

U.S. Army Fort Monmouth
Restoration Advisory Board (RAB)
Meeting Minutes
July 11, 2013

The Quarterly RAB meeting was held at Building 455 at Fort Monmouth, Oceanport Avenue, Oceanport, New Jersey.

At 7:01 p.m. the meeting was called to order by James Allen (Co-Chairman). Mr. Allen led the meeting members in the Pledge of Allegiance.

RAB Members Present:

James Allen – (Pubic Co-Chair)
Wanda Green, (Army Co-Chair)
Linda Range, NJDEP Case Manager
Timothy Rider, PAO Picatinny Arsenal
Frank Owens, Tinton Falls Representative
Brian Charnick, Eatontown Representative
Joel Grimm, Monmouth Co. Health Dept.
Frank Barricelli, Oceanport Representative

Introduction of new members:

Mr. Jonathan Cohen, Tinton Falls Resident, resigned from the position. Mr. Frank Owens, Tinton Falls Resident, will be taking his place. Mr. William Simmons is retiring from the Monmouth County Health Department in a few weeks. Mr. Joel Grimm will be replacing his seat on the board.

Comments on old business:

Mr. Allen indicated at the beginning of the meeting that there was not a quorum of members based on current attendance; therefore, no voting will be conducted during this meeting.

Mr. Allen indicated that the meeting minutes from April 4th, 2013 can be discussed, but without a quorum, there will be no vote. Mr. Allen requested comments on minutes. No comments from board members. Mr. Barricelli recommends minutes to be tabled until the next meeting.

- Mr. Barricelli motioned to table the meeting minutes
- Mr. Charnick seconded the motion

Discuss new business:

- Installation Restoration Program (IRP) Program update:
 - Parsons is completing Remedial Investigation / Feasibility Study Work Plans (RI/FS WP) for each of the IRP Sites. Parsons has submitted the RI/FS for M-66 (Building 886). The plan is to bring the RI/FS to Trenton (NJDEP) and meet with

Ms. Range's group to ensure they are on the right path, as this report will serve as a boiler plate for all the other reports that will be produced.

- Parsons is also working on finalizing the Landfill RI/FS. Once it is finalized it will be submitted to the board for review.
- Parsons is working on the long term monitoring plan. They will begin groundwater sampling at all IRP sites the first week in August, starting August 5th and will continue through the month of August. All of the wells sampled prior to closure will be sampled. In addition, Parsons will sample M-68 (Building 700). This is the Site where a UST was discovered shortly before closure which is next to M-53 (Building 699) the former gas station.
- It was noted the resignation of Jonathan Cohen was discussed earlier in the meeting.
- Ms. Green reminds the RAB that comments on the reports which were previously distributed were to be forwarded to Mr. Barricelli within three or four weeks. Mr. Barricelli would then send the comments to Ms. Green to develop answers prior to the next RAB meeting. The only comments received were from Mr. Barricelli. Mr. Barricelli's comments are included in the package entitled "Comments on Installation Restoration Program". There were six documents which he reviewed and provided comments and questions. There is then a second document half-way through entitled "Army's Response to Frank Barricelli's Questions". Ms. Green offers the floor to Mr. Barricelli to discuss.
 - Mr. Barricelli references question/comment #2. There was insufficient detail in the report. Ms. Green agrees, and believes when the RI/FS comes out; the answers will become clearer. It's agreed the packets should be reviewed after the meeting to have time to read the details and can be discussed at the next meeting. Responses will be due in two to three weeks.
 - Mr. Barricelli addresses comments within the reports, particularly the Installation Assessment of Fort Monmouth (1980). Mr. Barricelli is going to keep pressing the RAB that his belief is motor vehicle run-off is a big problem. The report also mentioned that the Fort Monmouth motor vehicle maintenance facility had floor drains that ran to waterways. Ms. Range added that in general, with any motor pools or such facilities, NJDEP determines if sampling is warranted for any area of concern with a floor drain or oily water separator.
 - Mr. Barricelli points out that he has found deficiencies in many of the past reports. An example being the outfall pipe from Eatontown Borough into the Fort Monmouth Boundary.
 - Mr. Barricelli addresses Water Quality Engineering Study (1975). He points out both alkaline and acidic waste was discharged into the lime pit. Wastes were co-mingled.
 - Mr. Barricelli addresses the Weston Report (1993). His concern is there was a tannery right on Highway 35 that existed. The property behind where the tannery was located is Fort Monmouth's M-2. Mr. Barricelli believes it is likely there may be chemicals which were disposed of in that area.

- Ms. Green informs the board the Army will be on furlough days each Friday through the end of September.

Hurricane Sandy Landfill Inspections – Presenter, James Moore, U.S. Army Corps of Engineers, New York District

- The purpose of landfill inspections was to check for any post Hurricane Sandy issue such as erosion, loss of rip rap, fallen trees, etc.
- U.S. Army Corps of Engineers, FTMM, and Parsons performed the inspections.
- A brief description and photographs of the inspection results was provided for the following landfills:
 - FTMM Landfill M-2
 - FTMM Landfill M-3
 - FTMM Landfill M-4
 - FTMM Landfill M-5
 - FTMM Landfill M-8
 - FTMM Landfill M-12
 - FTMM Landfill M-14
 - FTMM Landfill M-18
 - FTMM Landfill M-25
- In general, there were no issues other than a few downed trees.
- Questions following presentation:
 - Mr. Barricelli requests a description of the high water mark at each landfill. Websites have alleged water covered these sites, and it was possible to percolate down and leach out contaminants from the sites.
 - Mr. Moore agrees to provide during discussion. Adds that these landfills are unlined, therefore each time it rains water percolates through. There are also monitoring wells that have been looked at over time to provide valuable information pre-Hurricane Sandy, which can be compared to the results collected in August.
 - Mr. Charnick asked if any new pollution could be pushed onto the site from Hurricane Sandy.
 - Mr. Moore responds yes, however with the volume of water that moved during the storm, it probably pushed right over and past the site.
 - Mr. Barricelli commented he smelled oil and gas at his home downstream following the storm from lawnmowers and cars etc during the storm.
 - Mr. Moore responded that oil floats on top of water, so it would make sense to see more downstream but dispersed over a wide area and that critters and the sun degrade the residual oil.

Brief summary of FOST Phase 1 report for the golf course parcel - Joel Grimm.

- Concern over the protocols followed by the Army in the application of the sludge throughout Fort Monmouth. Some of the studies show it was used quite a bit across the golf course as well as other areas of the Fort. Specifically on the landfills either for cover or fill.
- There was a storage area for the sludge. That area was sampled by the Army, however there were no other samples taken where the sludge was applied. There was also a pond on the golf course that was not sampled. The report suggests there is a good possibility for the presence of heavy metals in the sludge.
- Mr. Charnick indicated previous reports did recognize that heavy metals were coming out of the hexagon and into the sewage treatment plant (STP) near Hope Road. There were no real state standards back then, but now there are. He believes the report indicates that more work should be done on the golf course. He wants to know what is out there before the parcel is transferred.
- Ms. Green reminds members to assist in reading the reports, read the Executive Summary and the Conclusion.
- Ms. Green reminds members to read past notes from her presentation on the older reports. The old reports are poorly written and very opinionated. Samples were taken at CW-5 and CW-9 which was where the sludge was stockpiled. The sludge stockpile location was thought to be the area with the worst condition. Samples were taken and an AOC was identified at CW-9. Sediment samples were also collected at the STP discharge location. The NJDEP approved the sampling plan and NFAs have been received for those sites.
- Mr. Barricelli believes there are several statements that were ridiculous, questions that were asked are unanswerable, and findings are unsubstantiated. Does not understand why the report questions not sampling for heavy metals near the transformer or the pesticide storage building; you would test for PCBs at the transformer and pesticides at the storage building. Questions numbers from the STP which are in the report.
- Mr. Charnick disagrees and believes the report can support its findings.
- Ms. Green reminds the board to be respectful of each other and you are allowed to state your opinion. The report that was written in Bill Simmon's opinion.
- Mr. Allen offers a motion to have the report as part of the record.
 - Mr. Charnick seconds the motion.
 - All board members present in favor.
 - The report is included in these minutes.

Round Table Discussion – Ms. Green

- Ms Green received an email about the TAPP grant yesterday from Mr. Charnick. The board needs to vote on the changes (with the Wampum Lake references removed) before it is submitted. There is no quorum today.

2013 Meeting Schedule – Ms. Green

- The following meeting schedule was confirmed by the RAB:
 - Thursday October 23, 2013

Public Comments/Questions

No public comment.

At 8:27 p.m. the meeting was adjourned by Mr. Allen.

