

# ENVIRONMENTAL HAPPENINGS AT PICATINNY ARSENAL

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## ANOMALOUS RESULTS AT AREA D

In the Winter 2009 newsletter we reported that volatile organic compounds (VOC) had been detected in Green Pond Brook (GPB) in the vicinity of the permeable reactive barrier (PRB) that is a component of the remedy for Area D groundwater contamination migrating to that brook. Relatively high VOC concentrations were detected in one of the wells downgradient of the PRB coincident with the detection of VOCs exceeding surface-water quality criteria in the brook near the PRB. In the August 2008 sampling event trichloroethene (TCE) was detected at a concentration of 1,550 micrograms per liter (ug/L) in Well D-PRB-06. In the May 2009 "2008 Annual Monitoring Report – Area D Groundwater" Arcadis characterized this detection as "anomalous" and reported that a TCE concentration of 20.8 ug/L was detected in the November 2008 sample from the same well. Specifically, Mr. Llewellyn of Arcadis explained that there was one anomalous round of data in August: an elevated concentration of 1550 ppb of TCE was detected in a downgradient well and that TCE was also detected in an upgradient well at an order of magnitude less. No explanation, such as a laboratory error or cross-contamination from sampling, has as of yet been provided for the anomaly. It is unclear whether laboratory data was validated to determine whether that may have been a source of the "anomaly." Although, Mr. Llewellyn did not cite a certain explanation

for the anomalous sampling results at the March RAB meeting he did describe and discuss the situation. He responded to several inquiries from RAB members with seeming candor and he then noted that TCE had not been detected in these wells previously. In the same sampling event as the "anomalous" detection, vinyl chloride (a breakdown product of TCE under certain conditions) was also detected at a concentration of 19.2 ug/L in a downgradient surface-water sample (D-SW-4) – several orders of magnitude over the surface water criterion of 0.083 ug/L for vinyl chloride. But vinyl chloride had not been detected at that location in the November 2008 sampling event. Mr. Llewellyn stated during the RAB meeting that there was no evidence of vinyl chloride having migrated through the PRB into the brook. Accordingly Mr. Llewellyn advised that expanded sampling

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## IN THE FIELD.....

Recent field activities for December 2008 through April 2009 included the following:

**Site 20/24, Area B (PICA 205):** Molasses injection. (December 2008, February 2009) Groundwater sampling. (January, March)

Groundwater sampling; installation and sampling of passive diffusion bags\* [PDBs]. Well inspections. (March)

**Area D (PICA 076):** Sampling of PDBs and low-flow groundwater sampling. (March) Measurement of water levels; well inspections. (March)

Groundwater sampling of

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### Editorial Reviewers

David Forti, Michael Glaab,  
Courtenay Huff

### Technical Advisors

Ted Gabel, William Roach,  
Gregory Zalaskus

## POINTS OF INTEREST:

- The last RAB meeting was held on Thursday, March 26<sup>th</sup> at the Hilton Garden Inn in Rockaway, New Jersey. Minutes of the meeting were distributed to all RAB members for comment.

- The next RAB meeting will be held on Thursday, June 25 at the Hilton Garden Inn in Rockaway, New Jersey. The meeting will begin at 6:30pm and its expected to continue to approximately 8:30 pm. Members of the public are invited to attend.

- The last technical team meeting was held on April 8, 2009 with representatives of Picatinny, USEPA, the NJDEP, US Army Corps of Engineers, and USAEC.

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## SOIL MANAGEMENT POLICY AT PICATINNY ARSENAL

In correspondence dated March 5, 2009, the USEPA expressed “concerns about what amounts to a ‘general permit’ to move contaminated soil from a CERCLA site to other non-CERCLA areas of Picatinny without notification to EPA and NJDEP. Currently, the LUC language in RODs and RDs generally stipulates notification to regulators when construction activities take place and soil is disturbed or removed from the site. If the Army is contemplating revising this policy, it must document this in the RODs and RDs for the site.” Further discussion of the Picatinny Soil Management Policy took place at the April 8, 2009 technical meeting attended by representatives of Arcadis, Picatinny, USEPA, NJDEP, the US Army Corps of Engineers, and the US Army Environmental Command. According to the meeting minutes Mr. Ted Gabel, who is the Arsenal’s Environmental Restoration Project Manager and also the PAERAB’s DoD Co-chmn., declared that Picatinny’s position

would be one of

“...using CERCLA Risk as the guiding principle so that soil from a site with acceptable risk under an industrial scenario can be moved to another site where landuse (industrial) would be the same and



hence the risk from the contamination would be acceptable. This would be based on a policy that would not consider NJDEP numbers if risk is determined as acceptable.” According to the meeting minutes the NJDEP “took exception to this suggested

policy change, because it ignores the state numbers and is based on CERCLA risk, which NJDEP does not agree with.” Furthermore, the NJDEP was apparently concerned about the movement of contaminated soil to clean sites and thus the potential creation of new contamination sites. This issue has occasionally surfaced throughout the site cleanup at Picatinny with the Army seemingly at odds with either or both agencies. For example, because soil had apparently been mistakenly removed offsite by a contractor this has inspired concern about the efficacy of the base’s soil management policies and the ability of the Arsenal to control unauthorized and inappropriate movement of soil — both around the base and offsite. According to the meeting minutes, a representative of USAEC “...clarified that the Army would not be moving impacted soils to an unimpacted area. The intent of the soil management policy is to allow the Army to move impacted soil among similarly impacted sites to aid in future construction projects.” The Army currently states that the proposed policy change was not accepted at the April technical meeting and that its soil management policy at the Arsenal has not changed.

