US Army Corps
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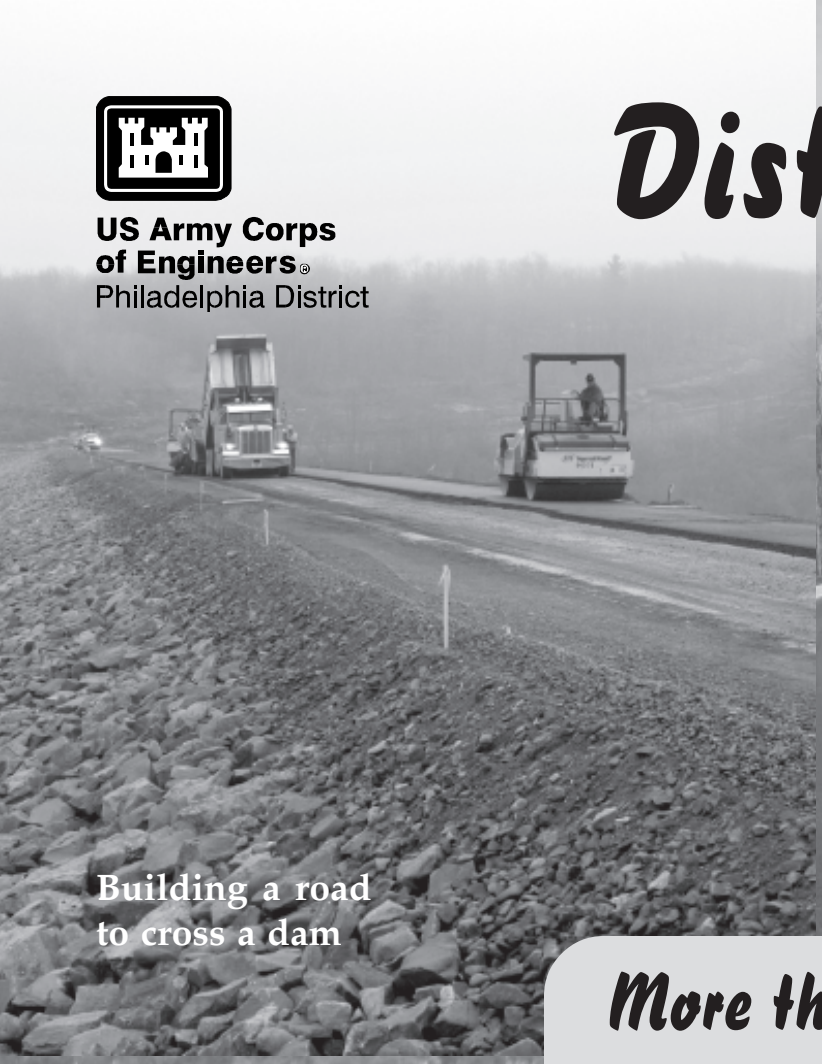
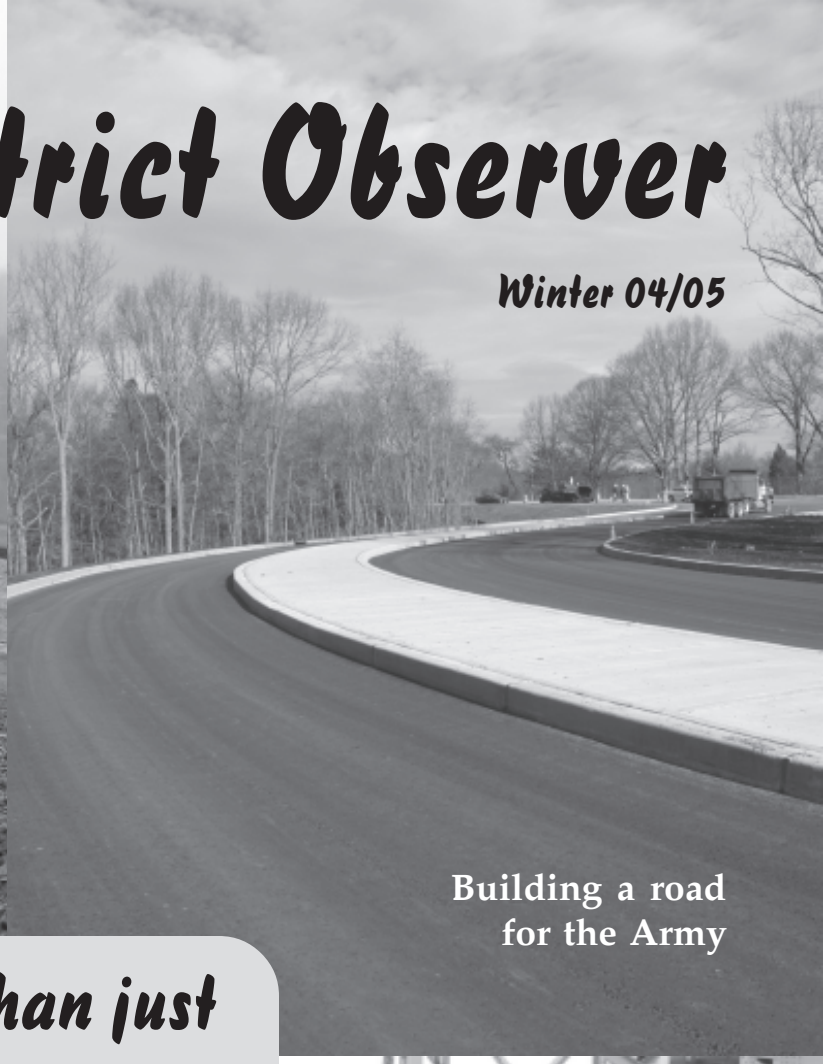
Philadelphia District