Meeting notes taken by A. Kriney of Parsons on behalf of the RAB.

Frank Barricelli;
Comments 6/18/13

Comments on Installation Restoration Program Reports Received at RAB on January 20, 2011

The comments that follow are for the bulleted items shown on the sheet handed out at the RAB held on January 20, 2011. A general comment is that all RAPRs were complete in providing data sheets, detailed maps, back-up information, and narrative and graphic summaries which were consistent and did not overstate the measured data. The future of the sites as shown in the FMERPA 20-year concept plan are also indicated in the comments that follow.

1. M2 RAPR 4Q05- 3Q06, M2 RAPR Nov 2008 (Covered 4Q03-3Q05), M2 RAPR 4Q08-3Q10 (Actual dates were for 4Q06-4Q08) The 6.5 acre M2 landfill site identified as FTMM-02 is located along the southern bank of Mill Brook in the southwestern corner of main post. It was used from 1964 to 1968 and closed in 1969. The Contaminants Of Concern (COCs) were benzene, chlorobenzene, and tert-butyl alcohol (TBA). The Ground Water Quality Standard (GWQS) for chlorobenzene was changed so the statement in the first RAPR's executive summary is incorrect in stating that the reading of 6.05 micrograms per liter exceeds the GWQS. This site was subject to Oxygen Release Compound (ORC) injections from Sep 2001 through May 2005. Although on a downward trend, the COC's "fluctuated widely with time". This site is undergoing additional site injection. The last RAPR provided indicated "There are several activities either currently underway or planned to be conducted in 2010 that will address many of the items outlined in NJDEP's June 26, 2009 correspondence letter [i.e. Baseline Ecological Evaluation (BEE) and Permit-by-Rule for Regenox injections]. The DPW will prepare a response to the June 26, 2009 correspondence letter for inclusion in the next RAPR." The FMERPA 20-year concept plan shows this site will remain an undeveloped recreational area.

Questions: Additional information is needed on the NJDEP correspondence and the DPW response. The RAPR also indicated Tentatively Identified Compounds (TICs) above the GWQS of 100 micrograms per liter were found but more information is needed describing the TICs.

2. M3 RAPR 2002-2008 (Covered 4Q02-4Q08) The 5.9 acre M3 landfill site identified as FTMM-03 is located on the south bank of Lafetra Creek in the west-central portion of Main Post. It is bordered on the south and west by North Drive and on the east by Mill Creek. The M3 landfill was used from 1964 to 1968 for the general disposal of domestic and industrial waste and inactive since 1969. Chlorobenzene was initially considered a COC however the NJDEP Ground Water Quality Criterion was changed from 4.0 micrograms per liter to 50.0 micrograms per liter in Nov 2005. That higher criterion has never been exceeded since sampling began. One well had samples above the GWGC for cis-1,1-dichloroethene (DCE) however that GWQC has changed from 10.0 micrograms per liter to 70.0 micrograms per liter in Nov 2005. One well (M-3MW07) has shown increasing readings of vinyl chloride above the GWQC. Vinyl chloride was not identified as a COC in the

RIR/RAWP but is now considered a COC. The RAPR indicated "Further investigation to determine the source of increasing vinyl chloride in M-3MW07 is warranted." The FMERPA 20-year concept plan shows this site will remain an undeveloped recreational area.

Question: What is the status of the investigation of the source of vinyl chloride?

3. M5 RAPR 2005-2006 (Covered 4Q05-3Q06), M5 RAPR March 2009 (Covered 4Q03-3Q05)
The 3.2 acre M5 landfill site identified as FTMM-05 is located in the western portion of main post just west of the Eatontown/Oceanport boundary, bordered to the west by Mill Brook, and south of the M8 landfill site. The M5 landfill was used from 1952-1959 and inactive since 1959. It contains domestic and industrial waste including automobiles. The GWQC is exceeded for PCE, TCE, cis-1-2dichloroethene (DCE) and vinyl chloride. Hydrogen Release Compound (HRC) was injected for groundwater treatment of PCE and is continuing. The figures show the COC levels for offsite wells increasing with time. That appears to confirm the slow lateral migration on COCs in the groundwater. The FMERPA 20-year Concept Plan shows this site will remain an undeveloped recreational area.

Question: Figures 5-7B and 5-8 provide data for wells M8MW12 and M8MW23. Why are those figures included in the M5 RAPR? The contaminants detected are in both landfills.

4. M8 RAPR 2004-2005 (4Q04-3Q05), M8 RAPR 2005-2006 (Oct05-Ssp06), M8 RAPR 2006-2008 (Oct06-Dec08)
The 2.2 acre M8 landfill site identified as FTMM-08 is located along the northern border of main post at a bend in Parkers Creek. The M8 landfill was used from 1961 to 1981. Figure 2-1 of RAPR 2005-2006 incorrectly shows the location of the site but all detailed maps showing well locations, gradients, etc. correctly indicate its location. Chlorobenzene was considered a COC however the NJDEP GWQS was changed in Nov 2005 from 4 micrograms per liter to 50.0 micrograms per liter. Vinyl chloride is now a COC since the NJDEP GWQS was changed from 5 micrograms per liter to 1 microgram per liter in Nov 2005. Reference page i of RAPR 2004-2005, "Although concentrations of COCs were above GWQC in several wells along Parkers Creek, the concentrations are not above the Surface Water Quality Criteria (SWQC) for Parkers Creek." As of the last RAPR, benzene, PCE, and TCE are still above GWQS and natural attenuation has been approved as a remedy. In 2007, four pesticides were detected in one well above GWQS. Those include 4,4'-dichlorodiphenldichloroethane, 4,4'-dichlordiphenyltrichloroethane, alpha-chlordane, and gamma-chlordane. No remedial action for those pesticides was discussed. The FMERPA 20-year Concept Plan shows this site will remain an undeveloped recreational area.

Question: More information on remedy for pesticides is needed.

5. M22 RAPR Oct99-Mar00, M22 RAPR Apr00-Sep00, M22 RAPR Oct00-Mar01, M22 RAPR Apr01-Sep01, M22 RAPR 2001-2002, M22 RAPR Mar 2006, M22 RAPR Nov 2008, M22 RAPR June 2010
The site M22 is also referred to as CW-1 and is under and near a now unused underground acid neutralization concrete vault that is located in the central courtyard of Building 2700 also known as the Meyer Center. The vault was built at the time

of the Meyer Center construction which began in 1952 and was used to neutralize acid wastes from the laboratories prior to discharge into the sanitary sewer system. During a clean-out, disposal and replacement of the vault's limestone chips in 1992, tetrachloroethene (PCE), trichloroethene (TCE), and 1,1-dichloroethene (DCE) were detected in groundwater under and near the vault. The possible source was solvents which were improperly disposed using the acid neutralization sinks located in Meyer Center laboratories. Air sparge with soil vapor extraction was started in 1998 and a groundwater recovery well was installed and operated starting in April 2001. In December 2001, the vault's limestone chips were removed and disposed and further use discontinued. Improvements to the groundwater recovery system (additional wells and connection to treatment system) and the vapor extraction/air sparge systems were made in 2001-2002. On May 25, 2005 the vapor extraction/air sparge and groundwater recovery/treatment systems were turned off. It was determined that the vapor extraction/air sparge systems had reached the desired end point of removing all recoverable vapor phase mass and the groundwater recovery/treatment system had removed VOCs to asymptotic levels. TCE was the remaining VOC above the GWQS. In 2006, the TCE reading was 55.82 parts per billion and the GWQS was 1.0 parts per billion. The vapor extraction/air sparge and groundwater recovery/treatment systems were restarted in Oct 2007. The last reading reported in the RAPR was 2.52 micrograms per liter which is slightly above the GWQS of 1.0 micrograms per liter. The FMERPA 20-year Concept Plan shows this site will be a grassy area inside a courtyard of office buildings.

Question: Are the recovery and treatment systems still being run and what are the latest readings?

