

ENVIRONMENTAL HAPPENINGS AT PICATINNY ARSENAL

VOLUME 7, ISSUE 1 WINTER 2009

DISPUTE OVER NJ SOIL STANDARDS

The last round of sparring between the USEPA and the Army regarding the Mid-Valley groundwater operable unit may have been resolved successfully after several meetings between the parties. Language was agreed to that would satisfy the objectives of both the USEPA and the Army and it is expected to be incorporated into the final revised edition of the Mid-Valley groundwater Feasibility Study (FS) to be prepared by Arcadis the Army's contractor. The USEPA received the revised FS on 12/12/2008 and it responded with comments about surface water contamination on 2/27/2009. An Army / Arcadis' response is anticipated. It will be provided in a future newsletter as and when it becomes available.

Following on the heels of the Army's dispute with the USEPA is one concerning the State of New Jersey's recently promulgated soil standards. Apparently the USEPA and the NJDEP both maintain that New Jersey's recently promulgated soil standards should be referred to as ARARs (applicable or relevant and appropriate requirements). The USEPA, as the lead agency, contends that these NJDEP soil standards should now be referred to as ARARs in pending feasibility studies : such as the subject FS for Sites 18 and 149. The USEPA laid out the basis for the dispute in its October 16, 2008 comments on the FS for Sites 18 and 149

wherein the USEPA stated that it is no longer valid to refer to the General Geis letter for soils with risks in between the range of 10^{-6} and 10^{-4} . This letter was an attempt to resolve previous disputes over certain soil standards that had not yet been legally promulgated. Gen. Geis' letter was based on an internal army memorandum generated by General Van Antwerp. Presumably New Jersey's promulgation of relevant soil standards has impacted the legal purview and relevance of this memorandum.



At the October 15, 2008 technical meeting held shortly after receipt by the Army of the USEPA's comments it was decided by the regulators and

the Army that they would proceed in the same manner as they had with the Mid-Valley dispute – attempting first to resolve the matter informally and barring resolution at that level, formally elevating the dispute up to the next level.

The contentious issue of New Jersey soil standards has come up time and again. The USEPA and the NJDEP utilize different risk values to determine when action is required. The USEPA requires a risk assessment and

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IN THE FIELD.....

Recent field activities for August 2008 through January 2009 included the following:

Former DRMO Yard – Bldg. 34 (PICA 072):
Stakeout of excavation boundaries; brush clearing,

soil sampling, and land surveying. MEC avoidance throughout intrusive activities. (August)

Area B – Phipps and Horney Road (PICA 205):
Brush clearing for well installation; well installation

along with MEC avoidance;

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POINTS OF INTEREST:

•A technical meeting convened by ARCADIS was held on December 15, 2008 with members of the NJDEP and USEPA present along with representatives of Picatinny Arsenal and ARCADIS.

•The last restoration advisory board (RAB) meeting was held on October 23, 2008. It was preceded by a field trip to sites of interest on Picatinny Arsenal.

Following the field trip which culminated in a trip to the top of the Armaments Research tower, the meeting took place at Bucky's.

•The next RAB meeting will be held on March 26th from 6:30 to 8:30 pm at the Hilton Garden Inn in Rockaway, New Jersey.

Members of the public are invited to attend.

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DEPARTMENT OF JUSTICE RESPONDS TO DoD

The Department of Justice (DOJ) responded to a request by the Department of Defense (DoD) Counsel to resolve a dispute between the U.S. Environmental Protection Agency (EPA) “concerning four ‘imminent and substantial endangerment’ orders issued by EPA under the Resource Conservation and Recovery Act (‘RCRA’) and the Safe Drinking Water Act (‘SDWA’) at DoD facilities listed on the National Priorities List (‘NPL’) pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (‘CERCLA’).” The DOJ reduced the request to four legal questions. However, other pending litigation was a cause for the DOJ to provide its response in summary form as a legal advisory which provides legal guidance rather than a formal legal decision regarding any particular site that is the subject of litigation. Therefore, DOJ has provided its “views” on each of the four questions.

The DOJ’s advisory response is provided in its entirety on the PAERAB’s own website as a PDF file. Salient parts of this legal guidance are provided below.



Basically on each of the four specific questions, the DOJ sided with the USEPA and it asserted the authority of the USEPA to issue orders to protect the public health and the environment if actions of the DoD **may** constitute substantial and imminent endangerment to the public health and to the environment:

1. The DOJ believes that EPA may issue an imminent and

substantial endangerment order under RCRA or the SDWA provided that they have established the legal basis.

2. The DOJ believes that EPA may issue an order under RCRA (section 7003) that is not limited to measures to abate a specific threat but instead seeks the implementation of a facility-wide cleanup process.
3. The DOJ believes that EPA may demand the inclusion in an interagency agreement of additional terms not listed in CERCLA section 120(e)(4) but because such an agreement denotes a “consensual undertaking” that DoD is not automatically required to agree to all the extra-statutory terms demanded by EPA.
4. The DOJ stated that “EPA may require DoD to address in an interagency agreement all property contaminated by a release listed on the NPL as long as the property is ‘within the broad compass of the notice provided by the initial NPL listing.’” The DOJ could not answer some related aspects of the question. The DoD would still be obligated for cleanup on parcels that had passed to other federal agencies.

It would appear that view 1 is directly relevant to Picatinny Arsenal. The remaining views may have bearing on other sites such as litigation by the State of Maryland regarding Fort Meade. Nevertheless, the EPA has reiterated to Picatinny Arsenal the need to achieve SDWA compliance for the groundwater at the base which constitutes a sole source aquifer beneath a sizeable portion of Morris County. As of yet no orders appear to have been issued by the USEPA to the Arsenal in regard to the SDWA, however, some admonishments have been pointed (see page 8).

