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Meeting Minutes

Meeting Subject: Norwalk Tank Farm Restoration Advisory Board (RAB) Semiannual Meeting	Meeting Date: <u>11 August 2011</u> Meeting Time: 5:00 p.m. Meeting Place: Norwalk Arts & Sports Complex
RAB, PROJECT TEAM, AND OTHER ATTENDEES	
<u>RAB Community Members</u> E. Garcia B. Hoskins M. McIntosh (Co-Chair) T. Winkler	<u>Other Members</u> P. Cho (RWQCB) S. Defibaugh (KMPE) (Co-Chair) C. Emig (City of Cerritos) A. Figueroa (City of Norwalk) L. Oppenheim (DLA Energy, Meeting Chair)
<u>Other Attendees</u> R. Hassan (Parsons) D. Jablonski (CH2M Hill) M. Koury (DLA Energy) M. Lucas (Parsons) K. Olowu (DLA Energy) T. Whyte (URS) M. Wuttig (CH2M Hill)	<u>Acronyms:</u> CHHSLs..... California Human Health Screening Levels DLA Energy .. Defense Logistics Agency Energy (formerly DESC) DTSC..... Department of Toxic Substances Control GSA..... General Services Administration HHRA..... Human Health Risk Assessment KMPE..... Kinder Morgan Energy Partners LNAPL..... Light non-aqueous phase liquids MTBE..... Methyl tertiary-butyl ether NPDES..... National Pollutant Discharge Elimination System OCCS..... Offsite Chemicals Cleanup Subcommittee OEHHA..... Office of Environmental Health Hazard Assessment 1,2-DCA..... 1,2-dichloroethane RAB..... Restoration Advisory Board RBCA..... Risk-Based Corrective Action RWQCB..... Regional Water Quality Control Board SVE..... Soil Vapor Extraction TBA..... Tert-butyl Alcohol TPH..... Total petroleum hydrocarbons URS..... URS Corporation VOCs..... Volatile organic compounds WRD..... Water Replenishment District of Southern California
<u>Absentees</u> N. Matsumoto (WRD) Lt Col Gaffney (DLA Energy, Co-Chair)	
<u>BACKGROUND</u> DESC-AMW and KMPE are conducting environmental cleanup activities at the area in and surrounding the former Defense Fuel Support Point Norwalk, also known as the Tank Farm, located at 15306 Norwalk Boulevard, Norwalk, CA. The Restoration Advisory Board (RAB) is an advisory committee of local citizens and project members that reviews and comments documents relating to the environmental cleanup. All RAB meetings are open to the public and are scheduled semiannually on the second Thursday at 5:00 p.m. in the months of February and August unless otherwise voted on by the RAB community membership.	

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1. **Introduction** Lee Oppenheim, Defense Logistics Agency Energy, Meeting Chair

Lee Oppenheim called the meeting to order at 5:09 p.m. He introduced himself as the Deputy Commander of Defense Logistics Agency Energy (DLA Energy) Americas West and said he would be chairing the meeting in place of Lt Col Gaffney, who could not make it.

Mr. Oppenheim asked for comments on the draft minutes from the February 10, 2011, RAB meeting. Mary Jane McIntosh made a motion for the minutes to be accepted as written. Steve Defibaugh seconded the motion. The minutes were approved without opposition.

2. **Regulatory Agency Update** Paul Cho, Regional Water Quality Control Board

Paul Cho, the Regional Water Quality Control Board (RWQCB) Project Manager for the Norwalk site, said that after the tank removal and concrete demolition, the RWQCB requested investigation of the rest of the soil. He said that they sent two letters in August approving Parsons' work and confirmation soil sampling, and the LNAPL (light, non-aqueous phase liquids) and Vapor Monitoring Plan (VMP). They had discussions with DLA Energy, and DLA Energy agreed to use the innovative LIF/UVOST (laser induced fluorescence/ultra-violet optical screening tool) technology at the site. Mr. Cho also said that the RWQCB is assisting with Kinder Morgan Energy Partners (KMEP) with their offsite access. There is one property owner to whom they may need to send an enforcement letter. Mr. Cho also said that the RWQCB management is delighted in the progress at the site.

