Meeting Minutes

2001 AUES Sampling Results Review with Property Owners/Residents

March 25, 2003

The first meeting with residents/property owners of the four Operable Unit (OU) 4 properties sampled for AUES List chemicals in early 2001 was held at the Corps of Engineers' (Corps) Spring Valley Resident Office at 3:00 p.m. on March 25, 2003. The attendees are listed in attachment 1.

The meeting began with a request from H. McGiffin/G. Teleki (residents) requesting that they be allowed to tape the meeting. G. Schilling expressed the need to have an open, roundtable discussion without the concern of every word or thought being recorded for future use. Mr. Teleki explained his interested in taping because the Corps had told him different things at different times and his need for consistency. After several minutes of discussion, it was concluded by the group that notes being taken by T. Henry, D. Rak and B. Rooney (Corps contractors) would be sufficient, noting that draft minutes would be circulated to the group for review.

Following introductions, G. Teleki asked why Richard Albright (DC Health) was not in attendance. R. DuBose (DC Health) responded indicating that Richard Albright had several duties to attend to and that he exercised his option as R. Albright's manager of coming in place of R. Albright to gain a better understanding of project status and where DC Health could help facilitate/improve the process.

G. Teleki asked about the report on the AUES List sampling and draft comments developed by DC Health. J. Sweeney (DC Health) indicated he had brought copies of the document and subsequently distributed copies to the owners/residents (Attachment 2). J. Sweeney noted that DC Health considers this document draft comments on the issue rather than a report.

Following an overview by G. Schilling (Corps), including his interest in a good discussion on the concerns, C. Bohlen (resident) thanked those in attendance for the meeting. C. Bohlen pointed out that he did not want to talk about who did what and why. Instead he identified two problems areas:

> 1) Health issues of J. Bohlen, Ryan Mitchel (not in attendance) and J. Hansen, and the Teleki family (residents in three of the four properties) and past residents; and
>
> 2) Serious problems regarding the property value cloud over their properties due to the AUES List sampling, noting conversations with real estate agents.

In turn, he noted interest in a new investigation, remediation, and letter giving all clear.

Health Surveillance

G. Schilling noted DC Health's surveillance program with Dr. Richardson (DC Health) and the need for current or past residents with health concerns to have their physician contact Dr. Richardson.

C. Bohlen asked about cancer deaths from across the street. J. Sweeny indicated that DC Health has been collecting the data on health outcomes, noting several dozens. He indicated that the data have been compiled but no next step has been taken as of yet. J. Sweeny indicated the Mayor's Scientific Advisory Panel indicated that the anecdotal evidence is almost useless, which is why DC Health set up the more scientific, surveillance program.

In response, F. Hansen inquired about the here and now, asking whether the Partnership could do sampling on people, possibly a study by the Agency for Toxic Substance and Disease Registry (ATSDR) and how she might get tested if she wanted to.

R. DuBose indicated that the initial program through ATSDR is over, but that he could take her name. D. Rak noted that a physician could sample for various chemicals (mostly metals) if she wanted to work through her physician. One attendee noted that George Washington University has a clinic at their hospital that specializes in occupational/environmental exposure that may be helpful.

A follow-up question noted that 3 of the 4 OU-4 properties were elevated for arsenic, so asked if those residents had been sampled and whether Dr. Richardson was involved. In follow-up it was explained that Dr. Richardson was not involved with Spring Valley at that time and that when the ATSDR's bio-monitoring of specific residents was conducted last year, there were other properties with even higher levels of arsenic. In turn, individuals assessed in the ATSDR study were selected from those properties and not from the OU-4/AUES List properties.

Basis for Property Sampling

H. McGiffin noted that at the RAB meeting the Corps indicated that all 4 properties were sampled due to high arsenic, but that now the Corps is indicating that 3 properties were selected based on arsenic. Various attendees indicated that the Corps only reported 3 of the 4 were due to arsenic and that the fourth property (owned by Teleki/McGiffin) was added to the sampling due to concerns expressed to MAJ Brian Plaisted, who was the Deputy District Engineer for the Spring Valley project at that time.

G. Teleki indicated that he did not discuss concerns with MAJ Plaisted until spring of 2001, which would have been after the sampling took place. L. Reeser and E. Hughes (Corps) noted e-mail and recent phone discussions, respectively, with MAJ Plaisted indicating that although their property was outside the OU-4 boundary, MAJ Plaisted had this property included due to concerns at the property, etc.

G. Teleki indicated his disagreement on this issue, but accepted the explanation for the purposes of continuing the meeting, specifically asking the Corps to check with him directly in the future on statements the Corps believes he made.

Upcoming Activities for the Properties

Moving to the next topic, C. Bohlen handed out for discussion a list of follow-up actions requested by the property owners.

G. Schilling asked team members for a report on next activities associated with these properties. E. Hughes covered the planned arsenic work and tables of exposure point concentrations (EPCs) used to prioritize the properties. Based on these data, 4710 Quebec has 13 grids above 20 ppm and is currently slated for removal in late FY-04 or early FY-05 based on its current ranking of 42 on the EPC list. Discussion revealed that 4625 Rockwood had 7 grids slated for removal and was ranked at 31, but that recalculation requested by S. Hirsh using the AUES results moved this property up to 14 on the current ranking. This placed 4625 Rockwood in the next set of properties to be remediated, which will begin in early FY-04. Recalculation of 4710 Quebec changed its ranking from 42 to 43.

C. Bohlen asked about other chemicals. E. Hughes responded that other chemicals does not alter ranking, noting that no additional risk issues were revealed by the AUES List sampling.

AU/Lot 18 Removal

G. Nielson (Corps) wanted to clarify that efforts will stop soon behind the Rockwood properties on American University (AU) and start again next year. He noted that if the ordnance investigation in this area in FY-04 requires moving into the backyard of 4625 Rockwood, then soil remediation possibly could be moved up on the current schedule being discussed.

Associated with this work on AU, G. Teleki asked about Lot 18 concentrations. Initial discussion indicated that the highest arsenic concentrations found were approximately 2,000 ppm, which had been removed. The Corps indicated that these concentrations would be confirmed and that the group would be notified.

F. Hansen asked about manifests for the wastes removed. G. Nielson indicated manifest information was stored at the Spring Valley Resident Office. G. Nielson confirmed that there would be follow-up sampling and that the Corps is waiting on the confirmation sampling results before backfilling the site.

S. Hirsh confirmed that the Corps would stop work in this area for this year, but would back-fill with clean-fill before leaving the site. He also noted that the EPA and DC health will take a look at the site prior to this demobilization.

F. Hansen asked if the EPA will be looking at documents from the work conducted there. S. Hirsh noted that not all chemicals were not analyzed for at that site and rarely are in such cases. G. Nielson noted that the Corps did extend parameters to chemical agent and agent breakdown products. L. Reeser noted that the Corps' contractor analyzed for 8 parameters (mustard and lewisite degradation products, cyanide and arsenic).

F. Hansen wanted to know when the data would be available. E. Hughes noted that normally data would be made available after all work was completed; however, given that the project is taking longer than anticipated it might be possible to provide draft data tables before a report was issued in FY04. G. Nielson indicated that the Corps will follow-up on this issue and get back to the group on when the data would be available for group review.

During the discussions relating to AU, G. Teleki requested to AU counsel Bethany Brigham that AU consider writing a guarantee to future renters of AU's Rockwood properties that AU would be financially responsible for any health problems incurred by renters that can be linked to AUES chemicals identified on those properties. He pointed out that if AU's hired experts (CPF Associates) issue a public statement that there are no health risks for those who rent those properties, then AU should be willing to legally stand behind that assessment.

AUES List Data Validation (Quality Assurance/Quality Control)

E. Hughes noted that the data report does not present a risk, that the Corps and its contractors believe the data are good. It was noted that S. Hirsh is having the EPA laboratory review the QA/QC process and that, while he does not expect any major problems to be identified, he noted that he would know for sure one way or the other in approximately 30 days.

G. Teleki asked for the paperwork indicating the findings when it becomes available and asked what would be done if the report says differently. S. Hirsh noted that the report would be reviewed and then the comments would be provided to the Corps regarding issues identified and next steps.