However, the group in attendance at the April meeting apparently was in agreement on the use of composite sampling of soil piles and on obtaining the approval of both agencies for soil reuse in future projects. Immediately at stake are the PHS&T project and the Gun Cotton Line proposal. PHS&T soils are to be taken to the Scat Gun Site along with soil from the Gun Cotton Line. The USEPA apparently expressed concern about the relocation of soil from the PHS&T project to the Scat Gun Site “because soil from a CERCLA site is moved to an active range (currently out of EPA’s control) without a ROD.” According to the Army the USEPA did agree to the PHS&T soil reuse in an e-mail dated April 9 of 2009.

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## MNA TIME FRAME FOR MID-VALLEY

The final Mid-Valley Groundwater Feasibility Study (FS) was submitted by Picatinny Arsenal to regulators in May 2009. Groundwater in the Mid-Valley area is contaminated primarily with trichloroethene (TCE) and RDX. The area affected by TCE comprises three different plumes with concentrations of TCE up to about 100 micrograms per liter (ug/L). The RDX plume is more localized and has concentrations of up to about 80 ug/L. Both the TCE and RDX plumes affect surface water. Monitored natural attenuation (MNA) was selected as the remedial alternative (RA) for the

RDX plumes. In situ treatment using in-well aeration with MNA polishing was selected as the alternative for the TCE plumes. The extremely long period of time that is expected to be required for MNA alone to achieve cleanup levels in the southern TCE plume is part of the reason for selection of an active remedy.

In order to evaluate potential remedial alternatives estimates of the timeframes to achieve a specific cleanup level (1 ug/L for TCE and 2 ug/L for RDX based on the Federal Health Advisory Level) were calculated as part of the FS process.

Based on a series of assumptions, as detailed in the FS, the estimates of time to achieve cleanup solely through MNA are as follows:

Northern TCE plume	– approx. 20 years
Southern TCE plume	– approx. 85 years
RDX plume	– approx. 35 years

Utilizing the State of New Jersey non-promulgated guidance number of 0.5 ug/L for RDX results in an even longer MNA duration.

## DISCHARGE OF SAMPLING WATER - CREATE NO NEW CONTAMINATION

Picatinny submitted a Facility-wide Well Sampling Plan to the USEPA for review. Comments dated March 12, 2009 from the USEPA hydrogeologist were as follows:

*"It is not Region 2's policy to allow contaminated groundwater from monitoring wells to be discharged to the ground surface. The water in the wells proposed for abandonment should be tested for all contaminants of concern and water with levels of contaminants of concern that are above applicable regulatory standards should be appropriately disposed of. If the monitoring well proposed for abandonment has a recent history showing contaminants of concern below applicable regulatory levels, these data may be applied in lieu of testing."*

Otherwise the work plan was found to be adequate.

Picatinny replied on March 16, 2009 with the following:

*"We have been discharging gw [groundwater] onto the site per approved FSP [Field Sampling Plan] when sampling for years. We ensure it does not get into a sw [surface water] body including wetland and if not possible then we containerize [sic - containerize] the*

*water."*

The USEPA countered with the following:

*'Arcadis's FSP states: "Pre-sample water will be containerized in a portable polyethylene tank and transported to a central storage area, secure temporary area, or treated at the well head if analytical results for the subsurface soil samples indicate potential contamination. If there is no indication of potential contamination, the purge water will be disposed of downgradient of the monitoring well on a grassy surface if it will not present a nuisance to day-to-day arsenal activities. The containerized purge water will be sampled and disposed of after consultation with PTP EAO." (Section 3.6.4, e) This, I think, is fairly close to what our hydrologist was asking for. That is, due diligence before discharging groundwater onto the surface.'*

There was no further reply from Picatinny but the topic did come up again at the April 8, 2009 technical meeting. It was reported that Mr. Joe Marchesani of the NJDEP summarized the NJDEP's policy which is focused on not contaminating otherwise clean soil or aquifer materials. Based on the correspondence it appears that water may not have been handled in accordance with the FSP - but it is unclear for how long and at

which sites. To determine which sites have been affected would require a review of field sampling logs for past groundwater sampling events.

Mr. Ted Gabel provides the following comments:

*'a. Throughout the years our contractors have been observed by regulatory inspectors while sampling, while conducting environmental tests and while participating in development construction at the Arsenal. The activities of our contractors were observed by numerous inspectors of the USEPA and — especially — by those of the NJDEP. None of these inspectors ever insinuated*

*that proper procedures were not being followed or that the methods used would "create new contamination."*

*b. No party — whether associated with a regulatory agency or with the Army or with a contractor — has proposed that a review of sampling logs would be necessary to determine which sites have been affected. Presumably this is because our methods have heretofore always been considered environmentally appropriate.'*



## SAMPLE COUNT RISING AT PICATINNY ARSENAL

According to the Arcadis database which includes results of environmental sampling at Picatinny, the total number of all environmental samples related to the cleanup is over

12,000. The breakdown is as follows:

- 6,017 — Soil samples
- 4,598 — Groundwater samples

- 988 — Sediment samples
- 824 — Surface-water samples

Picatinny Arsenal was placed on the National Priorities List (NPL) in 1990.

