

# ENVIRONMENTAL HAPPENINGS AT PICATINNY ARSENAL

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## WATER HAZARD AT THE GOLF COURSE

The permeable reactive barrier (PRB) was successfully installed by ARCADIS and their contractor in April 2007 just before a Nor'easter hit New Jersey and unleashed record rainfall on the area. After trenching and wall construction had been completed the Nor'easter turned the construction area into a soggy mess with many areas of the golf course completely submerged. Prior to the storm hitting, the construction crews had already experienced water difficulties. The unexpected volume of groundwater made construction almost impossible without far more intensive dewatering. Pre-construction plans had called for the installation of dozens of well points to be used for dewatering. The network that was initially installed proved to be inadequate for dewatering the sand units in the area – the trenching could not proceed due to “running sands” (saturated sand) that would fill in the trench thus not allowing the trench to stay open during construction. ARCADIS ultimately installed more and deeper wells with a larger diameter to withdraw excess water. To accommodate the groundwater

anticipated to be onsite it was originally planned that water would be pumped out during the dewatering phase to a series of large frac tanks located nearby to the construction site. However, the inclusion of additional wells increased the total flow rate to 1,000 gallons per minute. Therefore the frac tanks could not be used to contain the enormous volume of water. With the cooperation of NJDEP officials, including Mr. Greg Zalaskus, ARCADIS received permission in short order to treat the water and to then discharge it almost half a mile away into a swampy area of the Arsenal. Precautions were taken to avoid contaminating the swampy area. The water was treated using granular activated carbon vessels set up in series. Both influent and effluent water were sampled and analyzed frequently. Volatile organic compounds related to the contaminants present in the local groundwater were not detected in the effluent. Although, minor contaminants probably related to the piping system were detected periodically in

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## IN THE FIELD.....

Recent field activities for March, April, and May 2007 included the following:

**600 Area:** Collection of groundwater samples from monitoring wells. (March)  
Modification of the potable well at the AWDF building

in preparation for the upcoming pumping test. (April)

**ETSCP Groundwater Investigation:** Installation of an in situ bioremediation treatment system for groundwater near Building 823 as part of the

demonstration project.

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### Editorial Reviewers

David Forti, Michael Glaab,  
Courtenay Huff

### Technical Advisors

Ted Gabel, William Roach,  
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## POINTS OF INTEREST:

- The next RAB meeting will be held on May 31st at the Hilton Garden Inn in Rockaway, New Jersey from 6:30 to 8:30 pm. Members of the public are invited to attend. Topics include the following: Area D PRB installation, DRMO remedy overview, Area B update, MMRP update, and election of community co-chair.
- The next technical project meeting will be held on June 27th. Hosted by ARCADIS, the PBC contractor, the meeting will focus on technical and regulatory issues.

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## TORRENT OF DOCUMENTS EXPECTED SOON

The performance-based contract (PBC) that ARCADIS has entered into with the Army calls for completion of certain remedial activities at specified time frames in accordance with congressionally-mandated deadlines. Sites have been grouped by the year that the remediation is to be in place (remedy in place – RIP). The first batch of such sites is supposed to be categorized as RIP by 2007. Lower relative risk sites are to be categorized RIP in waves in subsequent years. Since embarking on the PBC at Picatinny ARCADIS has outlined an ambitious schedule to meet these deadlines. Accordingly, ARCADIS has been working on the production of numerous reports, work plans, and other documents. At the May 2nd technical meeting hosted /conducted by ARCADIS the following list of documents expected to be submitted to regulators within the next three months was cited :

- 13 Site Feasibility Study
- Area E Record of Decision
- Mid-Valley Groundwater Feasibility Study
- Site 180 Record of Decision
- Addendum to Environmental Risk Assessment for Phase II/III Sites
- Dog Pound Sampling Report
- Revised 25 Site Feasibility Study
- Child Development Center Vapor Sampling Results

- PICA-111 Feasibility Study
- Area C Proposed Plan
- Site 61/104 Proposed Plan
- Group 3 Sites Proposed Plan
- Area D Land-Use Controls Remedial Design
- Optics Lab Feasibility Study

Picatinny Arsenal will attempt to prioritize the



documents expected to be submitted to the regulators for review - but considering the schedule for completion it seems that everything needs to be completed at once!