G. Teleki expressed deep concerns regarding the health/safety of his 7-yr old son and indicated that he does not know why he should be satisfied with Corps' decisions. In turn, T. Henry asked, if additional sampling was done in the future, what would the residents want to see addressed and what would be enough. F. Hansen indicated that 1) depth of sampling, 2) concerns about chemical interactions and 3) indoor air sampling are all areas where questions/concerns exist. She also indicated that the potential correlation between health issues within the community and past activities is of concern.

P. Chrostowski (AU's technical advisor) indicated that AU was happy with the data quality of the 2001 AUES List investigation, which included AU's Child Development Center and the associated Lot 12.

G. Teleki noted his remaining concerns despite AU's position and wanted EPA to do split sampling of all future sampling efforts. S. Hirsh indicated that he acknowledged that the EPA would conduct some split

sampling if additional sampling takes place, but noted that the EPA would not collect split samples on every sample collected.

G. Teleki indicated concerns about the potential for burials to exist on the property. T. Henry indicated that while he may have been informed by someone that this is a possibility, he noted that this is highly unlikely given the low parts per billion range of the volatile organics found and asked individuals at the table to please speak up if these data may suggest otherwise based on their experiences.

J. Bohlen asked about how long it will take to re-evaluate the data. S. Hirsh indicated the 30-day time line and provided additional clarity of exactly what the re-evaluation of the collected data would involve. During this discussion, S. Hirsh noted that quality of data collected during this specific sampling event and what the data means with regard to the Spring Valley investigative process are two different issues, noting that what the data tells the partnership about the site is where we are in these complicated discussions.

G. Schilling noted that based on all the data and analysis available thus far, the Corps does not see any indication that some short-term or emergency actions on these properties are warranted.

F. Hansen asked about what air sampling had been done. Responses confirmed that no air sampling was conducted associated with the AUES List sampling effort (noting that certain air monitoring has been conducted associated with pit removal).

C. Bohlen asked about synergistic effects and how this issue was evaluated in the AUES data results. D. Rak explained that screening criteria used by the Corps for non-carcinogenic contaminants were reduced (divided) by a factor of 10, as described in current EPA guidelines. For example, if the screening criterion was 5.0, the Corps used a value of 0.5 as a point of comparison. D. Rak explained that such a reduction is not done for carcinogenic compounds because concentrations associated with cancer compounds is already regulated over a range of concentrations, unlike the process used for non-cancer outcomes (details of the Hazard Index approach for non-carcinogenic compounds was not discussed).

S. Hirsh noted that synergistic effects is at the limits of science and that such efforts like the reduction by a factor of 10 is what the regulatory process can do with the currently available science.

P. Chrostowski explained that several different options or outcomes exist for chemical-chemical interactions. He listed and described synergistic, additive, and antagonistic interactions. He indicated that chemicals at low levels do not tend to interact synergistically and that the available science suggests a much higher probability of interactions at low levels being antagonistic, meaning effects from exposure are reduced.

In follow-up, C. Bohlen asked about medical problems and indicated that he does not want potential health impacts swept under the rug. F. Hansen added that when one speaks about arsenic one is talking about exposure for years. S. Hirsh noted that no additional health issues were identified based on the AUES List data, with the exception of the long-term arsenic risk that has already been identified.

Review of Data Tables with Owners/Residents

To assist the property owners/residents in understanding the logic of the sampling and the assessment of the data, it was suggested that the group move into a brief review of the data reports associated with the properties. T. Henry indicated that the Corps assumes the different residents/property owners are sharing their data with each other, but that the team did not want to make this assume and give everyone in the room a copy of all the data without permission from each resident. In turn, copies of individual property reports were handed out to each resident/owner, letting those individuals decide who in the room would receive copies of data specific to their individual properties.

B. Bridgham indicated her willingness to share the two data reports associated with the properties they own (4625 and 4633 Rockwood) for discussion within the meeting/work group, but indicated AU becomes resistant to such sharing when the data are provided to the press (i.e., the NW Current) without their permission.

T. Henry asked the group if there could be agreement to keep the data within the room in context to this issue. G. Teleki indicated that once data are public, which he considers his data to be, the group cannot determine how he distributes it. B. Bridgham added that her concern with data control referred to data that had not yet been released to the public. In turn, T. Henry clarified that the proposal for consensus on not disseminating data only applies to data from other properties and not with regard to data from their own properties. J. Bohlen concluded this discussion with her belief and interest in having everyone in the room on the "same team," referencing how this is done with her oncology team, and that this group should proceed with the same good approach.

T. Bachovchin (Corps' Contractor) reviewed the 5 different tables included in data reports provided of the four different properties. The first table reviewed was the colored table from the appendix, which lists the chemicals for which analyses were performed and separates them into different categories. He noted that they conducted the analyses by running a full suite of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) and metals.

He then briefly reviewed the 4 main data tables as follows:

> Table 1 - Results from routine analyses (258 compounds)
>
> Table 2 - AUES list-only chemicals (a subset of table 1)
>
> Table 3 - Compounds inferred as possibly present based on detected indicator compounds
>
> Table 4 - AUES list compounds that were detected, with those above RBCs or background comparison values being shaded.

G. Teleki asked why certain things were shaded on his previous version, but not on the current version under review. Responses explained that in the first run of the data, risk-based screening concentrations (RBCs) for certain compounds were applied to other structurally similar compounds, a step which has scientific merit, but was removed for clarity given the level of owner/resident concern surrounding the data. Another example provided was phosphorus, where originally the RBC for white phosphorus was used in the table, but subsequently removed. It was also pointed out that the EPA revises the RBCs list twice a year.

J. Bohlen asked about the validation flags on the data and the usability of data. T. Bachovchin noted that all the data were useable and that the descriptions for the validation flags was in the appendix to the report in her document.

In a more detailed discussion of Table 3, T. Bachovchin pointed out that 55 of the AUES List compounds could be analyzed through routine methods, which are identified in the blue column of the color-coded appendix table. Additionally, 78 of 170+ AUES List chemicals could not be analyzed for directly (the yellow column of the table in the appendix), so the Corps did something extra in an effort to qualitatively assess these compounds. In turn, the Corps came up with the indicator compounds and figured that if all the indicator compounds for an AUES compound were present, then one could say "Yes" this chemical for which an analytical method was not available might be present because of the detection of its components. However, there is a lot of uncertainty in this approach and it is not definitive proof that a chemical is or was present.

P. Chrostowski asked what the asterisk meant on Table 3. T. Bachovchin responded that *shading* denotes the compounds assessed in Table 3 for which at least one indicator compound exceeded its respective comparison criterion (risk based concentration or background value). The *asterisk* is used to identify the specific indicator compounds for which the exceedances were found.

F. Hansen asked what other analyses had been done elsewhere. L. Reeser explained that 4 OU-4 properties, the CDC and Lot 12 on AU, and 4 properties on Sedgwick Street were investigated for the AUES List compounds. L. Reeser also noted that Sedgwick focused on POI 1, aiming for sample collection at the bottom of a trench.

F. Hansen then asked what other compounds were detected. P. Chrostowski noted that PAHs needed cleanup at the CDC, and noted that the levels there were higher than the concentrations from Sedgwick or the OU-4 properties based on his recollection and his review of the data tables being discussed. D. Rak noted that the PAHs at the CDC were likely the result of the site location adjacent to the road/parking lot. D. Rak also noted that the remediation of the CDC was not driven by the concentrations of PAHs, although they were present in the samples collected.

Continuing with sampling plan outside of arsenic for the OU-5 investigation, L. Reeser noted the development of POI-specific lists based on historical activities. For these POIs, T. Henry noted that explosives and their degradation products, chemical agents and their degradation products or both would have been sampled for depending on the POI in question. L. Reeser also noted that 15% of properties outside the CTA were targeted for this additional constituents sampling. G. Schilling pointed out that sampling for these other chemicals was aimed at the 1918 soil level to the best ability of the maps and the crew, noting that the cut and fill maps may not be perfect but also noting that the person in the field could at times discern from the core where virgin soil versus fill soil started.

Later in the meeting, the Corps acknowledged its willingness to have more detailed one-on-one meetings to address specific questions regarding individual data sets. Both C. and J. Bohlen and F. Hansen indicated that they would follow-up with the Corps in scheduling their meetings.

