USEPA AMCO Superfund Site & Lead Cleanup CAG Meeting, June 11, 2012

EPA Attendees: Rose Marie Caraway
Alejandro Diaz

EPA Contractors: Kent Baugh/ITSI-Gilbane
Yash Nyznyk/CDM Smith
Carolyn Moore/CDM Smith
Jack Medina/ Translator

CAG Members: John Schweizer (Technical Adviser)

Other Attendees: Brian Beveridge (Community Co-Chair)
Bradley Angel, GreenAction (with guest, Kate Paladin)
Frances Watson
Ellen Parkinson
Edward Henderson
David Carter
Tenagne Am
Pamela Evans, Alameda County Environmental Health

Purpose of Meeting

- *Update community on AMCO field work*
- *Update community on progress of lead cleanup, brainstorm/organize more community outreach, and discuss suggestions for improvement*
- *Technical Advisor to provide comments on AMCO investigations*

Poster Session

The meeting began with an informal poster session. CAG members were invited to circulate throughout the room and view posters presenting data from the recent soil characterization program and the ongoing groundwater monitoring. Rose Mare Caraway, EPA AMCO RPM, and EPA contractors Kent Baugh, ITSI-Gilbane, and Yash Nyznyk, CDM Smith, answered community questions. The posters will be included as figures in groundwater monitoring and investigation reports which will be available through the AMCO website or at the AMCO public information repository located at the Oakland Public Library – Main Branch, in the government reference section. [Note: Some of the posters were also presented to the community at the May Block Party held on May 19.]

Welcome & Introductions

Brian Beveridge, Community Co-Chair

- Mr. Beveridge welcomed everybody and reviewed the agenda.
- Mr. Beveridge introduced Alejandro Diaz, the new Community Involvement Coordinator (CIC) and EPA Co-Chair for the AMCO CAG.
- Mr. Beveridge noted that there hadn't been a CAG meeting since February 2012, in order to allow the EPA to make progress on both the AMCO and Lead Cleanup projects. The community was shown some materials during the May 19th, 2012 block party.

Lead Cleanup Progress Update

Alejandro Diaz, EPA CIC and CAG Co-Chair

- Mr. Diaz indicated that Steve Calanog, EPA Lead Cleanup RPM, was unable to attend the meeting and that he, Mr. Diaz, would be presenting the Lead Cleanup update.
- Mr. Diaz reported that, to date, 75 yards had been remediated. He added that 40 properties had yet to sign up for soil treatment. Mr. Diaz presented a figure showing properties treated (shown in green), properties in process (blue), and properties that had yet to sign up for the program (outlined in white).
- Mr. Diaz requested assistance from the CAG to speak to neighbors regarding the remaining 40 untreated properties. He added that the EPA has sent letters to the registered owners of the properties and has gone door-to-door to speak to residents, but that community members who know the residents may get better results. A community member requested that Mr. Diaz email the figure out to the CAG email list so residents can determine which neighbors to speak to. The community member also suggested that the EPA follow up on the letters and mailings sent to the property owners.
- Mr. Diaz related that the Lead Cleanup project has 2 to 3 months of work left on the properties that are in process and when that work has been completed, the contractors will be de-mobilizing. So, there is a limited window of opportunity to sign up and take advantage of the lead remediation and some yards might miss the opportunity for treatment. Due to the limited window of opportunity, it is important to sign up as many properties as soon as possible.
- Mr. Diaz reminded the CAG that remediation of soil is only one part of addressing the potential for residential lead exposures. Mr. Diaz displayed information on lead paint remediation programs available to local residents. He added that some of the programs have eligibility requirements, but all of the programs are free to qualifying residents.
- Mr. Diaz addressed the issue of Lead Cleanup contractors. Recently, the previous contractor (SFS) on the Lead Cleanup had been replaced by the contractor who had been involved in remediation on the public easement strips located adjacent to sidewalks in the neighborhood (EQM). He noted it is not standard protocol for the EPA to inform the community or seek input when a change is made in a contractor; however, in an instance in which the contractors are working so closely with community members (e.g., entering their yards and homes), EPA is seeking to keep the community informed on the issue of contracting. Mr. Diaz said that SFS had completed their work under the contract (which included remediation of a specified number of properties) and that the new contract had been awarded to EQM.
    - Mr. Beveridge expressed concern that the work elements on which the community provided input, such as low carbon, green processes, and local hiring, be preserved in the new contract. Mr. Beveridge noted that if the community is not informed when these changes are made and that if the requirements that are important to the community are not maintained in a new contract, then the CAG meetings would have no purpose. Mr. Beveridge asked whether EQM will be required to meet the criteria discussed. Mr. Diaz responded that he will check with Mr. Calanog. Mr. Beveridge indicated he heard not as many local workers are being employed.
    - Bradley Angel suggested that the EPA should provide the CAG and community with an explanation of the contracting issue and specifically should provide information on who, within EPA, is responsible for not involving the community on the decision to change contractors.
    - John Schweizer, CAG Technical Adviser, added that he has been performing field observation of Lead Cleanup activities and he observed EQM conducting Lead Cleanup in the same manner as SFS using local labor trained at the Mandela Training Center.
    - Ms. Caraway added that federal contracting is very centralized and sometimes local project managers have limited control.
    - Mr. Beveridge related he heard SFS quit, that there was some discontent or disagreement. Ms. Caraway responded that if there was a disagreement or contractual dispute, the EPA cannot discuss it with community members due to legal restrictions. Ms. Caraway suggested that Mr. Diaz and Mr. Calanog send the CAG a