MID-VALLEY GROUNDWATER SETTLED AND MORE...

It appears that the dispute between the USEPA and the Army regarding the Mid-Valley Groundwater Feasibility Study (FS) has been resolved. As of the December 4, 2008 technical meeting attended by representatives of Picatinny Arsenal, Arcadis, USEPA, and the NJDEP; Picatinny Arsenal had intended to submit a revised FS that would incorporate changes in accordance with the dispute resolution. However, now the NJDEP will be unable to approve the FS because the document does not include the NJDEP interim guidance number for RDX. At the meeting Arcadis agreed

to consider marking the RDX cleanup standard of 2 parts per billion (utilized in the present FS) with an asterisk and, according to minutes of the meeting, “documenting in a footnote that NJDEP has an interim standard of 0.3 ppb for RDX and providing, for informational purposes only, the additional time required to meet this interim standard.” It is somewhat unclear exactly how that provides resolution to the situation. The NJDEP further asked that if monitored natural attenuation (MNA) is the selected remedy for RDX that

a contingent remedy be included if MNA does not proceed as expected by Arcadis / Army modeling. Arcadis stated that their current preference is to avoid contingent remedies. NJDEP indicated that they may include a preference for a contingent remedy in comments on the FS. Michael Glaab, the RAB’s Community Co-chair offers the following comment: “... identifying and including at least one likely contingency response to be implemented if the selected remedy fails seems prudent - especially since the efficacy of that contingency response may be impacted by future activities at the arsenal such as new facility construction or materials storage”.

SITES ON THE SHORE OF PICATINNY LAKE

The Army submitted a Draft Final Pre-Design Technical Memorandum for Group 1 Sites (PICA 079) on October 1, 2008. It was noted that sediment for the Group 1 sites is going to be addressed in the Feasibility Study for Picatinny Lake and “that the name of the document (Pre-Design) does not imply that it is not a Pre-Proposed Plan document as well.” Although there does not seem to be a precedent for such a document it does seem that a technical memorandum could also be a pre-proposed plan. However it is unclear what purpose such a document might serve. Arcadis provides the following explanation:

“... There are precedent for technical memoranda at any stage in the CERCLA process and this document is intended to address changes in site conditions since the FS was completed and approved. The level of technical detail and evaluation in the Pre-Design Memo would not be appropriate in the Proposed Plan. The Proposed Plan is intended to provide a brief summary of the site, possible alternatives, and propose a recommended alternative”.

Generally the technical meetings conducted by Arcadis have served as a forum for

proposing ideas and plans that are later formulated into documents which are then submitted to regulators for their review. This memorandum includes the Army’s recommendation of “GW-2 – Continued Implementation of Institutional Controls and Monitored Natural Attenuation (MNA) as the preferred Response Action for groundwater.”



The memorandum cites Arcadis contention that the concentrations of TNT and RDX are decreasing and that there is evidence to support continued MNA. As is required by the USEPA for MNA alternatives, the memorandum calculates time frames for the dissipation of those contaminants. The USEPA was quick to respond on November 6, 2008 by noting that it did not find a decreasing trend in concentrations of TNT and RDX. The USEPA also pointedly questioned whether or not the plume was in fact actually migrating elsewhere rather

than just attenuating naturally. Or is the plume perhaps migrating and attenuating? Plume maps contained in the report (Figures 3 and 4) are interesting. However, the depiction of RDX plumes in 2002 versus 2008 (Figure 4) seems to indicate that the areal extent of higher RDX concentration (greater than 10 ug/L) has actually expanded rather than contracted as one would expect in a situation of attenuation. An expansion implies – but does not guarantee — that RDX migration may be occurring. No statistical analyses were included in the document to support the contention of a trend of decreasing RDX concentrations. The Army/Arcadis has not yet responded to the USEPA’s query. The Army’s response to the USEPA will be provided in a newsletter as and when it becomes available. However, Arcadis has provided the following explanation of its perspective:

“... We believe there is no disagreement between the

EPA and the Army regarding the migration of RDX and TNT at PICA 079. In fact, it was noted during its presentation of the data to the EPA and DEP that migration of the contaminant and discharge into the Lake was likely occurring, as well as attenuation by chemical breakdown. All parties agreed on this data trend, and all parties agreed that sampling of the lake sediments and water at the points of groundwater discharge was important. This work was completed by Arcadis on an expedited basis and no detections of explosive were reported in either media. The referenced 6 November 2008 EPA memo was an approval of the document”.

Michael Glaab comments : *“...the possibility that the migration of a contaminant will occur undetected and that its migration will be misinterpreted as evidence of attenuation is a risk in and of itself. This risk will tend to be larger for water soluble contaminants and it will probably be directly proportional to the ease with which those contaminants go into solution in water.”*

PHASE-IN GUIDANCE FOR NEW SOIL STANDARDS

New Jersey’s recently enacted soil standards have had an effect on some of the sites at Picatinny Arsenal that are in the process of being remediated. Arcadis has determined that the Record of Decision (ROD) and Remedial Design (RD) for Area B (PICA 205) are not subject to

the phase-in period for the new NJDEP soil standards. In consultation with the NJDEP, Arcadis determined that Sites 61 and 104 (PICA 102) and Sites 31 and 101 (PICA 72) can proceed under the phase-in guidance. The RAB’s DoD Co-chmn., Mr. Ted Gabel,

comments : *“...older Soil Cleanup Standards are more stringent for certain parameters than those recently promulgated by NJDEP. This particularly is relevant to lead removal aspects at Site 31/101”.*

Pending documents for the two sites are expected to be updated with language acknowledging the recent promulgation of new standards but these documents will not identify the new soil standards as ARARs.