3. **DLA Energy AMW Update** Redwan Hassan, Parsons

Remediation Operations Update

Redwan Hassan displayed a map showing an overview of DLA Energy's remediation system. He then listed general site activities recently completed including: weed abatement; NPDES (National Pollutant Discharge Elimination System) discharge monitoring reports (DMRs); remediation monthly status summary reports; sentry and semiannual groundwater monitoring (GWM); front site access gate repair; and recovery of product from well GMW-62.

Recent groundwater remediation system activities included: replacement of float switches in the surge tank; installation of new bag filter housing; replacement of a pump in well GW-2; installation of a new ladder on the surge tank; and carbon change-out. He said that from January 1, 2011, through July 31, 2011, the system was in continuous operation except for GAC (granular activated carbon) change out in February, for second quarter monitoring in April, and for third quarter monitoring in July.

Mr. Hassan next discussed the recent vapor extraction system activities. He said that the permit modification for the blower upgrade was submitted to the South Coast Air Quality Management District (AQMD) in February. The permit to operate was received in April. Startup, testing, and optimization was conducted in January. Continuous operation of six eastern boundary wells (VEW-32 through VEW-37) began in January. Continuous operation of four horizontal wells (HW-1, 3, 5, and 7) began in February. The system was in continuous operation except during quarterly groundwater monitoring. Other remediation system activities have included weekly system inspections, system performance and compliance sampling, and GWTS (groundwater treatment system) GAC change outs.

Mr. Hassan said that 1,031,468 gallons of groundwater were extracted and treated in the first quarter of 2011, 1,597,142 gallons were extracted and treated in the second quarter, and 54.9 million gallons have been extracted and treated since 1996. Free product recovery leveled off after 2001. There is no more mechanical extraction. They have been using absorbent socks to remove the remainder of the free product. Vapor extraction system fuel treated is based on the Eastern boundary wells. The investigation in this area began in 2004. There is little TPH (total petroleum hydrocarbons) or VOCs (volatile organic compounds) in the shallow soil. They treated 1.3 gallons of in the first quarter and 12.4 gallons in the second quarter of 2011.

Mr. Hassan next discussed gauging and recovery of well GMW-62. This well is located adjacent to the site in

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Holifield Park and contained LNAPL (light non-aqueous phase liquids) in the second quarter of 2011. In June 2011, the well contained 2.55 feet of product. They used a vacuum truck to recover nine gallons. Mr. Hassan said that the well will be gauged a minimum of twice a week and if the measureable LNAPL reaches two feet, the product will be recovered using vacuum-truck extraction. He said they are not sure why there is product in the well. They would like to get access to the Goldenwest well located in the Holifield Park parking lot to determine if the product is related to another source. Ms. McIntosh asked Mr. Cho if the RWQCB could help in gaining access to the well.

Mr. Hassan said that quarterly sampling included gauging wells in the Eastern area. Concentrations of TPH in April 2011 increased in wells GMW-58, GMW-59, and GMW-60 and decreased slightly at GMW-61 since October 2010. TPH has not been detected in wells GMW-63, GMW-64, and GMW-65 since these wells were installed in 2008. He next displayed a series of graphs showing concentration trends in wells GMW-60, -61, and -62. The graphs indicate an overall decreasing trend in TPH except at GMW-62 where the trend has been overall stable and shows a slight increase for BTEX (benzene, toluene, ethylbenzene, and total xylenes).

Mr. Hassan next discussed the LNAPL Characterization and Vapor Monitoring Program (VMP). An investigation report was submitted to the RWQCB in January 2011, and the RWQCB provided comments. Parsons completed a second addendum work plan which was submitted to the RWQCB in June 2011. The RWQCB provided concurrence and approval on work plan in August. Sampling has been conducted for three quarters. The next sampling will take place in the third quarter of 2011. A semiannual summary report with data evaluation will be generated and submitted later this month. If after one year of sampling the trend is non-detect, then they will discuss the next steps with the RWQCB.

Concrete Demolition Update

Mr. Hassan said that the aboveground storage tanks and piping at the site were removed under the direction of the U.S. Army Corps of Engineers. The remaining concrete bottoms and associated structures are being removed under DLA Energy. El Capitan Environmental Services was selected by DLA Energy for the concrete demolition task, since they had done a good job with the previous demolition. Parsons prepared a Work Plan for the concrete demolition and follow up confirmation soil sampling. A health and safety plan, operations plan, and all permitting were completed prior to the start of work. The berms were sampled so they could be included in the demolition if needed. A geophysical survey was conducted. The fire water system was capped, and two fire hydrants remain active at the site.

