



Picatinny Arsenal Restoration Advisory Board Meeting

29 October 2015

Ted Gabel, Army RAB Co-Chair

Mission: *USAG Picatinny Arsenal provides effective and efficient installation capabilities and services that support the Joint Center of Excellence for Armaments and Munitions enabling continued firepower dominance by the United States Military and sustaining a community in which Service Members, Families, and Civilians will thrive.*

Vision: *People development that is deliberate, continuous, and progressive. This includes training, education, and experiences acquired through opportunities in the institutional, operational, and self-developmental domains.*

Goal: *Picatinny Arsenal, recognized within IMCOM as the Army's Home in Northern New Jersey and a Team of professionals, provides consistent, quality services and infrastructure that are force multipliers in supported organization mission accomplishment and materially enhance Service Member, Family, and Civilian well-being and readiness.*

The Army's Home in Northern New Jersey



Agenda for 29 September Restoration Advisory Board

- Attendance, Introductions & Correspondence
- Old Business/Action Items/Minutes
- Election of the Community Co-Chair
- Updating the RAB Charter to Comply with RAB Rule
- Introduction to the ECC and EA Teams and Summary of their scopes
- Ecological Risk Assessment Overview: Lawrence Tannenbaum of Army Public Health Center
- Update in a Minute (if time permits)

Ecological Risk Assessment Overview -- for the Picatinny Arsenal RAB --



ARMY PUBLIC HEALTH CENTER (Provisional)



Lawrence Tannenbaum, health risk assessor, APHC

29 October 2015

Guaranteed . . . This presentation on eco risk assessment (ERA) is unlike any other you'll ever come by!

- It highlights essential ERA truths that other presentations or courses do not cover.
- It underscores the shortcomings of conventionally applied ERA assessment tools.
- It provides an honest treatment of our abilities to draw ERA conclusions.

Refresher slide from last time . . .

Let's define "risk" as: the probability of there being a negative outcome (to something you do, or a behavior that you have).

- Risk is measureable or estimable.
- Risk is necessarily negative; it's the thing that you **DON'T** want to happen.

Another refresher slide from last time . . .

And what's “**risk assessment**”?

- It's the process or method of determining how much risk there is associated with an action or behavior.

Definition: Ecological Risk Assessment

“The process that evaluates the likelihood that adverse ecological effects may occur or are occurring as a result of exposure to one or more stressors.”

What would be an example of an “adverse ecological effect”?

(source: Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments, U.S. Environmental Protection Agency, 1997.)

Now for the complication . . .

There is no way to measure or express the likelihood of an ecological receptor, or a population of them, developing an adverse (ecological) effect!



We would *like* to be able to say . . .

- There is a 6% chance that songbirds at a site will exhibit a behavioral effect.
- There is a 17% chance that red fox at a site will develop a reproductive effect.
- One in eight barred owl clutches onsite will be smaller than
 - a) barred owl clutches in the reference area, or
 - b) the norm for barred owls.



. . . but we can't.

Let's develop this critical point a little more

Potentially . . .

- Every agency's ERA guidance document is incorrectly titled (because it does not instruct on how to calculate or express risk).
- No ERA ever reports eco "risk". (Perhaps ERAs identify risk *factors*, but that's not the same thing as "risk".)
- **Don't fall off your seat:** There are no "eco risk assessors" out there, i.e., folks who calculate risk. Perhaps hiring actions and job descriptions say "eco risk assessor", but no one is actually assessing eco risk.

The Four-Step Human Health Risk Assessment (“RAGS”) Process

1. Data Collection / Hazard I.D.
2. Exposure Assessment
3. Toxicity Assessment
4. Risk Characterization

Risk Assessment Processes Comparison

Human Health

Data Collection/Hazard I.D.

Exposure Assessment

Toxicity Assessment

Risk Characterization

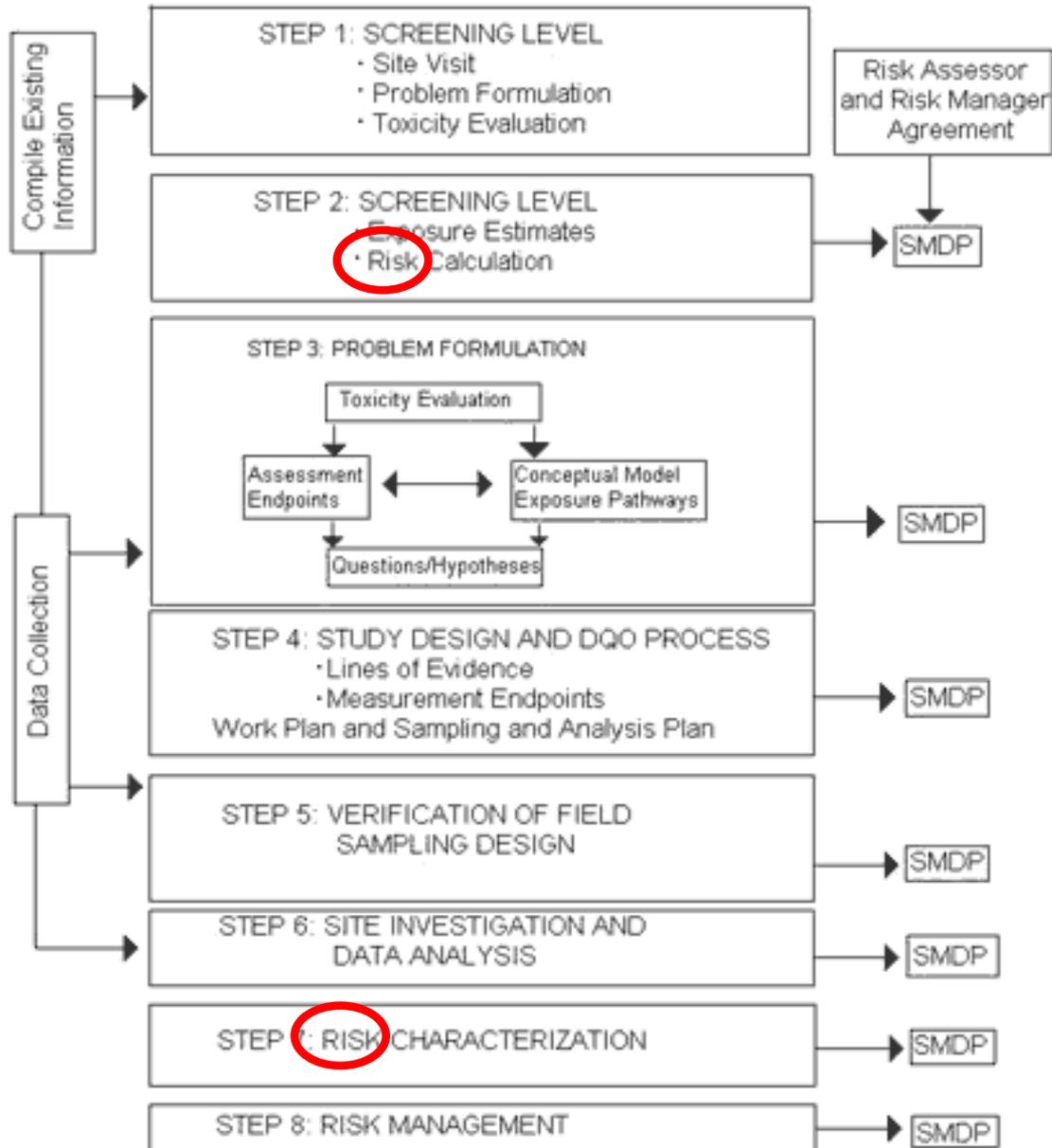
Ecological

Problem Formulation

Exposure Assessment

Ecological Effects Assess.