note explaining the transition between SFS and EQM, to the extent possible. Ms. Caraway added she is hearing the community's concerns and is working on a way to keep the community involved in the contracting process for the AMCO Site.
    - Mr. Beveridge repeated that he wants to ensure that the same processes that were developed with community input are used moving forward but added that he had not heard of any community member discontented with the outcome of EQM's work.

- Mr. Beveridge also brought up the issue of the sidewalk easement strips. It had been the community's understanding that for public spaces there would be continued watering and maintenance (e.g., a rolling water trailer), but the grass on the strips is not being maintained and is drying out and dying. Without the grass, the cap (intended to cover and isolate the treated soil) is incomplete. Mr. Beveridge suggested that the sod may need to be repaired or replaced with decomposed granite.
    - Ms. Caraway indicated she thought the homeowners agreed to maintain the sidewalk strips. Mr. Beveridge replied that that might be the case, or that there might have been confusion as to who was responsible for ongoing maintenance, but in any case, the maintenance isn't happening and the grass is dying. Mr. Diaz agreed to look into the matter and get back to the community with suggestions on a path forward. Ms. Caraway suggested that maintenance of the grass might have been an item that was lost during transition between contractors.
    - Mr. Schweizer suggested that if the grass be replaced with an evergreen grass. Mr. Beveridge added that while the grass looks dead it might not be completely dead and could recover with proper maintenance.

Community Outreach Update

Alejandro Diaz, EPA Co-Chair and CIC

- Mr. Diaz updated the CAG on community relations activities. Mr. Diaz informed the CAG that the May block party was a great success. Mr. Diaz thanked all those who helped make it happen. Attendees were treated to performances by local bands – Inspiration Movement, Kwamo, Mary O'Donald and Zigaboo. Awards were presented to a number of people for their outstanding work in the community. Award winners included Mr. Beveridge, Mr. Schweizer, and Margaret Gordon, to name a few.
- Mr. Diaz informed the CAG that new stickers, signs, and fact sheets are available for the Fishbone (Lead Cleanup) Project. Community members are encouraged to take the signs and post them in their yards as a way of spreading the word and informing neighbors about the project. Each sign has a pack of stickers included.
- Mr. Diaz also informed the CAG of the new phone number for the West Oakland field office. Old fact sheets and websites will be updated to include the new contact information. Mr. Diaz indicated a new fact sheet will go out in July or August with an emphasis on capturing the remaining yards.

AMCO Superfund Site Update

Rose Marie Caraway, EPA RPM

Ms. Caraway led the CAG on a guided poster session, discussing results from recent soil investigations and groundwater monitoring efforts.

- Ms. Caraway began by describing the soil investigation activities. Ms. Caraway indicated she will be placing pictures of site investigation activities up on the AMCO Facebook page. She also offered to show CAG members soil core that had been collected during the investigation. The soil characterization program involved drilling at 125 locations, and collection of soil samples at specific depths – 1 foot below ground surface (bgs), 3 feet bgs, 5 feet bgs, 8 feet bgs, 13 feet bgs and then at 10 foot intervals starting at 20 feet bgs until the drill rig reached Bay Mud (the aquitard), which typically was encountered between 60 and 70 feet bgs. Ms. Caraway related that in some instances Bay Mud was encountered at a shallower depth than

expected and soil sample collection extended deeper in order to confirm the presence of the Bay Mud.