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### TRAINING OPPORTUNITIES



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

- “Radiation Site Cleanup: CERCLA Requirements and Guidance,” June 5<sup>th</sup> from 2 to 4:15 pm
- “Risk Assessment and Risk Management:

Determination and Application of Risk-Based Values,” June 14<sup>th</sup> from 11 am to 1:15 pm

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

The USEPA Technology Innovation Program has an

internet course scheduled as follows:

- “Nanotechnology – Environmental Sensors,” May 31<sup>st</sup> from 2 to 4 pm

Register for the free class at <http://clu-in.org>.

## CHILD CARE CENTER VAPOR SAMPLING COMPLETED

ARCADIS completed indoor air sampling at the Child Development Center (CDC) in April 2007. The CDC is considered part of the Mid-Valley Groundwater area. Although sub-slab soil gas sampling was also planned, only indoor air samples were collected. CDC officials did not allow sampling through the floor and cited the cost (\$60,000) of the floor that had apparently been recently renovated as the reason. The results of the indoor air samples showed that no site-related constituents were detected. However, three

volatile organic compounds were detected as follows: dichlorodifluoromethane (Freon 12), chloromethane (methyl chloride), and 2,2,4-trimethyl pentane. Mr. Ted Gabel reported that the presence of the detected

compounds is consistent with indoor air sampling at residential homes and is likely associated with refrigerants, aerosols, water chlorination, and gasoline. Discussion of the results and of alternative sampling approaches took

place at the May 2nd technical meeting. For example, Mr. Glaab suggested drilling at an angle from outside the building to avoid drilling through the

floor. Alternatively he suggested that if there is a large utility or appliance installed on the CDC floor that it could be briefly displaced to permit drilling beneath it. ARCADIS anticipates no further sampling but it does propose the use of a vapor barrier in future construction combined with post-construction indoor sampling. The NJDEP preliminarily approved that approach which relies on indoor air samples rather than on "near slab" or "through slab" sampling results.



## NJDEP FOCUS ON VAPOR INTRUSION....AND CHILD CARE CENTERS

The NJDEP has recently made some changes in its vapor intrusion guidance. For example, in March 2007 the vapor intrusion screening level tables were updated. In addition a new draft analytical method for detecting volatile organic compounds in air was put forth, also in March 2007. The new draft method is

identified as NJDEP-LLTO-15-3/2007. This method entails a lower reporting limit and additional quality control requirements as compared to those found in U.S. Environmental Protection Agency Method TO-15 which had been a widely accepted standard. Information on both changes can be found at

<http://www.state.nj.us/dep/srp/>.

The NJDEP has also recently focused on child care centers. This appears to be a response to a new State law issued in January 2007 which requires the establishment of air-quality guidelines for day care centers built on or near contaminated sites. The NJDEP has experienced

negative publicity regarding a Gloucester County day care center built on the site of a former thermometer factory where mercury contamination was detected post-construction.

## PROPOSED CHANGE IN NJDEP SOIL STANDARDS

The NJDEP proposed new soil standards in the May 7, 2007 issue of the New Jersey Register. A public hearing on the rule

proposal is scheduled for June 7, 2007 at the NJDEP offices in Trenton.

Written comments on the proposal can be submitted

through July 6<sup>th</sup>. A copy of the rule proposal can be found at

<http://www.state.nj.us/dep/srp/>.