Risk Characterization



The Present 8-step ERA Process

Screening-Level: site visit, prob. formulation, tox.
evaluation

Screening-Level: exposure estimate, risk calc.

Problem Formulation: tox. eval., assess endpoints

Study Design and DQO Process: lines of evidence

Verification of Field Sampling Design

Site Investigation & Data Analysis

Risk Characterization

Risk Management

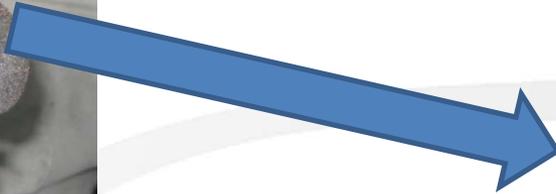
Paring things down: The Hazard Quotient in ERA

- A simple ratio, comparing an animal's estimated chemical dose to either a safe dose or an effect-level dose.
- Take due note: ERA only considers **ingestion** as a chemical uptake route. There's no consideration of inhalation or dermal contact.

The Hazard Quotient in ERA

$$\text{HQ} = \frac{\text{Chemical intake (mg/kg-d)}}{\text{Toxicity Reference Value (safe or effect-level) (TRV; in mg/kg-d)}}$$

Alas, the HQ is no more than a unitless ratio.



The Hazard Quotient in ERA

- A field mouse has 5 mg of Pb in its body.
- A fox eats six field mice/day; it consumes 30 mg of Pb/day.
- A fox weighs 5 kg.
- $30 \text{ mg}/5 \text{ Kg} = 6 \text{ mg/Kg}$; so we have the dose (the 'intake')!
- The literature informs that a safe Pb dose for a fox is 2 mg/Kg/d.
- $6 \text{ mg/Kg/d} \div 2 \text{ mg/Kg/d} = 3$; the fox is ingesting Pb at 3 times the safe dose.

Is a HQ of 3
a problem?



About the HQ -- from the U.S. EPA (We know that HQs don't express risk. But what *do* HQs tell us?)

If . . .

- $HQ > 1.0$ Harmful effects cannot be ruled out
- $HQ = 1.0$ Contaminant alone is not likely to cause ecological risk
- $HQ < 1.0$ Harmful effects are NOT likely

More about HQs

There are actually 2 ways to compute them.

- $HQ = \text{Dose} / \text{screening benchmark}$
- $HQ = \text{EEC} / \text{screening benchmark}$ (generally a ‘No Adverse Effects Level’)

EEC = **estimated environmental (contaminant) concentration**; a chemical concentration in an environmental medium (e.g., surface water).

More about HQs

From U.S. EPA RAGS . . .

“Be sure, however, not to interpret ratios (i.e., the HQs) as statistical probabilities; a ratio of 0.001 does not mean that there is a one-in-one thousand chance of the effect occurring. Further, it is important to emphasize that the level of concern does not increase linearly as the RfD is approached.”

More about HQs: Appreciating their limitations for what they are

Thus far we've seen that HQs do not express risk, and are not probabilities. There are quite a few more limitations that are not often acknowledged in the uncertainty sections of ERAs.

- HQs are not population-based
- HQs are not linearly scaled
- The lowest concentrations of inorganics in soil known to mankind will trigger $HQs > 1.0$
- Computed HQs are often unrealistically high and toxicologically impossible
- HQs are not linked to a temporal scheme

HQs are not population-based.

A HQ of 5 does not mean:

- 5 individuals will develop the effect;
- 5% of the population will develop the effect;
- One-fifth of the population will develop the effect;
- Animals onsite are 5 times more likely to display the effect (than animals that are offsite);
- 5 times as many animals onsite will be affected than offsite.

So what does a HQ of 5 mean?

The Hazard Quotient in ERA

$$\text{HQ} = \frac{\text{Chemical intake (mg/kg-d)}}{\text{Toxicity Reference Value (safe or effect-level) (TRV; in mg/kg-d)}}$$

Alas, the HQ is no more than a unitless ratio.

HQs are not linearly scaled.

- A HQ of 10 is not twice as bad as a HQ of 5.
- A mouse with a HQ of 25 is not five times worse off than a fox with a HQ of 5.

The lowest concentrations of inorganics in the earth's crust will trigger HQs > 1.0 .

Source:

Tannenbaum *et al.*, Application of the Hazard Quotient Method in Remedial Decisions: A Comparison of Human and Ecological Risk Assessments. 2003. HERA 9:387-401.

“HQs are often unrealistically high and toxicologically impossible.”

You cannot have a HQ of 463.
“the broken thermometer analogy”

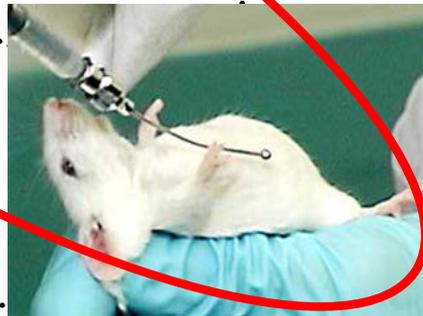
Source:

Tannenbaum *et al.*, Application of the Hazard Quotient Method in Remedial Decisions: A Comparison of Human and Ecological Risk Assessments. 2003. HERA 9:387-401.

Where Do TRVs Come From?

$$\text{HQ} = \frac{\text{Chemical intake (mg/kg-d)}}{\text{Toxicity Reference Value (safe or effect-level)}} \\ (\text{TRV; in mg/kg-d})$$

Where Do TRVs Come From?



Species difference

Previously non-exposed test animal

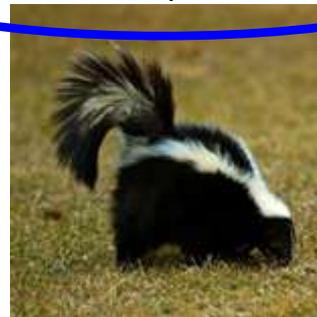
Yikes! - Chemical-by-chemical assessment!

Fixed temperature and lighting

What chemical form?

Mode of administration?

1-generation exposure?



Where do TRVs Come From? Same issue for birds.



Species difference

Previously non-exposed test animal

Yikes! chemical-by-chemical assessment!

Fixed temperature and lighting

What chemical form?

Mode of administration?