District Observer

Winter 04/05

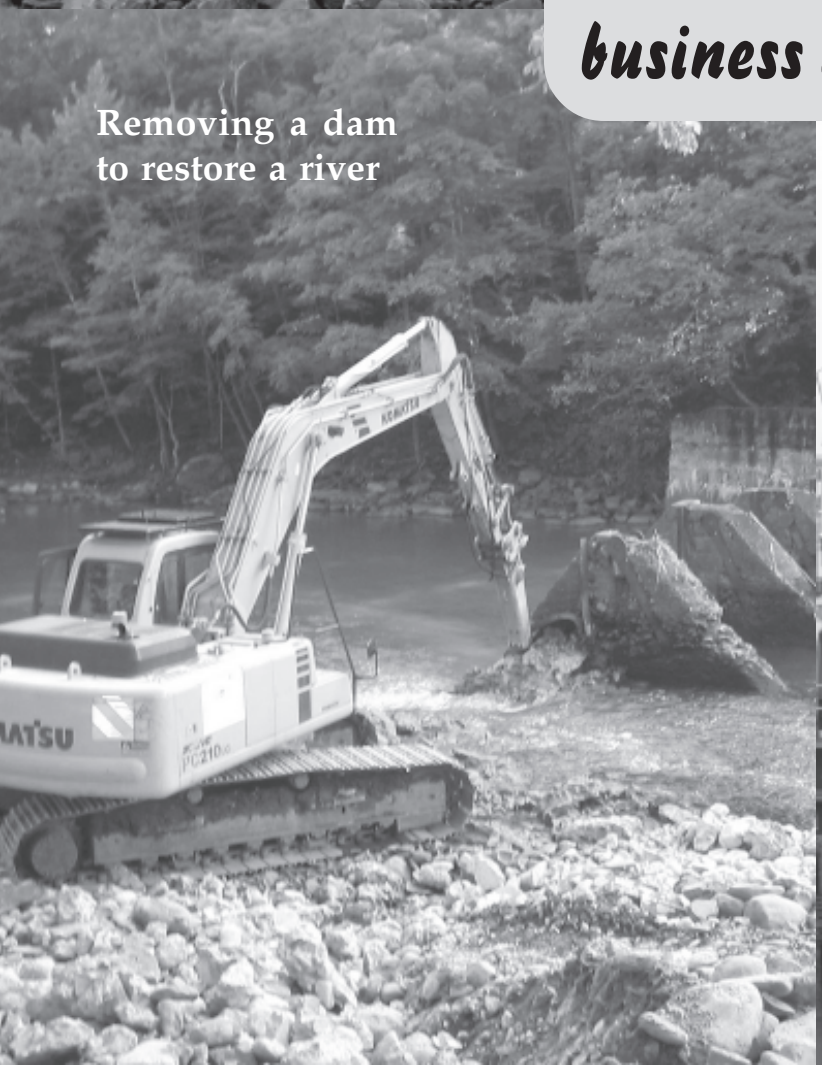


Building a road
to cross a dam

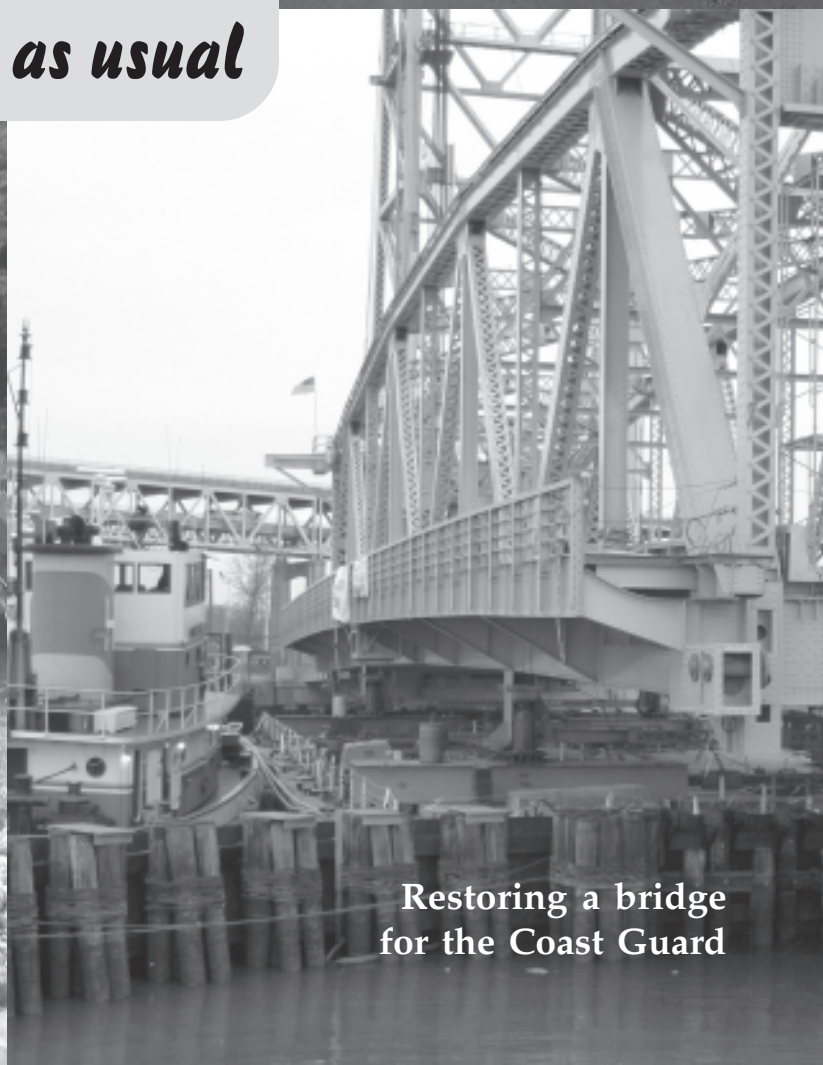


Building a road
for the Army

More than just business as usual



Removing a dam
to restore a river



Restoring a bridge
for the Coast Guard

As I see it...

Lt. Col. Robert J. Ruch
Commander & District Engineer

What does regionalization really mean?

On the facing page of this *Observer* you will read an article provided by our NAD Commander, Brig. Gen. Bo Temple, which focuses on how we will act within the North Atlantic Regional Business Center under USACE 2012.