**ANOMALOUS RESULTS AT AREA D** (continued from p. 1)

had been conducted in November to collect samples from the same areas. Analysis of the November sampling results disclosed significantly lower levels more consistent with previous data. Arcadis asserts that it has recorded the daily and monthly mean GPB discharge data from the nearest USGS gauging station for each surface water sampling event since September of 2007. In fact, as a response to previous comments, Arcadis maintains that it began including a summary table of the discharge data in the 3rd. quarter of 2008 report (Table 4) and that it has continued to include updated tables in subsequent quarterly and annual reports.

Arcadis states that the most recent and comprehensive table was provided as Table 4 in the first quarter 2009 report apparently issued in May of 2009. Arcadis explains that Table 4 of this report provides GPB discharge water data for all seven surface water sampling events at Area D. The Army/Arcadis provides the following reassurance : “The Permeable Reactive Barrier is not the sole remedy for Area D ... but part of the remedy for Area D Groundwater. The remedy also includes monitored natural attention, land use controls. Sampling is also required with certain trigger levels **laid** out in the remedial design as approved

by the regulators. The pump and treat also remains on standby”. Michael Glaab the PAERAB’s Community Co-chmn. offers the following comments: “The RAB has generally expressed approval of the concept of utilizing a permeable reactive barrier to shield GPB from nearby water soluble contaminants. But, many RAB members, including myself, have also repeatedly expressed concern that the pump and treat facility not be dismantled prematurely. Permanent dismantlement should only occur once it has been sufficiently demonstrated over an appropriate length of time that the PRB is

functioning satisfactorily and that the pump and treat facility is no longer required. This appears to be a particular concern of several community RAB members such as Mr. Robert Crothers the official representative for Denville who is very knowledgeable about past activities at the Arsenal. The board has been reassured that the pump and treat facility is essentially “mothballed” and that it can be reactivated for use if necessary. Presumably it can be utilized in the interim for other short term purposes such as materials storage’.

**SOIL MANAGEMENT POLICY AT PICATINNY ARSENAL** ( CONTINUED FROM PAGE 2 )

This e-mail was submitted to Mr. Ted Gabel by Mr. Bill Roach a Project Manager of the USEPA who is also its official representative to the PAERAB: “*Ted, EPA concurs on the Soil Reuse Plan for the proposed PHS&T Center. Soils being removed from the*

*Guncotton Line (CERCLA Site 16 will be used beneath an asphalt cap associated with the PHS&T Center. The capping of Guncotton Line soils at the site will be documented in the ROD for Site 16. Other soils to be removed from the site are not associated with the Gun Cotton Line*

*or other CERCLA site will be used for fill at the SCAT gun facility. Bill.”*

It was further agreed at the meeting that the Gun Cotton Line Record of Decision (ROD) must document the status of the reused soils.

Michael Glaab comments that “...the RAB generally tends to prefer that contaminants either be treated onsite or expeditiously removed from the Arsenal to a suitable location for safe storage”.

**POSSIBLE SOURCES of ANOMALOUS RESULTS at AREA D**

As discussed in the “ANOMALOUS RESULTS AT AREA D” article on page 1, the Winter 2009 newsletter had reported that volatile organic compounds (VOC) had been detected in Green Pond Brook in the vicinity of the permeable reactive barrier (PRB) that is the remedy for Area D groundwater contamination migrating to the brook. Relatively high VOC concentrations were detected in one of the wells downgradient of the PRB coincident with the detection of VOCs exceeding

surface-water quality criteria in the brook near the PRB. In the August 2008 sampling event trichloroethene (TCE) was detected at a concentration of 1,550 micrograms per liter (ug/L) in Well D-PRB-06. In the May 2009 “2008 Annual Monitoring Report – Area D Groundwater” Arcadis characterized this detection as “anomalous” and reported that a TCE concentration of 20.8 ug/L was detected in the November 2008 sample from the same well. No explanation has yet been

provided for the anomaly. Possible sources of the “anomaly” might be cross-contamination from sampling, a clerical mistake and/or a laboratory error. It is as of yet unclear whether laboratory data was properly validated. Flow conditions at the time of either the August 2008 or November 2008 sampling event are perhaps factors contributing to the anomalous results. Summer months are typically dry with flow in receiving streams

(those gaining groundwater) representing close to baseflow conditions (flow contributed from groundwater). Fall and winter months typically have greater precipitation and flow within streams can consist of baseflow and also surface water runoff. During these conditions baseflow may be diluted by surface-water runoff and thereby contaminants entering a stream via groundwater contribution would be similarly diluted.