Data Uncertainties

T. Henry noted that the group needs to at least start the discussion of data uncertainties and questions that remain about the data. Specifically, it was pointed out that there are two different data concerns:

1. Concerns about the QA/QC and meaning of data for chemicals that could be analyzed for, and
2. Concerns regarding chemicals for which analyses could not be conducted.

While the independent QA/QC re-validation will address the data quality concerns raised, and the agreement by all the partners that no risk concerns are suggested by the data addresses or will address the first set of concerns, S. Hirsh noted that he does have questions with regard to Table 3 and the compounds that could not be analyzed for. S. Hirsh noted that while science will never be able to answer all the questions or remove all the uncertainty, he thought this issue could be addressed further by the group.

T. Henry then explained the concept discussed in the Partnership meeting earlier in the day, identifying the development of a document to explain what other options there are to better assess the research column compounds. Examples of methods listed to take a second look included:

- Review of historical records to see how much was produced
- Review to see what compounds may now have analytical methods
- Determination of what compounds an analytical method might be developed for

- Evaluation of compound chemistry (fate and transport – how long would it last in the environment)
- Toxicology (e.g., arsenic trichloride, arsenic is the toxicity concern)

It was then noted that this document could list each chemical and propose an approach from the options above on how each compound might be better evaluated.

P. Chrostowski noted that he did something similar back when AU had the CDC data assessed. He explained how they eliminated unstable compounds (e.g., ions, acetyl halogens) that could not remain in the environment for decades, and then assessed organic and inorganic classes, etc. He indicated that this memo should be on the AU web page and that he was able to screen out almost all of the compounds (only identified arsenic and PAHs), which is the basis for AU's decision that risks do not exist based on the AUES List sampling.

P. Chrostowski indicated that soil was removed to address the arsenic and PAHs so no concerns remained at the site. D. Rak pointed out that the soil was being removed because of the arsenic, which made the PAH's a moot point.

As part of the effort to address some of the concerns over VOCs and to explain why it is not easy conduct indoor air sampling, T. Henry handed out a list of common indoor air background pollutants, the source of which was the EPA's Indoor Air Pathway seminar held in Atlanta, GA. This one-page hand out lists 26 volatile compounds and their respective commercially-available products through which such compounds are brought into a person's home.

Health Surveillance (Continued)

At this point, F. Hansen asked a question directly to DC Health regarding the fascinating issues that there are so many unusual diseases. DC Health noted that their statisticians looked at cancer registry data and DC Health records and did not find anything significant.

G. Teleki pointed out that DC did not bother to interview anyone on any issue related to health and has not gone door-to-door. He also noted that the registry data is not very old, which limits its usefulness. He also noted that even in the report handed out today are health risk issues that have not been identified previously.

G. Teleki noted that DC Health instead handed over the investigation to ATSDR and that ATSDR has a public record of failing to confirm the health consequences of living on contaminated sites across the country. He also noted that the linkage between ATSDR and DC Health in the person of Dr. L. Stokes has been a controversial issue for some time in Spring Valley. Moreover, he noted the fact that the Mayor's Scientific Advisory Panel has on several occasions taken ATSDR and DC Health to task for failing to design proper evaluations of health risks in Spring Valley, and has made numerous recommendations on changing approaches suggested by ATSDR and DC Health, which has a bearing on this issue.

P. Chrostowski refuted attack on ATSDR noting that the agency does good work, but this disagreement remained.

F. Hansen again noted exotic types of cancers starting out with rashes, tingling, etc. J. Sweeney noted that he and R. DuBose work on the environmental side of the house, but would take these concerns back to their medical professionals within DC Health.

G. Schilling noted that the Corps needs to put another health information announcement within the Corps'pondent to help make the surveillance efforts by DC Health more visible. F. Hansen indicted her belief that this may well alleviate many concerns. J. Bohlen noted that when she had asked her doctor to call Dr. Richardson, she received the impression that this was an imposition on a busy man.

T. Henry suggested that the group look at alternatives or improvements to the process and that there needs to be active two-way communication in an effort versus leaving it to doctors who are likely too busy to make the time. J. Sweeney noted that while they did not initially ask for doctor information when they returned calls to Spring Valley hotline inquiries, he noted that they did start to do that, although he noted that no one has called the hotline since October 2002.

T. Henry suggested that DC Health take a look at what materials are available to describe the surveillance program and information line, so there could then be some discussion about how to make them more visible. J. Sweeny noted that Dr. Richardson did give one presentation to the RAB and that he was supposed to return to give another update. G. Schilling noted that this needs to go to the RAB so the Corps can get that next presentation scheduled, which would probably be at least 2 months away.

Property Values

To address the concern over property value, C. Bohlen indicated that there would need to be some type of letter that indicates there are no risks resulting from the AUES List sampling results. It was clarified by the group that A) the RAB and EPA are working on a comfort letter for property owners for arsenic and B) the letter explaining the absence of significant risk from the AUES data would likely be a separate letter. S. Hirsh noted that he is hoping that the language in the letter could indicate that the property is safe for residential use.

G. Nielson wanted to acknowledge that the letter would not be an absolute guarantee, noting that such guarantee is impossible. He also noted that the letter should cover the Corps ongoing responsibility to come back and address any AUES contamination that might be found in the future.

T. Henry pointed out to the group that the Corps was aware that the G. Teleki/H. McGiffin house is up for sale and acknowledged the Bohlen indication that they may need to sell their home in the next few years. He pointed out that the he and B. Rooney work with real estate agents to make sure they understand the Spring Valley project and to answer questions and concerns of potential buyers. While acknowledging that certain people do walk away from a potential purchase when they hear about the investigation, he point out that others do not. He indicated that he is aware of homes that have sold before sampling data were back and noted that one home sold for above the asking price despite the presence of elevated arsenic and an impending remediation. T. Henry concluded by acknowledging that, although he is not a real estate agent, the Corps' hands-on work has not revealed that houses are not selling or that they are only selling at greatly reduced prices. Toward this goal, he indicated that the Corps will continue to focus on property transaction in its outreach efforts to meet community needs.

Property Owner Requests for Action

S. Hirsh raised the issues of the specific requests brought to the meeting by the residents, as he felt they needed to be addressed in some fashion before the meeting ended. It should be noted that a previous list of requests were submitted to the Corps via the RAB on March 11, 2003 (Attachment 4) and that a subsequent revised list was submitted at this meeting (Attachment 5).

Re-Sampling - S. Hirsh noted that the short answer to these questions is that the project team was not at a point where that was warranted. The QA/QC review by EPA will address the quality issue. Only when that comes back will the partnership know if any re-sampling needs to be considered on a quality basis. G. Schilling noted that on a risk basis, re-sampling is not needed at this time. S. Hirsh pointed out that if the partnership goes and resample right now, without any additional direction or reason, the effort will most likely produce similar results and everyone will be back in the same place with regard to uncertainty. In turn, additional sampling might be needed at some point but we have to answer preliminary questions first.

Geophysical Assessment – It was indicated that the Teleki property will be assessed geophysically in the late April or early May time frame. Pulling the report together and assessing the data will take approximately 120 days. If removal of anomalies is needed, developing the work plan will take 90 to 180 days, depending on whether the anomalies are considered high or low probability anomalies.

G. Teleki asked for a worse-case scenario, considering if AUES wastes are found and significant soil contamination removal is deemed necessary as a result of the anomaly excavation. In response, an estimate of 18 months was given, noting that if soil contamination is found during anomaly investigation, soil remediation will take place at that time.

As for the other 3 properties, it was concluded that they all may require geophysical assessment based on current work by the Partnership task group looking at additional areas of investigation. No final decision or information on the time line is available on these properties at this time.

Indoor Air Sampling – Based on the soil data there is no data suggesting that air sampling is needed at this time. This concern will be retained in these minutes for future reference as the Spring Valley investigation continues.

Timeline – As discussed at various points, the group is in phase one of resolving this issue and must take several steps before determining what, if any, additional sampling is needed and what timeline would be associated with such sampling.

Information Sharing – The Corps is committed to improving information sharing procedures, as discussed at the March RAB meeting. Any data generated in the future will be shared with the respective property owners in the most expedient time frame possible. In this effort, the Corps will work with its partners and concerned residents to transparently present how and when data will be shared. For instance, data collected on Lot 18 belongs to the Corps and the property owner, AU in this case. While the data will not be available through an official report for approximately two years, the Corps will do its best to devise an agreeable mechanism to share the information with this group in a shorter timeframe to meet nearby resident needs.