- Mr. Beveridge explained for the CAG that this investigation, this additional phase of comprehensive drilling and testing, is being performed in response to a request by the National Remedy Review Board that the EPA further characterize the site before choosing a remedy, in order to potentially lower remedy costs. Ms. Caraway added that the initial remedy had been based on a number of assumptions regarding contaminant distribution. Because the assumptions were conservative, the estimated cost of remediation was high. The intent of the current investigation is to accurately define extent of contamination, potentially contributing to a lower estimated cost for the remedial action at the Site.
- Ms. Caraway pointed out that Mr. Diaz gave significant input on presentation of the data on the posters, ensuring that the data were presented in an understandable way. The initial draft figures had contained all of the contaminant category data (metals, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) and polychlorinated biphenyls (PCBs)) on individual figures for each depth interval. Mr. Diaz had suggested that for each depth, each contaminant category should be shown on a separate figure.
- Ms. Caraway presented the contaminant distribution figures for the offsite properties, the small and large vacant lots, at 3 feet bgs. Ms. Caraway explained that VOCs include compounds such as trichloroethylene, cis-1,2-dichloroethylene and vinyl chloride; and that metals include arsenic and lead. Ms. Caraway pointed out the locations where SVOCs were detected about the EPA screening levels. A community member asked how much area each circle or location covered. Ms. Caraway explained that the circles are drilling locations, with a diameter of 6 inches, extending to the depths described before. The sample locations were placed in grids, 20 feet apart.
- Ms. Caraway noted that each sample is being analyzed for all of the suspected contaminants. She added that the analyses are being performed by a laboratory local to the Bay Area, rather than one of the EPA's nationally contracted laboratories. Shipping to national laboratories across the country can lead to delays, or sometimes loss of samples, due to adverse weather or shipping complications. The ability to use a local lab (Accutest, which is located in San Jose) simplified this logistical aspect of the investigation. As an example, Accutest picked up the samples from the Site on a daily basis. The driller was able to complete, on average, one and a half locations per day.
- Returning to the figures, Ms. Caraway pointed out that VOCs were not encountered below 3 feet bgs on the offsite properties. Metals were found at 3 feet bgs in the large vacant lot and in the parking lot on Center Street.
- Ms. Caraway presented the figures showing the extent of contaminants for the AMCO property at 3, 8 and 13 feet bgs. Ms. Caraway noted that SVOCs and pesticides are present at 3 feet bgs, but there were not as many detections of metals above screening levels. VOCs are widely present within the AMCO site at 3 feet bgs. Mr. Baugh described the figure depicting extent of contamination 8 feet bgs at the AMCO site. At this depth, metals were not detected above screening levels. There were fewer detections of pesticides, with DDT being the most common pesticide detected. SVOCs are also less prevalent, mostly polyaromatic hydrocarbons (PAHs), with some detections of naphthalene. PAHs are possibly present as a byproduct of trash burning. Mr. Baugh pointed out that many different VOCs were encountered in shallow soil. He noted that VOCs are the most mobile of the contaminants encountered and were also found in groundwater beneath the site.
- Mr. Baugh related that contaminants encountered varied with depth. The metals, SVOCs and pesticide concentrations decreasing with depth.
- Mr. Baugh noted that among the metals, lead was the most predominant metal encountered, which was expected, as the AMCO properties have never undergone lead abatement.
- Regarding treatment, the results of the investigation were used in the development of the treatability study scope. The treatability study work plan is currently in draft form. Mr. Schweizer has a copy of the draft treatability study work plan and it's also being peer reviewed within the EPA. Multiple treatment options are being considered, including onsite treatment as an alternative to excavation and offsite disposal. Previously excavation and

offsite disposal were considered for implementation at the AMCO Site, and this had resulted in high cost for Site remediation.