## IN WELL AERATION FOR MID-VALLEY PILOT STUDY

The remedy chosen by the Army in the May 2009 Feasibility Study for remediation of the TCE groundwater plumes in the Mid-Valley area involves groundwater recirculation and in well aeration to first strip the TCE from groundwater and to then reinject that treated groundwater back into the aquifer. The remedy addresses the TCE plume center of mass in both the unconsolidated and

bedrock aquifer units of one of the plumes. The remaining TCE plume areas are to be monitored as the contaminants degrade over time (monitored natural attenuation) – with 42 years required for AA1 and a maximum of 20 years for AA2. The longer is the duration of treatment the larger is the probability that contaminants will migrate. A total of seven recirculation wells are planned. Arcadis is currently working on

the pilot study for the in-well aeration program. Army/Arcadis state that Arcadis is reconsidering various alternatives. This was apparently a topic of a June technical meeting presumably attended by representatives of the US Army, Arcadis and various regulatory agencies. Army/Arcadis has explained that these alternatives are to be evaluated on the basis of the geological information that is



expected to be acquired as a result of the recent installation of two exploratory wells..

## GREENTECHNOLOGIES POSSIBLE

The USEPA currently has an initiative underway to utilize “green remediation.” Green remediation has several core elements:

- Energy efficiency
- Renewable energy
- Air emission
- Water

- Land
- Ecosystem
- Materials
- Waste
- Stewardship

Mr. Ted Gabel reports that solar panels are under consideration for application at Site 20/24.



## TRAINING OPPORTUNITIES

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

- “Enhanced Attenuation of Chlorinated Organics: A Site Management Tool,” June 4, 2009 from 11 am to 1:15 pm; August 13, 2009 from 11 am to 1:15 pm; November 5, 2009 from 11 am to 1:15 pm.
- “Protocol for Use of Five Passive Samplers,” June 9, 2009 from 2 to 4:15 pm;
- “In Situ Bioremediation of Chlorinated Ethene-DNAPL

Source Zones,” June 11, 2009 from 11 am to 1:15 pm; September 10, 2009 from 11 am to 1:15 pm; December 8, 2009 from 2 pm to 4:15 pm

- “An Improved Understanding of LNAPL Behavior in the Subsurface (LNAPL Part 1),” June 16, 2009 from 2 to 4:15 pm; September 17, 2009 from 11 am to 1:15 pm; December 3, 2009 from 11 am to 1:15 pm
- “LNAPL Characterization and Recoverability (LNAPL Part 2),” June 23, 2009 from 2 to 4:15 pm; September 22, 2009 from 2 to 4:15 pm;

December 10, 2009 from 11 am to 1:15 pm

- “Quality Considerations for Munitions Response,” July 14, 2009 from 2 to 4:15 pm; November 3, 2009 from 2 to 4:15 pm
- “Survey of Munitions Response Technologies,” July 16, 2009 from 11 am to 1 pm; November 19, 2009 from 11 am to 1 pm
- “Performance-based Environmental Management,” October 15, 2009 from 11 am to 1:15 pm

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## CHANGING FACES AT THE RAB

Mr. Louis Correale of the Rockaway Township Health Department recently announced that he would be retiring from his position with Rockaway Twp. as well as his long-standing position on the PAERAB. The RAB profusely thanks Mr. Correale for his **many years of service** to the community as a member of the RAB. Michael Glaab, the PAERAB's Community Co-chmn. notes that "...Lou Correale contributed immeasurably to the deliberations of the RAB. He could be counted on to contribute to our analytical discussions with insightful and thought provoking questions. His suggestions were constructive and practical. Lou's expertise as a health professional familiar with both health and environmental issues benefited the RAB. He will be missed".

In lieu of the able service of Mr. Correale as Rockway's official representative, Ms. Diane Trocchio of the Rockaway Township Health Dept. has been submitted to the PAERAB for consideration as



Rockaway's designated official representative. Accordingly, Ms. Trocchio attended the previous public meeting of the PAERAB wherein she was introduced to the board and contributed to the evening's deliberations. At that time she expressed her desire to serve on the board and to assume the seat vacated by Mr. Correale. Individuals designated to serve on the board are required by the

bylaws to attend at least two public meetings prior to calling a vote to approve membership. Membership votes are conducted in accord with Robert's Rules of order complete with a motion to nominate followed by a second. Ms. Trocchio is expected to attend the upcoming June 25 meeting at which time her membership approval vote is expected to occur. Michael Glaab comments "... Ms. Trocchio's participation - and in particular - her specific expertise and valuable experience on Rockaway's Health Dept. are more than welcome and should be of benefit to the environmental remediation effort at Picatinny Arsenal. We also welcome Ms. Lisa Joyce who was formally approved and voted into the PAERAB during its previous meeting to serve as a Community at Large member. Ms. Joyce was recommended

by Ted Gabel our other RAB Co-chmn. and her resume does cite extensive experience as an environmental engineer with such issues as waterfront development, "Brownfields" redevelopment, groundwater and water quality, risk assessment and CERCLA compliance. Individuals possessing environmental expertise who are also capable of representing the community while objectively assisting the Arsenal's remediation effort are especially welcome". Each town and township adjacent to the Arsenal appoints someone to officially represent it on the board. To assure full community representation on the PAERAB the board's community members are empowered by the RAB's charter to vote in additional members to represent the community at large.