ROUND 2 FOR ARMY VERSUS USEPA

Just when the disputed issues regarding the Mid-Valley Groundwater Feasibility Study (FS) appear to be settled, another dispute has cropped up between the Army and the USEPA. This new dispute involves land use controls (LUCs) and is described in the article on PICA 001 (page 8).

Referring to this dispute the minutes of the December 4, 2008 technical meeting include the following (presumably consensually agreed to) statement : “The LUC sites with risks within the generally acceptable CERCLA range will not move forward until resolution of the upcoming

dispute regarding LUCs and recognition of ARARs.” The notes section of the minutes refers to a “status of Army position paper”, however, there is no mention of a position paper in any subsequent correspondence. Presumably, as in past disputes, each side will present



its own position and arguments in a document that will then be submitted to the designated mediator.

HIGH LEAD IN FORMER SKEET RANGE CALLS FOR ACTION

A recent report on the investigation of lead concentrations attributes the high concentrations to the former skeet range. While the investigation of the lead appeared to have been covered by ER-A (Environmental

Restoration, Army - funds designated for restoration purposes by the Army) funding the costs of a review and remedial action do not appear to be funding eligible. The Army/ Arcadis asserts that this site is not ER-A eligible.

The USEPA, in comments dated December 11, 2008, questioned whether or not immediate action was required given that lead concentrations are in the parts per ten. No response yet from the Army. The Army/Arcadis states

that this site will not be considered part of the inter-agency agreement with the USEPA or the Defense State Memorandum of Agreement with the NJDEP.

COMMUNITY RELATIONS PLAN FORTHCOMING

The Shaw Group is working on preparing a Community Relations Plan for Picatinny Arsenal. As part of the

effort Shaw interviewed selected community members of the PAERAB such as Michael Glaab. Compilation of

the plan involved contact with many Picatinny Arsenal staff personel as well as other supporting entities that

interact with the community. A draft of the plan is expected in April of 2009.

TRAINING OPPORTUNITIES

The Interstate Technical Regulatory Council (ITRC) has scheduled the following on-line courses:

- “Quality Considerations for Munitions Response Projects,” January 15, 2009 from 11 am to 1:15 pm
- “Perchlorate Remediation Technologies,” January 22, 2009 from 11 am to 1:15 pm

•“In Situ Bioremediation of Chlorinated Ethene – DNAPL Sources,” February 10, 2009 from 2 to 4:15 pm

•“Performance-Based Environmental Management,” March 24, 2009 from 2 to 4:15 pm

The courses are free. Register on-line at www.itrcweb.org/ibt.asp.

The USEPA Technology Innovation Program has an internet course scheduled as follows:

- “Green Remediation: Opening the Door to Field Use – Session C (Green Remediation Tools and Examples),” January 13,



SUBMUNITIONS STOP WORK AT FORMER DRMO YARD

Work on the Former DRMO Yard was recently halted due to the reported detection of "sub-munitions" during preparation work for remedial activities. The RAB was informed of the discovery at its October 2008 meeting. Recently a representative of Picatinny Arsenal indicated that the appropriate term for these munitions and explosives of concern (MEC) is "improved conventional munitions" (ICMs). Arcadis states that after the discovery of the ICMs the gates to the fenced site were locked.



It is reportedly being patrolled by base personnel. Interestingly the area where the sub-munitions were discovered is nearby to a brook and it is close to an area traversed by a group consisting of Picatinny Arsenal, USEPA, NJDEP, and RAB representatives (Michael Glaab

and Barbara Dolce) during a trip to inspect a site during the early stages of the Feasibility Study several years ago. ICMs found at this location consist of the following: BLU-3, BLU-4, BLU-24, BLU-26/36/59, BLU-42/54, BLU-61, and BLU-63/86. Fortunately no one appears to have come in to contact with these potentially deadly items prior to their discovery. The "Unexploded Ordnance (UXO): An Overview" (October 1996) document states that sub-munitions include

bomblets, grenades, and mines filled with explosives or chemical agents. As a precaution the Army has placed an advertisement in the local Picatinny newspaper asking for current or former on-site workers and/or residents to come forward if they have any knowledge of the sub-munitions. Given the long history of the base and its many employees it is possible that someone may recall disposal of the sub-munitions. The PAERAB's own website also provides a telephone number to call to provide information.

WILL THERE BE ANY RODs IN FY '09?

The past year was a rocky one for the record of decision (ROD) pipeline at Picatinny Arsenal. As published in the Spring 2008 Newsletter, Arcadis had stated during an October 2007 technical meeting that its goal for Fiscal Year 2008 (FY'08) was

to complete 11 RODs. Instead, the Land Use Controls (LUC) ROD for 13 Sites was the only ROD signed during the fiscal year (FY 2008) which ended in September 2008. FY 2009 is not off to a good start. Although the Mid-Valley Groundwater dispute was substantially resolved in

late summer 2008, thus paving the way for a revised document that would include language reflecting the agreement reached between the Army and the USEPA, other disputes have arisen that could grind progress to a halt. These disputes include recognition

of the New Jersey soil standards that were enacted in June 2008 and other matters relating to LUCs, the restoration of groundwater to drinking water quality standards, RDX standards for New Jersey, and the nature of CERCLA response actions.