6. M23 RIR Mar 2005 This Remedial Investigation Report (RIR) is for site M23 also referred to as CW-2. CW-2 refers to a now removed underground acid neutralization concrete vault that was located southeast of Building 2700 also known as the Meyer Center. The vault was built at the time of the Meyer Center construction which began in 1952 and was used to neutralize acid wastes from the laboratories prior to discharge into the sanitary sewer system. During a clean-out of the vault's limestone chips, it was determined that an improper connection to the vault's input had been made from two latrine/bathroom facilities. The connections were removed and the vault cleaned (and subsequently removed). Site investigations showed one well had a tetrachlorethene (PCE) reading slightly above the NJDEP GWQC. One PCB was detected in soil slightly above the NJDEP soil cleanup criterion. A No Further Action (NFA) for groundwater has been requested since sampling shows no COCs in groundwater. The FMERPA 20-year Concept Plan shows this site will be a grassy area in front of an office building.
7. M53 RAPR Dec 2002, M53 RAPR 2004-2005 (Oct04-Sep05) Site M53 is located near Building 699, the main post gas station on Saltzman Avenue. Site investigation and remediation efforts began in 1989 after a release of an estimated 11,000 gallons of gasoline from piping connected to underground storage tanks. Benzene, toluene, ethyl benzene, and

xylene were detected. A separate phase recovery effort removed 6,733 gallons of product by Aug 90. Separate phase and product film have not been recovered since 2002. A soil vapor extraction/air sparging system was installed, and as of the end of the reporting period for M53 RAPR 2004-2005, 5,029 equivalent gallons of product have been recovered. A pump and treat groundwater system was installed treating an average of 4,090 gallons per day and 0.4 pounds of dissolved phase hydrocarbons were removed during the 2004-2005 reporting period. Benzene and toluene were detected in surface soils at levels exceeding the NJDEP Residential Direct Soil Cleanup Criteria. These could not be remediated using the vapor extraction/air sparging and groundwater pump and treat systems alone since a clay layer is located 3-4 feet below the ground surface. Therefore, Enzyme Enhanced Bioremediation (EEB) was used to treat surface soils starting in 2000. The EEB application resulted in an initial reduction of contaminants. No further EEB applications have been made. The FMERPA 20-year Concept Plan shows this site will be a grassy area bordering Saltzman Avenue.

8. M61 RAPR 2Q04-24Q08 Site M61 is a 2.75 acre area encompassing Building 283 (also known as Squier Hall) and its surrounding parking lots. Building 283 is located in the northern portion of main post at the intersection of Sherrill and Brewer Avenues. It is 200 feet south of Parkers Creek. On August 28, 1997 a spill was reported after leaks and ground contamination were detected upon removing a 3,000 gallon Underground Storage Tank (UST). Upon investigation, benzene, ethylbenzene, total xylenes, and lead were detected above the NJDEP GWQS and considered COCs. Natural attenuation with Long Term Monitoring was proposed for this site. Approval for Oxygen Release Compound injection was granted in 2007. While a downward trend of COCs has been measured, a Mann-Whitney U-test of the data for 1Q07-4Q08 indicates "While COC concentrations have shown a general decreasing trend since monitoring began, statistical analysis of the source well (283MW02) COC concentrations for the current reporting period does not support the trend." In paragraph 6.0 Conclusions, it is stated that one "cannot conclude that the concentrations of COCs are currently decreasing. In situ treatment to inject ORC Advanced at Site 283 is being considered for the future." With respect to surface water sampling, "results were compared to the appropriate freshwater or saline water NJDEP Surface Water Quality Standard (SWQS)." "Analytical results for three surface water sample locations during the current reporting period were greater than the NJDEP SWQS for trichloroethene, tetrachloroethene, lead, and arsenic. All these compounds were not considered as COCs except lead." The FMERPA 20-year Concept Plan shows this site will be reused for office purposes.

Questions: What are the latest ground water sampling results or trends? Has the downward trend been resumed? Why wasn't arsenic considered a COC with respect to surface water sampling? It was detected at levels above the SWQS at both upstream and

downstream sampling locations as compared to lead which was detected only in one upstream reading.

Comment: The conclusion that one "cannot conclude that the concentrations of COCs are currently decreasing" applies only to the time period covered by the latest RAPR. The results over the entire time period during which COCs have been monitored clearly show a reduction over time.

9. M64 RAPR 4Q03-4Q08 Site M64, also referred to as Site 812 and FTMM-64, is a 2.75 acre area encompassing Building 812 (the Army Community Center) and its parking areas. It is in the south-central part of Main Post bordered by Murphy Drive to the east and south, an unidentified access road to the northwest, Building 1000 (Post Exchange/PX) and Building 100 (Four Seasons Store) to the west. Building 812 was built in 1947. During World War II, a gas station with now removed USTs and underground piping connected to an abandoned rail line located 400 feet to the north was located at the site. Ground water monitoring of the site identified concentrations of eight Volatile Organic Compounds (VOCs) above the Ground Water Quality Standard (GWQS) for Class II aquifers: 1,1,1-trichloroethane, 1,1-dichloroethene, benzene, *cis*-1,2-dichloroethene, tetrachloroethene, *trans*-1,2-dichloroethene, trichloroethene, and vinyl chloride. The RAWP proposed natural attenuation enhanced through using HRC® injection to accelerate naturally occurring in-situ anaerobic biodegradation with ground water monitoring as the site remedy for the eight Contaminants of Concern (COCs). Figure 5-2c shows a sharp increase in vinyl chloride in the fourth quarter of 2008. The FMERPA 20-year Concept Plan shows this site will be roadways with a grass median.

Question: What are the latest sampling results for this site.

Comments: The file also included a copy of the Site 812 Remedial Investigation Report and Remedial Action Workplan. The location map of Figure 1 incorrectly shows the site outside of the fort's perimeter.

The RAPR also indicates a 1940 photograph showed the Site 812 location to be wooded with a linear feature (possibly a swale), running through the area. That linear feature is a brook shown on the attached map from the 1878 Woolman and Rose Atlas. The brook currently can be seen outside of the fort's perimeter running alongside Oceanport's Brookview Drive crossing under Main Street. The brook is no longer at ground level on the Fort Monmouth side and runs through an underground culvert which empties into Oceanport Creek. The underground culvert runs through the Site 812 (possibly under Building 812) and its presence should be considered when drilling sampling wells and redeveloping the site.

10. M66 RAPR 2003-2008 Site M66 Site 886 is located at the Main Post Area of Fort Monmouth, New Jersey (Figure 2-1). Site 886 includes Building 886, a former equipment-storage building, and is located in the south part of the Main Post Area at the intersection of Murphy Road and Lane Avenue, approximately 950 feet south of Husky Brook. A

250,000-gallon aboveground storage tank (AST) for #2 fuel oil was removed from the site in the 1970s. The AST was remotely filled from a railroad siding and connected underground piping which started approximately 200 feet to the West of the AST site at a historic railroad siding. During the removal of a 1,000-gallon #2 fuel underground storage tank (UST) in April 1998, extensive subsurface petroleum contamination (primarily Benzene) was found. The source of much of that contamination is believed to have been the AST. About 4,000 tons of fuel impacted soil has been removed from the site and a petroleum recovery system was installed at wells in the affected area. The recovery systems were subsequently turned off when little free product was recovered and the wells used for monitoring. The monitoring efforts are ongoing and it is expected natural attenuation will result in levels below the GWQS. The FMERPA 20-year Concept Plan shows this site will be a grass median.

COMMENTS/QUESTION: Installation Assessment of Fort Monmouth Report NO. 171, May 1980 US Army Toxic & Materials Agency

1. Page 32, para II,B.1.b, lines 19-25 – Comment: The report indicates motor vehicle maintenance area floor drains directly discharge into storm drains until grease traps were installed in 1978. Subsequently, trap contents were disposed of by a contractor. This was a probably source of motor vehicle related contaminants in local streams and water bodies. This was common practice.
2. Page 40, para II.C.1, 4th subpara – Comment: The test indicates possible leachate from Eatontown's sewer plant into Husky Brook. That plant discharged into Mill Brook. This is the only mention of the Eatontown sewer plant in the reports provided by the Army. Those reports are deficient in not identifying this sewer outfall into a stream within the fort's boundaries.
3. Page 45, para IV.A.12, 1st subpara – Comment: The report indicates effluent from the Hexagon passes through limestone neutralization tanks. Only effluent from special sinks and sewer mains designed for acid solutions flow through the limestone tanks. All other effluent flows through normal sewer lines until it merges with the effluent from the limestone tanks.

COMMENTS/QUESTIONS: USATHAMA Update of the Initial Installation Assessment of Fort Monmouth and Subinstallations: Charles Wood Area and Evans Area June 1988 FINAL REPORT

1. Page ii – Comment: The report recommends that USATHAMA not conduct a site investigation and that Fort Monmouth continue with the surface and ground water sampling program.
2. Page 3.1.1 – Comment: Public conceptions of the impact of Fort Monmouth on the environment are unfounded.
3. Comment: The presentations presented by the Army at the April 2013 RAB adequately summarize the findings of this report

COMMENTS & QUESTIONS ON: FINAL REPORT, January 2013, AECOM, Vapor Intrusion Site Investigation Report

1. Comment : The report is clearly written and includes backup data to support findings and conclusions. The targeted building were 283, 602,699,700, 1001 on Main Post and building 2700 in the Charles Wood Area. Buildings 675, 676, and 677 were visually inspected due to their proximity to sites where contamination was found. Those three buildings were beyond the 100 foot radius requiring testing.
2. Page 1-1, para. 1.2 Comment: The report neglects to mention the post's primary mission for the first half of its existence was as the US Army Signal School and Center.
3. Page 3-5, para. 3.5 Comment: All deviations from the vapor intrusion Guidance and Workplan were adequately explained.
4. Comment: Chloromethane is detected in background air samples not related to the fort's operation.
5. Page 5.1, para. 5.1 Comment: Issues raised during the Data Quality Review were adequately explained.