1-generation exposure

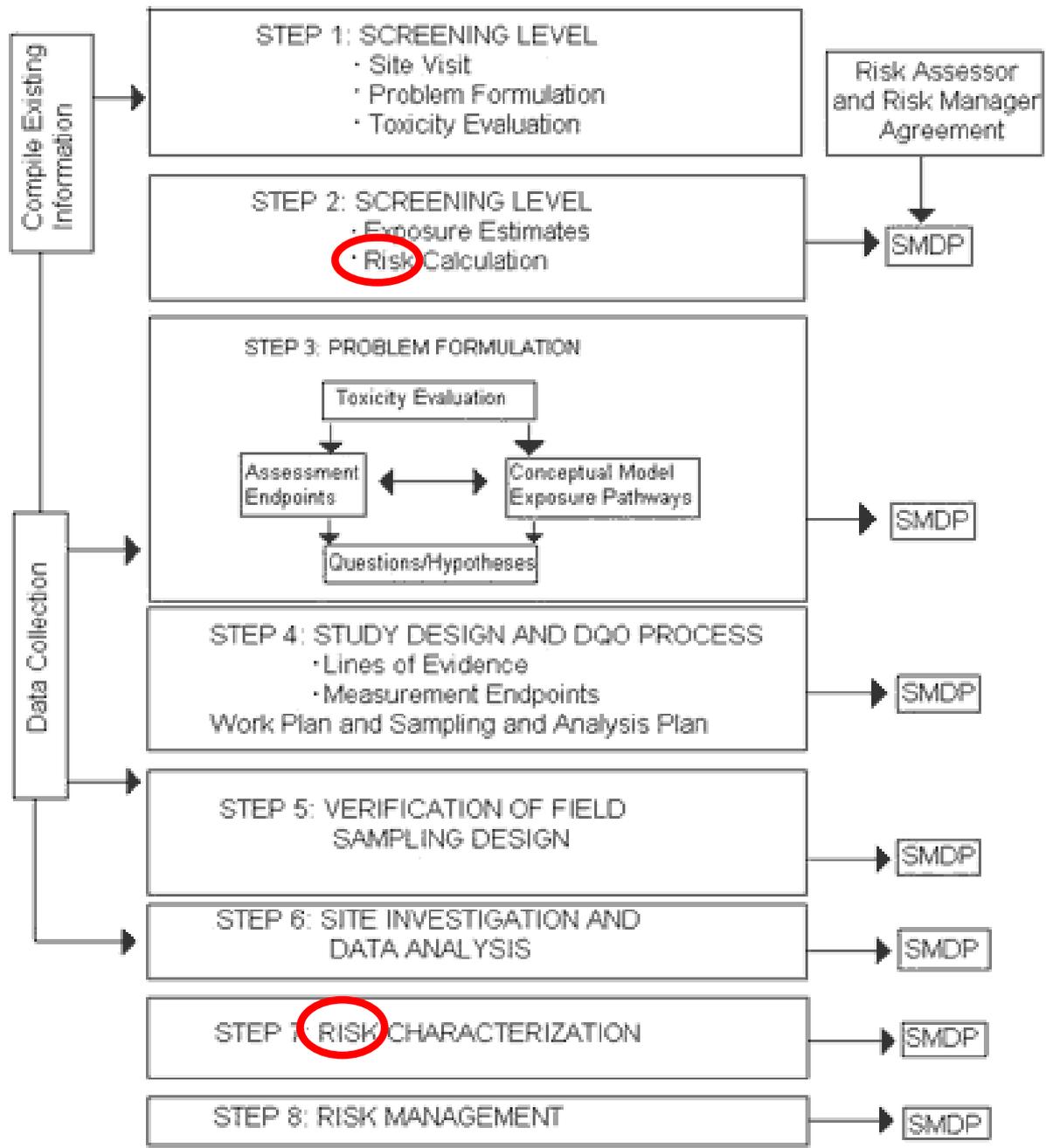


Critical to note: HQs are only screens / screening tools!

Whether they are based on:

- a) safe- or effect-level TRVs, and/or
- b) ‘initial’ (conservative) or ‘refined’ exposure assumptions,

one is not demonstrating (unacceptable) risk
with HQs!



More about HQs

There are actually 2 ways to compute them.

- $HQ = \text{Dose} / \text{screening benchmark}$
- $HQ = \text{EEC} / \text{screening benchmark}$ (generally a 'No Adverse Effects Level')

EEC = **estimated environmental (contaminant) concentration**; a chemical concentration in an environmental medium (e.g., surface water).

A word about Ambient Water Quality Criteria (AWQC)

- An EPA recommended AWQC for aquatic life or National Recommended Water Quality Criterion is the level of a pollutant or other measurable parameter that allows for protection of aquatic life in our nation's water. These aquatic life criteria are developed under Section 304(a) of the Clean Water Act of 1972.

Aquatic Life Criteria Table

Pollutant	CAS Number	P/NP*	Freshwater		Saltwater	Publication Year	
			CMC ¹ (acute) (µg/L)	CCC ¹ (chronic) (µg/L)	CMC ¹ (acute) (µg/L)		CCC ¹ (chronic) (µg/L)
Acrolein	107028	P	3ug/L	3ug/L		2009	
Aesthetic Qualities	—	NP	NARRATIVE STATEMENT— SEE DOCUMENT			1986	
Aldrin	309002	P	3.0 <u>G</u>		1.3 <u>G</u>	1980	
Alkalinity	—	NP		20000 <u>C</u>		1986	
alpha-Endosulfan	959988	P	0.22 <u>G, Y</u>	0.056 <u>G, Y</u>	0.034 <u>G, Y</u>	0.0087 <u>G, Y</u>	1980
Aluminum pH 6.5 – 9.0	7429905	NP	750 <u>I</u>	87 <u>I, S</u>		1988	
Ammonia	7664417	NP	FRESHWATER CRITERIA ARE pH, Temperature and Life-stage DEPENDENT SALTWATER CRITERIA ARE pH AND TEMPERATURE DEPENDENT			2013 1989	
Arsenic	7440382	P	340 <u>A, D</u>	150 <u>A, D</u>	69 <u>A, D</u>	36 <u>A, D</u>	1995

Sediment screening

(as continues to happen for Picatinny Lake)

- Procedurally, it's all the same. A representative sediment concentration is the numerator, and a tabular value (for either protection or effect) is the denominator.

Two examples of sed. screening tools – from NOAA

Sediment Quality Guidelines (ERL/ERM)

Screening Quick Reference Tables (SQuiRTs):

“This handy reference tool presents screening concentrations for inorganic and organic contaminants in various environmental media.”

Hyaella azteca is a 1/8- to 1/4-inch-long crustacean commonly found in lakes, ponds, and streams throughout North America. They are an important link in the aquatic food chain and a food source for several predators, including fish and various invertebrates.

Pesticides such as pyrethroids from residential runoff have recently been discovered to kill *Hyaella*. Low numbers of aquatic organisms, like *Hyaella* and [*Ceriodaphnia*](#), is an indication of poor water quality.