F. Hansen noted that the group does not acknowledge correlation in health risks currently, but asked if the partners acknowledge that there could be, suggesting that the group remain open to assessing new information as it becomes available. G. Schilling did acknowledge that this is an ongoing project and that the Corps and the partners certainly review new information as it surfaces or becomes available.

Examples of such issues worth consideration included the deformed cicadas observation by G. Teleki. C. Bohlen mentioned that neighbors they had noticed birds were dying and that they determined this was because the neighbor had sprayed chemicals on his trees.

G. Neilson noted that this is an investigation and that the book is not closed. Currently, the Corps believes that the additional data do not pose a health risk.

C. Bohlen asked whether 4710 Quebec would get geophysically assessed. G. Nielson noted that the Corps may well do that, but noted that there are other properties of greater interest.

C. Bohlen expressed his belief that his property was assessed geophysically in 2000, but did not receive report. The Corps acknowledged that it would confirm whether or not this took place.

C. Bohlen also asked about when they would get a letter addressing his property in order to relieve concerns about his property. It was noted that the comfort letter from the planned arsenic removal would come after the soil removal is complete. T. Henry noted that it appears a separate letter explaining the lack of significant risk regarding the AUES list sampling could probably be completed on a much shorter time scale.

Next Meeting

G. Schilling asked the group if they felt a community-wide meeting was necessary on this AUES sampling issue. The residents/owners in attendance indicated that a community-wide meeting is not necessary.

Attachments

Attachment 1 – Attendees List

Attachment 2 – DC Health's Draft Comments on 2001 AUES List Sampling Results

Attachment 3 – List of Common Household Sources of Background Indoor Air Contamination

Attachment 4 – Actions List Signed by Attending Residents dated March 4, 2003

Attachment 5 – Property Owners' Request for Action handed out at 25 March Meeting.

Tasks/Next Steps

Health Surveillance

1. Schedule update by Dr. Richardson for the May or June RAB.
2. DC Health to determine if fact sheet on the surveillance program exists, followed by discussion with partners regarding development of one if needed.
3. DC Health to list what procedures are followed with calls into the Spring Valley hotline, and what, if anything would or could be done with anecdotal health information collected via the DC's hotline to date.
4. DC Health to convey F. Hansen community health concerns to the medical side of DC Health and to follow-up with F. Hansen regarding potential for additional ATSDR bio-monitoring.
5. Place another announcement in the Corps'pondent regarding the DC Health's surveillance efforts.

AU Lot 18

6. Corps will confirm concentrations and depth of arsenic found in soil removed from this lot.
7. In consultation with AU, the Corps will determine when the confirmation data for the expanded parameters will be available.

AUES List Data Validation

8. EPA will receive the validation report in approximately 30-days, review the report and provide comments and next steps to the Corps.
9. Following completion of the comments, the EPA will provide the findings of the re-validation to the involved property owners/residents.

Review of Data Tables with Owners/Residents

10. Meet with individual owners/residents as needed to review the results in greater detail.

Data Uncertainties

11. Develop table listing research compounds and potential options for reducing uncertainties associated with each one (note this same table may address "yes" compounds in table 3 as well.
12. Obtain, distribute and review P. Chrostowski's report on CDC data.

Property Value

13. Develop letter from partnering agencies indicating that no significant risks were identified based on the AUES List sampling data, that the property is safe for residential use and that the Corps is responsible for returning if AUES contamination is detected in the future.

Property Owner Requests for Action

14. Develop a bullet list or fact sheet outlining how geophysical assessments will be done and timeline for data returns.
15. Determine whether or not 4710 Quebec received any geophysical assessment in the past.

Attachment 1

OU-4 AUES List Data
Meeting with Property Owners
March 25, 2003
3:00 p.m. – 6:00 p.m.

Name	Title	Organization
Rick DuBose	Program Manager	DC Dept. of Health
Tom Stukas	Regional Rep.	ATSDR
Steven Hirsh	Project Manager	USEPA - Region 3
Geza Teleki	Resident	
Heather McGiffin	Resident	
Jim Sweeney	Program Manager	DC Dept. of Health
Gary Schilling	Program Manager	USACE
Ed Hughes	Program Manager	USACE
Ray McNeil	Program Manager	USACE
Jeff Hankley	GIS Analyst	Parsons
Ben Rooney	Community Outreach Specialist	Theodore J. Henry Consulting
Tom Bachovchin	Project Manager	Parsons
Leland Reeser	Project Manager	USACE
Mark Baker	Historian	USACE
Chris Evans	Geophysics Team Leader	USACE
Drew Rak	Toxicologist	Mitretek
Ted Henry	Toxicologist	Theodore J. Henry Consulting
Bethany Bridgham	Attorney	American University

		General Counsel's Office
Paul Chrostowski	Enviro. Health Scientist	CPF Associates
Frances Hansen	Resident	
Janet Bohlen	Resident	
Curtis Bohlen	Resident	

Attachment 2

GOVERNMENT OF THE DISTRICT OF COLUMBIA
DEPARTMENT OF HEALTH

DRAFT COMMENTS ON THE CORPS OF ENGINEERS' FINAL REPORT OF ANALYTICAL RESULTS DATED MAY 8, 2002 3819 48TH STREET; 4710 QUEBEC STREET; 4625 ROCKWOOD PARKWAY AND 4633 ROCKWOOD PARKWAY

FEBRUARY 2003

Prepared by
Environmental Health Administration
Bureau of Hazardous Material and Toxic Substances
Hazardous Waste Division

Sequence of Events

First, the Corps of Engineers' (Corps') Final Report of Analytical Results (Report) WAS DATED May 8, 2002. Relevant data from this report was transmitted to only one of the property owners, 3819 48th Street, on or about January 14th, 2003. The property owner transmitted his portion of the data to DC Department of Health on January 23rd, 2003. At the partnering meeting on January 29th, 2003, the District of Columbia's Remedial Project Manager expressed concern over the delay and means of obtaining even a portion of the report. Also, concern was expressed over the more important delay in notifying the property owners.

At the partnering meeting, the District of Columbia's Remedial Project Manager noticed that the EPA's Remedial Project Manager had a completed Report dated May 8, 2002, which he also was given on January 14th, 2003. DC requested a copy of this Report, which the Corps transmitted on January 31st, 2003.

The Report indicates that sampling was done on 2/8/01 and 2/13/01. The Report also states on page 2 under SUMMARY, "Except as indicated in this report, all samples were prepared and analyzed within the specified holding times using the EPA-approved analytical procedures." The District will reserve comment on this portion of the Report until it receives copies of all field notes, chain-of-custody forms, laboratory quality control results, and all other information included in the data packages including the original laboratory reports, hereby requested pursuant to the Department of Defense and District Memorandum of Agreement (DDMOA) dated 5-9-94, paragraph 1, page 2-3.

This request is necessary due to the unusual nature of the timeline. A delay of a year and three months from sample collection to validated results is unusual, even for Spring Valley. Another delay of eight more months until the regulators and at least one property owner was notified is another inexplicable circumstance. Finally, the Report states in the first sentence, "In accordance with the revised Final Work Management Plan for Follow-on Sampling for OU-4 Residential Lots, Amendment 2 (Parsons, April 2001), Parsons collected soil samples from four OU-4 residences to assess for the presence of the American University Experiment Station (AUES) list of chemicals." The District needs to know how samples collected in February 2001 could be in accordance with a Plan Amended in April 2001.

Because many of the constituents of concern were volatile substances, this lengthy timeline and the missing date as to when the samples were actually analyzed is even more important. Also, several Trip Blank samples were apparently contaminated with volatile compounds, raising a further question on how well the sample blanks were sealed and whether any loss of volatile constituents occurred before analysis.

Generic Comments

During January and February of 2002, the District had several discussions with the Corps of Engineers "new" members of the partnering team, over the need to include the District in the deliberative process. While the District was and is pleased with the high level of expertise these "new" members possess, the District was under the impression that these "new" members were not used to working with state or local governments that assumed such a prominent role on a military weapons site. The District was under the impression that long before May 2002, these "new" members understood the need to include the District in the deliberations and to supply the District with all information regarding items or contamination found at the site. Therefore after this new member orientation, the District is at a loss to explain why it was not told of the sampling results, at least at a point in time where the results were validated.

