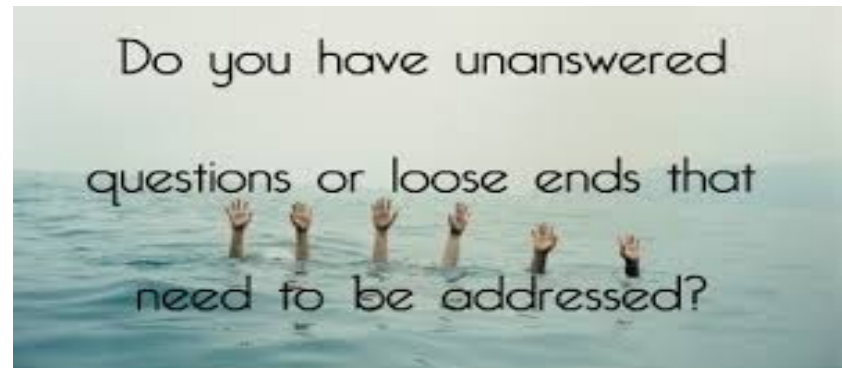


JOINT COMMITTEE ON ADMINISTRATIVE RULES (JCAR)

- Ø JCAR approved regulations (Aug 2012 – full 2 years after effective) with caveat that the Illinois Pollution Control Board (IPCB) open a new docket on **groundwater monitoring at CCDD facilities.**
- Ø The Board opened Docket R2012 – 009(B) First Notice based on IEPA's proposal.
- Ø Comments received December 2012.
- Ø Hearing held May 20, 2013.
- Ø Post hearing comments received August 1, 2013.
- Ø Opinion and Order of the Board issued August 6, 2015.

ISSUES AND OUTCOMES OF IPCB'S ORDER

- Ø IPCB found record supports original decision to **not** require monitoring wells at CCDD facilities, and closed the docket.
- Ø Two issues were left unaddressed, but open for future requests:
 - Ø Maximum soil pH limit (can this range be expanded?); and
 - Ø Codify the MAC list in the IPCB's regulation so a vetting of the limits for Cr, Fe, Mg, and Mn could be held.





IMPORTANT CONSIDERATIONS

Iron and Manganese

- Ø Iron MAC value (MSA County) of 15,900 mg/kg (or 5.0 mg/L) and
- Ø Manganese MAC value (MSA County) of 636 mg/kg (or 0.15 mg/L)

These are median concentrations in Illinois and as such the failure rate for these compounds from naturally occurring sources is approximately 50%. If you fail for total analysis method, perform supplemental toxicity characteristic leaching procedure (TCLP) or synthetic precipitation leaching procedure (SPLP) analysis to determine compliance with MAC values.



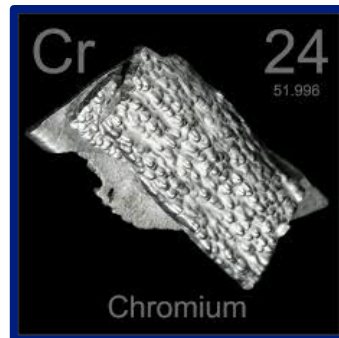


IMPORTANT CONSIDERATIONS

Chromium

Ø Chromium MAC value of 21 mg/kg* utilizes Total Chromium (trivalent and hexavalent), where as TACO allows for consideration of testing for hexavalent specifically. *21 mg/kg equivalent to 40th percentile of naturally occurring chromium in Illinois*

*For CCDD considerations if we fail chromium (via total method), there are no hexavalent considerations to determine compliance with MAC. However, can conduct supplemental SPLP or TCLP testing to determine compliance.





IMPORTANT CONSIDERATIONS

Arsenic

- Ø MAC set at TACO background value 13 mg/kg, which is the 95th percentile of the mean concentration in Illinois (or 11.3 mg/kg for non-MSA counties*)

In essence, 5% of all samples will fail the arsenic MAC from naturally occurring arsenic. Must use total results to determine compliance (not TCLP or SPLP).