COMMENTS & QUESTIONS: Water Quality Engineering Special Study No. 24-016-75/76 Sanitary and Industrial Wastewater, Fort Monmouth, NJ 23 Sep-9 Oct 1974, 15-17 Apr 75, 10-12 Jun 1975

1. Page 3, para 3 – Comment: Fort Monmouth sewage is mostly domestic. The Hexagon [bldg. 2700] flow is 10% of the 0.4Mgal/day flowing into the Charles Wood Area sewer treatment plant. The Hexagon's flow is characterized as industrial wastewater from laboratory related uses. However, it is not clear if the 10% attributed to the Hexagon includes the domestic sewage from the toilet facilities, showers, drinking fountains, lavatory and janitorial sinks, cafeteria operations, etc. for the approximately 2,500 personnel working in building 2700 and other R&D buildings located adjacent to that building.
2. Page 16, para 5.b(1)(a) – Comment: Alkaline wastes were detected flowing into the lime pit. The purpose of the lime pits was to neutralize acidic wastes received from specially designed sinks and drain pipes. The fact that alkaline and other non-acidic wastes were discharged into the system designed for acidic wastes indicates a serious training problem.
3. Page 30, para d(3) – Comment: The report indicates the removal of effluent from the Charles Wood Area and Main Post sewer treatment plants would not change the water quality in Wampum Brook and Parkers Creek. It suggests water quality of those streams may get worse since the sewer plant effluents are higher in quality than the streams upstream of the sewer outfalls.
4. Page 43, Para e(1) – Comment: Suspended solid removal was 91%.
5. Page 43, para e(2)(b) – Comment: Copper was a serious problem as an influent to the Charles Wood sewer treatment plant. That plant is equipped with a receiving basin and screening basin to remove the suspended copper but the NMCRSA sewer plant lacks those.
6. Page 49, para (3) – Comment : Paragraph reiterates the comment about the impact of removing the sewer treatment effluents from local streams [see above comment 3]. Supporting data for that position was contained in Tables 14 and 15 and Appendix F, G-12, Table 2, Appendix I. Analysis of off post grab samples were not as extensive as on post samples so the quality statement is limited to biological health of the streams. Off-post samples were not tested for heavy metals.
7. Page 66, para (f) – Comment: The report indicates a thick black sludge layer exists in Parkers Creek and largely attributes that to the Main Post sewer treatment plant. However, the report does not acknowledge that the Eatontown sewer plant discharged its effluent into Mill Creek upstream of the Main Post plant. The attribution to the Main Post plant cannot be substantiated without data on the solids in the Eatontown sewer plant effluent.

COMMENTS ON WESTON Final Investigation of Suspected Hazardous Waste Site at Fort Monmouth, NJ
December 1993

1. Page 4-1, para. 4.1.1 Landfill 1 (M-1)- Comment: The paragraph discusses a possible landfill reported as pre-WW2. The possibility of that landfill resulted from an interview with a former employee as part of an early search for possible contamination sites. The reported location was not precise and an investigation by fort employees failed to locate the landfill at the expected site which would have been outside the fort's boundary. That landfill may in fact have been the landfill site on the other side of Highway 35 along Wampum Lake. It should also be noted that the site investigated by the Army was behind an historic tannery. Eatontown's homepage indicated the tannery was founded in 1795 and is still shown on maps dating to the late 1800s. Tannery operations used large amounts of caustics, acids, and other chemicals which required periodic disposal. In that time frame, on-site disposal and dumping in nearby vacant land and streams was standard practice. Those substances may still be present.
2. Page 4-82, para 4.2.6.3 – Question: The paragraph indicates samples were collected in 1981 for TCLP analysis. No reference to the report on that analysis was provided. Is it possible to locate that analysis?

COMMENTS ON WESTON Site Investigation Fort Monmouth New Jersey Main Post and Charles Wood Areas December 1995

1. Page 4.3-61, Table 4.3-8 Comment: All metals detected in site soils for the former Charles Wood sewer treatment plant were below NJDEP SCC. Only calcium was above Maximum Background Concentration.
2. Page 4.3-64, Table 4.3-9 Comment: All metals detected in sediment samples were below NJDEP SCC and Maximum Background Concentration.



***Fort Monmouth Hurricane Sandy Landfill
Inspections
U.S. Army Corps of Engineers
New York District***

***James Moore
Project Manager
U.S. Army Corps of Engineers,
New York District***

BUILDING STRONG!

11 July 2013



Purpose of Hurricane Sandy Landfill Inspections

- Why perform inspections? - Regulators requested inspections to determine if there was a hazardous release related to Hurricane Sandy. Findings were documented on field inspection forms by US Army Corps of Engineers.
- When were the inspections performed? – In February 2013.
- Who performed the inspections? – Combined team of Fort Monmouth, US Army Corps of Engineers and Contractor (Parsons)



FTMM Landfill M-2

Date of Inspection: 14 February 2013

Name of Inspectors: James T. Moore & Robert M. Greco, Corps of Engineers, Parsons and FTMM staff

Do conditions at the site pose an immediate threat to human health or the environment? ___Yes _X_No

Briefly describe any equipment damage, operational problems, etc:

- Trees were observed to be down adjacent to the creek. The trees were located in the embankment of the creek. No environmental exposure of underlying landfill material observed in the area of the downed trees. No observed damage to the existing ground cover observed in other areas of the site. Reference attached photo.



US Army Corps of Engineers



FTMM Landfill M-2



BUILDING STRONG[®]



FTMM Landfill M-3

Date of Inspection: 14 February 2013

Name of Inspectors: James T. Moore & Robert M. Greco, Corps of Engineers, Parsons and FTMM staff

Do conditions at the site pose an immediate threat to human health or the environment? ___Yes ___X___No

Briefly describe any equipment damage, operational problems, etc:

- No Hurricane Sandy damage detected to the existing ground cover or riprap embankment along the creek at the site. Reference attached photo.



US Army Corps of Engineers



FTMM Landfill M-3





FTMM Landfill M-4

Date of Inspection: 14 February 2013

Name of Inspectors: James T. Moore & Robert M. Greco, Corps of Engineers, Parsons and FTMM staff

Do conditions at the site pose an immediate threat to human health or the environment? Yes No

Briefly describe any equipment damage, operational problems, etc:

- No Hurricane Sandy damage detected to the existing ground cover or riprap embankment along the creek at the site. Reference attached photo.



US Army Corps of Engineers



FTMM Landfill M-4



BUILDING STRONG[®]



FTMM Landfill M-5

Date of Inspection: 14 February 2013

Name of Inspectors: James T. Moore & Robert M. Greco, Corps of Engineers, Parsons and FTMM staff

Do conditions at the site pose an immediate threat to human health or the environment? Yes No

Briefly describe any equipment damage, operational problems, etc:

- No Hurricane Sandy damage detected to the existing ground cover or riprap embankment along the creek at the site. Reference attached photo.



US Army Corps of Engineers



FTMM Landfill M-5





FTMM Landfill M-8

Date of Inspection: 14 February 2013

Name of Inspectors: James T. Moore & Robert M. Greco, Corps of Engineers, Parsons and FTMM staff

Do conditions at the site pose an immediate threat to human health or the environment? Yes No

Briefly describe any equipment damage, operational problems, etc:

- No Hurricane Sandy damage detected to the existing ground cover or riprap embankment along the creek at the site. Reference attached photo.



US Army Corps of Engineers



FTMM Landfill M-8





FTMM Landfill M-12

Date of Inspection: 14 February 2013

Name of Inspectors: James T. Moore & Robert M. Greco, Corps of Engineers, Parsons and FTMM staff

Do conditions at the site pose an immediate threat to human health or the environment? Yes No

Briefly describe any equipment damage, operational problems, etc:

- No Hurricane Sandy damage detected to the existing ground cover or riprap embankment along the creek at the site. Reference attached photo.



FTMM Landfill M-12





FTMM Landfill M-14

Date of Inspection: 14 February 2013

Name of Inspectors: James T. Moore & Robert M. Greco, Corps of Engineers, Parsons and FTMM staff

Do conditions at the site pose an immediate threat to human health or the environment? Yes No

Briefly describe any equipment damage, operational problems, etc:

- No Hurricane Sandy damage detected to the existing ground cover or riprap embankment along the creek at the site. Reference attached photo.