## 600 HILL INVESTIGATION PLODS ON

The latest work in the 600 area focused on investigation of RDX detections in surface water and groundwater at Site 11. A primary purpose was to determine the source of the RDX seemingly migrating to the pond ("Site 11 Pond") located at the head of the drainage in Site 11. The results presented in the latest report ("600 Area RDX Investigation Data Report") dated April 2009 were from a field investigation involving installation of a new bedrock well, water-level

measurements, collection of six shallow and deep soil samples from around the pond, collection of four sediment samples, and collection of three surface-water samples. Shaw Engineering concluded that groundwater was not the source of RDX to the Site 11 Pond and that surface water had not affected downgradient groundwater at the newly installed bedrock well. Although the results of this investigation did not disclose the source of RDX in a number of wells Shaw did conclude that the soil around the pond was probably not the source of RDX in surface water.

In addition, RDX was not detected in this round of sediment samples nor was it detected in previous pond and stream sediment samples. Therefore Shaw has ruled out sediment as a source of RDX in surface water. No further action was recommended in regard to this investigation for several reasons as follows: low RDX concentrations in groundwater and surface water, intermittent nature of RDX detections in groundwater and surface water, and extent of RDX contamination delineated

in groundwater and surface water. The Army/Arcadis has informed the RAB that the USEPA had recently provided its approval in an e-mail dated June 11 of 2009. Specifically, the Army/Arcadis cites the following statement in that e-mail: "The report's conclusion of no further action (NFA) is appropriate..." The Army/Arcadis further assert that the NJDEP approved the Feasibility Study for the 600 Hill Groundwater in an e-mail dated June 10 of 2009.

## TIME-CRITICAL REMOVAL ACTION AT DRMO YARD

A time-critical removal action (TCRA) action memorandum for the Former Defense Reutilization and Marketing Office (DRMO) Yard was signed by Lieutenant Colonel John P. Stack on May 5, 2009. The memorandum provides a brief synopsis of the plans for removing and capping selected munitions and explosives of concern/improved conventional munitions (MEC/ICM) objects at the site; work plans with details of the proposed action are expected to be forthcoming.

The action will focus on the detection and removal or detonation in-place of surface and near-surface MEC. MEC were discovered on three different dates: the first discovery was in 1993 during fence installation, then additional material was found to be protruding from the banks of Green Pond Brook during a site walk, and finally, the remainder was found during pre-construction soil sampling for the remedial action. The MEC is believed to either be debris from the 1926 explosion or it is waste from excavation spoils dumped at the site. The

source for the ICMs has not been uncovered; Picatinny staff placed an ad in the base newspaper requesting anyone with knowledge of the ICMs to come forward but no one has yet replied. A similar request is posted on the RAB's website. It is not known whether the ICMs are inert or safe. A demolition shot on some of the items revealed that at least one of the items was live. Due to the extreme safety hazards of dealing with ICMs removal of ICMs must be covered by an ICM Waiver that is granted by

the Department of the Army before any action can take place.

The TCRA action memorandum states the following: "Although the DRMO Yard has dual fencing, this fencing is old and in a poor state of repair and could easily be compromised by curious parties potentially exposing personnel to these hazardous items." Fortunately we are not aware of any injuries due to the presence of the MEC/ICM.

The action will be executed in two phases. Phase I will involve

hand removal and destruction of all surface and near surface ICMs. Phase II will involve the cutting of trees and shrubs and the placement of a 4-foot thick cap over the area. Picatinny requested that the area where the ICMs are located be redesignated as a separate Munitions Response Site (MRS). The TCRA is expected to cost \$1.7 million. Arcadis projects that the TCRA will be completed by September 2009.



Improved conventional munitions (ICMs) found near the surface at the former DRMO Yard.

### A STICKY MATTER IN AREA B

Although the last injection event at Area B occurred in February 2009 it was originally scheduled for March 16, 2009. To permit CNN to film the injection the February date was selected and injection activities were carefully coordinated. CNN is going to use the

footage for a story on green remediation technologies. Arcadis reported that CNN planned to feature the in-situ bioremediation technology that utilizes injection of molasses. The plan for the February 2009 event was to inject 10,000 gallons of molasses solution into injection

Line #1. The decision to inject into Line #1 was based on a review of total organic carbon (TOC). TOC concentrations were reported to be between 12 and 20 percent of the maximum historical TOC concentration. TOC

concentrations in Lines #2 and #3 were reportedly high enough that additional injection was deemed not warranted. The next injection event is scheduled for June 2009; no details on that event have as of yet been made available to the RAB.

## AREA C ROD NEARING COMPLETION

On May 12, 2009 Picatinny responded to both the USEPA's and the NJDEP's comments on the Record of Decision (ROD) for Area C. USEPA had a number of comments, some of them relating to fundamental issues concerning the ROD, whereas the NJDEP had only three comments. The overriding issue raised by the USEPA is that concerning the use of groundwater as a potable water source. Two comments cited below pertain to the matter.

### **USEPA General Comment #1:**

'Language exists in the ROD to the effect that a risk exceedance due to exposure to Area C groundwater is the single measure driving a remedial action at this site. EPA disagrees with this position and maintains that by virtue of the fact that Picatinny is located over a sole source aquifer (see Federal Facility Agreement, Section 5.12, under Findings) that bears the designation of at least a Class IIA current source of drinking water classification. According to the NCP, "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." Based on aquifer designation, the beneficial use of groundwater located under Picatinny is drinking water. Therefore, EPA requests that this policy be included in discussions regarding what measures drive groundwater cleanups at Picatinny'.