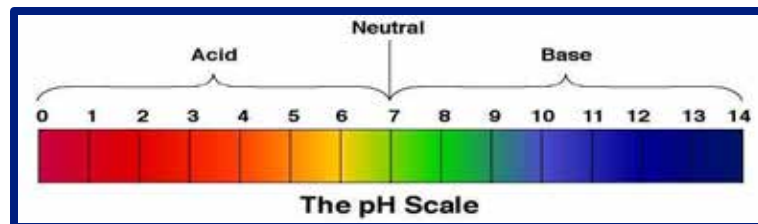


*Counties within Metropolitan Statistical Areas: Boone, Champaign, Clinton, Cook, DuPage, Grundy, Henry, Jersey, Kane, Kankakee, Kendall, Lake, Macon, Madison, McHenry, McLean, Menard, Monroe, Peoria, Rock Island, Sangamon, St. Clair, Tazewell, Will, Winnebago and Woodford.

pH Range Issue

- Ø CCDD facility acceptance range of 6.25 to 9.0
- Ø There was support in hearings to raise the upper pH limit from 9.0 to 11.0 or 11.5.
- Ø Important considerations:
 - Ø Gravel exempt from testing (limestone base course with pH>9.0) – avoid this exempted material in the sample;
 - Ø Parent material of native glacial soils partially comprised of ground-up limestone;

Even with proper sampling, native soils in NE Illinois often will have naturally occurring pH > 9.0 and cannot go to CCDD facilities.



pH Testing Methods

- Ø The rule does not specify a method for soil pH testing. Therefore, any reproducible method:
 - Ø Method 9045D; and
 - Ø D4972-01 2007
- Ø Field kits and direct read instruments are viable methods since they can provide reproducible and accurate results if used correctly.



CHARACTERIZATION PURPOSE

- Ø Control Fate of Own Spoils:
 - ü Decisions of Sampling/Disposal
 - ü Control Potential Change Orders

- Ø Characterization in Advance of Construction to Determine:
 - ü Pay Items
 - ü Special Provisions
 - ü Quantities
 - ü Final Disposition of Spoils





CHARACTERIZATION PURPOSE

Ø Building Construction

Ø Roadway Construction

Ø Utility Construction

ü Sewers

ü Water mains

ü Electrical (lighting/signal)





CHARACTERIZATION PROCESS

Ø **IDOT**; via BDE Manual Chapter 27-3 Environmental Surveys/Special Waste Procedures Chapter, June 2012 and IDOT Bureau of Local Roads and Streets (BLRS) Manual, Chapter 20-12, Special Waste, July 2013.

- Ø Special Waste Screening,
- Ø Preliminary Environmental Site Assessment (PESA),
- Ø Preliminary Site Investigation (PSI) with CCDD Form.



Illinois Department
of Transportation

Ø **Tollway**; via Environmental Studies Manual Section 6.6 (Solid Waste), October 2014 version.

- Ø Database search and site reconnaissance,
- Ø Transaction screening analysis,
- Ø Environmental site assessments,
- Ø Soil balance considerations,
- Ø Soil sampling based on PIPs,
- Ø Soil management memo.





CHARACTERIZATION PROCESS

Ø **CDOT**; per Rules and Regulations for Construction in the Public Way, Section 4.1.13 (Spoil Removal), generally follows IDOT procedures.

- Ø Special Waste Assessment (PESA/PSI/CCDD),
- Ø Handling and disposal generally per IDOT Standard Specifications for Road and Bridge Construction Article 202.03 and Section 669, allows for reuse of eligible, though process and sampling protocols may vary.



Ø **Municipal**; either BDE 27-3 / BLRS 20-12, Tollway or other similar due diligence approach.

- Ø Sampling and documentation approach often depends on funding source.

Key is understanding project Owner's processes and needs



CHARACTERIZATION PROCESS

1. Always Consider Potential for Soil Balance

- ∅ Reuse Spoils if Possible, Incorporate Into Design!
- ∅ Are Soils Suitable for Reuse (Environmental and Geotechnical)?



2. Conduct Due Diligence



- ∅ Consider Project Owner and Appropriate Methods.
- ∅ Project Specific Assessment (single or multiple locations, corridors).
- ∅ Database, Historic Aerials, Fire Insurance Maps, Prior Environmental Reports...etc.

CHARACTERIZATION PROCESS

3. Soil Sampling (know Owner's process!)

Ø When to Test?

- ü Phase I/Phase II
- ü In Time for Bidding Documents



Ø Where to Test and What to Test For?