US Army Corps of Engineers



FTMM Landfill M-14





FTMM Landfill M-18

Date of Inspection: 14 February 2013

Name of Inspectors: James T. Moore & Robert M. Greco, Corps of Engineers, Parsons and FTMM staff

Do conditions at the site pose an immediate threat to human health or the environment? Yes No

Briefly describe any equipment damage, operational problems, etc:

- No Hurricane Sandy damage detected to the existing ground cover or riprap embankment along the creek at the site. Reference attached photo.



US Army Corps of Engineers



FTMM Landfill M-18





FTMM Landfill M-25

Date of Inspection: 14 February 2013

Name of Inspectors: James T. Moore & Robert M. Greco, Corps of Engineers, Parsons and FTMM staff

Do conditions at the site pose an immediate threat to human health or the environment? Yes No

Briefly describe any equipment damage, operational problems, etc:

- No Hurricane Sandy damage detected to the existing ground cover or riprap embankment along the creek at the site. Reference attached photo.



US Army Corps of Engineers



FTMM Landfill M-25



The Monmouth County Board of Health

Frank Pingitore
President

3435 HIGHWAY 9
FREEHOLD, NEW JERSEY 07728-1255

TELEPHONE (732) 431-7456
FAX (732) 409-7579

Michael A. Meddis, M.P.H.
Public Health Coordinator
And
Health Officer

To: Wanda Green, BRAC Environmental Coordinator
OACSIM - U. S. Army Fort Monmouth (FM)

From: William Simmons, Environmental Health Coordinator

Re: Comments on FOST for the Phase 1 Properties Charles Wood Area
(CWA) /Parcel B

Date: April 26, 2013

At the Restoration Advisory Board (RAB) meeting on 4/4/13 you discussed sending in comments for this Finding of Suitability to Transfer (FOST), that you explained included the entire golf course, except for certain areas that are not ready for transfer ("carve outs").

The sludge from the former sewer plants had been applied to the golf course as fill or fertilizer since as early as the 1940s. As far as I know from RAB discussions and reading the documents that were provided, soil in only one 1.8-acre area of the 235-acre golf course has been analyzed for heavy metals, and the sediment in the freshwater pond on the golf course upstream of Wampum Lake has never been sampled for heavy metals.

How will the Army respond should more extensive sampling in the future of the soil or sediment indicate levels of heavy metals that will necessitate remediation due to historic practices?

Can FM provide whatever guidelines and standards FM used regarding the land application of sludge during the operation of the CWA STP from 1942 to 1975? What were the permissible levels of metals in the sludge that was used as fill or soil conditioner; and what were the land application practices regarding rain and the prevention of sludge runoff to the freshwater pond on the golf course that is upstream of Wampum Lake.

The basis for these comments is as follows. The CWA Sewage Treatment Plant (STP) operated for 33 years, from the opening of the CWA in 1942 until the STP was closed in 1975. This was three years after the passage of the Clean Water Act in 1972. The Act's requirements for more effective removal of pollutants from wastewater eventually resulted nationally in the production of large quantities of sewage sludge. When section 405 of the Act was amended in 1987, the EPA was required to develop a comprehensive program to reduce environmental risks and maximize the beneficial use of sewage sludge. In February 1993, EPA promulgated Title 40, Code of Federal Regulations, Part 503, "Standards for the Use or Disposal of Sewage

Sludge”, eighteen years after the CWA STP was closed (1). In 1978, the NJDEP began to focus on the regulation of the land application of sludge due to public concerns about the ocean dumping of sludge. These regulations were not adopted until 1987, twelve years after the CWA STP was closed (2).

Decades before these regulations, sludge from the FM sewer plants had been used as fill, soil conditioner, and fertilizer on the Suneagles Golf Course, beginning as early as the 1940s (3). An example of sludge being used as fill is: “According to long-term Fort Monmouth employees, at least three other fairways (8, 10, and 11) have 4 to 5 inches of sludge over the native sand; sludge may have been used to fill in low areas” (4). Sludge had also been disposed of at FM landfills and taken offpost for home use (5).

Suneagles is nearly 235 acres of the 489 acres of CWA (6). As far as I know from RAB discussions and reading the documents that were provided, soil in only one 1.8-acre area of the 235-acre golf course has been analyzed for heavy metals: the former sludge disposal site (FTMM-31, CW-9, ECP Category 3, Parcel 6). This was tested and was given a No Further Action letter by the DEP in 1996 (7). Another area by the former pesticide storage building (FTMM-28, CW-6, ECP Category 4, ECP Parcel 7) was tested for a target compound list of organics and pesticides, but apparently not heavy metals, and this received an NFA from the DEP on 4/30/12 (8). The former PCB Transformer Location (FTMM-29, CW-7) on the golf course was also sampled for PCBs but not metals (9).

Building 2700 (Myers Building, Hexagon Building) in the CWA was the most significant source of the heavy metals in the influent to the CWA STP (FTMM-27, CW-5, ECP Cat 1, ECP Parcel 35):

“Wastewater at FM consists almost entirely of domestic sewage. There is, however, one significant source of industrial wastewater. This is the Hexagon Building (Building 2700) in the CWA of FM. This source comprises nearly 10 percent of the 0.4 million gallons/day (MGD) influent to the CWA sewage treatment plant (STP)... The Hexagon Building contains a wide diversity of shops, such as photoprocessing, metal treatment, and painting. It also contains a number of laboratories in which experimentation with communications/electronics equipment, and components is conducted. At any given time, the effluent from the Hexagon Building may contain almost any kind and quantity of industrial wastewater. No central control over the dumping of such wastes exists. The wastes are all fed through a limestone acid neutralization bed to the sanitary sewer system of the CWA... There is little value in discussing the effluents from this building in terms of averages or medians because of the apparent randomness of discharging wastes from the building. Our survey was not of sufficient length to establish any cyclic patterns in the discharges.” (10). Regarding the magnitude of the heavy metal content in this waste stream, the inspectors from the U.S. Army Environmental Hygiene Agency advised in their 1976 report that “This influent contains a melange of solvents, metals and other assorted industrial wastes... Disposal instructions for the dried sludge may be obtained from this Agency, once sufficient information about the nature has been obtained. One possibility is that it may be economically feasible to recover metals from the sludge” (11).

The 40,000 gallons per day of wastewater discharged from Building 2700 to the CWA STP specifically refers to the chemical waste stream, not the additional sanitary sewage: “The Hexagon Building contains many shops, hundreds of laboratories, and has been the site of continuous maintenance operations. As a result, chemical waste streams of 150 m³ per day [40,000 gpd] have been generated” (12). The inspection by the U.S. Army Environmental

Hygiene Agency (from 9/23 - 10/9 1974; 4/15-17 1975; and 6/10-12 1975) gives several examples in their report of chromium, copper pickling waste, and an unknown discharge (maybe copper and ammonia) in the effluent from Building 2700. It notes that the “data reported here reflect the extremes seen during this survey, but long term extremes may exceed these” (13). During the inspection, 5300 ug/l (ppb) of chromium, and 992,000 ug/l (ppb) of copper temporarily spiked in their sample of the effluent from Bldg. 2700 (14).

As a result of this inspection, FM subsequently reorganized operations at Building 2700 and “effected a reduction in the amount of industrial waste output to approximately 115 m³ per day [30,380 gpd]”, and a licensed scavenger was hired “by Fort Monmouth in 1977-1978 for disposal of concentrated wastes (e.g., etchants and organic solvents)”, three years after the CWA STP was closed (15).

The STP at the CWA that was designed for treating mostly domestic sewage, was built in 1942 had an 800,000-gallon/day capacity and was manned 16 hours/day, 7 days/week, operating at about 50 percent capacity (400,000 gallons per day(gpd), also reported as 0.4 million gallons/day). “It is a trickling filter secondary treatment plant, whose primary treatment consists of grit chamber screening, comminution, and primary settling. Secondary treatment consists of a constantly and uniformly dosed biofilter, followed by secondary clarification and chlorination” (16).