### **Picatinny Response:**

**"The issue raised in Comment #1 has been the subject of the Mid-Valley dispute between USEPA and the Army. Since the Area C Groundwater ROD was drafted, the dispute between the USEPA and Army regarding the Mid-Valley Groundwater Operable Unit has**

**progressed and both parties have agreed that both measures of risk and groundwater ARARs can be drivers for action for Picatinny groundwater operable units. Therefore, the Area C ROD will be modified to be consistent with the Mid-Valley FS. Specifically, the Area C ROD will state that groundwater ARARs are one of the drivers for remedial action at Area C".**

**USEPA Comment:** "The selection of this Remedial Alternative relies on the continuation of the reported trend of decreasing concentrations of these two COCs. Because a mechanism of natural attenuation for these two COCs has not been discussed, it would be prudent to have a more complete discussion of what approach would be used in the event that concentrations of these two COCs, above risk-based limits, reaches beyond the limits of the current CEA".

### **Picatinny Response:**

**"The Army is committed to correcting any deficiencies in the remedy should they arise. The mechanism for identifying potential deficiencies in the remedy is the 5-year review. This mechanism will be detailed in the Long Term Monitoring Plan for Area C Groundwater. Trigger levels for the re-evaluation of the effectiveness of the remedial alternative will be presented in the LTMP, which will be developed during the RD. The trigger levels will indicate if a more aggressive remedial alternative should be considered. In the event deficiencies in the remedy are identified, the need for action will be evaluated at that time. Without knowing the nature of a hypothetical deficiency in the remedy or potential**

**technological advances, the reaction to that deficiency cannot be effectively determined at this time".**

Other comments related to the time frame to attain cleanup levels and contingencies should the remedy fail. These comments are presented below.

**USEPA Comment:** "Has there been any effort to quantify the time it will take to reach site clean up levels in the Area C groundwater unit? If not, please explain why".

### **Picatinny Response:**

**"The time it will take to reach site clean up levels in the Area C groundwater operable unit has not been quantified. Because of the nature of the groundwater exceedances in Area C any estimated timeframe will have limited accuracy. However, in order to meet the remedial action objective of protection of human health, the remedy will be continued until contaminant levels are shown to allow unrestricted use of the groundwater, as noted in the Proposed Plan. Cessation of monitoring will be allowed only after the tenants of the exit strategy are met. The details of the exit strategy will be finalized in the RD phase".**

Many other comments were editorial in nature necessitating changes in wording or tables. Of these one noteworthy comment was the following statement that affirms the RAB's participation in the oversight of environmental remediation activities at the Arsenal.

**NJDEP Comment:** "Picatinny intends to give the PAERAB an opportunity to review well locations and parameters during the RD process. This is acceptable. "

## NEW PERSONNEL ON THE PICATINNY ARSENAL TEAM

- Mr. James B. Smith is the new Military Munitions Project Manager for Picatinny Arsenal. Mr. Smith has 30 years of experience as an explosive bombs disposal specialist. Mr. Smith can be reached at : [jb.smith@us.army.mil](mailto:jb.smith@us.army.mil).
- Mr. Frank Misurelli returned to Picatinny Arsenal on April 2, 2009 after having been reassigned in 2006. When he first left the Arsenal, Mr. Misurelli was placed in charge of the Army Public Relations office in New York City from July 2006 to January 2008 where he reported to the Army's Chief of Public Relations a two-star General. At this prestigious post he worked on national media events and was decorated by the Army Chief of Public Affairs with the Army's Meritorious Service Medal. Mr. Misurelli retired from the Army Reserve in October of 2008 as a Lieutenant Colonel with over 30 years of service. However, in November of 2008 he was recalled to active duty as a retiree recall and assigned to be the Deputy Public Affairs officer at the distinguished US Army War College in Carlisle, PA from December 2008 to April 2009. On December 17th of 2008, a week after the shoe tossing incident in Iraq, Mr. Misurelli was assigned to an outside Washington DC press event for the then President George W. Bush wherein he worked with the national media to assure that, as Frank himself relates, "...no one tossed shoes at him and the event was flawless." After retiring from active duty on April 1, 2009 he returned to Picatinny Arsenal. Currently, Frank expects to serve next as an Assistant Professor of Military Studies instructing Army ROTC students at Clarion University of Pennsylvania.
- Michael Glaab, the RAB Community Co-chmn. comments that "...Frank is an extremely capable individual. He is clearly a steadfast and astute public relations advocate for the Army. I have observed him to be responsive, forthright and well informed. In addition to his Army service he has raised a family, become a qualified pilot on the verge of earning a commercial rating and he is also knowledgeable about military history and current military studies in general". Mr. Misurelli can be reached at: [frank.misurelli@us.army.mil](mailto:frank.misurelli@us.army.mil).
- Mr. Francis Coulters has replaced Mr. Paul Schaffer from the Army Environmental Command. Mr. Coulters can be reached at [francis.coulters@us.army.mil](mailto:francis.coulters@us.army.mil).