AREA D EXCURSIONS

The permeable reactive barrier (PRB) near Green Pond Brook (GPB) is approaching its second birthday. The PRB was sited to protect GPB by treating contaminated groundwater before it migrates to that stream. On the surface the PRB seems to be functioning properly. Despite fears of a potential water backup upgradient of the PRB, groundwater level measurements show that water is flowing through

the PRB. Also the ends of the PRB do not appear to have created adverse perturbations of the groundwater flow. However, recent water sampling (August 2008) has shown the presence of trichloroethene (TCE) in GPB. According to Arcadis TCE was not detected in surface water and the primary VOC detected in GPB was vinyl chloride at 19.2 ppb. An increase in TCE was found downgradient (downstream, actually) of the northern portion of the PRB. The TCE

concentration was higher than that from the sample collected 30 feet upstream. Vinyl chloride was also detected in the downgradient stream sample. Although vinyl chloride is a degradation product of TCE it was not reported in other stream samples. One possible cause may be a non-reactive zone within the barrier through which contaminants migrate without being treated. Such a zone could have accidentally been created during

construction had the sand medium not been properly mixed with iron filings. The iron is intended to react with the TCE and degrade it into less harmful constituents. Arcadis states that it will check such variables as stream flow conditions to determine the cause of the detection. Arcadis asserts that subsequent sampling has disclosed a decline in concentrations downgradient of the wall and in GPB.

AREA B FULL OF MOLASSES

At the last RAB meeting Arcadis presented a slide show on the Area B groundwater remedy. The first injection of molasses as part of the bioremediation took place between September 15 and September 19, 2008. A pre-mixed, dilute molasses solution was brought in by tanker trucks and injected into wells comprising three barriers perpendicular to the shallow groundwater flow direction. The actual injection scenario was very different from what had been planned – a much lower volume (about 2/3 less) with a much greater concentration (more than double to almost quadruple) was injected into the soil. Part of the problem was the concentration of the solution that arrived – apparently there is little control of the concentration and only a rough approximation of the specified mixture can be attained. Another contributing factor was the lower permeability of the soil surrounding the wells. As a result the actual radius of influence of the injected material was less than the original design radius (e.g., 7.5 to 9 ft instead of 10 ft

as designed). This resulted in the injection wells forming an imperfect barrier. Arcadis states that actual site conditions were slightly different from those predicted during the design phase and that adjustments were effected in the field. At the December 4, 2008 technical meeting Arcadis presented its justification for initiating a second injection event on December 15, 2008.

That justification was not described in the meeting minutes or the slides for the presentation but it apparently related to rapid dissipation of total organic carbon (TOC) in two of the barriers. Arcadis explains that multiple injections had been planned and that the second injection event occurred as originally scheduled. Arcadis maintains that TOC

concentration trends did not appear to be unusual prior to the second injection and that technical information was provided to the USEPA and to the NJDEP prior to the injections. Arcadis clarifies that it deems prior detailed knowledge of TOC concentration trends to be essential to the effective implementation of an injection.



PHOTO of Area B Molasses Injection activities courtesy of the US Army

NEW PERCHLORATE ADVISORY

The USEPA recently revised its 2006 guidance on perchlorate in groundwater. The new interim health advisory establishes a more restrictive level of 15 parts per billion (ppb) in groundwater than previous guidance

recommending a preliminary remediation goal of 24.5 ppb. Referred to as the USEPA's Interim Drinking Water Health Advisory level it is based on the recommendations of the National Research Council. The relevant USEPA report is dated

December 2008 and it can be viewed at www.epa.gov/OGWDW/contaminants/unregulated/pdfs/healthadvisory_perchlorate_interim.pdf.

The New Jersey Department of Environmental Protection (NJDEP) provides a "Homeowner's Guide to

Perchlorate" at

www.state.nj.us/dep/watersupply/perchlorate.htm.

This document, last updated in November 2005, provides background information on the source of perchlorate and its health effects.

AREA B FULL OF MOLASSES (CONTINUED)



PHOTO of Area B Molasses Injection activities courtesy of the US Army



PHOTO of Area B Molasses Injection activities courtesy of the US Army

USEPA COMMENTS ON PICA 001 FEASIBILITY STUDY

The USEPA provided comments on the PICA 001 Feasibility Study (FS) dated October 8, 2008 that was prepared by Arcadis / Army. The comments were substantive in nature and describe some fundamental issues that have come up again and again in Army documents. Several of the comments are included below as they succinctly state the USEPA's positions on the following points:

- 1) classification of groundwater as a drinking water source and as a sole source aquifer,
- 2) CERCLA actions,
- 3) land use controls (LUCs)
- 4) soil reuse.

The issue of returning groundwater to drinking water standards had come up previously at Picatinny Arsenal as had the matter of LUCs. In the past the arsenal had restricted the use of some of its own water wells and certain wells were closed. In addition, in the 1990/91 timeframe concern that RDX might have migrated into private wells inspired the precautionary supplying of bottled water by Picatinny Arsenal to several adjacent residences at the following locations: Union Turnpike, Woodport Road. To mitigate against possible harm steps were taken to connect affected residences to the Wharton municipal water system by such public officials as Rep. Dean Gallo, then the district's congressman, and the then presiding mayors of Rockaway Twp. (former Mayor Lombardo) and of Wharton (former Mayor Shupe).