- ü PIP areas (contaminants of concern and soil pH recommended)
- ü Non PIP areas
 - Soil pH only recommended (if planned for off-site disposal at CCDD or soil-only facility)

Ø Who Should Test?

- ü Owner / Generator Testing (design and environmental team) versus Contractor Testing

CHARACTERIZATION PROCESS

3. Soil Sampling (Continued)

∅ Additional Considerations

- ü Project plans / depth of proposed excavation
- ü Distance of PIPs relative to improvements
- ü Geology
- ü Topography
- ü Groundwater flow direction
- ü Field assessment versus laboratory analysis
- ü Consider submitting all samples on hold pending initial results (to define)





CHARACTERIZATION PROCESS

- Review Results and Compare to Maximum Allowable Concentration (MAC) Values and Soil pH Range of 6.25-9.0. Consider location of receiving facility for some compounds (PNAs, some metals).

from 35 Ill. Adm. Code 1100. Subpart F (MAC Table)

Compound	MAC Value
Benzo(a)anthracene:	0.9 ^B mg/kg
within Chicago corporate limits	1.1 ^F mg/kg
within a populated area in a MSA excluding Chicago	1.8 ^F mg/kg
within a populated area in a non-MSA county or outside a populated area	0.9 ^B mg/kg
Benzo(b)fluoranthene:	
within Chicago corporate limits	1.5 ^F mg/kg
within a populated area in a MSA excluding Chicago	2.1 ^F mg/kg
within a populated area in a non-MSA county or outside a populated area	0.9 ^B mg/kg

CHARACTERIZATION PROCESS

5. Prepare Appropriate CCDD LPC-Form(s) Noting Exclusion Zones

- Ø Location of Exclusion Zone(s);
- Ø Linear Extent of Exclusion Zone(s);
- Ø Depth Stipulations of Exclusion Zone(s);
- Ø Include or Draft Separate Soil Management Plan if Necessary.



IMPORTANT CONSIDERATION

At CCDD Facilities PID Result Trumps Analytical

Load checking and Rejected Loads (PID, Odor, Visual)

- Ø Final Regulations allows one to test or retest rejected load to show uncontaminated
- Ø Though often rejections are prior to unloading
- Ø Where to go with this material?





CHARACTERIZATION PROCESS

Soil Management Plan



- Ø Provides Level of Comfort to CCDD Facilities
- Ø Helps Avoid Costly Delays Related to Load Rejection
- Ø Used When Approaching or Within Exclusion Zones
- Ø Includes Excavation Oversight
 - Ø Visual Observations;
 - Ø Use of Photo-Ionization Detector for Field Analysis to Detect Volatiles;
 - Ø If Contaminated Soils Encountered – DO NOT LOAD TO CCDD Facilities, Sample for Landfill Profiling.



CCDD DOCUMENTATION

- Ø Form 662-For **Soils**: Owner/Operator certifies no PIPs based on environmental due diligence and soil testing shows pH between 6.25 and 9.0. **No other soil testing required** (road base is exempt);
- Ø Form 663-For **Soils**: Signed by PE or PG, and **REQUIRES** soil testing for the appropriate parameters as determined by PE/PG (or identified by Owner's process), including soil pH;
- Ø Form LPC-667: **Painted CCDD Material** with testing required unless documentation of IDOT specification paint;