I would like to add a few of my own thoughts on what regionalization actually means to the Philadelphia District.

- Recently our Chief of Engineers, Lt. Gen. Carl Strock, spoke to the District Engineers gathered at the Small Business conference. He fielded many questions, and as you may imagine, many of those questions centered on 2012 and regionalization.

  One thing that came across to me very clearly is that *regionalization does not necessarily mean centralization*. I think that many of us had that mindset prior to this discussion. Regionalization is all about *delivering the customer's needs in a more efficient manner*, however and at whatever level that is best accomplished.

- As a district, we have always continually strived to improve. This means providing service to our customers that is better, quicker and cheaper. In the end, that is how we stay in business.

  Most of our customers do have options as to whether or how much they use our services—and it is critical that we remain the preferred option.

- Over time, we have improved the product we deliver to our customers through the use of technology. In most cases this technology has allowed us to provide better service while maintaining or reducing costs.

- Just as we are able to become more efficient at the district level, technology may afford us similar opportunities at a regional level.

  A prime example of where this has already happened on the regional level is in our use of Baltimore District's real estate services. Most of our interaction is virtual, and from all indications, the service is great.

- Our region is steering a deliberate and clearheaded course in regards to regionalization. The Regional Management Board, through Project Delivery Teams, studies opportunities and then makes recommendations to the Board of Trustees

(see AS I SEE IT on page 10)

The Army Civilian Corps Creed

- ★ *I am an Army Civilian – a member of the Army Team*
- ★ *I am dedicated to the Army, its Soldiers and Civilians*
- ★ *I will always support the mission*
- ★ *I provide stability and continuity during war and peace*
- ★ *I support and defend the Constitution of the United States and consider it an honor to serve the Nation and its Army*
- ★ *I live the Army values of Loyalty, Duty, Respect, Selfless Service, Honor, Integrity, and Personal Courage*
- ★ *I am an Army Civilian*

Think as a Region ... Act as a Region

The North Atlantic Division is transforming itself.

Under USACE 2012, the Division and its Districts operate together as one cohesive unit, the North Atlantic Regional Business Center (RBC)—one of nine regional centers working with our Washington, D.C. headquarters to align the Corps for success in its future missions, workload and capabilities.

What is the North Atlantic Regional Business Center?

The North Atlantic Regional Business Center, using Project Management Business Processes, ***integrates*** the capability of six unique Districts, who ***collaborate*** to efficiently and effectively deliver projects, and serves ***customers*** by leveraging the resources of the Region and the Corps.

Nothing in the USACE 2012 concept changes the fundamental requirement for Districts to execute and deliver products and services to our varied customers. Integrating our capabilities means leveraging resources across district boundaries to get the job done, pooling expertise within the Region to meet technical challenges, and removing communication barriers to streamline customer service.

Since all of you are members of or provide support to one or more teams, ***everyone*** in the Region, by extension, supports and is affected by our RBC.

"In this regard we're finding opportunities to deliver quality work faster and to reduce costs on a regional basis. To make that happen, the Corps is shifting its focus from regional ***cooperation*** to regional business ***operations*** in order to support and facilitate better District delivery to our customers," says Brig. Gen. Bo Temple, Regional Commander. "As a result, we all need to think and act regionally."

The North Atlantic Regional Business Center (RBC), chartered in 1998, made tremendous progress in regional cooperation, and it has moved to its USACE 2012 "Initial Operating Capability" as of Oct. 1, 2004.

The RBC—the Region—is one team of some 3,500 Corps of Engineers professionals located in six districts under one regional office.

"Every one of the Corps' activities enhances the U.S. economy, supports our natural environment, and enhances our national security," says Temple. "As a Region of the Corps, we will be a better steward of public trust by developing regional efficiencies and capabilities.

"We will maintain and leverage regional capabilities where it is not cost-effective to maintain expertise at every one of our districts so that we can deliver more cost effective, high quality, safe products and services to our customers."

Regional success stories in 2004

Regional cooperation has helped ensure the success of a wide variety of projects completed in fiscal 2004, especially on a district-to-district basis:

- The New York District, constrained for in-house resources, engaged the Europe District to prepare the design package for an $8 million Explosive R&D Loading Facility at Picatinny Arsenal (N.J.). Europe then tapped the Norfolk District for civil, electrical and geotechnical expertise.

  The customer, the U.S. Army Armament Research, Development and Engineering Center (ARDEC), was pleased enough with the result to request the same team for a similar project.

- Another New York product, the Dam Safety Assurance Report for the Waterbury (VT) Dam, represented a collaborative effort with the New England and Baltimore Districts that received an honorable mention for the USACE Virtual Team of the Year Award.

- In its successful award (on extremely short suspense) of a $500 million contract for construction and rehab of Buildings, Schools, and Health Facilities in Iraq, the Philadelphia District drew upon New England and the North Atlantic Division Office for contracting support.

- To oversee demolition of the Tacony Warehouse, a former Army facility in northeast Philadelphia, the Baltimore District found the help it needed right down the street, bringing in the Philadelphia District for construction management and quality assurance.

- Baltimore and Norfolk are sharing resources and prepar-

(see REGIONAL on page 14)

Survey team responds to Delaware River oil spill

On Nov. 26, 2004, the tanker *Athos I*, in an accident still under investigation, spilled an estimated 265,000 gallons of crude oil into the Delaware River while en route to its destination at the Citgo refinery in Paulsboro, N.J.

The very next day, Capt. Jonathan Sarubbi, U.S. Coast Guard Captain of the Port of Philadelphia and Incident Commander for the spill response, requested that the Philadelphia District survey the Mantua Creek Anchorage, where the spill took place.

From Nov. 28 to 30 our survey team searched the area for possible causes of the incident using multibeam technology, but did not identify any obstructions.

Then on Dec. 1 the District supplemented multibeam with contractor-provided side scan sonar, focusing along the path taken by the *Athos I* as it approached the Citgo dock.