Soil reuse is also a potentially critical subject. Picatinny Arsenal maintains that it has a firm handle on soil management but on at least one past project contaminated soil was removed from the base to a private residence,

apparently in contravention of the then existing guidelines. Based on the USEPA's observation it is possible that contaminated soil related to PICA 001 may have been inappropriately utilized. The Army / Arcadis notes that it sought and received concurrence on the soil reuse from both the USEPA and the NJDEP and that the TAPP Consultant was also notified. Michael Glaab offers the following comments : "...such a breach of established protocols can be perceived to be a clear and definitive indicator of the usefulness and value of effective land use controls in general and specifically of appropriate LUCs that regulate the use of waste soil. Obviously reasonable measures must be taken to protect our communities and those individuals employed at - or even residing at - the Arsenal from needless exposure to improperly disposed contaminated soil. As for the groundwater issue, I believe that most, if not all, of the community members of the RAB are acutely aware of the importance of safeguarding the very groundwater sources that our communities depend upon. This is one of many reasons why a representative of Morris County serves on our board. The PAERAB is cognizant of the need to assure timely remediation of the groundwater and of the need to prevent the migration of water soluble contaminants off-base."

Sole source aquifer: The USEPA in its comments referred specifically to the first sentence of the executive summary of the PICA 001 FS which cites the human health risk assessment (HHRA) for PICA 001 in the following statement : "The results of the updated HHRA indicate that constituents in surface, subsurface soil, sediment, surface water, and groundwater do not pose an unacceptable risk or hazard to human health under current and

presumed future land-use scenarios for the sites addressed in this FS." The USEPA comment on this is as follows:

'Risk levels are only one measure to determine whether remedial action is necessary to address contaminated groundwater. Picatinny is located over a sole source aquifer; the designation does confer at least a Class IIA current source of drinking water groundwater classification. The NCP states: "EPA expects to return usable ground waters to their beneficial uses wherever practicable, within a timeframe that is reasonable given the particular circumstances of the site" (40 CFR Section 300.430(a)(1)(iii)(F)). Since all groundwater located below Picatinny is classified as a current source of drinking water, EPA expects that it will returned to drinking water quality standards within a reasonable timeframe.' Refer to comment 6 below.

Additional comments by the USEPA regarding groundwater are in reference to the latter part of the executive summary as follows: *'Executive Summary, eleventh paragraph, page ES-4 – The third sentence states: "In addition, constituents that exceeded an LOC for subsurface soil, sediment, surface water, and/or groundwater but that were not identified as risk drivers under current and reasonably anticipated future uses were generally addressed by evaluation under Alternative SL-1SD-1 and SL-2SD-2." Risk levels calculated based on exposure to contaminated groundwater is [sic] not the sole measure to determine whether a response action is necessary or not. The other measure is aquifer classification based on EPA Groundwater Policy. At Picatinny Arsenal all groundwater is classified as a sole source aquifer: the designation does confer at least a Class IIA current source of drinking water groundwater classification. The NCP states: "EPA expects to*

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USEPA COMMENTS ON PICA 001 FS (CONT'D)

return usable ground waters to their beneficial uses wherever practicable, within a timeframe that is reasonable given the particular circumstances of the site" (40 CFR Section 300.430(a)(1)(iii)(F)). Since all groundwater located below Picatinny is classified as a current source of drinking water, EPA expects that it will returned to drinking water quality standards within a reasonable timeframe." Refer to comment 2 above.

CERCLA Response Actions and LUCs:

The last two sentences of the sixth paragraph of the executive summary state the following: "At the 24 sites addressed in this FS, the contaminant levels, risks and hazards at the sites are not low enough to allow unrestricted use. Therefore, administrative (non-CERCLA) or CERCLA actions were evaluated, as appropriate, for these 24 sites." The USEPA comment is as follows: 'EPA does not agree with the Army's parsing of what constitutes an "action" in determining whether the implementation of land use controls (LUCs) constitutes a CERCLA action or not. "Action", as expected, has a range of meanings that are not necessarily limited to "the bringing about of an alteration by force or through a natural agency" (second definition of action in Webster's Ninth Collegiate Dictionary). Other definitions include 4) "an act of will" and 5)b "the accomplishment of a thing usually over time, in stages, or with the possibility of repetition". Clearly, the implementation of institutional controls requires an "act of will" and constitutes "the accomplishment of a thing usually over time, in stages, or with the possibility of repetition". The NCP refers to institutional controls as a "remedy" in: "The use of institutional controls shall not substitute for active response measures (e.g., treatment and/or containment of source material, restoration of ground waters to their beneficial uses) as the sole remedy unless such active measure are determined not to be

practicable, based on the balancing of trade-offs among alternatives that is conducted during the selection of remedy" (40 CFR Section 300.430(a)(1)(iii)(D)). In addition, the Army accepted the Navy principles which appeared in a DoD memorandum dated January 16, 2004 that represented the end of the LUC dispute between EPA and DoD. In Attachment 1 of that memorandum entitled Navy Principles and Procedures for Specifying, Monitoring, and Enforcement of Land Use Controls and Other Post-ROD Actions the Preamble stated:

"Since the Department of Defense (DoD)/ Environmental Protection Agency (EPA) Model Interagency Agreement (IAG)/ Federal Facility Agreement (FFA) was developed in 1988, EPA and the Navy have gained considerable knowledge and understanding about post-Record of Decisions (ROD) activities, especially Land Use Controls (LUCs). Thinking, policies, regulations and procedures concerning LUCs have evolved considerably since DoD and EPA developed the 1988 FFA model language. New statutes and regulations related to LUCs are being considered in many states. Accordingly, EPA and the Department of the Navy (DON) believe that a set of Principles will assist the Navy field commands and EPA Regions to better implement our respective Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) responsibilities [emphasis added]. The Principles described below do not replace or substitute for any existing CERCLA statutory or regulatory requirement. Rather they provide a mutually agreeable framework to provide a more efficient process to implement LUCs at National Priority List (NPL) installations."