Critical to note:

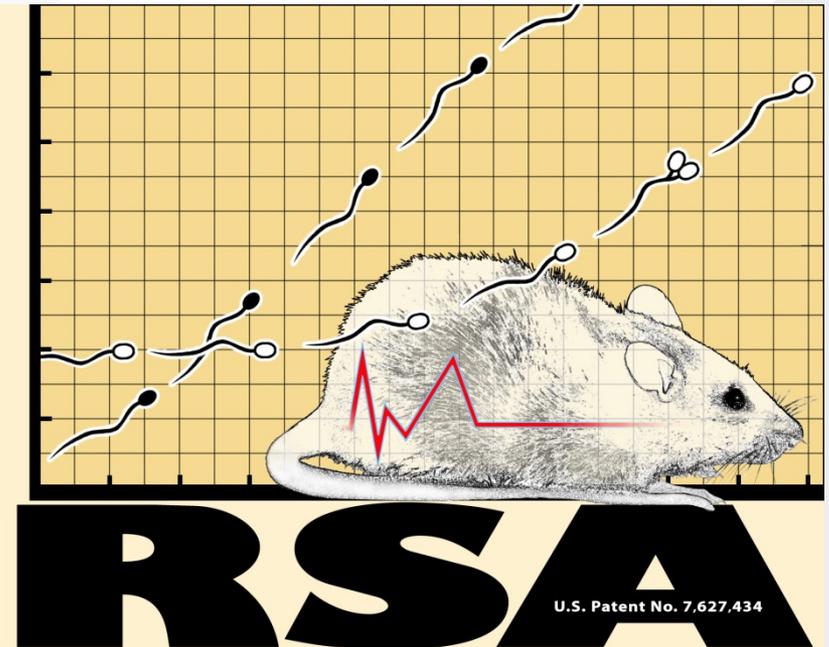
HQs are only screens / screening tools!

- If you suspect a problem because of a screening outcome, go out and “**field-verify**”.
- If for example, an AWQC was exceeded, look to see if there are fish in the waterbody.
- Oh by the way, it’s not an **intermittent** waterbody, is it? (If it is, then shame on you for screening it in the first place. 😊)

Critical to note: HQs are only screens / screening tools!

On the mammal side . . .

If you've got HQ concerns, consider applying the Army's **Rodent Sperm Analysis (RSA)** method. Did you know that **RSA** has been applied at Picatinny?



Take-home points of this HQ-based ERA review

Despite

- a) so much of ERA involving HQs, and
 - b) the many shortcomings of the HQ method . . .
- HQs are fixtures of assessments. Parties expect to see them, and if they're not computed and presented, this will generate friction among stakeholders.

Bear in mind though, that just because HQs are computed, doesn't mean that they provide useful information.

Take-home points of this HQ-based ERA review

- The tools do not exist to adequately assess ecological risk.
- We are almost never in a position to say that there's "unacceptable ecological risk".
- **even more basic:** It could be that the very premise of setting out to assess ecological risk is flawed.

HQs are not linked to a temporal scheme.

a HQ of 100

Situation:

a 30-year old site

a 50 year-old site

a 75-year-old site

**a site from the
Roman Empire**

Interpretation:

There is potential for risk

Thanks again
for being a terrific audience.

Got any questions?



Picatinny Arsenal Cleanup Contract RAB Meeting March 31, 2016



Cleanup Contract Status Overview:

- Site Specific Status and Schedule - Preliminary Assessment Site:
 - Abandoned Railroad Tracks – preparing Draft PA; Final PA November 2016

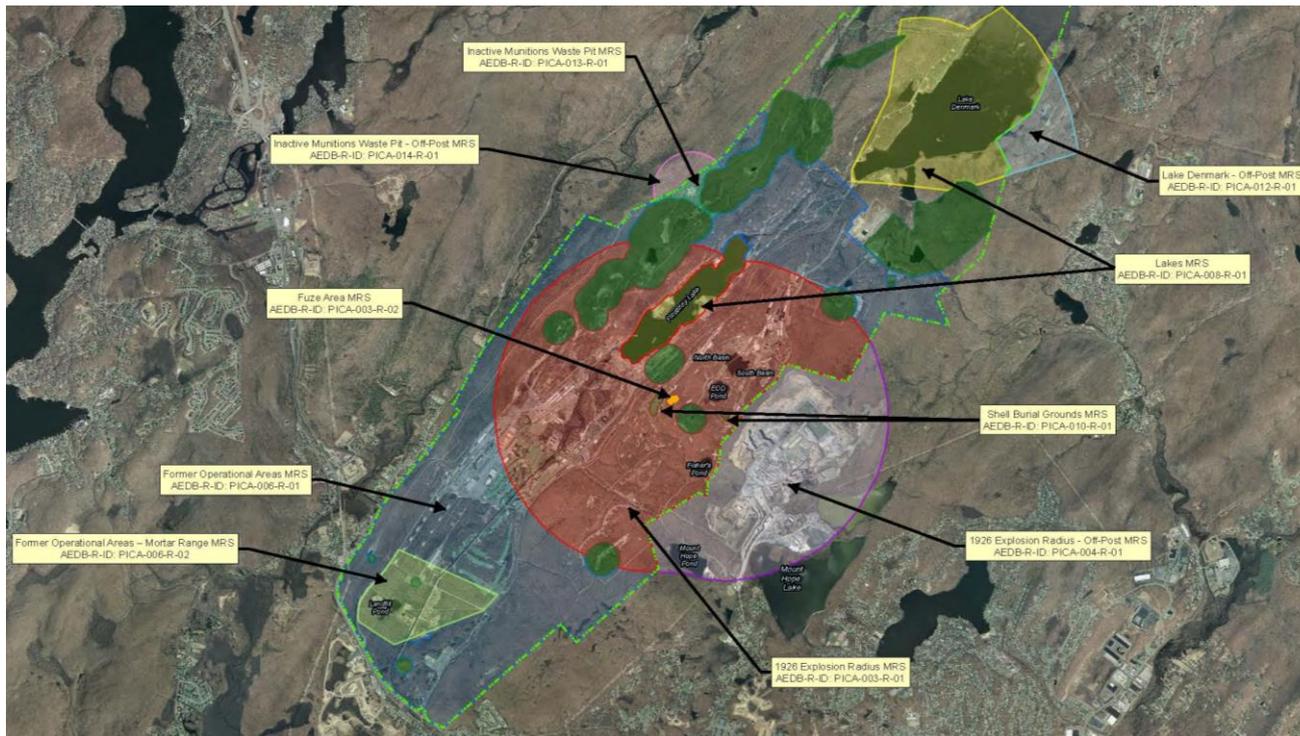
Cleanup Contract Status Overview (continued):

- Site Specific Status and Schedule – Site Inspection Sites:
 - Eastern Edge of Green Pond Brook – SI sampling conducted 22-23 March 2016; Final SI Report October 2016
 - ORAP Ranges 1, 2, 5, 6, 7, 8 – preparing SI Work Plan; Final SI May 2017 (Off-Range)



Cleanup Contract Status Overview (continued):

- Site Specific Status and Schedule – Feasibility Study Sites:
 - 600 Hill Waste Pit and Mortar & Skeet Area – preparing Draft FS; Final FS November 2016
 - Shell Burial Grounds and MR Sites – preparing Draft FS; Final FS January 2017



Cleanup Contract Status Overview (continued):

- Site Specific Status and Schedule – Proposed Plan/Record of Decision Sites:
 - PICA-207 Sites – sampling conducted this week; Final PP June 2018
 - PICA-111 Sites – sampling conducted 22-24 March 2016; Final PP September 2018
 - 3 Sites Group – sampling conducted this week; Final ROD February 2017