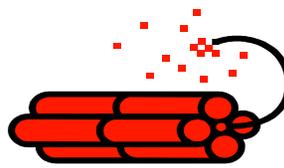


AREA B CLEANUP AT A STANDSTILL

Field work for the groundwater remedy at Area B was started in March 2007. Although a draft remedial design work plan is currently being reviewed, ARCADIS had planned to install wells for molasses injection as part of an in situ bioremediation remedy. This remedy once sought by ARCADIS differs from that previously proposed by the Shaw Group: molasses versus Hydrogen Release Compound (HRC) injection. The firm of MKM Engineers was retained by ARCADIS to perform UXO avoidance at the proposed well locations. ARCADIS

reported at the May 2, 2007 technical meeting that MKM found high density ferrous anomalies at most of the investigated locations. For example, a mortar that turned out to be a training round was found and cleared. However, aluminum fuzes, which would not be detected by a magnetometer, were also brought up during drilling. Due to field conditions and safety concerns the Picatinny Arsenal Safety Office suspended the work. At the May 2nd meeting ARCADIS proposed a passive remedy (i.e., monitored natural

attenuation) instead of the original in situ bioremediation remedy. This proposal met with a mixed reaction from the regulators and RAB representatives.



Numerous questions were posed concerning what was detected and whether the site conditions were indeed prohibitive of future intrusive work. After all the Shaw Group had completed extensive work in the area as part of the capping and they had not suspended work. Intrusive work had also been completed there by Dames & Moore prior to

Shaw. A suggestion to include the site as part of the MMRP was countered by the fact that the site is considered an active range and thus excluded from the MMRP. Ultimately it was decided that a revised proposed plan and another public meeting would likely be required. The revised proposed plan is expected to include an in situ bioremediation option which involves molasses injection. But it will also include realistic costs for UXO clearance at the site. The results of the recent field work will be discussed by ARCADIS at the next RAB meeting on May 31, 2007.

IN THE FIELD...(CONTINUED FROM P. 1)

(March)

**Area B:** Collected GPS coordinates for proposed monitoring well locations. Completion of UXO avoidance activities by MKM Engineers. (March)

**Area D:** Mobilization of DeWind

Dewatering. Completion of UXO avoidance by MKM Engineers. Equipment mobilization and supplies delivery. (March) Dewatering and treatment and discharge of groundwater. Trenching for installation of permeable reactive barrier (PRB).

Site maintenance. (April) Site restoration. (May)

**Post Farm Landfill:** Surface soil sampling in accordance with remedial design work plan. (April)

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GOLF COURSE HAZARD (CONTINUED FROM P. 1)

concentrations presumably below NJDEP actionable levels. Once the dewatering system was operative the trenching only required two days. The actual width of the PRB ranged from 1.1 to 1.2 feet compared to a design width of 1.5 feet. To compensate for the decreased wall width, which would have decreased the residence time of groundwater

traveling through the wall, ARCADIS added a higher percentage of iron to the iron-sand mixture comprising the wall. Presumably the increased concentration of iron in the PRB will compensate for the reduced time of contaminant exposure to iron. Equipment was demobilized just before the big storm hit and site restoration was

delayed by the deluge. Additional work planned in the area involves the installation of permanent monitoring wells around the PRB. ARCADIS will give a detailed presentation on the PRB construction at the next RAB meeting on May 31, 2007.

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## ANSWERING THE MAIL....AND THE PHONE AT NJDEP

As of the time of this newsletter's publication the PAERAB's last letter to the NJDEP sent on November 1, 2006 has still gone unanswered. On behalf of the RAB Mr. Michael Glaab and Dr. Peter Lederman prepared a letter to Mr. Edward Putnam of the NJDEP documenting the RAB's concerns with the NJDEP's apparent commitment of inadequate resources to its enormous workload related to the Picatinny Arsenal environmental restoration project.

Just prior to the last RAB meeting on March 8<sup>th</sup>, Mr. Glaab contacted Mr. Putnam's office by telephone and although he did speak to a receptionist; he was unable to reach Mr. Putnam and he therefore

left a telephone message.