The second of the Principles referenced above states: "At sites where contaminants are left in place at levels that do not allow for unrestricted use, LUCs are used to

ensure that the contaminants do not pose an unacceptable risk to human health or the environment. LUCs consist of engineering controls and/or institutional controls." (Memorandum from Alex Beehler, Assistant Deputy Under Secretary of Defense (Environment, Safety and Occupational Health), to the respective Deputy Assistant Secretary of the armed services entitled: Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Record of Decision (ROD) and Post-ROD Policy dated January 16, 2004). Furthermore, where in the NCP, CERCLA or EPA guidance does it make the distinction between administrative (non-CERCLA) and CERCLA actions for addressing contamination at a CERCLA operable unit (OU)? The only situation where this remotely occurs is when a CERCLA OU is suitable for no further action (NFA) and no post-ROD activity whatsoever is required. The criterion for NFA is that contaminant levels allow for unrestricted use and unlimited exposure. Failing that, LUCs are required which clearly constitute a CERCLA action.

Based on the foregoing, the implementation of land use controls at a CERCLA site plainly constitutes a CERCLA response action. Therefore, EPA will not approve any feasibility study or other primary document that refers to LUCs as an administrative action not subject to CERCLA.'

The USEPA's sixth comment further elaborates on LUCs as follows: '.....if LUCs are required at an operable unit, then an active remedy will need to be assessed to determine that implementation of such a remedy is impracticable. Please refer to Specific Comment 5.' Refer to comment 2.

Soil reuse: 'Section 3.21.2, Previous Investigations, Building 1071, Crystallizing Building, sixth paragraph, page 136 – It is stated in this paragraph:

"The concrete sump associated with

USEPA COMMENTS ON PICA 001 FS (CONT'D)

Building 1071 was subsequently removed in March 2004. One post-excavation sample was analyzed for SVOCs, explosives and metals. Exceedances of RDX (49,000 mg/kg), HMX (14,000 mg/kg), tetryl (12,000 mg/kg) and lead (3,120 mg/kg) resulted in a second excavation of the sump area. Soil was removed to bedrock, 13.5 to 14 ft. bgs. The concrete sump was demolished and disposed of as non-hazardous construction debris at a municipal landfill. The steel reinforcing bars and cover plates were returned to the Picatinny DPW for salvage as scrap metal. The excavated soil was relocated to the 3500 area for reuse as fill under a proposed new building [emphasis added]. The excavation was filled with certified clean soil from the Berm 35 source. Six surface soil samples were collected in the area of Building 1071 to investigate these AOCs."

EPA considers the re-use of this soil with high explosive levels to be unacceptable and requests that the Army verify that this soil was actually used as fill in the 3500 area. If re-use of this soil actually did occur, then it raises doubt about the validity of the soil clearance program. "Refer to comment 21.

Michael Glaab comments : "... the RAB has consistently expressed a preference for remedial actions which directly act to redress contamination either by expeditiously removing contaminants and safely transporting them offsite to appropriate

certified facilities or by safely decomposing the contaminants onsite into relatively harmless components. There are additional uncertainties inherent in relying on such relatively passive and indirect measures as monitored natural attenuation (MNA). MNA essentially involves permitting the environment to naturally — and often slowly - decompose contaminants over time. This entails the tacit assumption that an exact enough perception of the environment can be established to first permit accurate quantification of relevant factors and that realistic mathematical models can subsequently be created for use in devising a remedial action. In point of fact this tacit assumption is an uncertainty and therefore a risk. For example, due to the difficulty of exactly calculating the amount of time required for safe attenuation many determinative factors such as soil density and porosity; underground water flow rates, water flow vectors and etc. - which do not always lend themselves to easy determination or quantification - can potentially loom large in determining the effectiveness of a remedial action. Unaccounted for factors such as unexpected and unobserved soil deposits, undetected ground fissures, soil subsidences, unrecorded waste deposits, tectonic activity and etc. can potentially so skew problematic factors that the calculations on which the assumptions of a model were based become unrealistic and thus can perhaps contribute to the failure of a sincerely initiated

environmental remediation effort based on that model. Our restoration advisory board has been exposed to sufficient site plans, graphs, charts, topographic maps, hydrological water flow and contaminant concentration gradient maps, risk tables, soil and water test sample data tables, risk calculations, mathematical analyses, computer modeling and technical appraisals for us to appreciate that many calculations are problematic and subject to uncertainty. The longer is the time duration of a remediation action the greater is the possibility that an unanticipated or perhaps just inaccurately anticipated factor will arise that will reduce the effectiveness of that remediation action. Accordingly, those remediation actions that require less time to be completed tend to also involve less risk due to the uncertainty posed by time. Therefore, remediation actions that involve either the immediate removal or the immediate decomposition and treatment of contaminants tend to be favored by many board members: for example, the direct and relatively quick decomposition of contaminants onsite with suitable treatment materials or the prompt excavation of contaminated soil which is either treated and carefully disposed at the Arsenal or completely and safely removed from Picatinny to a proper storage location elsewhere."

FORMER DEP COMMISSIONER NOMINATED FOR USEPA CHIEF

Former NJDEP Commissioner Ms. Lisa Jackson had been nominated for the position of USEPA Administrator. President-Elect Barack Obama announced the nomination on December 15, 2008.

According to Mr. Bill Roach, the USEPA's representative to the RAB, her appointment was confirmed on 1/23/2009. The former Commissioner was in charge at the NJDEP until October 2008 when she accepted the position of

Chief of Staff for New Jersey Governor Jon Corzine. Ms. Jackson assumed the role of Chief of Staff on December 1, 2008. In her stead at NJDEP, Governor Corzine appointed Mr. Mark N. Mauriello on

November 18, 2008. The Governor's press release noted that commissioner Mauriello is a 28-year veteran of the NJDEP and most recently served as Assistant Commissioner for Land Use Management.