- Mr. Angel asked if the EPA is testing for dioxin. Mr. Baugh responded that samples were not analyzed for dioxin during this investigation, due to the high cost of the analysis and the number of samples taken during the investigation. Mr. Angel asked whether, considering the toxicity of dioxin, it might be prudent to analyze the samples for dioxin as well. Mr. Baugh pointed out that the samples were analyzed for compounds that would drive the cleanup, so while dioxins may be present, other compounds pose a greater risk and, therefore, would be used to determine the extent of remediation. Ms. Caraway added she will revisit the dioxin issue. Another investigation mobilization will be taking place to collect samples for the treatability study and samples to be analyzed for dioxin could be collected then.
- Mr. Angel asked if there was testing conducted in South Prescott Park. Ms. Caraway replied that no soil samples were collected in South Prescott Park as part of the soil characterization effort. However, groundwater samples have been collected from locations in the park. Other posters on display presented the current understanding of the extent of the groundwater plume, which does not extend to South Prescott Park, for the most part. Mr. Angel pointed out that this contradicts information provided by Ms. Caraway's predecessor. Ms. Caraway responded she has drawn her conclusions regarding plume extent from the most recent groundwater monitoring data.
- Ms. Caraway summarized that the soil investigation was comprehensive and served to further delineate the extent of contamination in soil on the AMCO properties and adjacent properties and also provided evidence showing the variation of certain contaminants with depth. Ms. Caraway indicated she would revisit the rationale for not analyzing samples collected during this investigation for dioxin, other than cost considerations, which are not used to determine which constituents are analyzed for.
- Ms. Caraway related that following the delineation of the extent of soil contamination, the next step is to evaluate treatment methods. This will be accomplished during the upcoming treatability study. Based on the new understanding regarding the extent of contamination, new treatment options will be considered. As shown on the posters, both VOCs and SVOCs are present in soil at 8 feet, as well as the in the shallow groundwater. The previous remedial strategy had been to excavate to 8 feet; however, there may be options that can be used to address constituents at these depths without excavation. Ms. Caraway noted that the EPA is considering thermal treatment, to treat VOCs, SVOCs and possibly PCBs, in both soil and groundwater. Thermal treatment had been suggested previously by Mr. Schweizer. However, thermal treatment does not treat metals, so will only be part of the remedy. Mr. Schweizer added that he has changed his views on thermal treatment and indicated he would explain further during his presentation. .
- Mr. Beveridge noted that the concentrations of certain contaminants vary with depth and asked whether the observed behavior of the contaminants is consistent with the EPA's expectations for those chemicals based on their properties. Mr. Baugh confirmed that the behavior of the contaminants is as expected. Metals, SVOCs and PCBs were observed to be less mobile and more widely encountered in shallow soil on the adjacent properties. However, on the AMCO property in locations where solvents were theoretically released, other less mobile contaminants are encountered at lower depths. The solvents can carry the less mobile contaminants down through the soil. Mr. Baugh also pointed out that VOCs present at depth are also located where underground tanks and subsurface piping was present.
- Ms. Caraway then led a discussion on the posters presenting recent groundwater monitoring data. Contaminants presented include trichloroethylene (TCE), cis-1,2-dichloroethylene (cDCE), vinyl chloride (VC) and toluene. Ms. Caraway explained that for each contaminant there is a maximum contaminant level (MCL). Concentrations above the MCL for each contaminant were shown on the posters, with concentrations higher than the MCLs depicted as darker colors. For TCE, as an example, the MCL is 5 micrograms per liter (µg/L).
- Mr. Angel questioned Ms. Caraway's presentation of 5 µg/L as a "safe" number. Mr. Angel noted that the 5 µg/L is not based on a cumulative analysis of all toxic risk factors present in

the South Prescott neighborhood. Mr. Angel indicated that he disagrees with the use of an abstract number, calculated without taking into account the realities of the South Prescott neighborhood. Ms. Caraway explained that the intent of the posters is to show the extent of contaminant presence in groundwater. These posters are not intended to convey risk information. The use of the MCL on the figures is to show where the contaminant is present above the most conservative regulatory level [drinking water standard]. For example, the MCL for cDCE is 6 µg/L (this value represents the California MCL, which is lower than the Federal MCL). The highest concentration of cDCE is 20,000 µg/L. Comparing this concentration to the MCL gives a sense of the magnitude of the contamination. The posters are not intended to present risk but rather what was measured in groundwater during the recent investigation.