Mr. Hassan said that concrete has been removed from all former tank areas and a portion of the truck fill station area. Approximately 7,200 tons of concrete were shipped for recycling. Six of the seven steel tank pads have been shipped for recycling. The remaining tank pad is double layered and is impacted with tar, and Parsons is developing a cleanup strategy for it. In addition, approximately 2,600 feet of transfer fuel lines have been removed and shipped for recycling. Approximately 430 feet of steel storm drain piping have been removed and will be shipped for recycling. Approximately 85 tons of contaminated soil have been disposed of at a certified treatment facility. Miscellaneous fuel lines and electrical conduits are also being removed.

During the berm sampling, three soil samples were collected at a total of 64 locations. A total of 189 samples were collected. At three locations, refusal was encountered and no samples were collected. Mr. Hassan displayed a map showing the berm sample locations. All samples were analyzed for VOCs, TPH as gasoline (THPg), and TPH as JP-5, and 40 of the samples were analyzed for metals. TPH results were below all screening levels. All metals were low except for arsenic. The maximum detection of arsenic was 10.5 mg/kg, which is below the background threshold value for soil in Southern California of 12 mg/kg. The data were submitted to the RWQCB. Parsons is recommending to not remove the berms, because the results do not justify the need. Mr. Cho said that the RWQCB would likely not comment on this recommendation. He said that it is up to the DLA Energy. He said that the berms would still need to meet all levels for water quality protection in addition to screening levels, because anything below the top of the berms is considered subsurface to the RWQCB.

Mr. Hassan next discussed the geophysical survey and displayed a map showing the results, including the

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locations of storm lines and fire suppression lines. He also showed several photographs of the demolition work.

Mr. Hassan then said that asbestos material was identified during the demolition activities. Approximately 1,900 feet of storm drain pipes were composed of transite. Approximately 1,800 feet of water main were composed of transite. Approximately 1,000 feet of transfer fuel lines were found to be wrapped in asbestos containing material (ACM). An estimated 8,000 linear feet of fire water piping is on site, a portion of which were found to be wrapped in ACM. They are currently assessing these lines so they can continue with the demolition.

Revised Remedial Action Plan Progress Report

Mr. Hassan discussed the revised Remedial Action Plan (RAP) and said that fuel thickness and extent of free product in wells throughout the northern tank farm area have decreased. In April 2011, free product was only detected in four wells in the north-central, north-eastern, and TFS areas with thicknesses ranging from 0.01 feet to 1.68 feet. The vacuum-truck LNAPL recovery from GMW-62 will continue if a rebound in product occurs.

Soil venting and biosparging has expanded. The soil vapor extraction system (SVE) began continuous operation in January 2011. In 2011, approximately 14 gallons of hydrocarbons have been destroyed from the SVES.

Groundwater extraction has decreased the free product plumes. Extraction from the north-west corner and the north-eastern area for containment has been effective. Offsite wells continue to show non-detect or decreasing trends in TPH and BTEX concentrations. Groundwater extraction is still used for plume containment.

Mr. Hassan said that SVE operation is scheduled to continue through December 2013. They plan to complete additional soil investigation under concrete foundations in Spring of 2012. Full scale SVE and bioventing operations will resume next year and continue through December 2013. Respiration testing and soil confirmation sampling are planned for January 2014 to June 2014. Groundwater extraction is continuing. They will look at biosparging vigorously and then look at a potential new remedial solution. Then they hope to get to monitored natural attenuation. Next will be confirmatory groundwater sampling and then a request for no further action.

Planned Activities

Mr. Hassan said that activities planned for the next semiannual period include:

- Weekly system inspections, required sampling, evaluation, and optimization of the GWTS
- Operation, system inspections, required sampling, and optimization of the VES
- Site-wide weed abatement and spraying
- Fourth quarter GWM (groundwater monitoring) semiannual event and first quarter 2012 GWM sentry event
- Preparation and submittal of NPDES DMRs for second and third quarters 2011.