The District requests that the Corps of Engineers search its files to ensure that no other relevant data or information is being withheld. The District reminds the Corps that the vast majority of the AUES site is private property and military customs regarding "need to know" are simply inapplicable.

The District has been informed that rights of entry for this expanded sampling were not obtained from two of the residents. The District is not in a position to assess the accuracy of this anecdotal information.

The District is also concerned about the timeline because the Corps has repeatedly stressed that its expertise is in the ordnance and engineering aspects, and has deferred the health related issues to the regulators. In the Work Management Plan for OU-5, August 10, 2001, the Corps states, "CENAB responsibilities include...obtaining rights-of-entry to properties in the investigation areas...and coordinating with regulatory agencies on issues pertaining to protection of human health and the environment." Par. 1.4.2 page 1-5. (See also page 1-5 of the Work Management Plan for OU-4 dated August 14, 2000). Again the Corps states, "Communication with the residents of Spring Valley is considered paramount to the successful completion of this project. The flow chart (Figure 1-4) below indicates the general sequence of events necessary to accomplish the sampling of the residential properties...Submit Right of Entry Letter to Homeowner-Receive signed Right of Entry-...Submit Sample Results Letter to Homeowner." Par. 1.5.9.4 Page 1-11. **(TAB A).** The District suggests that the Corps insure that its new personnel familiarize themselves with these generic work plans.

Since the Corps defers health issues to the regulators, not advising the regulators of the presence of these compounds <u>left the residents without any competent opinion</u> on the impact of the compounds for a period broaching two years. The fact that the residents were not even informed about the existence of the compounds, further exacerbates the problem. This "ostrichesque" approach to environmental remediation is not appropriate.

Specific Constituents

The following constituents are listed in the Report as being detected:
acenaphthalene
acetone
acrolein
acetaldehyde
alpha-lindane
anthracene
benzaldehyde
benzo[A]anthracene
benzo[B]fluoranthene
benzo[G,H,I]perylene
benzo[K]fluoranthene
benzoic acid
benzyl alcohol
benzyl bromide
benzene
benzeneetanol, 4-hydroxy
benzene, (1-methylethenyl)
benzene, 1-methyl-3-(1-methyl)
bicyclo2,2,1 heptane,7,7-d
bicyclo3.1.1 hept-2-ene.2.6.5-trimethyl
bicyclo3.1.1 hept-2-ene.2.6.6-trimethyl
bis(2-ethylhexyl)phthalate
butanal
butane
2-butanone
2-butanone, 3-methyl
2-butene, (z)
butylbenzylphthalate
carbon disulfide
carbonyl sulfide
carboxylic acid ester
chloride
chloroform
chloromethane
chrysene
cyanide
cyclohexene, 1-methyl-4-(1-methylethenyl)
cyclorpropane, 1,2-dimethyl-,trans
cyclotetrasiloxane, octamethyl
dibenz[A,H]anthracene
dibenzofuran
dichlorofluoromethane

diethylphthalate
di-n-butylphthalate
docosane
dodecanal
1-eicosanol
ethanethiol
ethanol,2-(2-ethoxyethoxy)
ethanone, 1-(3-ethyloxiranyl)
fluoranthene
fluorene
fluoride
gama-sitosterol
heptadecane
heptadecane, 9-octyl
heptane.3-methylene
hexadecanoic acid
9- hexadecanoic acid
2,4-hexanedione
2-hexanone
hexanal
hexanal, 2-ethyl
hexanal.5-methyl
hexane
1-hexene,4-methyl
2-hexene, (z)
indeno[1,2,3-CD]pyrene
methyl acetate
methylene chloride
2-methylnaphthalene
naphthalene
nitrate-n
nonacosane
nonadecane
nonanal
octacosane
13-octadecenal
14-octadecenal
9,12-octadecadenoic acid
octanal
octane
1-octanol,2,7-dimethyl
2-octene
2-octene, (e)
oleic acid
pentadecane,8-hexyl
pentanal isomer 1

pentanal isomer 2
pentanal isomer 114-octadecenal
phenanthrene
phenanthrene, 9-methyl
phosphate-P
propanal, 2-methyl
propane, 1,1-oxybis
1-propene,1.2.3-trichloro
pyrene
sulfate
thiodiglycol
toluene
trichlorofluoromethane
tricosane

Comments on Risk

Since many of these are volatile compounds, and many of these were found in surface soils, a presumptive pathway to human exposure exists. However, since many of these compounds are unknown in modern industry and do not have Risk Based Concentrations established, it would be difficult, if not impossible, to do an accurate Risk Assessment.

The District agrees with the Corps that most of these compounds are found in very low levels (i.e. a few parts per billion). However, the District notes that a few of these compounds are experimental chemical warfare agents or precursor compounds listed in the archival documents. Some are listed in standard hazardous materials references. **(TAB B).**

In addition, there are 102 compounds detected on one or more properties. The lowest number on any single property is 24. The two properties with the largest number of compounds lie in close proximity to each other. Because of the number of compounds on any given property, the synergistic and combinative effects would make it difficult, if not impossible, to do a Risk Assessment.

Finally, since EPA has already done a risk assessment on the Spring Valley site, it would be repetitive to do another. While EPA's Risk Assessment was done in 1999, it was primarily based on the limited sampling data from 1993 and 1994. Newer data from the site-wide arsenic sampling and limited sampling for other constituents should be added. If EPA feels that a Risk Assessment could be done on this new data, it should also be included.

Comments on Implications for the Spring Valley Project

Since two of these properties are known to have burial sites adjacent to them and are suspected of having burial sites on them based on geophysical surveys, the remaining two properties should also be examined geophysically for potential burial sites. Indeed one of those properties is already on the list for the first 50 properties to be geophysically surveyed, for other reasons.

The District noted in letter sent to the Corps in 1998 that the general absence of volatile and semi-volatile compounds found in the 1993 and 1994 sampling suggested that where such compounds were found a containerized burial site might exist. The reasoning seems especially apropos in light of the Report.

Other adjacent properties, as well as those in Points of Interest, should have a similar battery of tests done.

The District suggests that the partners discuss, as a priority, the need for more extensive sampling (some of these properties had only 3 samples) and whether a mapping of the soil gas would be useful in pointing to potential burial sites. The Corps should discuss interim measures with the property owners.

TAB A

DRAFT FINAL

WORK MANAGEMENT PLAN

- Field Sampling Plan
- Quality Assurance Project Plan
- OE/CWM Risk Evaluation
- OE/CWM Contingency Plan
- Site Specific Safety & Health Plan
- Work Management Structure

TASK ORDER TO NATIONAL GUARD BUREAU
CONTRACT NO. DAHA90-94-D-0010, TASK ORDER DA01
DERP-FUDS HTRW PROJECT NUMBER C03DC091804

REMEDIAL INVESTIGATION/FEASIBILITY STUDY (RI/FS) SPRING VALLEY OPERABLE UNIT 5, WASHINGTON, D.C.

Prepared For:

U.S. ARMY CORPS OF ENGINEERS
BALTIMORE DISTRICT

Prepared By:

PARSONS ENGINEERING SCIENCE, INC.
10521 ROSEHAVEN STREET
FAIRFAX, VA 22030

AUGUST 10, 2001

1.3.3 Environmental Setting

1.3.3.1 Four geological formations, three Piedmont and one Coastal Plain formation, are apparent in the vicinity of the site. These formations (from west to east) are the Sykesville Formation, the Dalecarlia Intrusive Suite, the Actinolite Schist, and the Coastal Plain Terrace Formation (USGS 1994). The Sykesville Formation is a sedimentary melange consisting of fragments of metagraywacke, migmatites, amphibolite, and actinolite schist in a quartzofeldspathic matrix. The Dalecarlia Intrusive Suite consists of massive to well-foliated biotite monzogranite and lesser granodiorites. The Actinolite Schist Unit consists of actinolite schist, actinofels, actinolite-chlorite schist and lesser talc bearing rocks. The Coastal Plain Terrace Gravel consists of highly weathered, crudely bedded gravel, sand, silt, and clay (Fleming, A. H., Drake, A. A., Jr., McCartan, Lucy, 1994). The Piedmont Formations are igneous or metamorphic in origin. The Coastal Plain Terrace Formation is fluvial in origin (Fleming, A. H., Drake, A. A., Jr., McCartan, Lucy, 1994). Schistosity is the major structural feature of the Piedmont rocks and saprolite in the OU-4 vicinity.