On Dec. 2 we began to work with the National Oceanic and Atmospheric Administration surveying team also assigned to the event, developing data and providing it daily to the Coast Guard investigation team. This information, combined with similar data from the surveying and dive team hired by the ship owner, led to identification of one suspected object in the anchorage.

Evidence of the *Athos I* oil spill was unmistakable at the Fort Mifflin Field Office berthing area, home to the *McFarland* and to most of the District's survey fleet

Due to concerns raised by the shipping industry, Sarubbi also asked the District to perform in-depth surveys from the Commodore Barry Bridge upstream to the incident site (about 7 miles) to assure the Delaware River federal channel was free of any further obstructions. Again in concert with NOAA, after three days of surveys we certified the channel as clear and the Coast Guard reopened it without restrictions on Dec. 7, 2004.

As of this writing, the Corps continues to work with the Coast Guard incident response team in its ongoing investigation of this incident.

"I commend Capt. Sarubbi and the entire team on their efforts following the incident," said District Commander Lt. Col. Robert Ruch on Jan. 18, 2005 during testimony before the House Subcommittee on Coast Guard and Maritime Transportation. "The excellent cooperation of all parties involved, including the Federal and State Agencies and the representatives of the ship

(see OIL SPILL on page 10)

During a combination open house/press conference aboard the *Shuman* on Dec. 1, Survey Section Chief Joe Scolari (left photo) fields reporters' questions about the District's sonar findings in support of the U.S. Coast Guard's spill response, while *Shuman* Survey Party Chief George Griffith illustrates how the data is used to identify possible irregularities and obstructions in the Delaware River federal channel.

Brigantine Island Shore Protection

On the Brigantine Beach boardwalk Oct. 12, Rep. Frank LoBiondo (NJ-2) **(inset)**, Commissioner Brad Campbell of the N.J. Dept. of Environmental Protection, Assemblymen Frank Blee and Kirk Conover, Mayor Phil Guenther and District Commander Lt. Col. Bob Ruch jointly announced a $4.5 million contract award for beachfill and dune placement along 1.8 miles of Brigantine Island shorefront. The work is scheduled to begin this September.

PROJECT MILESTONES

Delaware Canal Restoration

Then-Rep. Jim Greenwood (PA-8) **(inset)** was joined by Lt. Col. Ruch, representatives of the Pa. Dept. of Conservation and Natural Resources and local residents on Nov. 15 to dedicate a newly restored section of the Delaware Canal in Morrisville, Pa. By bypassing a highway abutment that had blocked the canal for several decades, the project extended recreational opportunities along a greater stretch of this historic waterway.

Air Freight Terminal, Dover Air Force Base

North Atlantic Division Commander Brig. Gen. Bo Temple addresses **(l-r)** Lt. Gen. William Welser III, Commander, 18th Air Force; Del. State Sen. John Still III; Rep. Mike Castle (DE-AL); Sens. Tom Carper and Joe Biden (DE); and other invited guests at the Dec. 13 groundbreaking for the new $71 million, 371,000-square-foot Air Freight Terminal, a major aerial port complex to be built at Dover Air Force Base, Del.

Innovation in Remediation

Vineland Chemical Company Superfund Site
Operable Unit 1, Soil Washing Treatment System

How proven processes from two unrelated applications were brought together to help clean up one of EPA's most complex Superfund sites

From 1949 until the early 1990s, the Vineland Chemical Company produced herbicides at a manufacturing facility in Vineland, N.J. The arsenic-based weed killers were commonly applied to fields of cotton, sugar cane, soybeans and other crops.

The manufacturing process generated arsenic-containing salts as a waste by-product. With no means to treat or dispose of these salts, they were stored in uncontrolled piles and lagoons across the approximately 35-acre site.

This practice led to contamination of the underlying soil and groundwater—and eventually of a low-lying nearby marsh, the adjoining creek, the Maurice River (a National Wild and Scenic River), and Union Lake.

The District's Steve Creighton (l) and Jon Dougherty (r) with Carl Seward of ART Engineering at the leach tanks. These four in-series tanks (right) are where the iron/arsenic coatings are "washed" off the sand particles using a high temperature water and sodium carbonate. The water/sand slurry is mixed in each tank for approximately 12 minutes.

Arsenic originating from Vineland Chemical has been found as far as 36 miles downstream, near where the Maurice empties into the Delaware Bay.

After some limited attempts to treat wastes on-site, plant operations ceased in 1994—and with the company no longer in business, the site was added to the National Priorities List for cleanup under the EPA Superfund Program.

And as it has so many other times over the past two decades, EPA (specifically, Region 2) turned to the Corps (specifically, Philadelphia District) to plan, design and execute the selected remediation of this site.

As the project evolved, it was subdivided into four phases, or operable units (OU's):

- OU1 (Plant Site Source Control): Excavation and onsite treatment of contaminated site soils.
- OU2 (Groundwater Remediation): Pumpout and onsite treatment of the contaminated groundwater directly under and surrounding the site.
- OU3 (River Areas): Cleanup of contaminated sediments in the nearby stream, marsh and floodplain.
- OU4 (Union Lake): Cleanup or environmental management of Union Lake downstream.

It was for OU1 that soil washing was selected as the means of remediation, to handle an estimated 268,000 tons of arsenic-contaminated soils.

Just as EPA looks to the Corps for most of the project management, we look to our own contracting community for much of the technical expertise.

Enter Sevenson Environmental Services of Niagara Falls, N.Y., the Corps' prime contractor for Vineland remediation, and its

Soil Washing Treatment Plant, Vineland Chemical Company Superfund Site

OU1 excavation and backfilling—untreated soil on left, treated backfill on right

subcontractor, ART Engineering of Tampa, Fla., developer and lead designer of the innovative soil washing treatment system for OU1.

Much of ART's previous experience is in the mining industry, where many of the earthen materials refining and volume reduction processes have proven applicable to this environmental remediation. In fact, they had already designed and operated other successful soil washing plants on a smaller scale, including one for the removal of chromium, copper and nickel at a Superfund project in nearby Winslow Township, N.J. (In contrast, the Vineland plant is now the largest of its kind in the world.)