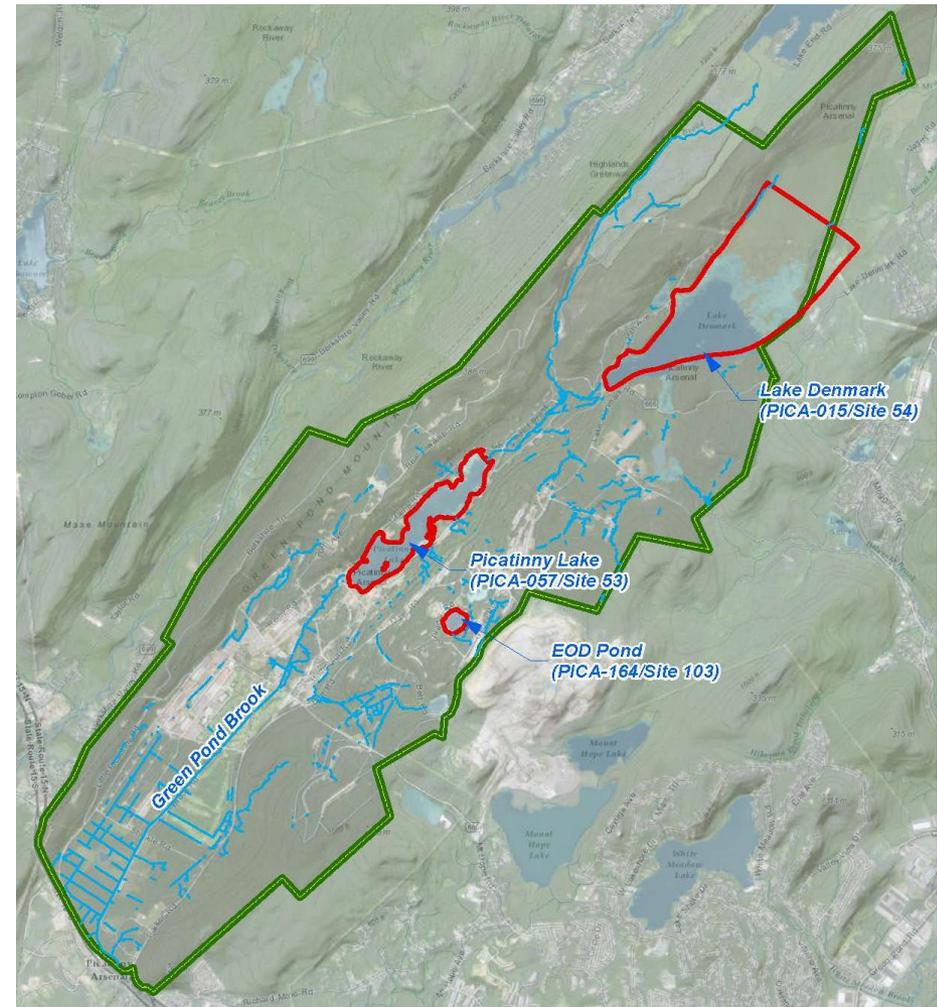


Cleanup Contract Status Overview (continued):

- Site Specific Status and Schedule – Proposed Plan/Record of Decision Sites:
 - Non-Lakes Group – preparing Draft Work Plan; Final PPs July 2017, March 2018
 - 45 Site Groups A & B – response to regulatory comments submitted February and March 2016; Final PPs December 2016-July 2018

Cleanup Contract Status Overview (continued):

- Site Specific Status and Schedule (continued):
 - Lakes Group Overview and History - PICA-015 (Site 54), PICA-164 (Site 103), and PICA-057 (Site 53)



Lakes Group – Overview and History

PICA-015 (Site 54), PICA-164 (Site 103), and PICA-057 (Site 53)

- **OBJECTIVE**
 - Achieve FS Report within 16 months of Task Order
 - Draft completed by previous contractor, with regulator comments
 - Additional horizontal/vertical delineation required to refine excavation volumes of sediments at PICA-057 (Site 53).
 - Achieve PP/ROD (Option)
 - Achieve RIP (Option)

FS has been approved for EOD Pond and Lake Denmark, and PP/ROD option has been awarded:

- Final PP December 2016
- Final ROD April 2017

Lakes Group – Overview and History

PICA-015 (Site 54), PICA-164 (Site 103), and PICA-057 (Site 53)

- All man-made waterbodies; managed as recreational resources (fishing and boating). Swimming is not allowed.
 - Lake Denmark (Site 54) created early 1900s, approx. 174 acres and average 6-7 ft deep
 - EOD Pond (Site 103) created 1945-1953, approx. 9 acres with average depth of 6-7 ft
 - Picatinny Lake (Site 53) created 1880s, approx. 108 acres maximum depth of 15 ft
- Numerous CERCLA investigations completed
 - 2000: Phase II RI ERA
 - 2004: Fish Consumption HHRA
 - 2005: Phase II RI (work began in mid 1990s; includes the HHRA)
 - 2011: Supplemental sediment sampling
 - 2012: Final FS
 - 2013: Supplemental sediment & macroinvertebrate sampling
 - 2014: Draft FS

Lakes Group

PICA-015 (Site 54), PICA-164 (Site 103), and PICA-057 (Site 53)

- **Lake Denmark (Site 54) and EOD Pond (Site 103)**
 - HHRA indicated site risks and hazards within the acceptable range for current military/industrial and recreational scenarios, as well as residential scenarios
 - Fish consumption HI is greater than 1; existing restrictions are consistent with state-wide fish consumption advisories
 - Baseline ERA indicated potential risks to ecological communities are unlikely.
 - Surface water for all three lakes found to be good overall.
- USEPA and NJDEP have not indicated a need for further evaluation at Lake Denmark or the EOD Pond
- Path Forward for Lake Denmark and EOD Pond
 - FS Approved; Prepare PP and ROD for these two sites.

Lakes Group

PICA-015 (Site 54), PICA-164 (Site 103), and PICA-057 (Site 53)