Concrete demolition and miscellaneous tasks planned include:

- Continue removal of non-ACM storm drain system
- Continue removal of non-ACM fuel lines
- Continue concrete demolition of pump houses, truck fill station area, and the oil water separator
- Removal of septic tanks
- Further delineation of asbestos lines and removal
- Bidding of asbestos work has been initiated
- Green waste removal

Tracy Winkler asked about the removal of the storm drain lines. Mr. Hassan replied that they have a stormwater prevention plan in place at the site.

4. KMEP Update Mark Wuttig, CH2M HILL

Remediation Operations Update

Mark Wuttig said that KMEP's remediation objectives are to contain and to remove contaminant mass in order to obtain site closure. In the South-Central and Southeast areas, KMEP operates a SVE system, a groundwater extraction (GWE) system, and a total fluids extraction (TFE) system. The TFE system extracts free product and groundwater. The West Side Barrier system was shut down in August 2008 based on low concentrations of MTBE (methyl tertiary-butyl ether) and 1,2-DCA (1,2-dichloroethane). In addition, TBA (tertiary-butyl alcohol) was added to the list of monitored chemicals.

Mr. Wuttig next described the remediation systems in the South-Central and Southeast areas and said that SVE vapors are treated with a catalytic oxidizer and then are safely discharged to the atmosphere under an AQMD permit. TFE liquids include free product that is recycled offsite and groundwater that is treated by liquid-phase GAC and discharged into Coyote Creek under a NPDES permit.

Next Mr. Wuttig discussed operation and maintenance activities, which include weekly inspections and data collection, monthly pump inspections, measurement of individual well vapor concentrations, collection and analysis of influent and effluent vapor and groundwater samples, and gauging of select remediation wells.

Mr. Wuttig then summarized KMEP's SVE operations. In the first quarter of 2011, 994 gallons were treated. In the second quarter, 175 gallons were treated. Since KMEP's Second Addendum to the Revised RAP, 4,276 gallons were treated. Since 1995, approximately 456,000 gallons (3 million pounds) have been treated. Mr. Wuttig displayed a graph showing the cumulative fuel removed by vapor extraction to date, which shows that most of the mass has been removed.

Regarding KMEP's TFE/GWE system, Mr. Wuttig said that in the first quarter of 2011, 2,820,685 gallons of groundwater were extracted from the South-Central area, and 314,343 gallons were extracted from the Southeastern area. In the second quarter, 2,084,095 gallons of groundwater were extracted from the South-Central area and 822,385 gallons were extracted from the Southeastern area. Total groundwater extracted since September 1995 includes: 48.1 million gallons from the South-Central area; 12.8 million gallons from the Southeastern 24-Inch Block Valve area; and 26.9 million gallons from the West Side Barrier area. Mass of TPH removed in the groundwater extracted included 22 gallons in the first quarter of 2011 and 10 gallons in the second quarter. A total 213 gallons of TPH mass has been removed since implementation of the Second Addendum.

Mr. Wuttig said that no free product recovery was estimated for the first and second quarters of 2011, since it has decreased and is mostly emulsified. A total of 8,917 gallons has been recovered since 1995. Mr. Wuttig then showed a graph of extracted groundwater and recovered free product. He noted that the free product line is very level. The West Side Barrier level has been flat since 2008, when it was shut off.

Mr. Wuttig said that the SVE system was in operation 61 percent of the time in the first quarter of 2011 and 75 percent in the second quarter, or 88 percent excluding planned shutdowns for groundwater monitoring. The TFE/GWE system operated 74 percent of the time in the first quarter of 2011 and 80 percent of the time in the second quarter, or 90 percent excluding planned shutdowns for groundwater monitoring.

Mr. Wuttig next discussed the remediation system downtime. The SVE system was down for groundwater monitoring activities, routine maintenance activities, replacement of the low pressure natural gas switch, inspection of the thermocouple wiring, repair of the actuator motor and dilution air valve, and installation of a digital chart recorder. The TFE/GWE system was down for groundwater monitoring activities, carbon changeouts, high level alarms for transfer tank, repairs to the manifold and GAC vessel, cleaning of the southeastern area conveyance lines, and redevelopment of the southeastern area wells.

The well redevelopment program was conducted to reduce the amounts of changeouts. Influent to the GWTS is high in suspended solids and product sheen. The solids and product material cause excessive clogging and frequent change outs of the influent bag filters. Redevelopment will remove these materials from the filter

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pack and surrounding formation which may reduce clogging and change outs. A well development rig was mobilized to bail, swab, and purge groundwater until turbidity levels were reduced. Three southeastern wells were redeveloped in June 2011. Eleven wells in South-Central area were redeveloped in July 2011. Mr. Wuttig showed a map of the location of the redeveloped wells.