For the Vineland design, ART conducted a bench-scale treatability study and process optimization study at the Buffalo, N.Y. laboratory of Sevenson Environmental Services to confirm process design parameters.

Based on these study results they prepared the process design, including specifications for each piece of process equipment. They also prepared an excavation, staging and blending plan to describe how contaminated feed material would be mixed to achieve the desired feed concentration of arsenic (60 to 90 parts per million).

Design of the soil washing treatment plant was completed in December 2002. Sevenson constructed the plant is less than a year and it was up and running in October 2003—the world's first full-scale application of this innovative technology for environmental remediation.

How does it work?

In short, the soil washing treatment plant combines particle size separation processes with a chemical leaching and washing step to effectively remove arsenic contamination from site soils.

The site soils are sandy and contain arsenic in concentrations ranging from less than 20 to greater than 5,000 parts per million. The initial process step uses trommel screeners and vibrating wet screens to remove oversize materials (more than 2 millimeters) from the feed, then hydrocyclones to remove the fine particles ("fines," defined as soils with particle sizes less than 0.1 millimeters). In these soils being treated, oversize materials make up about 2 percent and fines approximately 4 percent by weight.

After removal of the oversize and fines, water is added to the remaining sand particles and the resulting sand slurry is sent through for washing. After being heated to 130 degrees Fahrenheit, the slurry passes through four in-series leaching tanks that mix in several process chemicals, including sodium carbonate, which is the primary washing and leaching agent. The combination of high-temperature sodium carbonate slurry and the aggressive mixing dissolves the iron and arsenic coatings from the sand particles.

The resulting product is clean sand, with contaminated water as a byproduct that is further processed using pH adjustment and flocculation to precipitate (settle) the dissolved arsenic into a highly contaminated sludge.

The sludge generated by this process, as well as fines initially removed by the hydrocyclones, is consolidated into a highly concentrated sludge that contains high levels of arsenic. The sludge is then shipped to an approved offsite hazardous waste landfill for disposal, as are the oversize materials.

Some 94 percent of the site's soils are treated and returned to the site as clean backfill, with the

(see SOIL WASHING on 15)

More than just business as usual

Fiscal 2004 was one of the Philadelphia District's more memorable years for project execution—not just because of the sheer number of jobs brought to construction, but also because of their considerable variety. We've been dam builders and operators, but not dam removers; we don't often lay down any roads, let alone two; and one of our biggest bridge jobs in decades was for the Coast Guard on Navy property.

- √ Cuddebackville Dam Removal
- √ Francis E. Walter Dam Road Relocation
- √ Fort Dix Routes 68 & 616 Bypass Road
- √ Vertical Lift Bridge Rehabilitation

Removing a dam to restore a river

Following are excerpts from a Sept. 22, 2004 New York Times article, "Dam builder tries new role: dam breaker," by Ian Urbina—one of several stories from around the country that put a small but significant District project in the spotlight. The Cuddebackville Dam Removal project was not only the first of its kind in New York State, but also one of the Corps' first formal cost-sharing partnerships with a nonprofit organization, The Nature Conservancy.

Cuddebackville Dam before removal (above) and after (below), with free flow restored to the Neversink River.

Tucked away in Orange County, N.Y., a 90-year-old dam will start coming down today. Piece by piece, a team of engineers from the Nature Conservancy and the Army Corps of Engineers will begin removing major parts of the Cuddebackville Dam on the Neversink River as part of a painstaking effort to save an endangered mussel that is blocked by the dam from going upstream.

The project is the first in New York history in which a dam is being removed for purely environmental reasons. It also signals a change of purpose for the Army Corps of Engineers, which has spent more than a century creating dams and now is just beginning to remove them.

"This is a pretty symbolic occasion for us," said Brian J. Mulvenna, project manager from the Army Corps. He said the project is the first in which the corps has worked with a nonprofit organization since a federal law was passed in 1999 allowing such partnerships.

Built in 1915, the dam diverted water down the Delaware and Hudson canal system to turn turbines at a power plant in Cuddebackville, about 65 miles northwest of New York City. But the dam became a vestige in the mid-1940's when the power plant was shut down as modern power lines were built to draw electricity from farther away.

"We've come to realize the ecological costs of tapping nature for our purposes, and where possible we've started paying

(see REMOVING on page 16)

Building a road to cross a dam

Pavers work their way across the crest of Francis E. Walter Dam on Nov. 18, 2004

By way of a $2 million contract awarded to Sigma, LLC of Lancaster, Pa., the Philadelphia District converted what was essentially a four-wheel-drive-only trail into a two-lane road with state-approved shoulders, guard rails and pavement markings.

The purpose of this undertaking—formally titled "Road Relocation, Francis E. Walter Dam"—was to guarantee Corps personnel safe and expedient access to the dam and control tower at all times, eliminating a 42-year-old headache of having to detour an extra half hour whenever the one project road behind the face of the dam was flooded due to a raised reservoir pool. The side benefit is that with rare exceptions, the public now also has a way across the dam at all times.

Despite the project's official title, "road upgrade" would be more descriptive. From an aerial view, the new route has changed in appearance (tan to black!) but not in alignment from the original. It covers slightly more than a mile (6,100 feet), connecting to the main project road at its north and south end and including the entire crest of the dam.

Although several punchlist items remain before the road can be opened to vehicular traffic, the most visible milestone was the paving operation that took place Nov. 17 and 18.

It might have been sooner if not for certain unforeseen circumstances—unforeseen by virtue of having been buried! If you follow the new road segment north, just past its highest elevation and before the dam itself comes into view, you will pass between faces of sheared-off solid rock that pay silent tribute to the greatest challenge encountered during construction.

"We ended up having to remove almost 40,000 cubic yards of rock, way more than the original estimate," said Tom Devlin, Construction Branch, who oversaw the work being performed by Popple Construction of Laflin, Pa. under subcontract to Sigma.

As is so often the case, despite all the best engineering and technology available, the only way to be 100 percent sure what's underground is to dig it up—and in this case digging was not enough.

