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Meeting Minutes

Meeting Subject: Norwalk Tank Farm Restoration Advisory Board (RAB) Semiannual Meeting	Meeting Date: <u>29 July 2010</u> Meeting Time: 6:30 p.m. Meeting Place: Norwalk Arts & Sports Complex
RAB, PROJECT TEAM, AND OTHER ATTENDEES	
<u>RAB Community Members</u> B. Hoskins M. McIntosh (Co-Chair) T. Winkler	<u>Other Members</u> S. Defibaugh (KMEP) (Co-Chair) C. Emig (City of Cerritos) A. Figueroa (City of Norwalk) P. Cho (RWQCB)
<u>Other Attendees</u> S. Chou (AMEC Geomatrix) M. Hanak (KMEP) R. Hassan (Parsons) E. Herrera (Office of Napolitano) D. Jablonski (CH2M HILL) Col. Keyes (DLA Energy) (Interim Co-Chair) M. Koury (DLA Energy) M. Lucas (Parsons) K. Olowu (DLA Energy) L. Oppenheim (DLA Energy) A. Padilla (AMEC Geomatrix) 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 KMEP 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> E. Garcia (RAB) N. Matsumoto (WRD)	
<u>BACKGROUND</u> DESC-AMW and KMEP 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 6:30 p.m. in the months of February and August unless otherwise voted on by the RAB community membership.	

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1. **Introduction** Steve Defibaugh, KMEP Co-Chair, Meeting Chair

Steve Defibaugh called the meeting to order at 6:49 p.m. He introduced Mark Wuttig and Dan Jablonski of CH2M HILL, who is KMEP's new environmental consultant.

Mr. Defibaugh asked for comments on the draft minutes from the January 28, 2010, RAB meeting. Bob Hoskins made a motion for the minutes to be accepted as written. Tracy Winkler seconded the motion. The minutes were approved.

2. **DESC-AMW Update** Redwan Hassan, Parsons

General Site Activities

Redwan Hassan said that activities conducted on behalf of DESC recently include weed abatement; submittal of NPDES (National Pollutant Discharge Elimination System) Discharge Monitoring Reports (DMR) for the four quarter of 2009 and first quarter of 2010; sentry and semiannual groundwater monitoring (GWM); and submittal of the Groundwater Capture Report to the Regional Water Quality Control Board (RWQCB).

Mr. Hassan next displayed and described a map showing DESC's current remediation system layout. He discussed recent system activities, including filter cleaning, evacuating arsenic resin, valve replacement, surge tank leak repair, and broken hose repair. Parsons noticed a motor failure in the groundwater treatment system (GWTS) on June 7, and it was repaired on June 16. An electrical short was repaired on June 17. Monthly samples collected on June 22 showed selenium levels exceeding the NPDES permit limit. Parsons notified RWQCB upon receipt of laboratory results. Pump failures occurred in wells GW-15 and GW-16 on June 23. These are two extraction wells on the east, and they were already shutdown due to the selenium issue. One pump will be repaired and the other will be replaced. A new groundwater permit was issued by the RWQCB. The permit expires in 2013.

Mr. Hassan next discussed the groundwater treatment system operations. He said the GWTS was on from December 31 through June 30 except for shutdowns during sampling events, carbon change-outs, and a motor failure and replacement. Regarding vapor extraction system (VES), Mr. Hassan said that the new VES permit approval was received from the Air Quality Management District (AQMD) on February 8. Parsons conducted baseline testing and minor repairs to the VES in March; conducted field monitoring and tests in April; and collected data for flow calculations and prepared final sketch of layout/dimensions for improvements on May 7. An assessment was conducted and solutions were proposed in May to attempt to stay in compliance with the permit. They revised the flow calculations to include influent piping from all areas in June, and then standardized the re-piping configuration in July. The re-piping will be conducted in August, after which the VES will be restarted.