Mr. Wuttig next discussed remediation system maintenance activities performed including: installation of new flow meters, totalizers, and solenoid valves for air compressors; inspection of wellheads, replacement of fittings and well boxes; and pulling, cleaning, and reinstalling extraction pumps. These maintenance activities increased treatment system downtime, but will decrease future downtime and increase performance. The PowerPoint presentation also listed several other preventative maintenance activities performed.

KMEP plans to continue to focus on the South-Central and Southeast areas by continuing operation of the TFE, GWE, and SVE systems; continue system maintenance, inspections, and data collection on a weekly basis; and conducting TBA treatment. They will monitor concentrations of 1,2-DCA, MTBE, and TBA in western area. Because TBA concentrations remain low in the northwest area, they recommend that the West Side Barrier System remain off.

NPDES Permit Update

Mr. Wuttig said that KMEP's new NPDES permit for treated groundwater discharged into to Coyote Creek was finalized in June 2011. The previous permit expired in October 2010. TBA was added as new discharge parameter. They negotiated a Time Schedule Order (TSO) with the RWQCB to operate the system at interim discharge limit for TBA to allow time to upgrade the GWTS. Mr. Wuttig said the TBA treatment system uses fluidized bed bioreactors (FBBRs). FBBRs consist of aboveground tanks containing microorganisms that attach to the surfaces of sand grains or granular activated carbon granules. These particles are distributed or fluidized in the tank by the upward flow of the water in the tank. The microorganisms consume TBA as food, using oxygen supplied from ambient air and/or oxygen boosters. Mr. Wuttig displayed a schematic, a photograph, and a flow diagram to show details of the new treatment system.

Additional Assessment Update

Mr. Wuttig stated that work plans have been submitted to the RWQCB and approved for the Vertical Assessment of LNAPL in Soil, the South-Central Residential Area Vapor Study, and the Southeastern 24-Inch Block Valve Area. The Southeastern 24-inch Block Valve field investigation is complete. Access agreements are being finalized for other two investigations. They hope to have all three investigations completed by the end of the year.

Mr. Wuttig showed a figure of the proposed vertical assessment sampling locations. There are four in the South-Central area, two onsite and two offsite. There is also one offsite in the Southeast area. They do not have access agreements yet, so they may get started on the onsite locations first.

Mr. Wuttig showed a figure with the proposed residential area vapor sampling locations. They do not have access yet for the some of the locations. Mr. Cho said that the RWQCB can issue an order of enforcement.

Mr. Wuttig said that two investigations were performed in 2008 and 2009 in the Southeastern 24-Inch Block Valve area. A third investigation near well GMW-O-18 was performed in January 2011. The object of this investigation was to delineate impacts in groundwater in southeastern area. They used direct push field methods to the top of aquitard (50 feet below ground surface) (bgs) to obtain discrete-depth soil and groundwater samples at five locations. They used drilling, continuous coring, and lithologic logging. Soil and grab groundwater samples were analyzed for TPHg, TPHfp, BTEX, and oxygenates. In soil, MTBE was detected in one sample at three soil borings. TPHfp was detected in two soil borings. TBA was detected at a sample depth of 50 to 50.5 feet bgs. All other target analytes for the remaining soil samples were not detected. The detections were at very low levels, so therefore they concluded that there were no soil impacts. For groundwater, TPHg was detected in one boring at a sample depth of 41 to 45 feet bgs. TPHfp was detected in one boring at a sample depth of 31 to 34 feet bgs. TBA was detected in one sample in three soil borings. All other target analytes for the remaining groundwater samples were not detected. Mr. Wuttig said

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that recovery would be conducted through hydraulic containment, and that TBA appeared to be moving back onsite. He said there are extraction wells in the area, but they were disconnected. Mr. Defibaugh said that these extraction wells were turned off when MTBE levels decreased in the area, but they may turn them back on due to the TBA increase. Mr. Wuttig also displayed maps showing the soil and groundwater results, and more details were contained in the handout. He said that the overall conclusion is that low level of detected constituents and onsite groundwater flow direction indicate that the lateral extent of dissolved phase constituents to the east is defined.