"Much of what was originally thought to be rippable (removable by mechanical means) would respond only to detonation," said Devlin.

Adding to the challenge was the presence of wetlands adjacent to one of the rockiest areas. The solution? Build a delay into the blast sequence, directing the dust and debris away from the wetlands.

The additional rock blasting largely accounted for several weeks' delay from the original schedule, but the most important deadline was met: placing all the asphalt before the onset of winter in 2004.

Once all the clearing, grubbing, digging and blasting was complete, the right-of-way was filled in with rock to raise and shape the roadbed to its design profile and provide a solid foundation. Thanks to all that extra blasting that had to be done, there was a corresponding increase in the supply—and quality—of fill material. "That proved a blessing in disguise," said Devlin.

The roadway began taking shape layer by layer, starting with a 6-inch subbase of 2A aggregate; then 3 to 4 inches of RDM (rapid drainage material); a 6-inch base course, again of 2A aggregate; and 3 inches of asphalt for the wearing surface. Atop the dam crest, fewer layers were necessary—only a 1 ½-inch base course of aggregate and the 3-inch asphalt cap.

Even before the asphalt had

(See WALTER on page 10)

Building a road for the Army

Opening of Route 68 Bypass, Fort Dix, N.J., Dec. 20, 2004

With a snip of the ceremonial scissors, **(from left)** Fort Dix Commander Col. David McNeil, Rep. Jim Saxton (NJ-3), Wrightstown Borough Council President Brian Sperling, and District Commander Lt. Col. Robert Ruch open a new bypass connecting State Route 68 and County Route 616 on Dec. 20.

This two-lane, 32-foot-wide, 2,500-foot-long asphalt road segment allows local traffic to pass along the perimeter of Fort Dix without compromising installation security.

The two routes previously intersected at a traffic circle further onto Fort Dix property, but this intersection has been blocked and closed to local traffic since Sept. 11, 2001. With the bypass now complete, area drivers no longer have to detour for many miles to get around the northwest side of the installation.

Funded under the Army's Military Construction program, this $1.5 million project was designed by Collette Contracting, Inc. and constructed by C-Con, Inc. of Mount Laurel, N.J., both under contract to the Corps. Construction began Aug. 31, 2004 and was complete Dec. 10, about three weeks ahead of schedule.

Walter Dam road

(from page 9)

a chance to cool, it was tested for smoothness and evenness with a "Profilograph," which resembles a golf cart and is outfitted with equipment so sensitive it would detect a change in surface contour if someone left a sheet of paper on the road.

Oh by the way, did you know that nuclear testing was conducted at Francis E. Walter Dam? Not to worry, the instrument of choice was a nuclear densometer, toted atop the Profilograph and placed at selected intervals along the new pavement to measure compaction against specifications.

Though the road is open for business, one step remains before the project can be called complete. Still to be done this spring and summer, pending availability of materials, is the application of a "tar and chip" layer to reinforce the shoulders against wear and erosion.

But even now the deep cuts, wide shoulders and smooth blacktop bear little resemblance to the unimproved road that for so many years occupied the same right of way through the woods, down the hill and across Francis E. Walter Dam.

As I see it...

(from page 2)

> on which opportunities we should pursue. There have been no rash changes, which bodes well for the future.

My advice is to embrace regionalization as integral to how we do business, and figure out how we can improve the product we deliver. It seems there is an inclination to be protective over what we have built here and that is natural to a certain extent. It is a good thing to be proud.

Let's identify our strengths, but let's also figure out where we can use some help. That is what regionalization is all about.

Oil spill response

(from page 4)

owner, are attributed to Capt. Sarubbi's outstanding leadership.

"I would also like to commend the efforts of the NOAA Navigation Response Team led by Mr. Howard Danley and Lt. Commander Rick Fletcher. Their survey expertise and dedication throughout the investigation greatly assisted the Corps in its mission and proved to be an invaluable partnership."

Before restoration (November 2003)

Restoring a bridge for the Coast Guard

Officially titled "Alteration of the Vertical Lift Bridge across the Reserve Basin," this massive undertaking involves total rehabilitation of the vertical lift bridge at the west end of what is now the "Navy Yard," or Philadelphia Naval Business Center.

Situated just south of the "mothball fleet," the bridge belongs to the United States Navy. However, because it was also considered a hazard to navigation, responsibility for its overhaul and repair fell to the Coast Guard—which then turned to the Corps to carry out the work.

The project was designed by Modjeski & Masters, Inc., of Harrisburg, Pa. for about $3 million and is being built by American Bridge Co. of Coraopolis, Pa. under a contract worth about $20 million.

While the two most visible elements have been the "float-out" of the center span for rehab last February (complete with tugs, barges, hydraulic jacks, and some improvisational engineering) and the corresponding "float-in" in December, the project will have passed through several distinct phases by the time it is turned back to the customer:

Near end of restoration, center span returns (December 2004)

1) Mobilize, notify permitting authorities, close bridge and install detour sings
2) Float out lift span
   - Close channel to marine traffic
   - Position lift span counterweights to be supported independently from the towers with eyebar hangers
   - Provide blocking and jacking under the lift span to transfer the load in the wire ropes to the eyebars
   - Deenergize bridge and maintain aids to navigation
   - Removing all connections at each end of span to provide clearances from the towers
   - Position barges under span
   - Jack lift span onto barges for transport offsite for repair, rehab and repainting
3) Remove all asbestos from machinery rooms, bridge control rooms, old substation and abandoned steam pipe
4) Remove operating machinery for disposal/rehab as needed
5) Store and modify counterweights
6) Remove portions of towers for disposal/rehab as needed
7) Repaint towers and counterweights
8) Construct new (15 feet higher) tower tops, including new maintenance lifts and control house at north tower location
9) Remove, modify and replace tower span decks and sidewalks

(see LIFT BRIDGE on page 12)

Lift bridge rehab

(from page 11)

10) Rehab existing concrete abutments, piers as required

11) Install operating machinery, new counterweight ropes and new electrical and control equipment