Remediation System Update

Mr. Hassan stated that Parsons has continued to perform weekly inspections, system performance, and compliance sampling on the DESC remediation system. Granular activated carbon (GAC) change-outs were conducted in February and March. The GWTS was shutdown for the quarterly monitoring events in January and April. Charles Emig asked when the wells were turned back on after sampling. Mary Lucas said that the wells are turned back on after all the wells are sampled.

Mr. Hassan said that 1,283,961 gallons of groundwater were extracted and treated in the first quarter of 2010, 1,115,590 gallons were extracted and treated in the second quarter of 2010, and 50.8 million gallons have been extracted and treated since the system startup in April 1996. From April 1996 through December 2009, 428,722 gallons of total hydrocarbon mass were removed, which includes approximately 215,870 gallons recycled and destroyed through groundwater and vapor extraction, and an estimated 212,851 gallons of hydrocarbons destroyed due to enhanced biodegradation.

Mr. Hassan next described their NPDES permit for the GWTS and the permit's selenium discharge limits. The daily maximum discharge of selenium allowed is 8 micrograms per liter ($\mu\text{g/L}$), which is for the

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protection of aquatic life. This is well below the human maximum allowable level. A monthly compliance sample in June was 8.67 µg/L, and the confirmation sample in July was 7.8 µg/L. Therefore, they shutdown the system and notified RWQCB on July 2. They restarted on July 14 with selected wells, but additional samples were over the limit, so they shut down the system again on July 21. Mr. Hassan discussed several selenium remedial options evaluated. They propose to use ion exchange, which uses resin to treat the selenium. This process has been successful at the site in the past, so Parsons has started ordering the resin. They will prepare a plan for approval by RWQCB prior to implementing this option. He said they should be complete near the end of August 2010. Mr. Defibaugh said that KMEP is in the process of renewing their NPDES permit also. He asked if the new DESC permit has the same selenium discharge levels as the previous permit. Mr. Hassan said yes, the limits are the same. DESC's previous NPDES permit expired in February 2008; Parsons recently received the new permit in the mail.

Mr. Hassan next discussed the groundwater extraction in the north-eastern area, which began from well GW-15 in April 2009 and from well GW-16 in July 2009. Since then, the overall trend in concentrations in this area is decreasing. There are some spikes due to increased pumping. Wells GMW-63 and -64 in Holifield Park remain non-detect. They will keep an eye on the overall trend. Then Mr. Hassan displayed charts showing concentration trends for wells GMW-58, -59, -60, -61, and -62.

Additional Investigation Update

Mr. Hassan said that an addendum Work Plan for the Truck Fill Station (TFS), Water Tank, and Northeast (NE) Settling Pond Areas was submitted to RWQCB in April 2010. This is for subsequent work to the investigation started last year. Field activities were conducted from April 28 through June 14, 2010, and included a soil gas survey and soil sampling. The soil gas survey was conducted in the NE corner and covered an area of about 275 feet by 175 feet. Soil gas was sampled at 97 locations. Total petroleum hydrocarbons (TPH) and BTEX (benzene, toluene, ethylbenzene, and total xylenes) were detected in the soil gas. Soil sampling using direct-push technology (DPT) was conducted at 25 locations in the NE, TFS, and water tank areas. They collected 42 samples which were analyzed for volatile organic compounds (VOCs) and TPH as gasoline (TPHg) and TPH as JP-5 (jet propellant 5).

In the TFS area, elevated fuel contaminant concentrations are present at depths between 5 to 25 feet below ground surface (bgs). Based on the data collected, the lateral extent of impacted soil has been adequately assessed. The highest concentration of TPHg (16,000 mg/kg) and TPH as JP-5 (11,000 mg/kg) were detected at 25 feet bgs. Benzene was detected at six locations from 10 to 25 feet bgs. MTBE (methyl tertiary-butyl ether) and TBA (tert-butyl alcohol) were not detected in any of the soil samples.