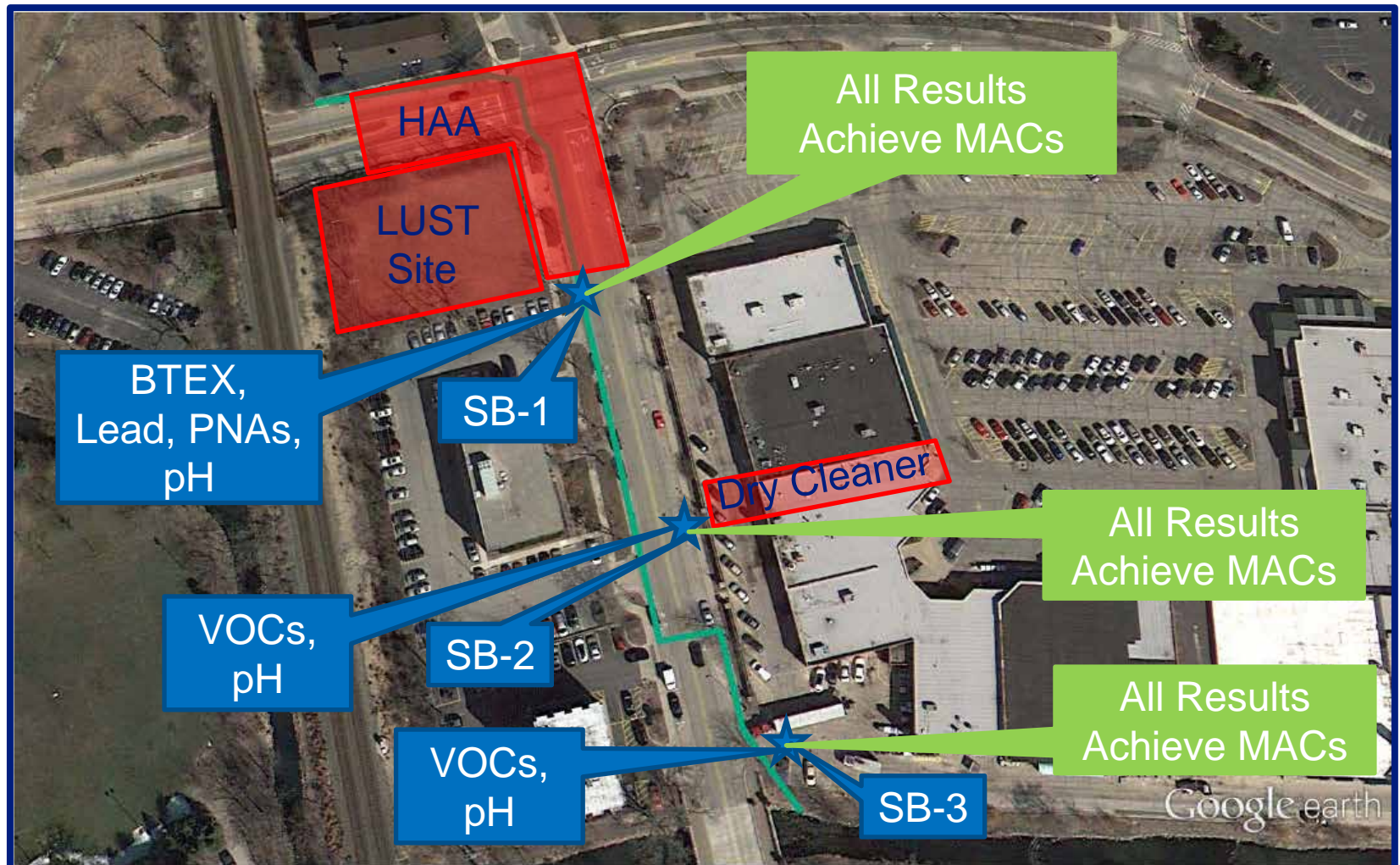




LPC FORM PREPARATION

- ü Cover Memo of Project and Results Summary
- ü LPC-663 Form (Signed & Stamped) or LPC-662 (Owner/Agent Signed)
- ü Narrative
 - ü Project Summary and Scope;
 - ü Due Diligence Process, Findings, and Identification of PIPs;
 - ü Soil Sampling Locations & Results Compared to MACs (and pH range);
 - ü Identification of Exclusion Zone if applicable;
 - ü Method for Reducing Exclusion Zone (Soil Management Plan);
- ü Supporting Documentation (database, FOIAs, prior reports)
- ü Project Area Photos

PROJECT EXAMPLE

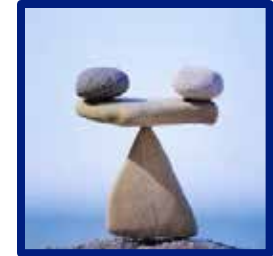




PROJECT EXAMPLE



TAKE HOME MESSAGES



- Ø Strive to balance spoils on the project.
- Ø Manage risk of increased project costs by completing due diligence and testing (recommend based on PIPs) before contract lettings.
- Ø Strive for owner controlled CCDD due diligence / testing / permitting.
- Ø Consider obtaining CCDD facility pre-qualification for inclusion with bidding documents.
- Ø Avoid rejected loads, consider soil management plan with PID screening for projects with identified exclusion zones.
- Ø Stay vigilant on future regulatory changes.





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