- Mr. Angel asked if there were other chemicals present during the investigation, other than the 4 presented on the board.
- Ms. Caraway pointed out that only 4 chemicals are presented in the posters but many more were encountered during the investigation and results from the shallow zone (5-15 feet bgs) and intermediate zone (25 to 35 feet bgs) are shown. Mr. Baugh added that there was only one location where contaminants were encountered in the deep zone, so a plume map wasn't feasible.
- Ms. Caraway added that the risk assessment would calculate acceptable or "safe" levels of contaminants specific to the AMCO Site.
- Mr. Angel refuted the use of "safe" in the risk assessment, indicating that the risk assessment had not taken into account the freeway, the port of Oakland and individual risks representative of actual residents in the area into a cumulative risk assessment.
- Ms. Caraway related that the goal of the investigation was to determine what the concentrations of contaminants were in groundwater and how far they extend. Mr. Baugh indicated that these posters include data from recently installed wells, located further downgradient. There were no detections in wells that are located at the greatest distance downgradient of the AMCO Site, so it appears that the downgradient edge and the lateral footprint of the plume have been defined.
- Mr. Henderson asked whether the contamination extends deeper than 35 feet. Mr. Baugh, responded that cDCE was detected in a deep well, at 70 feet bgs at one location. Mr. Baugh added that the concentrations at this location are much lower than those encountered in the shallow zones. Mr. Baugh also pointed out that the deeper detection is laterally separated from the shallower plumes.
- Mr. Angel asked when a cumulative risk assessment would be done on the Site. Ms. Caraway indicated that the risk assessment conducted by EPA's risk assessment specialist, Sophia Serda, did take into account cumulative risks and conducted a cumulative risk assessment at the Site. Mr. Angel refuted and asked if it took into account the presence of the freeway and the Port of Oakland. Ms. Caraway indicated that she did not recall how they were integrated, but that EPA was able to take that into account when conducting the 2010 risk assessment. Ms. Caraway pointed out, that based on the additional environmental pressures that the South Prescott neighborhood is subject to Ms. Serda's recommendation that action be taken at the lower end of the EPA's risk management range. Ms. Caraway indicated that Ms. Serda is more qualified to answer specific questions regarding how risk is assessed and offered to have Ms. Serda present at the next CAG meeting. Mr. Angel requested that the EPA provide the report where the preceding [human health risk assessment] is documented, indicating that in his experience the EPA has not performed cumulative risk assessment when assessing risk at the AMCO Superfund Site. Mr. Beverage requested that the risk assessment process be presented to the CAG in the future, including a discussion on how the EPA arrives at their "safe" levels and whether those are calculated in a bubble, without considering cumulative effects or external environmental conditions as Mr. Angel contended. The audience member indicated, based on his reading of EPA literature dating back 10 years, the numbers are not calculated in a bubble and take into account that contaminants act in concert with other chemicals and that people interact with multiple chemical sources. He related that the potential for interaction was accounted for by

incorporating a factor of safety, making the regulatory level maybe ten times lower than the theoretically safe level, based on chemical traits and toxicity alone. He recognized that while the intent of the posters wasn't to present risk, the issue of risk and risk assessment came up and is an important issue to residents and he indicated he would like to see more information on risk assessment in the future.

- Ms. Caraway agreed that it's an important topic and indicated that it will be covered in future CAG meetings. She repeated that she and Ms. Serda tried to respond to the community's concerns regarding cumulative impacts in the previous risk assessment.
- Mr. Beveridge asked whether the results of this investigation will lead to another review by the National Remedy Review Board. Ms. Caraway replied that this investigation will result in two actions. The first will be a report summarizing findings of the additional investigations that have been performed. The second will be the treatability study, the results of which will be used to evaluate a variety of remedial technologies. Experiments will be performed in the CDM Smith laboratory, located in Bellevue, Washington, using samples collected from the Site. The results of the treatability study testing will be used to determine which technologies, or combination of technologies, work best for the range of contaminants present. The treatability study will be performed over two six-month phases. Ideally, a remedy or combination of remedies will be identified that will cost less than the previously proposed remedy, which was projected to involve significant excavation and offsite disposal. The estimated cost of the excavation and off-site disposal was over $60 million. Mr. Beveridge asked if the project schedule had effectively been pushed back 3 years. Ms. Caraway replied that some efficiencies may be identified during the treatability study that could accelerate the project schedule. Areas to be excavated immediately could be identified and action could be taken while remedies for other areas are still under evaluation. Ms. Caraway indicated that implementation of the remediation is at least 2 years away, unless any early action removals are identified.
- An audience member asked if anything had ever been done to try to control the spread of contaminants in groundwater.
- Mr. Angel pointed out that earlier, when he asked about testing at South Prescott Park Ms. Caraway had responded that the plume is not present at the park but according to the posters the contaminant plume is present underneath the park. Mr. Schweizer offered to address Mr. Angel's question during his discussion.