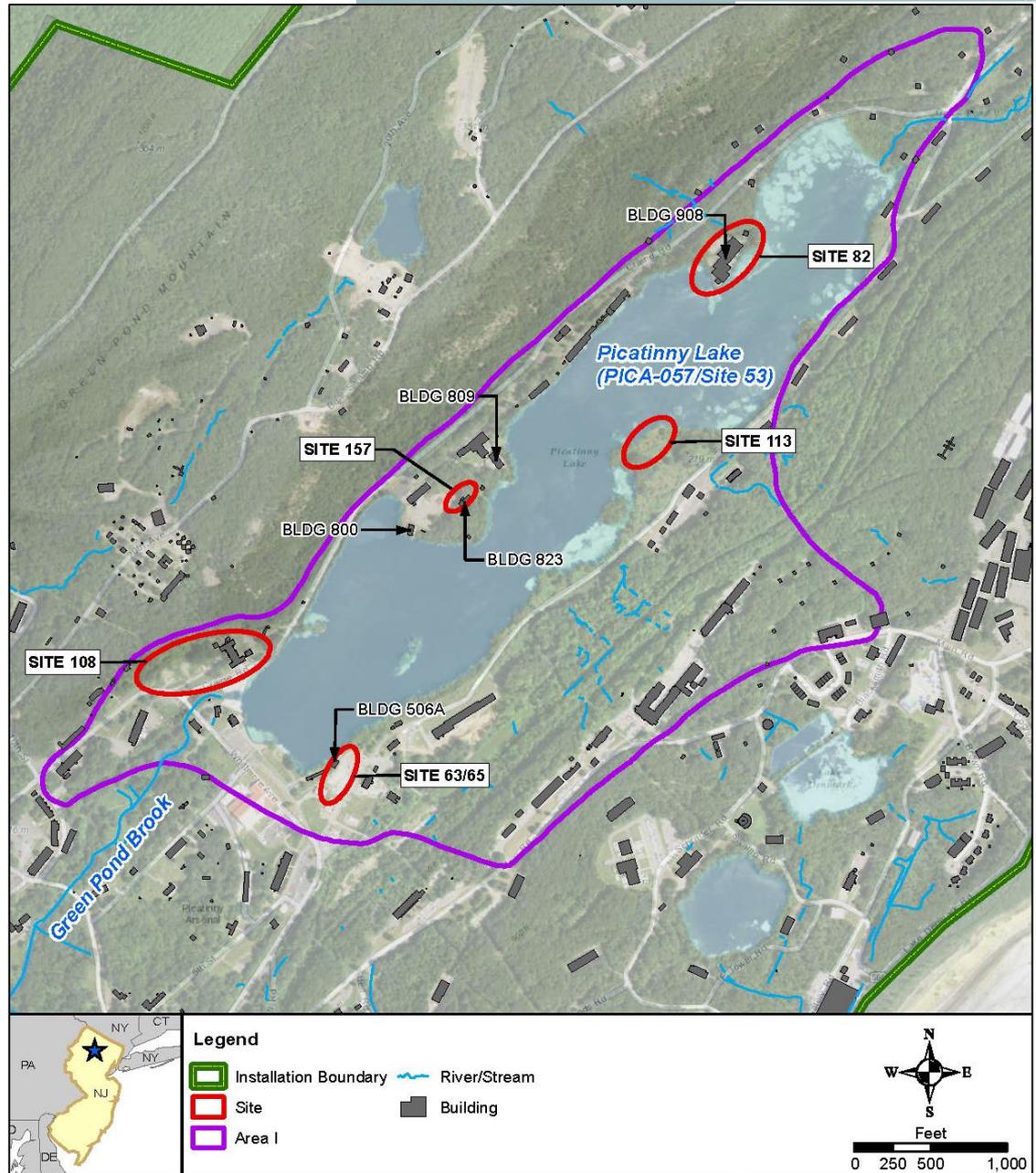
- Picatinny Lake (Site 53)
 - HHRA indicated site risks and hazards within the acceptable range for current military/industrial and recreational scenarios.
 - Fish consumption HI is greater than 1; existing restrictions are consistent with state-wide fish consumption advisories.
 - NJDEP and Department of Health issued consumption advisories due to elevated levels of mercury found in certain fish species; Picatinny Arsenal has adopted these consumption advisories.
 - Potential for risks to benthic organisms is the primary concern.

Lakes Group - PICA-057 (Site 53)

- Phase II ERA (IT Corporation, February 2000)
 - Sediment, surface water, and fish tissue samples
 - Benthic community surveys and sediment and surface water toxicity tests
 - Bioaccumulation by benthic organisms was modeled using conservative bioaccumulation factors
 - Concluded that ecological risks were not significant for the Lake as a whole; however
 - Sediment toxicity test results suggested that hot spots exist along the shoreline of Picatinny Lake.

Lakes Group - PICA-057 (Site 53)

- Toxicity tests reported toxicity in one sample each from Sites 65, 82, 108, and 113.
 - Sites 65, 82, and 113 also had samples showing no toxicity.
 - Same sites identified in supplemental sampling events and by NJDEP as hot spots based on metals concentrations.
- Site 157 was identified as an explosives hot spot, but has been ND for last several sampling events



Lakes Group - PICA-057 (Site 53)

- 2011 Supplemental sediment sampling (ARCADIS)
 - Sediment samples at Sites 63/65, 82, 108, and 113.
 - Some metals present at concentrations greater than LOCs.
- 2013 Supplemental sediment & macroinvertebrate sampling (ARCADIS)
 - Some metals present at concentrations greater than LOCs.
 - Estimated metals bioavailability - low potential for bioavailability was found.
 - Benthic community structure was similar at the Picatinny Lake sites and reference site (Lake Denmark).

Lakes Group - PICA-057 (Site 53)

- Lines of Evidence from Three Ecological Evaluations
 - Sediment chemistry data
 - Metals bioavailability data
 - Macroinvertebrate community survey data
 - Sediment toxicity test results



Lakes Group - PICA-057 (Site 53)

- Synthesis of Findings
 - Chemistry and toxicity test data support the conclusion that the potential for risks to the Lake-wide benthic community is low, but that there are hot spots offshore of specific sites where a greater potential for risks may exist.
 - Bioavailability and community survey data support the conclusion that chemical concentrations in sediment of Picatinny Lake were not adversely impacting the benthic community as a whole.
- Metals COCs identified through CERCLA investigations and discussions with regulators
 - Copper, lead, mercury, silver (not all are COCs at each of the hot spots).

Lakes Group - PICA-057 (Site 53)

- Next Steps

- As a result of discussions with regulators, 2014 Draft FS includes a sediment hot spot removal option.
- 2014 Draft FS presented estimated areas of each hot spot.
- USEPA, NJDEP and Army comments requested improved delineation of the hot spots for the FS.

Lakes Group - PICA-057 (Site 53)

- Work plan developed for COC delineation at 4 hot spots in Picatinny Lake
- Currently being reviewed by NJDEP; approved by EPA 17 March 2016
- Sampling scheduled for late May-early June 2016