## NEW SECRETARY OF THE ARMY BY MICHAEL GLAAB

On June 2, 2009 Congressman John McHugh of New York state was selected by President Obama to serve as the next secretary of the Army. If the

selection is confirmed by congress then Rep. McHugh will replace the current Army Secretary, Mr. Pete Geren. Rep. McHugh is reported to be a senior

member of the House Armed Services Committee who has also served as co-chair of the House of Representatives Army Caucus.

## IN THE FIELD (CONTINUED FROM PAGE 1)

withdrawal wells. (April)

### Area E (PICA 077):

Measurement of water levels; well inspections; installation and sampling 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.) (March)

### Mid-Valley (PICA 204):

Oversight of monitoring well completion and well development. Surface sampling. Surveying of new monitoring wells. (April)



## TRAINING (CONTINUED FROM P. 5)

The courses are free. Register on-line at [www.itrcweb.org/ibt.asp](http://www.itrcweb.org/ibt.asp).

- "CrEAM: Critical Ecosystem Assessment Model," June 30, 2009 from 11:45 am to 1:45pm

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

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

## RDX AND TNT STANDARD IN PLAY AT PICA 079

The NJDEP commented (October 2008) on the Draft Final Pre-Design Technical Memorandum for Group 1 Sites (PICA 079). Picatinny Arsenal provided their response to the NJDEP in an e-mail dated February 10, 2009. Comments and responses are provided below.

### NJDEP Comments:

“The preferred remedy for the TNT/RDX plume(s) is Monitored Natural Attenuation. The remedy is unacceptable, and violates N.J.A.C. 7:26E-6.1(b)3. The remedial timeframe of 11-13 years is based on the attenuation of contaminants to the Federal Drinking Water Health Advisories for TNT of 2.0 ug/l and RDX of 2.0ug/l. The New Jersey Ground Water Quality Criteria must be used.

The preferred remedy for RDX is RDX-2 (Monitored Natural Attenuation), and is unacceptable. The criteria used to evaluate the contamination and remedy is unacceptable.

Page 10 describes the comparison criteria for RDX and TNT in groundwater as 2.0 ug/l. The remedial action fails to comply with state laws, regulations and requirements.

The LOC for RDX in groundwater should be set to 0.5ug/l. This state criterion was set in place on September 11, 2006. The groundwater LOC for 2,4,6-TNT should be 1.0 ug/l. these are the New Jersey State Groundwater Criteria.”

### Army Response:

“The U.S. Army and USEPA have agreed on a LOC of 2.0 ug/L for RDX and TNT per the Federal Drinking Water Advisory Level (HAL). This criterion is being used for RDX and TNT consistently across numerous USEPA Regions. However, per recent discussion pertaining to the RDX standard in

*the Mid Valley Feasibility Study, the U.S. Army has developed text which acknowledges the States guidance number, and presents a remedial time frame to meet the NJDEP guidance number. This information will be added to this Pre-Design Technical Memorandum, as well as other subsequent CERCLA documents, for informational purposes. Below is the text that will be added to the document.*

*‘In addition, regarding the TNT and RDX plumes, while the Health Advisory Level (HAL) of 2.0 ug/L is the selected criteria for RDX and TNT at Picatinny, the Army recognizes that the State of New Jersey has a non-promulgated guidance number of 0.3 ug/L for RDX (with a practical quantitation limit of 0.5 ug/L) and a non-promulgated guidance number of 1.0 ug/L for TNT. Anticipated remedy durations are calculated to achievement of the HAL, which will be the performance criteria of the CERCLA action. However, MNA durations to the NJDEP guidance numbers are also provided within this document for informational purposes’”*

The subject of cleanup criteria for RDX and TNT was apparently discussed again at the April 8, 2009 technical meeting and according to the meeting minutes they “...were discussed extensively.” There was speculation that a final NJDEP decision would depend upon a decision

being issued by a district attorney general of the state attorney generals office.

The NJDEP is concerned with the proposed use of the Federal Drinking Water Advisory Levels (HALs) instead of NJDEP’s interim guidance numbers for the contaminants. Despite the apparent lack of agreement with the NJDEP it has been reported that Arcadis is moving forward with finalizing the Pre-Design Technical Memorandum.

Michael Glaab comments that “...the PAERAB is acutely aware of the need to assure that these water soluble contaminants are treated promptly enough to avoid offsite migration. The duration of a remedial action for a particular contaminant at a site should be the amount of time required to remediate that site to an acceptable standard. But a significant disadvantage to relying on monitored natural attenuation (MNA) to remediate a site is the possibility that the site’s contaminants will migrate prior to being degraded. Arsenal groundwater does tend to slowly migrate beyond its borders to the south by southwest. The Rockaway River is nearby and Picatinny lies above large aquifers. Therefore time is a critical factor. Cleanup standards have to be sufficiently restrictive to be meaningful - and - the duration of MNA must be short enough to guarantee that the contaminants will decompose before they migrate elsewhere”.