Technical Adviser Update

John Schweizer, Community Technical Adviser

Mr. Schweizer presented his comments on the results of the recent soil and groundwater investigations at the AMCO Site to the CAG.

- Mr. Schweizer related that he reviewed the investigation data with "frequently asked" community questions in mind. The most commonly asked question is "How does the site impact my property?". The answer relates to groundwater because the contaminants are able to move with the migrating groundwater. Mr. Schweizer indicated he looked at TCE in shallow groundwater today compared to TCE in shallow groundwater 5 years ago and found that TCE had decreased by half over this 5-year period. He also found that the plume as a whole is moving slowly to the south, except near the downgradient edge of the plume, where it appears the plume edge is receding. Mr. Schweizer explained that these data suggest that the TCE groundwater plume at the AMCO site has a half-life of about 5 years. Mr. Schweizer estimated that TCE may be below the site screening level of 5 µg/L in about 10 years.
- Mr. Schweizer said that one of the possible explanations for the decrease is that TCE is undergoing degradation to cDCE. TCE degrades to cDCE as a result of biological activity when there is no oxygen present (i.e., under anaerobic conditions).
- In response to an audience member query, Mr. Schweizer explained that his visuals are presented directly from the 2011 groundwater monitoring report, a 142 page document. He confirmed that he posted the document to the CAG website, for the public to access. Mr. Nyznyk pointed out that the results being presented by Mr. Schweizer are from August 2011 and are not the same as the results presented in the posters, which are more recent.

- Moving to a figure depicting cDCE in the shallow zone, Mr. Schweizer pointed out that the nearest homes are underlain by parts of the plume that are near or at the screening level. Mr. Schweizer indicated that at the observed rate of decrease in cDCE concentrations, biological activity will degrade the cDCE plume to below screening levels before it reaches South Prescott Park. Mr. Schweizer added that due to the cDCE concentrations present in the center of the plume it may take about 120 years for the entire plume to be below screening levels.
- Vinyl chloride is a degradation byproduct of cDCE. The vinyl chloride plume (on page 67) in the shallow groundwater appears to be receding from residential structures and the park. Vinyl chloride appears to be increasing in some wells while decreasing in others, suggesting that reductive dechlorination is occurring across the Site, with vinyl chloride degrading to ethene, a non-toxic gas. It appears that there is a very healthy anaerobic biological community within the groundwater in the vicinity of the AMCO Site. Mr. Schweizer noted that the 2009 indoor air sampling results found no vapor intrusion hazard impacting homes on Third Street and Center Street, and with new data showing receding plumes, vapor intrusion hazards in nearby homes is unlikely to be present. This is good news for the community. Mr. Schweizer added that in Prescott Park, vapors were not detected. Mr. Schweizer opined that contaminants are stable or decreasing.
- Mr. Schweizer added that it can be difficult to find a healthy robust reductive dechlorination system, such as the one that appears to be present in the groundwater beneath the AMCO Site.
- Mr. Schweizer also noted that one deep upper aquifer well, RMW-14-50, contains TCE and cDCE concentrations that appear to be increasing. At a groundwater velocity of 10 feet per year, the source of the concentrations at RMW-14-50 can be tracked to the original release at the AMCO Site. Mr. Schweizer theorized that the increasing concentrations are due to TCE from the original release that is passing through the sandier deeper upper aquifer as a plug of contamination, rather than as a plume, as encountered in the shallow aquifer. Mr. Schweizer suggested that the peak will get smaller as it progresses downgradient. Mr. Schweizer clarified that the depth of the well is from 40 to 50 feet bgs.
- Mr. Schweizer recommended that the natural processes not be disturbed by high temperature thermal treatment. Rather, that they be enhanced with non-toxic chemical amendments to the source area. Mr. Schweizer pointed out that high temperature thermal treatment in the source area could kill off the beneficial biological activity. Mr. Nyznyk added that one of the technologies that will be evaluated during the treatability study will be use of lower temperature thermal treatment, which can serve to accelerate the biological activity. Prior discussions regarding thermal treatment had revolved around treatment using very high temperatures. Ms. Caraway pointed out that the technology or combination of technologies needs to address the entire range of contaminants at the site, rather than just the VOCs. Issues such as these will be examined during the treatability study.
- Mr. Schweizer added that at the very low levels observed, there is no technology to remove the contamination easily and quickly and the ongoing biological processes is probably the fastest way to address the plume.
- Ms. Caraway noted that over the past few years, gains have been made in remedial technologies, and additional technologies have been come into play that may be able to remediate the site faster and at a lower cost. Corporate entities have begun using thermal treatment, where it had previously been thought to be too expensive. Corporations tend to be on the leading edge of identifying efficiencies in remediation, quickly adopting technologies that will clean up contamination cheaper and faster. Ms. Caraway indicated that the EPA is looking at several different technologies and combinations of those technologies, including excavation and offsite disposal and excavation and onsite treatment.
- Mr. Schweizer agreed those technologies should be looked at for the source area and the shallow aquifer, but he asserted that monitored natural attenuation (MNA) is an appropriate remedy for the upper deep aquifer VOC detections. Mr. Schweizer related that the nearest water body is the Oakland Estuary, located more than 3,200 feet from the AMCO source