1.3.3.2 Two soil associations are present at the site, the Urban Land-Sassafras Chillum (ULSC) and the Urban Land-Manor Glenelg (ULMG). The ULMG soil association appears to comprise the majority of the soil at the site. It is a well to moderately well drained soil resulting from the weathering of the basement rocks (schist). The site ULSC soil in the vicinity of the residence results from the weathering of Coastal deposits. However, these soils have been greatly disturbed by construction and landscaping activities. The bedrock at this location consists of a variety of metasedimentary rocks of the Sykesville Formation. Depth to bedrock in the vicinity of the site ranges between 6 and 20 feet.

1.4 PROJECT ORGANIZATION

1.4.1 Project Team

1.4.1.1 Several organizations are directly involved in the Spring Valley OU-5 project. The technical team comprises the USACE, Parsons, and various subcontractors (Figure 1-2). The roles of these team members are described below.

1.4.2 U.S. Army Corps of Engineers, Baltimore District (CENAB)

1.4.2.1 CENAB is the Project Manager for this project. CENAB responsibilities include review of project plans and documents, obtaining rights-of-entry to properties in the investigation areas, working with the news media and the public (in conjunction with the Parsons ES Public Affairs Officer), and coordinating with regulatory agencies on issues pertaining to protection of human health and the environment.

1.4.3 Parsons Engineering Science (Parsons)

1.4.3.1 Parsons will function as the A/E contractor, and provide overall site management and coordination during field operations, including sampling, coordination of analytical samples, coordination of subcontractors, documentation of site activities, and preparation of the final report. Parsons will appoint a Public Affairs Officer (PAO) to assist CENAB in communicating progress and results to the public.

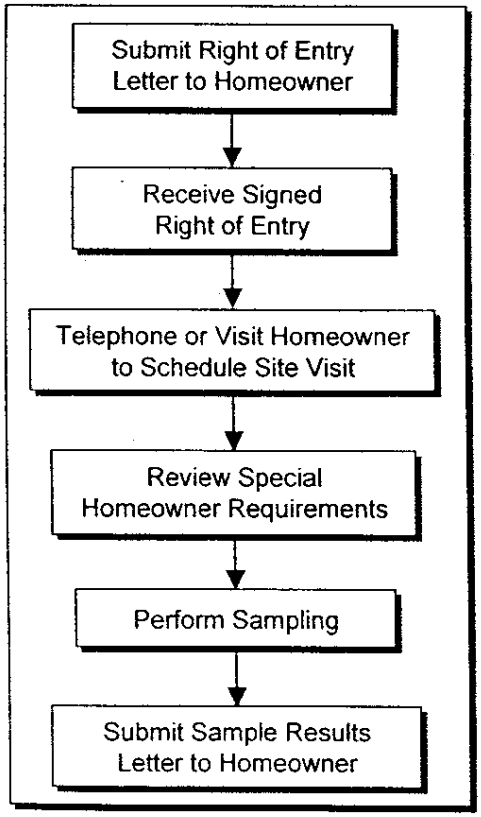
1.5.9.2 During sampling, it is anticipated that Ms. McQuilkin will be on site at the CENAB trailer located at the Federal Property.

1.5.9.3 Ms. McQuilkin, in close coordination with the CENAB Project Manager, will assist with the following:

- Answering phone calls from residents, providing answers to questions or taking messages for more difficult questions. Researching questions and returning phone calls within a reasonable time. Maintaining a log of contact with residents;
- Scheduling of sampling activities on each property with the homeowner and the sampling team;
- Tracking of requirements to conduct sampling at a resident's property. This will include pre and post sampling activities such as notifying the residents, tracking the status of signed rights of entry and preparing post sampling letters to be sent by CENAB to residents. The final list of items to be tracked will be coordinated with the CENAB Project Manager;
- Participating in meetings with residents as appropriate.

1.5.9.4 Communication with the residents of Spring Valley is considered paramount to the successful completion of this project. The flow chart (Figure 1-4) below indicates the general sequence of events necessary to accomplish the sampling of the residential properties.

Figure 1-4
Home Owner Communication Flow Chart



TAB B

Final Report

A Brief History of the *American University Experiment Station* and *U.S. Navy Bomb Disposal School, American University*

Prepared under the
Defense Environmental Restoration Program
for
U.S. Army Engineer District, Baltimore

by
Martin K. Gordon, Ph.D.
Barry R. Sude, Ph.D.
Ruth Ann Overbeck, M.A.
Charles Hendricks, Ph.D.

Office of History
Headquarters, U.S. Army Corps of Engineers
May 1994

Specific Activities and Operations

Operations at the Experiment Station, first under the Bureau of Mines and then under the Chemical Warfare Service, fell into several comprehensive, if sometimes overlapping, categories: gas mask research, offensive and defensive toxic chemical investigations, medical research, pyrotechnic investigations, and mechanical investigations. The Experiment Station's Chemical Research Division (Offense) studied the properties and efficiency of toxic substances—mustard gas, phosgene, superpalite (trichloromethyl chloroformate)—already in use in Europe. It suggested, developed, and submitted for testing literally hundreds of new chemical and solid toxic substances—including new types of mustard gas, cyanogen chloride, and bromobenzyl cyanide—for possible use in gas warfare. The division also investigated and developed smoke mixtures for Navy smoke screens and colored smokes for Army signaling on the battlefield, as well as incendiary materials for use in bombs, shells, projectiles, darts, and hand grenades. In addition, it investigated the problem of obtaining resistant linings suitable for gas shells; devised methods for manufacturing inorganic compounds for use in new explosives and as new toxic and corrosive shell fillers; and invented new methods for analyzing the effectiveness of new materials developed for use in gas warfare. It conducted extensive tests related to the toxicity and symptomology of various classes of mustard gas and similar compounds; developed a method for determining the tear-producing effects of toxic substances on humans; and contributed to various aspects of gas mask research.

The Chemical Research Division (Offense) also devised methods for the preparation, manufacture, and use of such toxic materials as acrolein, martonite, nitrosomethylurethane, chloroacetic anhydride, diphenylchloroarsine, adamsite, phenylbromoacetonitrile, methyldichloroarsine, thionyl fluoride, methyldichloroarsine, lewisite, bromobenzyl cyanide, phenylimidophosgene, thiophosgene, sulfur monochloride, sulfur dichloride, superpalite, cyanogen chloride, cyanogen bromide, diethyl sulfide, diphenyl sulfide, chloropicrin, acetylene-arsenic trichloride, acetyl fluoride, acetyl chloride, chloroacetyl chloride, acetophenone, chloroacetophenone, zinc arsenide, calcium arsenide, magnesium arsenide, arsenic trifluoride, bromine trifluoride, boron trifluoride, sulfur hexafluoride, iodine pentafluoride, aluminum chloride, titanium tetrachloride, and mustard gas.[47]

CHEMICAL	COMMENT
2-butonone	toxic by ingestion and dermal, affects peripheral nervous system[1]
acetone	
carbon disulfide	sulfide exception[2]
chloromethane	organic halogen (aliphatic halide)[3]
dichlorofluoromethane	organic halogen (aliphatic halide)[4]
2-butanone, 3-methyl	
2-octene	octylene [5](acrid smoke)
acetaldehyde	causes respiratory paralysis[6]
bicyclo2,2,1 heptane,7,7-d	
bicyclo3.1.1 hept-2-ene.2.6.5trimethyl	Similar to pinene, causes skin eruption, ataxia, kidney damage[7]
carbonyl sulfide (carbon oxide sulfide	sulfide[8]
cyclotetrasiloxane, octamethyl	siloxanes can spontaneously combust in air[9]
heptane.3-methylene	
hexanal	toxic, ingestion & inhalation, (acrid
smoke)[10]	
hexanal.5-methyl	
octanal	
octane	asphyxiant and blister agent[11]
pentanal isomer 114-octadecenal	Irritating to eyes & respiratory tract[12]
1-eicosanol	
1-propene,1.2.3-trichloro	organic halogen[13]
hexadecanoic acid	decanoic acid is a poison (acrid smoke)[14]
oleic acid	poison and skin irritant[15]

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[1] Hazardous Chemical Desk Reference by N. Irving Sax and Richard J. Lewis, Sr., Van Nostrand Reinhold NY 1987.