DISPUTE OVER NJ SOIL STANDARDS (CONT'D)

that action be triggered if the risk exceeds 10^{-4} . NJDEP soil standards are predicated on a risk exceeding 10^{-6} . Although the NJDEP is a party to the oversight of the environmental remediation effort at Picatinny Arsenal it is considered a support agency

and the USEPA is the lead agency.

The Army explains that the NJDEP did not sign the inter-agency agreement governing remediation of contaminated sites at the Arsenal. Apparently the NJDEP is also subject to the terms of several agreements between the

NJDEP and the Army that are presumably intended to facilitate New Jersey's participation in Installation Restoration Program / CERCLA activities at Picatinny Arsenal and also at other federal facilities in New Jersey.

COOPERATIVE (LEGAL) AGREEMENTS TO CLEANUP ... BY MICHAEL GLAAB

The environmental remediation effort at Picatinny Arsenal is legally governed by New Jersey State Statutes, New Jersey Administrative Code, the United States Federal Code and it is also impacted by legal agreements between the State of New Jersey and the United States Department of Defense (DoD). Cooperative agreements intended to facilitate environmental remediation efforts have been proposed, drafted, enacted and/or revised between NJ and the DoD — such as the following :

Memorandum of Understanding By and Between United States Army Tank-Automotive and Armaments Command Armament Research, Development and Engineering Center, Picatinny Arsenal, NJ and New Jersey Department of Environmental Protection (NJDEP).

The revised draft, dated 4-30-01, of this memorandum states on its first

page that its purpose is to establish :

“... a partnership to develop, demonstrate and implement innovative approaches to environmental management to ensure clean air, clear waters, clean soil, and preserve and sustain land and natural resources” .

This agreement includes the following:

- Testing and evaluation of new remediation technology and methods
- Transfer of such technologies and methods to the DoD and also to commercial applications
- Development of goals and strategies for future improvements.

Throughout the years the DoD and the NJDEP have entered into a Defense and State Memorandum of Agreement (DSMOA) and also a Cooperative Agreement (CA) to establish a basic partnership which also includes a provision for financial reimbursement of the NJDEP by the DoD.

On 09/01/2000 former Senator Torricelli's office had kindly provided the PAERAB with a copy of a Voluntary Cleanup Agreement (VCA) dated August 30, 2000 that supplements the DSMOA and the CA. The VCA includes the NJDEP, Army, Navy, Air Force and Defense Logistics Agency as signatories. Page 2 stipulates the exclusion of provision for :

“...detection and disposal of unexploded ordinance...”

Page 3 specifies :

“... Reimbursement for DEP support services for sites subject to this Agreement will be made in accordance with the ... DSMOA/CA ... DEP will not review documents without being reimbursed”.

Such cooperative agreements can synergistically facilitate environmental remediation efforts and research *everywhere* — if they are implemented energetically, properly, and with sufficient resources.

TRAINING (CONTINUED FROM P. 4)

2009 from 1 to 3 pm [sponsored by USEPA Technical Support Project Engineering Forum]

- “New Year, New CLU-IN!”
January 16 and January 30, 2009
from 1 to 2 pm

- “Frequently Asked Questions Regarding Management of Chlorinated Solvents in Soils and Groundwater,” March 24, 2009
from 11 am to 1 pm [sponsored by the Environmental Security

Technology Certification Program]
Register for free classes at <http://clu-in.org/training> .

Internet courses may be archived at the respective websites for reference at the user's convenience.

MEMORIAL FOR WESLEY ACKERSON BY MICHAEL GLAAB

The estate of Mr. Wesley Ackerson, a former representative of Jefferson Township to the PAERAB until his demise in 2007, responded to the board's proposal to memorialize the service of Mr. Ackerson in a letter addressed to Mr. Michael Glaab and the RAB's Wesley Ackerson Memorial Committee. In this letter dated January 26, 2009 the estate acknowledged the PAERAB's proposal and expressed its appreciation and gratitude to the board for offering to honor Wesley's service with the placing of a commemorative plaque in remembrance of his contributions to the environmental restoration effort at Picatinny Arsenal.

Specifically, this thank you letter approved the following sites suggested by the board's memorial committee for consideration for placement of the commemorative plaque: on property of the Ackerson estate (some of which was recently donated to the County of Morris), or at the arsenal where he had formerly been employed.

Mr. Ackerson, who had served honorably in the U.S. Army in the Pacific Theater during World War II, had been nominated to the board by Mr. Russell Felter the current mayor of Jefferson Township. Having been employed for many years at

Picatinny Arsenal Wesley possessed practical knowledge about its activities and he had often expressed both his support of the arsenal's national security mission and his concern for the environment. In particular, Wesley had repeatedly expressed concern for the Arsenal's lakes and he was keenly alert to any possible concerns for the residents of the communities living alongside Picatinny - such as those on Berkshire Valley Road and elsewhere. An active member of the community he dedicated time and effort to numerous diverse civic causes. Indeed, since a not insignificant portion of his own estate's landholdings have actually been donated to the County of Morris, apparently to be dedicated to the services and purview of the Morris County Park, this is an undeniably meaningful demonstration of his commitment to the preservation of the environment for his posterity.

The letter was sent on behalf of the estate of Wesley Ackerson by Mrs. Evelyn A. Brown, who is apparently the estate's administrator. Mrs. Brown, who had served consecutive terms as mayor of Jefferson Twp. had also, similar to former Mayor Slayton and current Mayor Felter, served her community on its council and on various municipal bodies. She had presided over the council as

its vice-president and it was during her mayoral tenure that the arsenal's technical review committee (TRC) was reorganized into a resource advisory board with Mr. Glaab then serving as Jefferson's representative to the RAB.