“Sludge is treated in one of the two digesters, dewatered, and concentrated. It is then drawn off onto underdrained open sand beds for drying. Supernatant liquid from each digester and drainage from the drying beds are routed back to the plant influent.” (16). At the last RAB meeting, it was “confirmed sand beds removed the metals”, as recorded in the draft minutes for 04/04/13. The underdrain sand beds are designed to dry out sludge and return the liquid (supernatant) to the plant for further decomposition and settling. It is not their purpose to remove heavy metals, it is to dry out the sludge. They are not a Heavy Metal Removal & Recovery System. Any heavy metals that remain in the sand when the sand is removed periodically for maintenance are incidental levels. Removing heavy metals from industrial waste streams requires additional treatment: “the heavy metal contents of wastewaters can be effectively removed to acceptable levels by precipitating the metal in an insoluble form. Heavy metals are typically precipitated from wastewater as: hydroxides, sulfides or sometime sulfates carbonates. Metal co-precipitation during flocculation with iron or aluminum salts is also possible for some metals (e.g., arsenic)” (17).

The U.S. Army Environmental Hygiene Agency reported several times that the CWA STP was generally well run with good solids removal (18). Organic and inorganic solids are removed from the liquid and stored in the sludge when a plant is running efficiently, which occurs when it is not raining heavily. The report states that their inspection occurred during a dry period, except for precipitation “on the night and morning of 29-30 September, which amounted to 0.52 inches of rain” (19).

In fact, the stream flows were so low during the inspection period that a layer of sludge formed below the Main Post STP, which would normally have broken up and moved downstream into the Parkers Creek estuary during heavier rainfall than had occurred during this period:

“A second problem within the upper Parker's Creek estuary is a thick (up to 6 or more inches), black sludge layer on the bottom of the study reach. This anaerobic layer has been described as deposited sewage solids, which it most probably is. It is largely, if not entirely, from the FM

proper STP. The presence of this layer may be caused in part by a "lip", or shallows downstream of the STP outfall which prevents free drainage at low tide ... One phenomenon of significant interest was not observed. This is the effect of a large freshwater discharge through the study reach. During and following a significant rainfall event, there may be substantial flushing of the reach" (20).

We now know from recent RAB meetings that the Eatontown Sewerage Authority has discovered significant ongoing I&I leakage into the sewer lines at FM. It is unfortunate that the inspection conducted by the U.S. Army Environmental Hygiene Agency in the mid-70s did not address the effect of heavy rainfall on the efficiency of the CWA STP, when the sewer infrastructure was then about 30 years old. The volume of the influent to a STP will increase if rain enters the sewerage infrastructure due to Infiltration and Inflow (I&I) problems. When this happens, the STP will lose its efficiency, and some of the organic and inorganic solids that normally would have had time to settle into sludge will remain in the effluent. This effluent and its solids then discharge to the receiving stream, which is also flowing quickly due to storm conditions. These solids, especially the finer particles that contaminants like heavy metals preferably bind to, eventually deposit into a lake or other slow moving areas located downstream in the watershed, where these fine particles are able to slowly settle into the sediment. How much the full plant capacity of the CWA STP (which normally operated at about 50 percent) would have compensated for I&I volume increases during heavy rainfall from the 489-acre CWA property is unknown.

Heavy metals preferably bind to organic material, not sand. This means that the environmental fate of the heavy metals, that were predominately discharged from Building 2700 to the CWA STP, was either to the effluent that was discharged from the STP to the watershed, or to the sludge which had been land applied to the golf course since the 1940s - with some incidental removal from the effluent and sludge streams when the underdrain sands were removed for maintenance.

Can FM provide whatever guidelines and standards FM used regarding the land application of sludge during the operation of the CWA STP from 1942 to 1975? What were the permissible levels of metals in the sludge that was used as fill or soil conditioner; and what were the land application practices regarding rain and the prevention of sludge runoff to the freshwater pond on the golf course, upstream of Wampum Lake.

Given the above, how will the Army respond should more extensive sampling in the future of the soil or sediment indicates levels of heavy metals that will necessitate remediation due to historic practices?

NOTES

Pdf pages are used instead of document pages to simplify locating the references to these scanned or online documents using the 'Find' tool.

1. USEPA. 2002. Office of Inspector General Status Report: Land application of biosolids. 2002S000004. Washington, DC: U.S. Environmental Protection Agency.
http://www.epa.gov/oig/reports/2002/BIOSOLIDS_FINAL_REPORT.pdf Pdf pps 9-10
2. NJDEP. Accessed 4/23/13. State Wide Solid Waste Management Plan 2006. K. SEWAGE SLUDGE. Solid and Hazardous Waste Management Program.
http://www.nj.gov/dep/dshw/recycling/swmp/doc/section_k_06.doc . Main index:
<http://www.state.nj.us/dep/dshw/recycling/swmp/index.html>
3. U.S. Army BRAC 2005 Environmental Condition of Property Report Fort Monmouth Monmouth County, New Jersey Final 29-January-2007. Pdf pps 108, 163, 171, 173.
4. Weston (Roy F. Weston, Inc.). 1995. Site Investigation Report – Main Post and Charles Wood Areas, Fort Monmouth, New Jersey. December. pdf p 323
5. U.S. Army Toxic and Hazardous Materials Agency, 1980. Installation Assessment of Fort Monmouth, Report No. 171. May 1980. Pdf p 38.
6. Fort Monmouth Reuse and Redevelopment Plan Technical Memorandum: Site Characteristics Prepared for: Fort Monmouth Economic Revitalization Planning Authority Prepared by: EDAW, Inc. September 14, 2007
http://www.fortmonmouthredevelopment.com/pdf/tmsite_final.pdf
7. Weston (Roy F. Weston, Inc.). 1995. Site Investigation Report – Main Post and Charles Wood Areas; Fort Monmouth, New Jersey. December. Pdf p 323; and U.S. Army BRAC 2005 Environmental Condition of Property Report Fort Monmouth Monmouth County, New Jersey Final 29-January-2007. pdf pps 173 & 208.
8. U.S. Army BRAC 2005 Environmental Condition of Property Report Fort Monmouth Monmouth County, New Jersey Final 29-January-2007 pdf pps 171-2; and CALIBRE Systems, Inc. March, 2013. Draft Finding Of Suitability To Transfer (FOST) Fort Monmouth, New Jersey Fort Monmouth, Charles Wood Area. (Charles Wood Area/Parcel B)
http://www.pica.army.mil/FtMonmouth/Documents/FTMM%20DraftFOST%20P1%20Public%20comm_032713_red.pdf pdf p 9.
9. U.S. Army BRAC 2005 Environmental Condition of Property Report Fort Monmouth Monmouth County, New Jersey Final 29-January-2007 pdf p 172-3.
10. USAEHA, 1976. Water Quality Engineering Special Study No. 24-016-75-76, Sanitary and Industrial Wastewater, Fort Monmouth, New Jersey. September 23 - October 9, 1974; April 15-17, 1975; June 10-12, 1975. Pdf pps 10, 13 and 21.
11. USAEHA, 1976. Water Quality Engineering Special Study No. 24-016-75-76, Sanitary and Industrial Wastewater, Fort Monmouth, New Jersey. September 23 - October 9, 1974; April 15-17, 1975; June 10-12, 1975. pdf p 285 (App. G)

12. U.S. Army Toxic and Hazardous Materials Agency, 1980. Installation Assessment of Fort Monmouth, Report No. 171. May 1980. pdf p 38.
13. USAEHA, 1976. Water Quality Engineering Special Study No. 24-016-75-76, Sanitary and Industrial Wastewater, Fort Monmouth, New Jersey. September 23 - October 9, 1974; April 15-17, 1975; June 10-12, 1975. pdf pps 25, 26, and 28.
14. USAEHA, 1976. Water Quality Engineering Special Study No. 24-016-75-76, Sanitary and Industrial Wastewater, Fort Monmouth, New Jersey. September 23 - October 9, 1974; April 15-17, 1975; June 10-12, 1975. pdf pps 32 and 34.
15. U.S. Army Toxic and Hazardous Materials Agency, 1980. Installation Assessment of Fort Monmouth, Report No. 171. May 1980. Pdf p 38.
16. USAEHA, 1976. Water Quality Engineering Special Study No. 24-016-75-76, Sanitary and Industrial Wastewater, Fort Monmouth, New Jersey. September 23 - October 9, 1974; April 15-17, 1975; June 10-12, 1975. pdf p 14; and U.S. Army BRAC 2005 Environmental Condition of Property Report Fort Monmouth Monmouth County, New Jersey Final 29-January-2007 pdf pps 163 and 171.
17. Armenante, P. Accessed 4/23/13. Precipitation of Heavy Metals from Wastewaters. NJIT. <http://cpe.njit.edu/dlnotes/CHE685/CIs06-2.pdf> Slides 3 and 40.
18. USAEHA, 1976. Water Quality Engineering Special Study No. 24-016-75-76, Sanitary and Industrial Wastewater, Fort Monmouth, New Jersey. September 23 - October 9, 1974; April 15-17, 1975; June 10-12, 1975. pdf p 49.
19. USAEHA, 1976. Water Quality Engineering Special Study No. 24-016-75-76, Sanitary and Industrial Wastewater, Fort Monmouth, New Jersey. September 23 - October 9, 1974; April 15-17, 1975; June 10-12, 1975. pdf pps 21 and 72.
20. USAEHA, 1976. Water Quality Engineering Special Study No. 24-016-75-76, Sanitary and Industrial Wastewater, Fort Monmouth, New Jersey. September 23 - October 9, 1974; April 15-17, 1975; June 10-12, 1975. pdf pps 21 and 72.