[2] Military Chemistry and Chemical Agents TM 3-215 1942 at page 59 "Chemical agents are, almost without exception, organic compounds of the halogens." The exceptions are the sulfur derivatives (sulfides, mercaptans), nitrogen derivatives (cyanides), and some arsines.

[3] Supra, TM 3-215

[4] Supra, TM 3-215

[5] Chemical and Technical Dictionary H. Bennett editor, Chemical Publishing Co. NY 1962.

[6] The Merck Index Martha Windholz editor, Merck and Company 1976

[7] Supra, Merck

[8] Supra, TM 3-215

[9] Supra, Hazardous Chemicals

[10] Supra, Hazardous Chemicals

[11] Supra, Hazardous Chemicals

[12] Supra, Merck

[13] Supra, TM 3-215

[14] Supra, Hazardous Chemicals

[15] Supra, Hazardous Chemicals

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Appendix 8.

192 COMPOUNDS PREPARED FOR TOXICOLOGICAL TESTS.

70 w arsenic

COMPOUND	REPORT NO.
Allyl Dichlorarsine	EACD 179
Allyl Formate	" 129
Allyl Isothiocyanate	*MR 7- '25
p-Amino Chloracetophenone	EACD 158
Ortho Arsanilic Acid	" 323
Para Arsanilic Acid	" 279
Atoxyl	" 279
Benzyl Arsonic Acid	*MR 4- '25
Benzyl Bromacetamide	EACD 307
Benzyl Bromide	*MR 9- '25
Benzyl Dichlorarsine	EACD 171
Bromacetoacetic Ester, Alpha	" 190
Bromacetoacetic Ester, Gamma	" 190
Bromnitromethane	" 275
Brompicrin	" 151
Butyl Arsenious Oxide	" 345
Butyl Arsonic Acid	" 345
Butyl Dichlorarsine	" 345
Butyl Difluorarsine	" 345
Calcium Butyl Arsonate	" 345
Calcium Ethyl Arsonate	" 338
Calcium Methyl Arsonate	" 319
Calcium Meta Nitrophenyl Arsonate	* MR 9- '24
Capsaicin	EACD-186
Chloracetic Acid	" 82
Chloracetoxylone	*MR 9- '25
Chloracetyl Chloride	EACD 87
Beta Chlorethyl Dichlorarsine	" 331
Bis Alpha Chlorethyl Sulfide	" 354
Bis Beta Chlorethylthio Ethane	*MR 3- '25
Bis Beta Chlorethylthiol Carbonate	EACD 280
Beta Chlorethylthiol Chlorformate	" 280
Beta Chlorethylthio Cyanate	" 285
Bis Chlorethylthio Methane	" 311
Bis Chlormethyl Ether	" 126
Chlormethyl Phenyl Sulfone	" 199
Bis Chlormethyl Sulfide	" 267
Chlorpicrin	" 75
Beta Chlorvinyl Arsenious Oxide	" 321
Bis Beta Chlorvinyl Arsenious Oxide	*MR 12 -22
Bis Beta Chlorvinyl Chlorarsine	EACD 239
Beta Chlorvinyl Dichlorarsine	" 239
Beta Chlorvinyl Difluorarsine	" 346
Beta Chlorvinyl Dimethoxyarsine	" 321

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REPRODUCE

COMPOUND	REPORT NO.
Bis Beta Chlorvinyl Fluorarsine	*MR 8- '25
Bis Alpha Chlorvinyl Sulfide	EACD 354
Bis Beta Chlorvinyl Sulfide	" 354
Copper Xanthate	*MR 5- '25
Cyanogen Bromide	EACD 196
Cyanogen Sulfide	" 221
Dibromacetamide	" 307
Dichloracetone	" 312
Dichlorarsanthrene	" 323
Dichlor Nitroso Ethane	" 191
Diethoxy Chlorarsine	" 352
Diethyl Diselenide	" 277
Diethylene Disulfide	" 311
Diethylene Oxide Sulfone	" 337
Diethyl Selenide	" 277
Dimethyl Aniline Arsenious Oxide	" 229
Dimethyl Sulfate	*MR 8- '25
Dimethyl Sulfide	EACD 252
2,4 Dinitrophenol	" 238
2,4 Dinitrophenyl Beta Chlorethyl Sulfide	" 251
2,4 Dinitrophenyl Beta Chlorethyl Sulfone	" 251
2,4 Dinitrophenyl Beta Chlorethyl Sulfoxide	" 251
Dinitrotetrachlorethane	" 157
Di-isothiocyan Dimethyl Ether	*MR 3- '26
Diphenylamine Arsenious Oxide	EACD 324
Diphenylamine Bromarsine	*MR 3- '25
Diphenylamine Cyanarsine	EACD 257
Diphenylamine Fluorarsine	" 318
Diphenyl Arsenious Oxide	" 324
Diphenyl Arsenious Sulfide	*MR 4- '25
Diphenyl Arsinic Acid Ortho Arsonic Acid	EACD 323
Diphenyl Chlorarsine Ortho Chlorarsine	" 323
Diphenyl Cyanarsine	" 220
Diphenyl Fluorarsine	" 183
Diphenyl Trichlorarsine	*MR 3- '25
Diphenyl Antimonous Oxide	*MR 2- '25
Diphenyl Chlorstibine	*MR 2- '25
Diphenyl Phenoxyarsine	EACD 156
Divinyl Sulfide	" 354
Bis Beta Ethoxy Ethyl Sulfone	" 354
Ethyl Arsenious Oxide	" 324
Ethyl Arsenious Sulfide	*MR 6- '25
Ethyl Beta Chlorethyl Sulfide	EACD 254
Ethyl Beta Chlorethyl Sulfone	" 254
Ethyl Beta Chlorethyl Sulfoxide	" 254
Ethyl Beta Hydroxyethyl Sulfide	" 254
Ethyl Dichlorarsine	" 313
Ethyl Dichlor Phosphine	" 283
Ethyl Difluorarsine	" 338

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COMPOUND	REPORT NO.
Ethylene Dithiocyanate	EACD 285
Ethyl Iodoacetate	*MR 12- '23
Ferric Xanthate	*MR 5- '25
Fluorobenzene	EACD 262
Guaiacyl Dichlorarsine	" 189
Heptoyl Amide	" 307
Hexachlorbenzene	" 253
Hexachlorethane	" 253
Ortho Hydroxy Chloracetophenone	" 158
Beta Hydroxy Ethyl Arsenious Oxide	" 331
Beta Hydroxy Ethyl Arsonic Acid	" 331
Para Hydroxy Ethyl Phenyl Arsenious Oxide	" 189
Bis Beta Hydroxy Ethylthiol Carbonate	" 280
Beta Hydroxy Ethylthiol Chlorformate	" 280
Iodoacetophenone	*MR 1- '24
Lead Xanthate	*MR 5- '25
Magnesium Methyl Arsonate	*MR 9- '24
Magnesium Phenyl Arsonate	EACD 259
Magnesium p Phenylene Diarsinate	" 279
Mercaptol	" 217
Mercury Diethyl	" 283
Mercury Dimethyl	" 192
Mercury Dinaphthyl	" 274
Mercury Diphenyl	*MR 10- '24
Methyl Arsenious Oxide	EACD 324
Methyl Arsenious Sulfide	*MR 5- '25
Methyl Arsonic Acid	*MR 10- '24
Methyl Beta Chlorethyl Sulfide	EACD 231
Methyl Beta Chlorethyl Sulfone	" 231
Methyl Beta Chlorethyl Sulfoxide	" 231
Methyl Chlormethyl Sulfate	" 198
Methyl Cyanformate	" 102
Methyl Dibromarsine	*MR 8- '25
Methyl Dichlorarsine	EACD 211
Methyl Difluorarsine	" 344
Methylene Methylol Undecenoylamide	" 307
Methyl Heptoyl Amide	" 307
Methyl Beta Hydroxyethyl Sulfide	" 231
Methylol Benzamide	" 307
Methylol Heptoate	" 307
Methylol Nonoyl Amide	" 307
Methylol Phthalimide	" 307
Methylol Undecenoylamide	" 307
Methyl Oxamic Ester	" 102
Methyl Phenyl Sulfone	" 199
Methylthiol Chlorformate	" 180
Methyl Vinyl Sulfide	" 354
Monothioethylene Glycol	" 311
Mustard Sulfone	" 177
Alpha Naphthoyl Amide	" 258