Biodegradation Assessment

Mr. Wuttig said that a biodegradation assessment was conducted to better understand how to improve the remediation systems. Biodegradation had not been quantified previously. He showed a table of mass removal from 2007 through 2011 (projected), which averaged a total of 6,428 pounds per year removed by GWE/TFE and SVE. SVE has been more effective at mass removal. Mr. Wuttig next described the biodegradation process and said it is similar to what will occur in the new TBA treatment system. Microorganisms can cause or assist in chemical reactions that change the form of contaminants. Many components of petroleum hydrocarbon contamination can be destroyed by microorganisms. They are conducting a robust assessment of conditions and biodegradation rates in the vadose zone (above the water table). Preliminary estimates show that the annual biodegradation rate in groundwater ranges between 300 and 1,100 pounds. They can use biosparging to add oxygen to the vadose zone which should increase the biodegradation rate. Mr. Wuttig will report back at the next RAB meeting.

Five-Year Action Plan Progress Report

Mr. Wuttig said that the Second Addendum to the RAP was submitted to the RWQCB in November 2006 and was approved in April 2007. Remediation system enhancements were completed in order to target a five year goal for closure, which originally was estimated at August 2012. A revised schedule was provided to the RAB in February 2010 with a new estimated closure date of September 2013. Mr. Wuttig then provided a chart showing completed and future tasks, which was the same as showed at the previous RAB meeting. He said there are a lot of activities completed, but for the future, there are still a lot of items to be determined. They do not have a definitive schedule, but they continue to optimize the equipment. Mr. Defibaugh said that they are also looking at other technologies to try to get the last bit of product remaining.

Mr. Cho asked about the TBA investigation. Mr. Defibaugh said that a release occurred in the Southeastern 24-Inch Block Valve area, and TBA is a break down product of MTBE. Mr. Cho said that due to the increasing TBA trend, the RWQCB may require additional testing or fingerprinting. He also suggested carbon dioxide testing for the biodegradation assessment. Mr. Wuttig said that they did look at oxygen and carbon dioxide levels to find out how much bioactivity was occurring.

Mr. Cho then asked about the well redevelopment. He said that for any well with product, they would need justification data for the redevelopment. Mr. Defibaugh said there has been biofouling in some Southeastern area wells. Mr. Cho also asked about the product recovery summary and groundwater data by DLA Energy, if they could match what is in KMEP's presentation. Mr. Hassan said that they used to include product removal in their presentation, but they no longer do since there has been no change. He said they will include it in the next meeting. Mr. Cho said that it would be good to include so the public can see the total mass removed. Mr. Cho also asked if they could include the number of extraction wells. Mr. Defibaugh said that it would be difficult because it fluctuates month to month.

Mr. Hoskins asked regarding the increase in contaminants, could you conduct fingerprinting to determine if it is old stuff, or new stuff from an outside source or from a new discharge? Mr. Wuttig said that concentration levels at the site go up and down, but show an overall decrease over time. Rainfall causes the water table to rise, and then later it dries out and the water table goes down. This dissolves some of the contaminants in the smear zone, which can cause a seasonal increase in some concentration levels. Ms. McIntosh noted that KMEP conducted considerable pipeline testing a while ago after she requested it. Also, the remediation systems have been a lot more operational the last two years, and there has been a lot of rain, so therefore we

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have seen more fluctuations in wells. Ms. McIntosh also said it would be helpful if the trend could be showed in the Groundwater Monitoring Reports and suggested more detailed presentations, since we are only meeting twice per year.

5. Semiannual Monitoring Event Mark Wuttig, CH2M HILL

Mr. Wuttig said that the Sentry monitoring event was performed in January 2011. Semiannual monitoring event activities were conducted in April 2011. Monthly sampling in the Southeast area was performed in February, March, May, and June 2011. A total of 138 wells were gauged and 124 wells were sampled for the semiannual event. To make sure things were at equilibrium, they turned off the active remediation systems prior to gauging and sampling.

Groundwater levels in April 2011 were generally similar to those encountered during previous events. In the winter, the levels tend to go up, and in the summer, they tend to decrease. In the uppermost aquifer, groundwater elevations were approximately 1.2 feet higher than those reported for October 2010. In the Exposition Aquifer, groundwater elevations up to approximately two feet higher. Mr. Wuttig displayed a water table contour map for the shallow zone showing that groundwater flows towards the northwest, and free product thicknesses of one to two feet or less. Next he displayed a flow direction map showing the groundwater in the Exposition aquifer flowing in the opposite direction, towards the southeast.