DEPARTMENT OF THE ARMY

OFFICE OF ASSISTANT CHIEF OF STAFF FOR INSTALLATION MANAGEMENT
U.S. ARMY FORT MONMOUTH
P.O. 148
OCEANPORT, NEW JERSEY 07757

June 11, 2013

Mr. William Simmons
Monmouth County Board of Health
Environmental Health Coordinator
3435 Highway 9
Freehold, NJ 08625

**Subject: Fort Monmouth, NJ
Phase 1 Property
Transfer Finding of Suitability to Transfer Comments**

Dear Mr. Simmons:

The Army received your comments dated April 26, 2013 on the draft Finding of Suitability to Transfer (FOST) for the Phase 1 Property at Fort Monmouth. Your letter provided a significant amount of background information and also included two specific comments/questions. The Army's responses to those questions are as follows:

Comment/Question 1: How will the Army respond should more extensive sampling in the future of the soil or sediment indicate levels of heavy metals that will necessitate remediation due to historic practices?

Army Response: Should future sampling of soil or sediment indicate that levels of heavy metals necessitate remediation and that such contamination is due to Army's activities, use and ownership of the property, the Army would conduct all necessary remedial action consistent with applicable law and deed provisions.

Comment/Question 2: Can FM provide whatever guidelines and standards FM used regarding the land application of sludge during the operation of the CWA STP from 1942 to 1975? What were the permissible levels of metals in the sludge that was used as fill or soil conditioner; and what were the land application practices regarding rain and the prevention of sludge runoff to the freshwater pond on the golf course, upstream of Wampum Lake.

Army Response: Historic records of the Charles Wood Area (CWA) sewage treatment plant (STP) do not show any standard operating procedures regarding the application of the treated sludge to the golf course. A sludge dump (CW-9), as identified in the 1980 IA report (USAEC), was located in the southwest section of the Charles Wood golf course, south and southeast of Bldg. 2070 and west of Green 11 and Tee 12. Since the 1940s, sludge generated from both the Main Post and Charles Wood STPs were stored in this area before being used as a soil conditioner and fertilizer on the golf course. Sludge piles are visible on aerial photographs dating from 1957 through 1981. Under the SI phase, two monitoring wells were installed, one subsurface soil sample

and nine surface soil samples were collected to evaluate the impact to ground water and soil as a result of past site activities. All samples were analyzed for TCL + 30 parameters and TAL metals. No compounds of concern were detected above NJDEP Direct Contact Soil Cleanup Criteria or Ground Water Quality Standards. A "No Further Action" determination was approved by NJDEP. In addition, as part of the SI Phase, sampling was conducted at the CWA Former Sanitary Treatment Plant (CW-5). The sampling included two soil samples collected in the area of the sludge drying beds and one sediment sample collected from the former wastewater discharge point. All three samples were analyzed for TCL + 30 parameters, TAL metals and cyanide. No compounds of concern were detected above NJDEP Direct Contact Soil Cleanup Criteria or Sediment Criteria.

Your comments and the Army's response will be included in the final FOST. Please let me know if further clarification to the questions posed in the April 26, 2013 letter is needed. I can be reached at 732-380-7064 or via e-mail at Wanda.S.Green2.civ@mail.mil.

Sincerely

A handwritten signature in cursive script that reads "Wanda Green".

Wanda Green
BRAC Environmental Coordinator

Cc: James Briggs, BRAC HQ

Revised TAPP Application for your resubmission for approval

Brian Charnick [charnickb@comcast.net]

Sent: Wednesday, July 10, 2013 11:51 AM

To: Green, Wanda S CIV USARMY HQDA ACSIM (US)

Cc: jpallencfe@verizon.net; Linda.Range@dep.state.nj.us; hardwarean@verizon.net; charnick3@juno.com; edlugosz@verizon.net; msg4frank@verizon.net; ccamera35@comcast.net; brewerrosemary@comcast.net; Rider, Timothy L CIV USARMY ARDEC (US); dn3557@aol.com; Occhipinti, John E CIV USARMY HQDA ACSIM (US); Moore, James T NAN02 [James.T.Moore@usace.army.mil]; james.e.briggs2@conus.army.mil; Joseph.Pearson@calibresys.com; rharrison@njeda.com; georgegorhaujr@gmail.com; lpp4882@gw.njsp.org; Dianne Crilly [dmcrilly@comcast.net]

Importance: High

Attachments: TAPP Grant Reclama letter.docx (19 KB) ; Proposed TAPP Grant (revi~1.docx (18 KB)

Wanda,

Attached is a "revised" reclama to the original Army Rejection of the unanimously approved RAB request for TAPP funding IAW DOD/Army regulations. Recall that the RAB voted to (1) initiate this Reclama/request for reconsideration and (2) delete the wording falsely giving the impression that this was an investigation of Wampum Lake in Eatontown.

Kindly resubmit this RAB application to the Installation Command at Aberdeen, MD. For formal processing. on this official RAB approval to resubmit. Since the RAB approval, and this revision, it should no longer be delayed locally prior to HQ review.

Thanks.

Brian Charnick, Eatontown RAB Member

TO: Chairman

U.S. Army Garrison Fort Monmouth

Restoration Advisory Board

SUBJECT: Revised Formal Submission of TAPP Grant Application- Oct.6, 2011

This cover letter formally re-submits the attached TAPP Grant application for Army funding, contracting and an Authorization to Proceed. This application was originally unanimously approved by all RAB voting members present at the public meeting held on Oct. 6, 2011 and then approved to be modified removing any erroneous intent to use the TAPP grant to research causes of pollution of Wampum Lake. The intent is to educate the public, via an independent objective third party review of existing data/reports. Of special interest is the whereabouts of the "old" metals pollution from the Sewage Treatment Plant (STP) sludge applied to the golf course and now is no longer present in the limited samples taken.

The RAB members are available to assist in your expeditious processing of this application.

Brian Charnick

Eatontown RAB Member

Proposed Technical Assistance for Public Participation (TAPP Grant)

TITLE: REVIEW OF RESTORATION DOCUMENTS AS THEY MIGHT PERTAIN TO THE SOURCES OF POLLUTION OF WAMPUM LAKE-EATONTOWN, NJ.

Requested by Brian Charnick, Eatontown, NJ RAB member

Problem Statement: The RAB has been presented with public technical material and open briefings regarding the Ft. Monmouth Environmental Condition of Property (ECP) and related cleanup activities. In the early stages of this process, RAB members questioned the data regarding the Fort's hazardous sites as possibly being the cause of the pollution in Wampum Lake in Eatontown and not on Fort Monmouth property. Wampum Lake is located in Eatontown between the Fort Monmouth Charles Wood area and the Main Post. One stream flowing into Wampum Lake flows through the Charles Wood area. Army Department of Public Works personnel and their contractors offered

reasonable and logical explanations as to the sources of the pollution. However, the question of whether the Army is the primary source or contributed to other external sources of the lake's pollution remains difficult to explain to the residents of Eatontown. I request that a respected independent, objective third-party source be retained to assist and educate this RAB member on the history and likely causes of the present pollution in Wampum Lake using existing public records and data.

It is requested that the Army TAPP grant decision authority consider this TAPP request and approve the application. The proposed project conforms to the TAPP process eligibility requirements. The Eatontown community has sought other avenues of assistance before applying for TAPP, and we believe that TAPP funding is available. Even though other avenues for assistance may exist, this Eatontown community member desires an independent provider, in order to enhance the environmental restoration program and improve community support. This TAPP application has direct relevance to the restoration activities at the installation.

BACKGROUND:

I had difficulty understanding the *limited sampling* required by the DEP of the sediment immediately downstream of the 9 landfills and 3 sewage treatment plants and indications that no major sediment contamination exists.

The contamination of sediments in Wampum Lake with metals, that was investigated by the Monmouth County Health Dept., Dr. Dorfman of Monmouth University, the EPA and the DEP, may be related to a privately owned metallurgical company's Sewerage Treatment Plant (STP) as well as the Fort's STP that had discharged into Wampum Lake.

There is also a Cause of Concern in that the Ft. Monmouth IRP Engineering Contract was awarded to a single contractor, Shaw Engineering, for both the Sampling Plan and the Test/Execution of that Plan, rather than two independent contractors.