12) Lift span float-in

- Prepare towers and lift span for float-in
- Prepare all mechanical and electrical components, making sure they are in good operating condition
- Close channel to marine traffic and coordinate with affected users (permissible

2/24/04: Preparing for float-out by (above) cutting main counterweight cables to free lift span and (below) using hydraulic jacks on barge to support lift span and adjust its elevation

2/25/04: The center span during float-out, at 20 feet from its starting location

3/26/04: Taking the roof off the south tower prior to removing the operating machinery

2/25/04: (l-r) Win Patchell and Brendan Lynam, American Bridge; the District's Bob Nebbio and Mark Wheeler; and Jared Wigger, Modjeski & Masters discuss float-out alternatives in light of interferences between the towers and lift span

4/6/04: Demolition of the decking surface on the north tower approach

outage period no more than two weeks)
- Float lift span into position
- Attach lift span to counterweight ropes and complete all necessary interface items to operate the span
- Jack the span to transfer all loads to the ropes
- Energize the bridge operating system
- Perform initial balance of the bridge
- Perform all necessary testing, rebalancing and adjustment

13) Construct and install machinery enclosures and new aerial beacons on both tower tops

14) Complete remaining miscellaneous construction

15) Open bridge to traffic and demobilize

"The biggest challenge by far was the float-out," said resident engineer Mark Wheeler, Construction Branch. "It took three tries over two days until we were successful. The main problem was previously hidden connections between the center span and lift towers that did not become apparent until we tried to pull away."

In contrast, the float-in went much more quickly and smoothly because many of those previous obstacles were no longer in the way.

With the project now substantially complete, the inattentive passerby might only wonder who had taken the structure apart only to put it back together again. But upon closer inspection, the new paint and decking give the first obvious hint that this really is a new and improved bridge for a (potentially) new and improved "Navy Yard," courtesy of the Army Corps of Engineers.

6/28/04: Removing electrical room from south tower; north tower (l) covered for paint containment; main sheaves (r) awaiting rehab

10/6/04: Checking new machinery alignment atop north tower

10/6/04: The newly repainted north tower

12/9/04: The fully refurbished center span approaching the Reserve Basin from the Schuylkill River, on its way to float-in

Regional success

(from page 3)

ing a programmatic environmental impact statement for the proposed introduction of a new oyster species into the tidal waters of Maryland and Virginia.

- Initially Europe District, then ultimately all Districts have provided support to GWOT by deploying over 186 regional employees in direct support, with nearly all in general support to this vital wartime effort. Further, the region deployed over 176 employees to support South Atlantic Division in post-hurricane recovery efforts in devastated areas of our country's Southeast in 2004.

  Our support to these contingency missions, both directly and through those who remained at the home station and shouldered additional responsibilities, is a true testament to the flexibility, spirit, and professionalism of every NAD team member.

Ongoing regional initiatives

In terms of actualizing the RBC concept, the region has within the past year embarked on a number of initiatives designed to better integrate our capabilities:

- The Regional Technical Specialist ("Tech-13") Program applies the Region's best technical expertise in specific disciplines to improve civil works planning while enhancing career paths for non-supervisory technical specialists. There are currently 18 GS-13 Regional Technical Specialists (RTS), each designated part-time for such tasks as project technical review.
- Through Virtual Design Teaming ("VTeam"), physical location no longer restricts the composition of a project's design team. This "tele-engineering" approach, using video teleconferencing and electronic data transfer, has enabled the districts, especially Europe, to work together on projects without regard to the usual travel constraints (see example of Picatinny Arsenal above).
- The need for consistency across district boundaries in dealing with non-federal partners helped bring about creation of the Regional Sediment Management (RSM) Team.

  Dredging and placement of sediment from federal channels falls under the Corps' navigation mission, but its applications include hurricane and storm damage reduction and ecosystem restoration, and affects cross-district regulatory issues. The RSM Team will engage appropriate stakeholders at all levels on these sometimes competing demands and a range of other issues in order to develop better regional solutions and support to affected customers.
- Contracting, Resource Management, Logistics, Information Management and Public Affairs, all formerly independent functions, are now single-team Regional Support Functions that also continue to support the districts where they are located. Each of these teams has already developed a series of initiatives that will provide better support regionally and will make more efficient use of existing resources.
- Three NAD-based District Support Teams, each dedicated to two districts (Europe/New England, New York/Philadelphia and Baltimore/Norfolk), supply the region-to-district link in the Corps' vertical integration team approach.

  The DST's complete the vertical link by communicating with the Regional Integration Team (RIT) in the Washington HQ. This RIT provides dedicated national support to the North Atlantic Regional Business Center. There is one RIT per RBC. These teams, together with the Districts, are operationalizing the Corps' "One Headquarters" concept.

Looking ahead as a Region

In the future, plans are being made for continued progress in fiscal 2005, building on last year's accomplishments, and laying the foundation for further regionalization in FY 06 and beyond:

- Workload management will be fine-tuned based on customer needs and on regional resources and capacities.
- P2, the automated system being used for project management, will continue to be a major focus area to better support all activities.
- The RBC will continue to define the Region's core competencies and to make effective use of the Tech-13 program and other technical capabilities, region-wide.
- Regionalization of support functions under USACE 2012 will continue as Communities of Practice (CoP) take shape within each function.

(see RBC PLANS on page 15)

Soil washing

(from page 7)

remaining 6 percent shipped to an approved offsite landfill in the form of oversize materials (gravel, roots and twigs, miscellaneous debris) and sludge. The treated sand is returned to the excavation. Some clean topsoil from an approved offsite source will be used to restore the site to its original grade and support revegetation.

How well does it work?

Since the soil washing plant began operation in October 2003, a rigorous sampling and analysis program has confirmed that arsenic concentrations are below the 20 part-per-million cleanup standard for backfill. To date, only 1,300 tons (less than 2 percent) of the 100,000 tons of soil processed have exceeded that threshold and required retreatment.