Mr. Glaab has stated that he verbally reiterated the RAB's standing invitation, as previously expressed in a letter to Mr. Putnam, that he is welcome to appear before the RAB personally to address this issue if he so desires. Mr. Glaab also stated that he had offered to relay a message to the RAB on Mr. Putnam's behalf if that would be more convenient. However, as of the time of newsletter publication this phone call still remains unanswered.

This lack of responsiveness from key NJDEP officials continues to be a source of frustration to the RAB. Michael Glaab has described Mr. Putnam's unresponsiveness as "neither encouraging nor reassuring."

After discussing this issue

with Mr. Greg Zalaskus, a NJDEP Case Manager and the NJDEP's official representative to the PAERAB, Mr. Zalaskus kindly sent on March 30, 2007 an e-mail to Michael Glaab wherein he stated the following :

"...There has been some recent change regarding my priorities. Picatinny is now my top priority site for the next 2 months. This should help..."

Progress on the continuing cleanup has at times been hindered by NJDEP delays that appear to be due to such factors as a recent revision of NJDEP document management procedures and inadequate NJDEP staffing. As a result Picatinny Arsenal's remediation schedule as planned by the U.S. Army

with regulator consultation has often been hampered and therefore Army funds slated for cleanup at Picatinny have been diverted to other bases. With the expected future onslaught of reports, work plans, and other documents in the coming months, all of which are required to meet congressionally-mandated dates for cleanup, it is imperative that adequate regulatory resources are available to handle the work load.

### ADDENDUM:

On May 18<sup>th</sup>, Mr. Glaab received an e-mail from Mr. Putnam that elaborated briefly on Mr. Zalaskus' March 30<sup>th</sup> e-mail :

"...we were able to redirect Greg's work, and we are still trying to get additional resources."

Michael Glaab stated that "Mr. Putnam's facilitation of Mr. Zalaskus' work on behalf of the remediation effort at Picatinny is appreciated. The PAERAB welcomes being informed and we reiterate our willingness to assist the NJDEP's efforts. Mr. Putnam is welcome to clarify and elaborate at any RAB meeting. More can be achieved together than separately".

### GOLF COURSE HAZARD (CONT'D)



Trenching equipment is located to the left; the backhoe is being used to remove excavated soil.

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## GOLF COURSE HAZARD (CONT'D)



The iron and sand mixture is being loaded into the hopper on the trencher; the iron and sand mixture is emplaced in the excavation as the native soil is being removed.

Well points used for dewatering are visible in the foreground. The trencher is shown from another view. The cement mixer in the background was used to deliver sand for the sand and iron mixture. A specific proportion was mixed into the sand prior to emplacement.



### IN THE FIELD....(CONTINUED FROM P. 4)

**Optics Prototype Processing Facility – Building 91:** Low-flow sampling of one monitoring well. (March)

Installation of security fence in the Navy Hill area around the Lenape Village housing project. (April)

**UXO Support for RCI Project:**



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**PICATINNY ARSENAL IS ON  
THE WEB**

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

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ENVIRONMENTAL RESTORATION  
ADVISORY BOARD**

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Mr. Louis Correale – Rockaway Twp. Rep.,  
Rockaway Township Health Department

Mr. Don Costanza – Town of Dover Rep.,  
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Mr. Michael Glaab – Community Rep.,  
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Ms. Courtenay Huff – Community Rep.

Dr. Peter Lederman, PE, DEE – NJIT Rep.

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Dr. Raymond Westerdahl – Union Rep., 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](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.pacerab.us>.

## HOT OFF THE PRESS....

### Reports/Documents

- Remedial Design Area D Groundwater, Final, March 2007
- Bear Swamp Brook Oil/Water Separator and Tributary Stream Sediment Removal Action Work Plan, Final, March 2007
- Vapor Intrusion Sampling Work Plan for the Child Development Center, March 6, 2007
- Remedial Design PICA 205 - Area B Groundwater, Draft, March 15, 2007
- Soil Reuse Plan – Pyrotechnics Facility 500 Area, April 28, 2007
- Record of Decision Site 180 (PICA 093) Waste Burial Area, Draft Final, May 7, 2007



*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.*