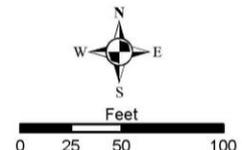
Offshore of Site 82



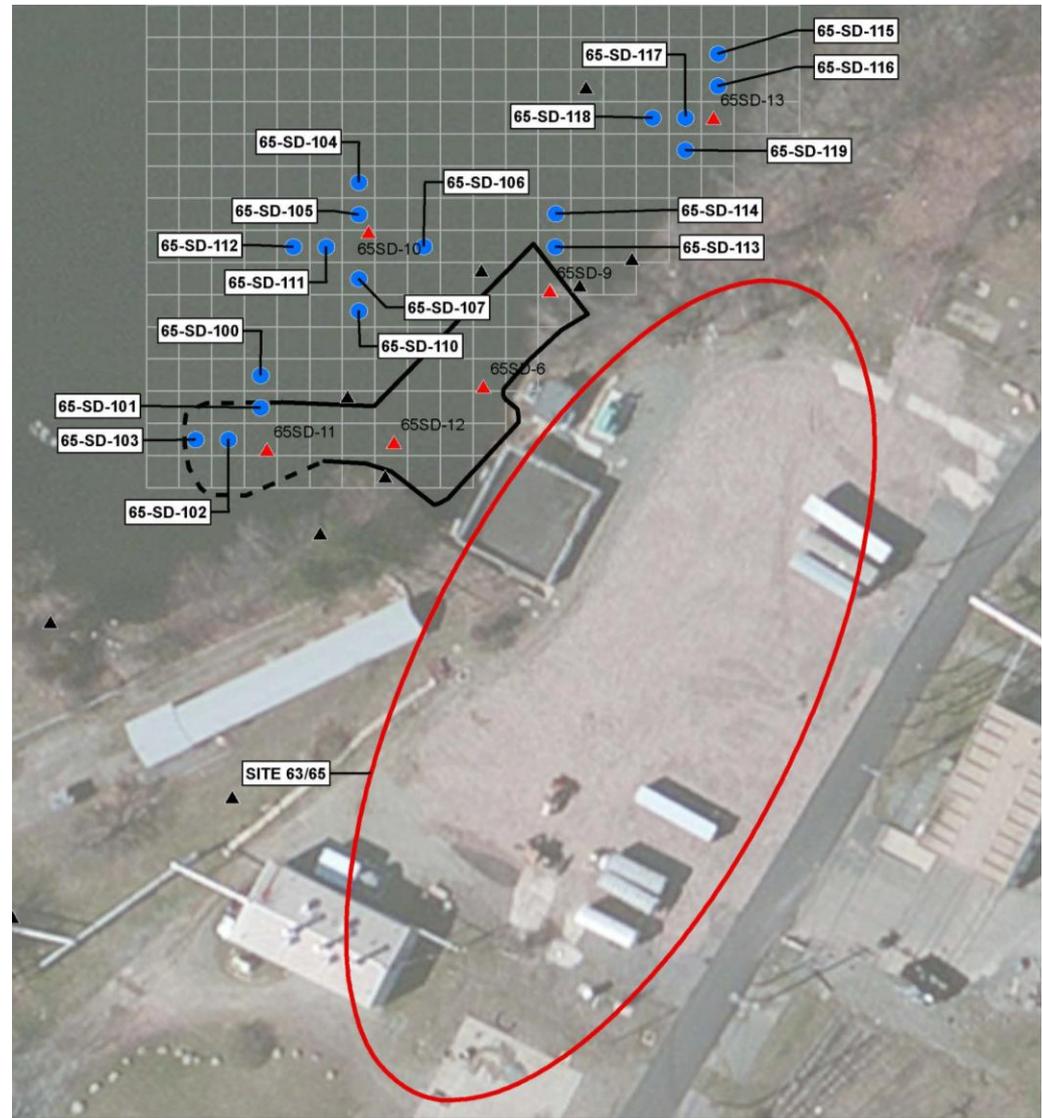
Legend

- Installation Boundary
- Site
- 15x15ft Sample Grid
- Area of Attainment (dashed where inferred)

- Proposed Sediment Sample
- ▲ Historical Sediment Sample with Exceedances of Cleanup Goals
- ▲ Historical Sediment Sample



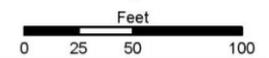
Offshore of Site 63/65



Legend

- Installation Boundary
- Site
- 15x15ft Sample Grid
- Area of Attainment (dashed where inferred)

- Proposed Sediment Sample
- ▲ Historical Sediment Sample with Exceedances of Cleanup Goals
- ▲ Historical Sediment Sample





Thank you!



RA-O/LTM Contract

- EA Engineering, Science, and Technology, Inc. PBC
 - Small business established in 1973
 - Over 400 employees in 23 offices, headquartered in Hunt Valley, Maryland
- Contract at Picatinny Arsenal
 - Perform RA-O at 14 sites and LTM at 70 sites
 - RA-O Groups: Group 1, Group 3, RI Concept Site 78, Area B, Area D, Area E, and Mid-Valley
 - LTM Groups: Lower Burning Ground, Group of 13, Post Farm Landfill, Pyro Range & Landfill, Landfill & Dredge Pile, DRMO, Waste Burial Ara, Waste Dumps & Labs, Green Pond and Bear Swamp Brooks, Area C, 25 Site Group, and 21 Site Group
 - Field activities conducted by Sovereign Consulting Inc.



RA-O/LTM Contract

RA-O Groups

- Group 1 (PICA 079): MNA and LUCs
- Group 3 (PICA 08): Bioremediation, MNA, and LUCs
- RI Concept Plan Site 78 (PICA 13) : MNA and LUCs
- Area B (PICA 205): Bioremediation, MNA with LUCs
- Area D (PICA 076): MNA, PRB and LUCs
- Area E: (PICA 077): MNA and LUCs
- Mid-Valley (PICA 204): Bioremediation, MNA, and, LUCs