As for innovation, this project boasts several "firsts":

- Use of soil washing technology to remediate an arsenic-contaminated Superfund Site.
- Use of the traditional mining processes of wet screening and hydrocyclones to remove those soil fractions which are not amenable to soil washing (fines and oversize materials).
- Use of chemical leaching to remove the iron and arsenic coatings.
- Incorporation into the soil treatment process of a rotating ball mill, which will use physical grinding with 1-inch diameter ceramic balls to remove arsenic coatings from higher-concentration, or "hot," feed materials (greater than 500 parts per million arsenic).
- Implementation of an extensive coring and sampling program for the old Vineland Chemical Plant's foundations, with the result that concrete and asphalt areas previously assumed to require disposal as hazardous materials have been reclassified as contaminated but "nonhazardous," resulting in savings to the project of approximately $1.5 million.

Also, while not a "first," chemical stabilization of contaminated oversize material to render it "nonhazardous" for disposal will save the project approximately $350,000.

As of December 2004 the ball mill has not been used; instead the contractor has been able to successfully blend these "hot" materials with lower grade feed material (20 to 40 parts per million) to produce a combined feed stream with a concentration of approximately 80 parts per million. This combined feed has been successfully treated without the grinding step.

By the end of November 2004, approximately 25 percent of an estimated 268,000 tons of contaminated soils onsite had been successfully treated and returned to the ground as backfill.

Project completion date is currently projected as September 2006, six months ahead of schedule—thanks to process improvements by Sevenson and ART that increased the plant's treatment rate from 52 to 70 tons per hour and will end up trimming about $1 million from the project's $23.5 million budget. Working with its contractors and EPA, the Corps will continue plant optimization efforts with the goal of additional project savings.

"This soil washing treatment plant has played an invaluable role in expediting and enhancing the cleanup of one of New Jersey's most complex and challenging Superfund sites," says EPA Region 2's Ron Naman, Remedial Project Manager for the Vineland Chemical Company Superfund Site. "Its success offers great promise for use on other site operable units or for similar efforts within the Superfund program."

RBC plans

(from page 14)

- The Regional Program Budget Advisory Committee will study and prepare for implementation of cost control measures and regional rates in fiscal year 2006.
- Better integration of teams (District PDTs, DSTs, RITs, CoPs etc.) and greater delegation of authorities will likely occur by FY 06 as well. So if you are a member of, or provide support to, one or more of these teams, you will be directly affected by our regionalization efforts.
- Regionalization also will drive the TAPES performance objectives for all members of the Regional Management Board, GS-15s throughout the Region, and others rated by regional leadership.

"We will think as a Region and act as a Region, delivering quality projects through our Districts, on time at the lowest cost, safely," says Brig. Gen. Temple. "We have done and are doing great work in the service of the Army and the Nation. But working together we can always improve, and as a Region, I know we will.

"I am extremely proud and grateful for all that you do daily to support our Region, our Regiment, and our Nation. ESSAYONS!"

Removing a dam

(from page 8)

Mother Nature back," said George E. Schuler, director of the Nature Conservancy's Neversink Program. The project will remove one of two dams located on either side of an island that splits the Neversink River. Mr. Schuler explained that the Nature Conservancy has no plans to remove a separate dam on the northeast side of the island because most fish swim up the southwest side.

The depth of the river, about four feet, and its speed will not change when the dam is removed, Mr. Schuler said. But American shad and native brook trout will again be free to swim upstream in the Neversink River, where fly-fishing became popular in the United States.

But the biggest beneficiary will be the dwarf wedgemussel, a tiny freshwater mussel no bigger than a quarter and one of the most endangered species in upstate New York. While the wedgemussel, which helps purify the water, does not swim upstream, host fish carrying its larvae do.

"American dams are not the pyramids of Egypt, and they were not meant to stand forever," said Amy Souers Kober, a spokeswoman for American Rivers, a conservation group based in Washington, D.C. "Many states are starting to realize that river restoration starts with dam removal since that is the only way to open the flow to aquatic life."

Ms. Souers Kober said there are plans to remove an estimated 60 dams in 14 states and in the District of Columbia in 2004. Only four of these dams ever supplied electricity, and they have been off line for years, she said. Of the 77,000 dams higher than 6 feet across the country, fewer than 2,500 generate electricity, she noted. Most were built to run mills that are now obsolete, to control floods or to create water supplies or recreational lakes.

While sometimes providing useful services, dams drown valuable habitats under reservoirs and can create inhospitable downstream conditions for fish and wildlife.

More than 145 dams nationwide have been removed since 1999, only one of them in New York. But until now, none were removed in New York to help the environment.

"In many places, aging dams have become major public hazards and legal liabilities," said Mr. Mulvenna, from the corps. "Each one of those that we take out is one less headache for us in the future."

The removal of the steel-reinforced concrete dam, 6 feet tall and 125 feet across, was completed in October 2004 at a cost of about $2.2 million.

The project, begun in July 2003, was a feat of civil engineering and ecological planning. Many dams are demolished using explosives, but that approach would have damaged the local habitat. Instead, the District built a cofferdam upstream to divert the water to the other side of the island and enable workers to move backhoes and large hydraulic hammers in front to chip away at the concrete.

Adding to the technical challenges were two of the wettest years in recent memory, causing the flow of the Neversink to exceed design parameters and force an alternative to the original cofferdam design.

The Cuddebackville Dam Removal Project was authorized and funded under Section 206 (Ecosystem Restoration) of the Corps' Continuing Authorities Program for small civil works projects. As the non-federal sponsor, The Nature Conservancy paid 35 percent of the cost and the Corps paid the rest.

In this issue

Commander and District Engineer ..... **Lt. Col. Robert J. Ruch**
Chief, Public Affairs / Editor ..... **Edward C. Voigt**
Staff Writer ..... **Mervin E. Brokke**
Photographer ..... **Anthony S. Bley**

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Address mail to: Editor, DISTRICT OBSERVER, U.S. Army Corps of Engineers, Wanamaker Building, 100 Penn Square East, Philadelphia, PA 19107-3390. PHONE: (215) 656-6515. FAX: (215) 656-6820. E-MAIL: edward.c.voigt@usace.army.mil.