REPRODUCED

COMPOUND	REPORT NO.
Beta Naphthoyl Amide	EACD 258
Naphthyl Dichlorarsine	" 274
Alpha Naphtho Nitrile	" 258
Beta Naphtho Nitrile	" 258
Ortho Nitraniline	" 323
Nitro Chloracetophenone	" 158
Nitromethane	" 275
Meta Nitrophenyl Arsenious Oxide	*MR 5- '24
Meta Nitrophenyl Arsonic Acid	*MR 10- '24
Ortho Nitrophenyl Arsonic Acid	EACD 323
Meta Nitro Phenyl Dichlorarsine	*MR 10- '24
Meta Nitro Phenyl Difluorarsine	*MR 1- '25
Meta Nitro p Oxy Benzoyl Benzamide	EACD 307
Phenoxarsine Chloride	*MR 5- '25
Phenoxarsine Fluoride	**WR6-22-25
Phenoxarsine Oxide	*MR 6- '25
Phenyl Antimonous Oxide	*MR 11- '24
Phenyl Arsenious Oxide	EACD 324
Phenyl Beta Chlorethyl Sulfide	" 263
Phenyl Beta Chlorethyl Sulfone	" 263
Phenyl Dichlorarsine	*MR 7- '25
Phenyl Dichlorphosphine	EACD 283
Phenyl Difluorarsine	" 273
Para phenylene Diarsonic Acid	" 279
Para Phenylene bis Dichlorarsine	" 279
Phenyl Beta Hydroxyethyl Sulfide	" 263
Phenyl Vinyl Sulfide	" 354
Phosphorus Pentaselenide	" 277
Picric Acid	" 238
Potassium Xanthate	*MR 5- '25
Pyromucic Acid	EACD 159
Pyromucyl Chloride	" 159
Resorcyl Aldehyde	" 307
Sodium Methyl Arsonate	" 211
Tetrachlordiethyl Sulfide	" 254
Tetrachlordiethyl Sulfoxide	" 232
Thiobenzamide	*MR 5- '23
Toluyl Acetamide	EACD 307
Toluyl Bromacetamide	" 307
Toluyl Chloracetamide	" 307
Toluyl Dibromacetamide	" 307
Para Toluyl Heptoyl Amide	" 307
Trimethoxyarsine	" 310
Triphenylarsine	*MR 5- '25
Triphenyl Dichlorarsine	*MR 5- '25
Tris Chlorvinyl Arsine	EACD 239
Trithioacetaldehyde	" 354
Trithioformaldehyde	" 267
Vanillyl Alpha Benzoyl Amide	" 307

Attachment 3

Common Household Sources of Background Indoor Air Contamination

Acetone	rubber cement, cleaning fluids, nail polish remover
Benzene	automobile exhausts, gasoline, cigarette smoke, scatter rugs, carpet glue
Bromomethane	soil or space fumigant
2-Butanone (MEK)	printing inks, fragrance/flavoring agent in candy & perfume, cigarette smoke
Chlorobenzene	plastic foam insulation, paint-related products
Chloroethane	refrigerant
Chloroform	generated from chlorinated water (showers)
Cyclohexane	paint thinner, paint and varnish remover
1,4-Dichlorobenzene	moth balls, general insecticide in farming, air deodorant, toilet disinfectant
Dichlorodifluoromethane	refrigerant (CFCs), cleaning solvent
1,1-Dichloroethane	Plastic products (food and other packaging material), flame retardant fabrics
1,3-Dichloropropene	fungicides
Ethylbenzene	paint thinners, insecticides, wood office furniture, gasoline
Formaldehyde	building materials (particle board), furniture, insulation, cigarette smoke
n-Heptane	nail polishes, wood office furniture, petroleum products
n- Hexane	gasoline, rubber cement, typing correction fluid, aerosols in perfumes
Methylene chloride	hairspray, paint stripper, rug cleaners, insecticides, furniture polish
Methyl isobutyl ketone	paints, varnishes, dry cleaning preparations, naturally found in oranges & grapes
Methyl *tert* butyl ether	gasoline (oxygenating agent)
Styrene	cigarette smoke, automobile exhaust, fiberglass, rubber & epoxy adhesives, occurs naturally in various fruits, vegetables, nuts, and meats
1,1,2,2-Tetrachloroethane	solvent, paint & rust removers, varnishes, lacquers
Tetrachloroethene (PCE)	dry-cleaning, metal degreasing, adhesives and glues, insecticide, rug cleaner
Toluene	gasoline, automobile exhaust, polishes, nail polish, paint thinner, cigarette smoke
1,1,1-Trichloroethane	spot cleaners, glues, insecticides, drain cleaners, shoe polish
Trichloroethene (TCE)	scented candles, automotive cleaning & degreasing products
Xylenes, total	water sealer, gasoline, automobile exhaust, markers, floor polish, cigarette smoke

Attachment 4

Have any other properties in Spring Valley received the same level of scrutiny? If so, which ones and how do the results compare to ours? Why was there such a prolonged delay in informing the property owners/tenants of the results? Why, if problems arose with interpretation of results and with laboratory control issues in early 2002, were the properties not resampled and data reanalyzed at that time? And why were partnering regulatory agencies, including EPA and DCDOH, not consulted by USACE until the homeowners released the results in February 2003?

However these questions are answered, it is vitally important for all concerned to move forward and promptly resolve these issues. We therefore ask USACE to:

a) Conduct surface and subsurface retesting of the four properties for all listed chemicals, including arsenic, with checks and balances built in to ensure accuracy and independent oversight of the process;
b) Conduct geophysical testing of the four properties to determine the source of volatile and semi-volatile substances which should have evaporated long ago if they are not in slowly leaking containers;
c) Conduct air sampling of home interiors at the four properties, especially the basements;
d) Provide independent evaluation of all data sets by a private laboratory that is designated by the residents and financed by USACE, to offset lack of trust in federal agency chemical/medical experts; and
e) Provide full disclosure to property residents, RAB members, and agency partners of the information so derived.

We, the undersigned, submit this statement for inclusion in the public record with the minutes of the meeting of the Restoration Advisory Board on March 11, 2003.

Curtis Bohlen
E.U. Curtis Bohlen

Janet L. Bohlen
Janet Bohlen

Geza Teleki
Geza Teleki

Heather McGiffin
Heather McGiffin

Frances Hansen

Ryan Mitchell
Ryan Mitchell

Signed on March 4, 2003

Attachment 5

Property Owners' Request for Action – Partners' Meeting Tues 25 March 2003

The owners of 4710 Quebec Street and 3819 48th Street in Spring Valley, whose property values have been severely impacted by the recently released Parsons' Report of May 2002, respectfully request the Partners to promptly authorize the following actions:

1. Conduct surface and subsurface retesting of our properties for all AUES chemicals, including arsenic. Six to 12-inch cores are inadequate; deeper cores should be taken. Samples from this new test should be split and made available to EPA and to an independent laboratory of the property owners' choosing. Samples must be analyzed immediately after extraction to accurately determine the presence of any volatile or semi-volatile substances.
2. Conduct geophysical testing to determine the source(s) of volatile and semi-volatile substances which should have evaporated long ago.
3. Conduct tests of home interiors, especially basements, to determine presence of any AUES chemicals in air, dust or cement walls.
4. Conduct the above tests on each property concurrently rather than in sequence.
5. Perform these tests as soon as possible, the time-line to be confirmed to the owners in writing within three weeks of today's meeting.
6. Provide full and prompt disclosure to property residents, RAB, and Partners of the information derived from these tests..
7. Together with the owners, plan and promptly conduct appropriate mitigation..

It is assumed that the Corps of Engineers will meet all the costs of the above retesting, including any incurred by an owner-selected independent laboratory.