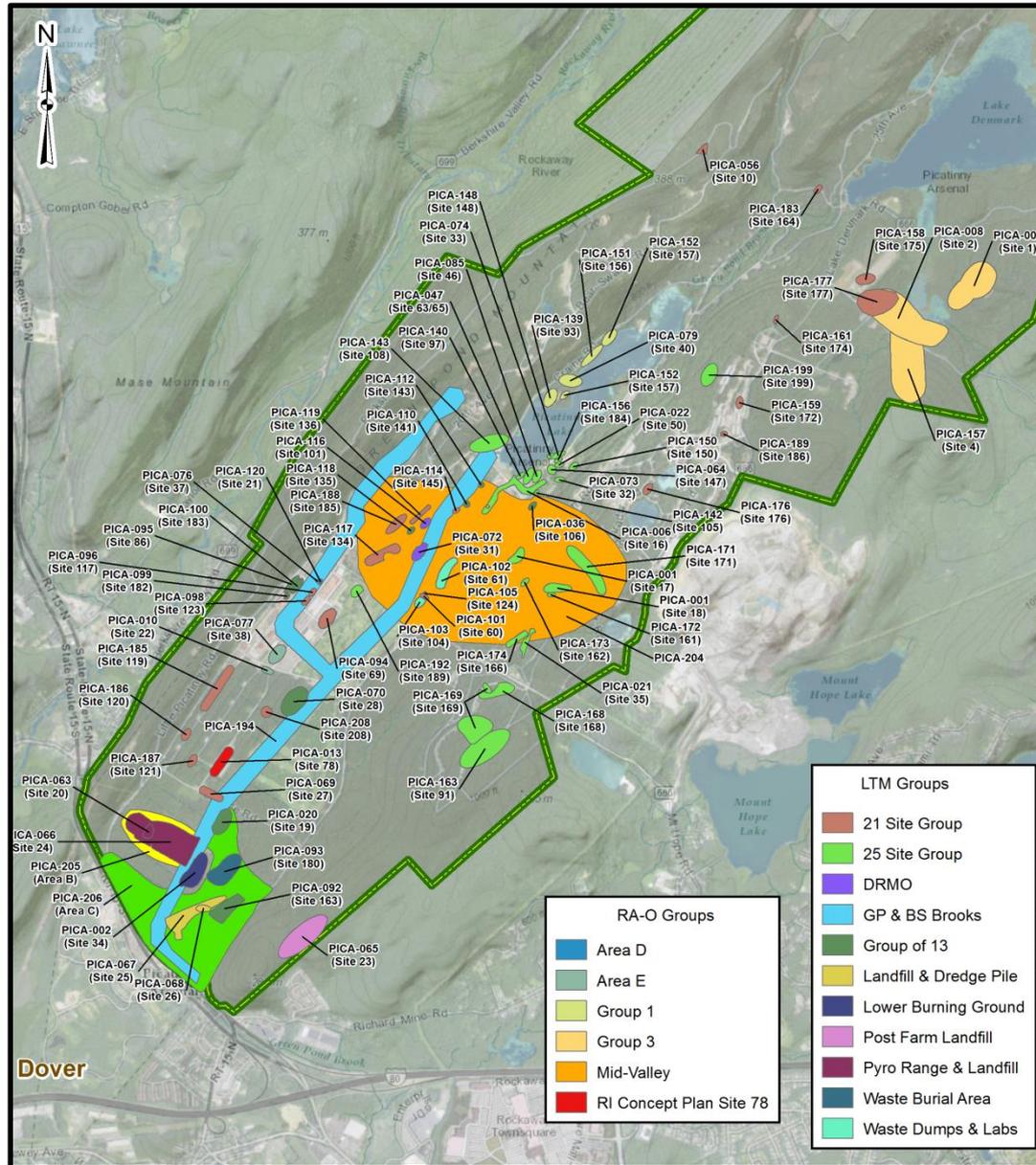


RA-O/LTM Contract

- LTM Groups
- Lower Burning Ground (PICA-002): Cover maintenance, wetland mitigation monitoring, groundwater and surface water monitoring
- Group of 13 (PICA-020): LUCs only at 11 sites
- Post Farm Landfill (PICA-065): Groundwater monitoring and LUCs
- Pyro Range & Landfill (PICA-067) : 2 Sites (20/24). LUCs, cap maintenance
- Landfill & Dredge Pile; LUC, mowing and cap maintenance
- Defense Reutilization Marketing Office (PICA-072): Cover maintenance, mowing, LUCs
- Waste Burial Area (PICA-093): LUCs
- Waste Dumps & Labs PICA (PICA-102): LUCs
- GP & BS Brooks (PICA-193): LUCs, biological, and sediment sampling
- Area C (PICA-206): Groundwater monitoring and LUCs including full analysis of Southern Boundary wells
- 25 Site Group: Land-use monitoring
- 21 Site Group: Land-use monitoring



Picatiny Arsenal Restoration Advisory Board Meeting





RA-O/LTM Contract

- Activities conducted to date
 - Planning documents
 - Groundwater, surface water, and sediment sampling
 - Including sampling of Southern Boundary wells under Area C
 - Biological sampling
 - Wetland mitigation area assessments
 - LUC inspections and NFA site monitoring
- Data evaluation and reporting



Field Schedule Outlook

Group	Nov 15	Dec 15	Jan 16	Feb 16	Mar 16	Apr 16	May 16	Jun 16	Jul 16	Aug 16	Sep 16	Oct 16
Group 1	Yellow			Yellow			Yellow			Yellow		
Group 3				Yellow						Yellow		
RI Site 78										Yellow		
Area B										Yellow		
Area D				Yellow						Yellow		
Area E										Yellow		
Mid-Valley				Yellow						Yellow		
LBG	Yellow			Yellow			Yellow			Yellow		
Post Farm										Yellow		
GP&BS												Yellow
Area C	Yellow						Yellow			Yellow		
Remaining LTM Sites						Yellow			Yellow			



Update-in-a-Minute
Installation Restoration Program (IRP)
&
Military Munitions Response Program (MMRP)

29 September 2015 Presentation to the
Picatinny Arsenal
Restoration Advisory Board



Update on FINAL NON-TIME CRITICAL REMOVAL ACTION INTERIM LAND USE CONTROL PLAN

- **In 2010** for number of Army installations, established Land Use Controls LUCs as an interim action while the MRSs progress to a final remedy within the Framework of CERCLA: MRS not located on Army-owned land would not addressed
- Approved Engineering Evaluation/Cost Analysis public noticed **NOV-DEC 2011**
- The *Action Memorandum, Interim Land Use Controls, Picatinny Arsenal for 1926 Explosion Radius (PICA-003-R-01), Green Pond Site (PICA-005-R-01), Former Operational Areas (PICA-006-R-01), Lakes Sites (PICA-008-R-01), Shell Burial Grounds (PICA-010-R-01), and Inactive Munitions Waste Pit (PICA-013-R-01), Military Munitions Response Program (Action Memorandum or AM) signed by the installation's Garrison Commander on 3 April 2012.*
- *Land Use Control Plan approved and final in January 2013*
- **GIS documentation of Construction Support**



Construction Support Avoidance since LUCWP

- Chugach with subcontractor REMTECH:
 - Install 3 Gates B175, , 100 area demolition , - B118 Install two utility poles, Various sign post Installations, Tilling of the wildflower area Safe Haven LPS project MOD1 de-ob 2 days, Emergency cleanup B314, , B902 Demolition MOD1 de-ob 1 day , B175 Playground equipment installation , B525 Removal of slab and footings , B174 Installation of 2 wood poles, Mt. Hope gate underground trenching, , B3228 Dig trenches for video surveillance , Wetland delineation, Truck gate trenching, - B314 Fence installation, B3159 Removal of stumps and grading, B3801 Installation of a gas service, B175 Replacement of a defective pole, B351 Trenching for generator (mod 1) , B3100 Install concrete pad, Install (32) UXO signs, Install Gate, B3410 Installation of new storm water piping installation of poles, B3334 and old burning installation of poles near substation 2- B314 Install fencing, *METC ground loop installation, AAL Archaeological work, Substation 1 utility pole, Utility pole installation , B200 Fueling facility boring, Trailer install American Water near B50, B73 boring for soil samples, B507 for Installation of a Utility Pole and Ground Rods, B3321 Concrete pad installation, B472 Installation of a gas line, Various small projects, B173 Trenching for drain piping, B200 Fueling Facility improvements, **B183 Install handicap walkway, Installation of of utility pole/ demo steam pits, B454B Removal of slab footings and pole installation, SREC Substation #1 poles, B462 Installation of a generator, B3128 Loading dock footings, B3208 Expand driveway install trench drain MOD1, B3114 Roadway clearing Substation 1 utility trenching, B904 Ground loop, trenching, B3355 Hydronic piping replacement, , Main road curbing,, B175 Parking lot renovation, B3321 Drainage repairs, B407 Footing installation, B3024 Exterior repairs, B175 Drainage repairs, B462 Gas line installation***
- Corps:
 - Bunker construction support (complete)
 - Soon: American Water new Picatinny Water Plant



Programmatic Developments

- **2015 Installation Action Plan (IAP)** is now updated and signed by the Picatinny Garrison Commander: Provides pathway and justification for funding
- Picatinny Environmental Restoration Program Web Page updated with EPA, NJDEP and Army letters and 2015 Action Plan
- **2016 Five-Year Review** implemented with Kansas City Corps of Engineers: Will include all sites with Records of Decision:
 - Hazardous substances remain on site above levels which permit unrestricted use and unlimited exposure. Five-year reviews provide an opportunity to evaluate the implementation and performance of a remedy to determine whether it **remains protective of human health and the environment.**
 - Working with EPA and NJDEP: targeting draft in April of 2016
 - Public Notice required before and after: target end of fiscal year
- Working with NJDEP (Anne & Greg) on 2-Year Joint Execution Plan for Defense-State Memorandum of Agreement (DSMOA): How NJDEP get paid. Anne has accepted the plan



Update on the Solar Panel Project

1782 Panels that would capable to produce 588KW (5%-7%) of Picatinny needs



Sussex Rural awaiting DC breakers before the system can be turned on.