When the TRC, the precursor to the PAERAB, was originally founded Michael Glaab (then a long standing member of Jefferson's Environmental Commission led by its chairman Dr. Clifford Williams) was nominated by the then serving mayor of Jefferson Twp., Mrs. Frances Slayton, to represent that community to the TRC.

For his efforts and expense in acquiring the plaque the board is grateful to Mr. Robert Crothers who is Denville's official representative to the PAERAB and also a member of the memorial committee. Mr. Crothers is a valued long standing member of the board who is very knowledgeable about the arsenal. An active citizen of his community he contributes his talents to the support of worthy civic activities and to such organizations as the Fire Department.

The memorial committee also includes Mr. Glaab (a former councilman and Vice-chmn. of Jefferson Township's Environmental Commission) and Mr. Paul McGinley who is Wharton's official representative to the board and a former councilman of that community.

IN THE FIELD (CONTINUED FROM PAGE 1)

and molasses injection. (August)

Area D: Groundwater sampling. (August)
Monitoring of groundwater levels and installation of passive diffusion bags (PDBs) (note: PDBs are a means

of monitoring water quality within a well. Some say that PDBs provide more reliable results than extracting a sample by traditional methods.) in monitoring wells. (November)

Site 104 – Bldg. 162 (PICA 102): Conduct soil excavation

in two areas. Site restoration of soil excavation areas. (September)

Mid-Valley Area (1000 Enclosure, 400 Enclosure) (PICA 204): Sampling volatile organic compounds via PDBs. (September)



Area E (Bldgs. 95 and 70): Collect groundwater levels and install PDBs in monitoring wells. (November)



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PICATINNY ARSENAL IS ON
THE WEB

<http://www.pica.army.mil>

PICATINNY ARSENAL ENVIRONMENTAL RESTORATION ADVISORY BOARD

Community Representatives

- Mr. Wesley Ackerson, Dec. – Jefferson Twp.
- Mr. Louis Correale – Rockaway Twp.,
Rockaway Township Health Department
- Mr. Don Costanza – Town of Dover ,
Dover Health Department
- Mr. Robert Crothers – Twp. of Denville
- Mr. David Forti, PE, CHMM – Community
- Mr. Michael Glaab – Community,
RAB Co-Chair: Community
- Mr. Mark Hiler – Community, Rockaway
Twp. Environmental Commission
- Ms. Courtenay Huff – Community
- Dr. Peter Lederman, PE, DEE – NJIT
- Mr. Pat Matarazzo, Community, Rockway
Twp. Environmental Commission
- Mr. Paul McGinley – Borough of Wharton
- Mr. Cliff Morris— Community, Tilcon NY,
Inc.
- Ms. Virginia Michelin – County of Morris;
County of Morris Planning, Development
and Technology
- Dr. Raymond Westerdahl – Union, NFFE

Exofficio Members

- Mr. Ted Gabel – Project Manager for
Environmental Restoration, RAB Co-Chair:
DoD, US Army
- Mr. William Roach – U.S. Environmental
Protection Agency
- Mr. Gregory Zalaskus – New Jersey
Department of Environmental Protection

If you have any questions or require additional information on any of the subjects in this newsletter, please contact Barbara Dolce at Subsurface Solutions LLC. Subsurface Solutions LLC is the Technical Assistance for Public Participation (TAPP) contractor for the Picatinny Arsenal Environmental Restoration Advisory Board (PAERAB).

In accordance with federal regulations PAERAB meetings are open to the public and attendance by the community is encouraged. The date and time of an upcoming PAERAB meeting are advertised in local newspapers. For further information please contact Michael Glaab (PAERAB Community Co-Chair) at 973-663-9605 (michaelglaab@worldnet.att.net) or the Environmental Affairs office at Picatinny Arsenal (Ted Gabel, PAERAB Army Co-Chair at 973-724-6748).

The TAPP - Technical Assistance for Public Participation program is a DOD program that provides a mechanism for community members of Restoration Advisory Boards and Technical Review Committees to obtain technical assistance. Its purpose is to provide citizen and/or community groups with professionals to assist them in their review of environmental issues at military installations. For example, a TAPP process may involve helping the public understand environmental remediation alternatives by providing an unbiased technical analysis and recommendation.

The newsletter is intended to provide an update on newly drafted documents, field activities at Picatinny Arsenal, upcoming events related to environmental issues at the site, and discussions at technical meetings. In addition, notice of new or revised Federal or State regulations may also be included.

The PAERAB also maintains a website at <http://www.pacerab.us>.

HOT OFF THE PRESS....

- Interim Remedial Action Report (IRAR) –
Area D Groundwater, Draft Final, August
2008
- Sampling and Analysis Plan for Marshy
Area across Green Pond Brook from
DRMO Yard with wetland-permit
equivalent, Final, August 4, 2008 (no
enclosure to TAPP consultant)
- Pre-Design Technical Memorandum –
Group 1 Sites (PICA 079), Draft Final,
October 2008
- Remedial Action Report PICA 020,
Group of Sites, Draft Final, November 18,
2008
- Remedial Action Report Sites 61 and 104
(PICA 102), Draft Final, November 2008
- Site 180 and Former Skeet Range Lead
Investigation Data Report Picatinny
Arsenal, New Jersey, Final, December 1,
2008



Documents can be reviewed by the public at the Rockaway Township Library and Morris County Library. Both sites maintain a repository of Proposed Plans and Records of Decision. Other documents and final reports are in the Administrative Record which is maintained in Building 319 at Picatinny Arsenal. Call ahead to schedule to review the record.