area, At the current rate of groundwater velocity of 10 feet per year, it is unlikely that groundwater contamination from the AMCO Site will reach the estuary.

- Ms. Caraway pointed out that while the leading edge of the groundwater plume is defined, questions still remain regarding the large combined sewer pipe running down the center of 3rd Street. The pipe is concrete and 12 feet in diameter, sitting in gravel or sand bedding. It needs to be determined whether the pipe is influencing shallow groundwater flow and contaminant concentrations.
- Mr. Beveridge asked whether high temperature thermal with cryogenic reconstitution is still being considered as a technology. Ms. Caraway responded that due to advances in understanding of the potential of thermal treatment, the EPA is now considering low temperature thermal treatment rather than high temperature with cryogenic reconstitution. Recent developments in remedial technology have opened up new options for the AMCO Site, including options that are faster and do not involve years of monitoring and reporting. Mr. Beveridge requested that in the future the type of thermal treatment be clarified when discussing thermal treatment technologies in order to avoid confusion.
- Mr. Schweizer concluded his presentation by pointing out that data in the 2011 groundwater monitoring report indicate that the deeper aquifer has been impacted. But while the contamination is present, he believes that the contamination does not appear to be ongoing and will dissipate with time. Mr. Schweizer related that the best way to confirm that the deep aquifer contamination is dissipating is to place a well downgradient of RMW-14-50. Ms. Caraway confirmed investigation of the total depth of the contamination and installation of a deep downgradient well will be part of the EPA's next work plan but the implementation schedule for that work plan is up in the air due to questions of funding. Ms. Caraway also clarified that the EPA's directive under Superfund is to clean up contamination wherever it is present above a defined action level. So, if the VOCs in the deep aquifer are above the action levels, efforts will be made to remediate it.
- Mr. Beveridge asked for any additional comments before ending the meeting and reviewed suggested agenda items for the next CAG meeting.
    - Ms. Serda from the EPA to present on risk assessment methodologies used at the AMCO Superfund Site.
    - Presentation on development of levels characterized as "safe" such as MCLs.
    - Maintenance of the sidewalk easement strips.
    - Review of what happened with the lead contractor turnover and how the community input can be maintained for future contractors.
- Ms. Caraway offered to send out the minutes from the CAG meeting in which Ms. Serda presented the results of the risk assessment. Additionally, she offered to provide copies of her presentation. The CAG members agreed to review and discuss the minutes and the previous assessment and presentation and to develop specific questions for Ms. Serda.
- Mr. Diaz will be sending out the parcel map showing which properties remain to be treated under the lead program, to CAG members and residents.

Next Meeting

- The next CAG meeting will be in August 2012 (date to be determined) from 6:30 to 8:30 PM, at the Mandela Parkway Apartments Community Room.