Eligibility Rationale:

a) This requested TAPP procurement should be pursued by the RAB since the proposed technical assistance will contribute to the efficiency, effectiveness, or timeliness of environmental restoration activities at the installation and is likely to contribute to community acceptance of those activities.

(b) This TAPP procurement will be used to fund activities that will contribute to the

public's ability to provide advice to decision-makers by improving the public's understanding of overall conditions and activities related to the serious heavy metal pollution of Wampum Lake.

The TAPP Statement of Work eligible activities include the following:

(1) Interpret technical documents. The installation restoration program documents each stage of investigation and decision-making with technical reports that summarize data and support cleanup decisions. Technical assistance may be provided to review plans and interpret technical reports for community members of RABs. These reports include, but are not limited to:

(i) Installation restoration program site studies, engineering documents, such as site inspections, remedial investigations, feasibility studies, engineering evaluation and cost analyses, and decision documents (including records of decision);

(ii) Risk assessments, including baseline and ecological risk assessments conducted by the installation; and

(iii) Health assessments, such as those conducted by the Agency for Toxic Substances and Disease Registry (ATSDR).

(2) Assess technologies. Technical assistance may be provided to help RAB/TRC community members understand the function and implications of those technologies selected to investigate or clean up sites at the installation.

(3) Participate in relative risk site evaluations. Technical assistance may be provided to help RAB/TRC community members contribute to the relative risk evaluation process for specific sites.

(4) Understand health implications. Technical assistance may be provided to help RAB/TRC community members interpret the potential health implications of cleanup levels or remedial technologies, or to explain the health implications of site contaminants and exposure scenarios.

(5) Training, where appropriate. Technical trainers on specific restoration issues may be appropriate in circumstances where RAB/TRC members need supplemental information on installation restoration projects.

Statement of Work:

Task 1- Information Gathering:

-Conduct interviews with key RAB, Fort Monmouth, NJ DEP personnel specific to the Wampum Lake discussions and conclusions of “no Army contribution/responsibility”.

-Review and interpret technical documentation, plans and technical reports. These include, but are not limited to: installation, restoration, program site studies; RAB /Army Shaw engineering documents; decision documents including records of decisions and meeting minutes. Review existing Monmouth County Health Dept. representative report, Birdsall Engineering report and other reports concerning the likely causes of the pollution. This will include weaknesses/strengths of sampling/test methods and history/time flows of the “source-to-lake” pollution. Review “time-phased” Health Records of documented pollution in the lake.

Task 2: Studies and Analysis

-With the results of Task 1, knowing the existing documented possible sources of contamination and the end result of the pollution in the lake, perform studies/analyses as to the reasonableness of the Army conclusions. Possible alternate sources of contamination of Wampum Lake and related health implications and environmental effects should be considered as to offer educational responses to the Eatontown Community.

Task 3: Final Report/Community Conference

-Deliver a Final Report that will contribute to the efficiency, effectiveness and timeliness of restoration activities and that is likely to contribute to community acceptance of these activities. This should lead to the public’s ability to provide advice to decision makers by improving the public’s confidence and understanding of the overall condition of properties and restoration activities.

Term and Condition: The selected supplier will be required to execute a “non-conflict of interest” statement.

Proposed Multiple Candidates for Supplier of Services:

Dr. Stephen Souza, Princeton Hydro, 908-237-5660 (preferred service provider)

Dr. Keith Cooper, Professor of Toxicology, Rutgers, <http://aesop.rutgers.edu/-cooper/>

Dr. Christopher Uchrin, Professor of Environmental Sciences, Rutgers,
<http://aesop.rutgers.edu/-uchrin/>

Period of Performance- 3 months

Estimated Costs- \$25000

Eatontown RAB member sponsor:

Brian Charnick 732-542-1562

732-693-4673 (blackberry)

charnickb@comcast.net

TO: Chairman

U.S. Army Garrison Fort Monmouth

Restoration Advisory Board

SUBJECT: Formal Submission of TAPP Grant Application- Oct.6, 2011

This cover letter formally submits the attached TAPP Grant application for Army funding, contracting and an Authorization to Proceed. This application was unanimously approved by all RAB voting members present at the public meeting held on Oct. 6, 2011.

The RAB members are available to assist in your expeditious processing of this application.

Brian Charnick

Eatontown RAB Member

Proposed Technical Assistance for Public Participation (TAPP Grant)

TITLE: REVIEW OF RESTORATION DOCUMENTS AND PRELIMINARY ASSESSMENT (PA) AS THEY MIGHT PERTAIN TO THE POSSIBLE POLLUTION OF WAMPUM LAKE-EATONTOWN, NJ.

Requested by Brian Charnick, Eatontown, NJ RAB member

Problem Statement: The RAB has been presented with public technical material and open briefings regarding the Ft. Monmouth Environmental Condition of Property (ECP), Preliminary Assessment (PA) and related cleanup activities. In the early stages of this process, RAB members questioned the "Preliminary Assessment (PA)" data regarding the Fort's hazardous sites as possibly being the cause of the pollution in Wampum Lake in Eatontown and not on Fort Monmouth property. I request that a respected independent, objective third-party source be retained to assist and educate this RAB member on the history of Army operations, to include the Sewage Treatment Plant sludge application to the golf course, using existing public records and data. The RAB has voted to request this grant to independently educate its members and the public, as to whether or not the "Preliminary Assessment" conclusions were correct with respect to no possibility of metals pollution movement into Eatontown.

It is requested that the Army TAPP grant decision authority consider this TAPP request and approve the application. The proposed project conforms to the TAPP process eligibility requirements. The Eatontown community has sought other avenues of assistance before applying for TAPP, and we believe that TAPP funding is available. Even though other avenues for assistance may exist, this Eatontown community member desires an independent provider, in order to enhance the environmental restoration program and improve community support. This TAPP application has direct relevance to the restoration activities at the installation.

Eligibility Rationale:

a) This requested TAPP procurement should be pursued by the RAB since the proposed technical assistance will contribute to the efficiency, effectiveness, or timeliness of environmental restoration activities at the installation and is likely to contribute to community acceptance of those activities.

(b) This TAPP procurement will be used to fund activities that will contribute to the public's ability to provide advice to decision-makers by improving the public's understanding of overall conditions and activities related to the serious heavy metal pollution of Wampum Lake.

The TAPP Statement of Work eligible activities include the following:

(1) Interpret technical documents. The installation restoration program documents each stage of investigation and decision-making with technical reports that summarize data and support cleanup decisions. Technical assistance may be provided to review plans and interpret technical reports for community members of RABs. These reports include, but are not limited to:

(i) Installation restoration program site studies, engineering documents, such as site inspections, remedial investigations, feasibility studies, engineering evaluation and cost analyses, and decision documents (including records of decision);

(ii) Risk assessments, including baseline and ecological risk assessments conducted by the installation; and

(iii) Health assessments, such as those conducted by the Agency for Toxic Substances and Disease Registry (ATSDR).

(2) Assess technologies. Technical assistance may be provided to help RAB/TRC community members understand the function and implications of those technologies

selected to investigate or clean up sites at the installation.

(3) Participate in relative risk site evaluations. Technical assistance may be provided to help RAB/TRC community members contribute to the relative risk evaluation process for specific sites.

(4) Understand health implications. Technical assistance may be provided to help RAB/TRC community members interpret the potential health implications of cleanup levels or remedial technologies, or to explain the health implications of site contaminants and exposure scenarios.

(5) Training, where appropriate. Technical trainers on specific restoration issues may be appropriate in circumstances where RAB/TRC members need supplemental information on installation restoration projects.

Statement of Work:

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-Review and interpret technical documentation, plans and technical reports. These include, but are not limited to: installation, restoration, program site studies; RAB /Army Shaw engineering documents; decision documents including records of decisions and meeting minutes. Review existing Monmouth County Health Dept. representative report, Birdsall Engineering report and other reports concerning the likely causes of the pollution. This will include (1) weaknesses/strengths of sampling/test methods, (2) specific metals pollution and (3) history/time flows of the identified metals pollution.

Task 2: Studies and Analysis

-With the results of Task 1, knowing the existing documented possible sources of contamination and the end result of the pollution in the lake, perform studies/analyses as to the reasonableness of the Army conclusions health implications and environmental effects that should be considered as to offer educational responses to the Eatontown Community.

Task 3: Final Report/Community Conference

-Deliver a Final Report that will contribute to the efficiency, effectiveness and timeliness of restoration activities and that is likely to contribute to community acceptance of these activities. This should lead to the public's ability to provide advice to decision makers by improving the public's confidence and understanding of the overall condition of properties and restoration activities.

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