Provided below for comparison purposes are the monitored natural attenuation (MNA) timeframe estimates to meet the NJDEP Guidance Criteria:

	<b>Site 40</b>	<b>Site 157</b>
<b>TNT (HAL - 2.0ug/L)</b>	11 years	8 years
<b>TNT (NJDEP Guidance - 1.0ug/L)</b>	13 years	10 years
<b>RDX (HAL of 2.0ug/L)</b>	9 years	8 years
<b>RDX (NJDEP Guidance - 0.5 ug/L)</b>	12 years	13 years

## PENDING CHANGES TO USEPA POLICY ... BY MICHAEL GLAAB

Recently [CQ Weekly](#) published an informative and pertinent article about pending environmental remediation policy changes that may significantly impact the environmental cleanup effort at Picatinny Arsenal. Entitled [EPA Takes Aim at Pentagon Pollution](#) this article was prepared by Ms. Rebecca Adams and it appeared in the March 23, 2009 issue of [CQ Weekly](#) whose website is at [www.cq.com](http://www.cq.com). This article refers to the recent assumption by Ms. Lisa Jackson of the administration of the USEPA and it discusses the administrative policy changes which she is expected to implement.

For example, since a significant portion of Picatinny Arsenal is contaminated with TCE ( trichloroethene/trichloroethylene) the following expectations cited in the article are most pertinent to the Arsenal which is sited above three water aquifers and occupies approximately 6,491 acres of Morris County, New Jersey:

- The USEPA may revise standards for trichloroethene:

“...the EPA may update the standards for Pentagon-generated substances it counts as hazardous pollutants. Agency officials are considering setting tougher standards under the Safe Drinking Water Act for the types of chemicals that military bases often produce. Among the substances under consideration are trichloroethylene...”

Perhaps mindful of such organizations as the PAERAB the article referred to the participation of activist groups in the cleanup process and the efficacy of current legal instruments used to implement environmental remediation policy:

- According to the article Mr. John Reeder, an official of the USEPA, “... has stepped up his inquiries to state officials and interest groups about how the agency can strengthen various cleanup laws pertaining to military installations”. The following direct quote was attributed by the article to Mr. Reeder: “The dynamic has changed now...”
- Referring to the USEPA, the article stated that the “...agency may ask Congress to update federal laws to make it clear that the EPA has the final authority to set cleanup requirements...”
- Apparently referring to events in 2008 when the Department of Justice acted to resolve a dispute between the Department of Defense (DoD) and the USEPA the article reaffirmed the legal jurisdiction and purview of the USEPA with the following statement:

“...the Bush administration’s Justice Department confirmed in December that the law requires the Pentagon to comply with EPA cleanup orders.”

The article continued with discussion of the military’s prioritization of the cleanup of its own contaminated facilities:

- Although the “...Defense officials have proposed military exemptions from more than half a dozen environmental laws affecting air quality, water quality, hazardous waste...” recent events appear to indicate that environmental cleanup will be accorded a higher priority. For example:

“In February, Wayne Army the deputy undersecretary of Defense for installations and environment, told the EPA that the Pentagon would start negotiating the superfund cleanup controls that it contested last year. Earlier this month, the Navy endorsed two previously disputed agreements...”

Especially relevant to Picatinny Arsenal, the article elaborated with the following thought provoking statement concerning those facilities, such as the Arsenal, which contain firing ranges and munitions sites:

- Mr. “...John Reeder, an EPA official who oversees cleanups at federal facility sites, says he now plans to develop new strategies for cleaning up munitions sites, such as abandoned firing ranges where explosives were used ... ”.

Will the Obama administration allocate additional funds for cleanup? The financial cost of a potential remedial action alternative is deemed by the Army to be a crucial determinative factor when comparing and assessing different possible remedial action alternatives for any particular site. Therefore, the amount of funding available for environmental remediation and the anticipated cost of cleanup are vital factors in determining which remedial action alternative will finally be selected to cleanup a site.

Discouraging on the overall cost of cleanup the article explained that approximately 10,000 sites under the Pentagon’s supervision still require remediation and that more than 3,400 of these are superfund sites. Citing a total of 31,487 DoD cleanup sites the article specified that of these 9,852 have not yet achieved their remediation goals. The article elaborated with the statement that during the Bush administration the “...Pentagon spent an average of about \$2 billion per year, or less than 0.5 percent of its annual budget, on environmental restoration”.



## Subsurface Solutions

LLC

P.O. Box 568  
Sparta, New Jersey 07871-0568

Phone: 973.729.8814  
Fax: 973.729.0559  
Email: [subsurfacesolns@earthlink.net](mailto:subsurfacesolns@earthlink.net)

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.
- Ms. Dianne Trocchio – Rockaway Twp. Designate, Rockaway Township Health Department
- Mr. Don Costanza – Town of Dover , Dover Health Department
- Mr. Robert Crothers – Twp. of Denville
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- Mr. Michael Glaab – Community, RAB Co-Chair: Community
- Mr. Mark Hiler – Community, Rockaway Twp. Environmental Commission
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- Mr. William Roach PE, Remedial Project Manager — U.S. Environmental Protection Agency
- Mr. Gregory Zalaskus, Case Manager — 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](mailto: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.paerab.us>.

### HOT OFF THE PRESS....

- 600 Area RDX Investigation Data Report, Draft, April 2009
- Action Memorandum – Munitions and Explosives of Concern Time Critical Removal Action for Former Defense Reutilization and Marketing Office (DRMO) and Improved Conventional Munitions (ICM) Site, Final, May 2009 (signed by LTC John P. Stack – May 5, 2009)



*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.*