Free product was detected in 9 of 183 wells gauged. Thicknesses ranged from 0.01 feet, barely measurable, up to 1.93 feet in well GMW-36. A product sheen was also observed in three wells in the northwestern area. Free product was found in the northern Tank Farm area, the eastern area, the truck rack area, the South-Central area, and the Southeastern 24-Inch Block Valve area.

In the Exposition Aquifer, five wells were sampled, and four of the five were sampled twice. All analytical results were non-detect, except for low detections of MTBE and 1,2-DCA in well EXP-3. The detections were right at the laboratory reporting limits, meaning they could barely see it. These types of low limit detections occur sporadically, so they will continue monitor these wells closely.

In the uppermost aquifer wells, in most areas the lateral extents of TPH, benzene, 1,2-DCA, and MTBE remain similar to those interpreted during recent previous events. The lateral extent of TBA decreased across site compared to October. As discussed earlier, Mr. Wuttig said that concentrations are influenced by water level fluctuations which are a seasonal occurrence. Concentrations are decreasing at the site over the long term, but in any snapshot they could increase.

He next displayed groundwater concentration contours for each plume. For TPH, the larger areas are in the South-Central area and the northern area. There are two apparent increases in wells in the South-Central offsite area, but the long term contaminant trend is expected to continue to decrease. For benzene, the overall extent is smaller than TPH. For 1,2-DCA, this is the smallest area of the contaminants. There is a little bit of a remnant in the west side where the West Side Barrier System used to operate. For MTBE, the main area is in the South-Central area, and there is a low level area in the Southeast area and some in the northern area. TBA covers a similar area to MTBE, in the South-Central area, Southeast area, and a very low concentration in the northern area. Ms. Winkler asked if when TBA increases continue, does MTBE decrease? Mr. Wuttig said not necessarily. MTBE will continue to get smaller because it continues to break down, but TBA also breaks down.

6. Set Date and Agenda for Next Meeting

The next semiannual RAB meeting will be held on Thursday, February 9, 2012, at 5:00 p.m. in the Norwalk Arts & Sports Complex. The agenda is to include remediation system updates, semiannual monitoring report, five-year plan updates, and update on well GMW-62, update on the Goldenwest well, demolition update, and update on the new City Manager.

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7. Public Comment Period

Mr. Oppenheim made a presentation on behalf of Col Keyes, Commander of DLA Americas. He presented a piece of one of the former tanks to Mr. Defibaugh and KMEP for thanks for all their help. He also presented a piece to Ms. McIntosh for all her help with the RAB over the years.

Ms. McIntosh said she found a cleanup and abatement order for Goldenwest issued 12-21-93 by the RWQCB, which superseded abatement order 91-079. Goldenwest was previously Gulf Refinery, and prior to that the Wilshire Oil Refinery. Their site investigation started in 1985, and cleanup did not start in 1992. In between that, they filed for bankruptcy. She found a RWQCB file number 85-13, and order number R4-2003-0158. There was 38,000 cubic feet of contamination, according to the documents she downloaded. She will email the information to Mr. Cho. Ms. McIntosh also discussed Powerine, which was located off Imperial Highway. They were taken over by Cenco. They had a pipeline that ran through the site that was abandoned and then filled with inert gas. She asked Mr. Cho if he could help get more information from them, in addition to the information from Goldenwest and their well No. P-07. Ms. McIntosh said that Goldenwest was located at Foster Road and Shoemaker.

Ms. McIntosh also mentioned that the City of Norwalk has a new City Manager named Mike Eagan who comes on board on August 25, 2011. She suggested that DLA Energy write him a letter in mid-September on behalf of the RBA to welcome him and extend an invitation for a meeting and site tour.

Mr. Hoskins made a motion to adjourn the meeting. Ms. McIntosh seconded the motion. Mr. Oppenheim adjourned the meeting at 8:05 p.m.

ACTION ITEMS		
Item	Responsible Party	Due Date
Mail Semiannual Groundwater Monitoring Report to RAB members	Parsons	02/01/12
Next RAB meeting	All	02/09/12