In the water tank area, elevated fuel contaminant concentrations are present in soil south and southwest of the existing tank. Based on the data collected, the lateral extent has been defined. The highest TPHg and TPH as JP-5 concentrations were detected at 5 feet bgs. Benzene was detected at four DPT locations at 20 and 25 feet bgs at a maximum concentration of 45 µg/kg. MTBE and TBA were not detected.

In the NE area, TPH as JP-5 was not detected in any of the soil samples. TPHg was reported at a concentration 0.35 mg/kg in one soil sample. Benzene was detected in three of the soil samples collected, with a maximum concentration of 1.9 µg/kg. MTBE and TBA were not detected.

Since they did not find any concerns in the NE corner in this or the prior investigation, Parsons is recommending no further action for soil in this area. Remedial options for contamination in the soil at the TFS and water tank areas are being evaluated; the TFS area already has vapor extraction. An investigation summary report is being prepared and will be submitted to the RWQCB and the RAB upon completion.

Capture Zone Analysis Update

Mr. Hassan said that DESC and KMEP prepared a Joint Capture Zone Analysis, and on a recent conference call they agreed to prepare a joint capture map. DESC's report was submitted to RWQCB on June 17, 2010. The objectives of the analysis are to delineate groundwater capture areas with the recent addition of extraction well GW-16; compare capture induced from DESC's groundwater extraction system to the

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KMEP's extraction wells; and investigate mechanisms for early breakthrough of TBA in DESC's groundwater treatment system. Mr. Defibaugh said that TBA is not part of KMEP's current NPDES permit, unlike DESC. He said that KMEP samples for TBA at the well head, not the effluent. Mr. Hassan said that DESC's NPDES permit limit for TBA is 12 parts per billion (ppb).

Mr. Hassan described several areas analyzed for capture effectiveness, including water level measurements; drawdown estimation; groundwater elevation contouring; 2D analytical flow modeling; plotting chemicals of concern (COCs) trends for the NE area; and groundwater extraction well sampling.

Mr. Hassan concluded that the current groundwater extraction rates are sufficient for limiting the potential for further migration of COCs offsite. The increased TBA was related to non-equilibrium pumping rates, or different flow rates at different wells by KMEP and DESC. Mr. Hassan recommended the reduction of groundwater extraction rates to the following: 2 gallons per minutes (gpm) at wells GW-2, GW-13, and GW-16, and 3 gpm at GW-15. Ms. McIntosh said that a similar issue came up a few years ago with MTBE showing up in the DESC remediation system. That issue was also solved by adjusting pumping rates.

DESC and KMEP agreed to re-calibrate the active pumping groundwater model by incrementally changing the parameters in the Parsons model towards the AMEC model, thereby averaging the parameters. This gradual change was continued until the calibration statistics approached an acceptable solution; after calibration, additional KMEP wells were included in the southeastern and South-Central areas. Mr. Hassan also described the re-calibrated parameters, calibration statistics, and flow rates in the northwest, northeast, southeastern, and South-Central areas. He then displayed a figure showing the combined capture zone simulation. Mr. Emig noticed that the South-Central area on the figure was missing a green line to represent the extent of the target capture zone relative to the site boundary. Mr. Hassan said that they would add the line prior to submittal to the RWQCB and the RAB.

Remedial Action Plan Update

Mr. Hassan discussed the background of the revised Remedial Action Plan (RAP). In 2006, Elizabeth Erickson, then the RWQCB Project Manager, requested that both KMEP and DESC prepare revised Remedial Action Plans and wanted a more aggressive, five-year closure schedule. Both parties submitted plans and began implementation. In their revised plan, Parsons included proposed steps, technologies, and cleanup levels. However, the RWQCB has not provided concurrence with the proposed cleanup goals. Mr. Hassan said that the cleanup levels should be reexamined and should tend towards industrial standards, not drinking water standards. Drinking water standards may not be feasible at this site. Once an agreement is reached on cleanup goals, and DESC's remediation system gets back to full operation, then Parsons can prepare a more accurate closure schedule update. Ms. McIntosh said that she is scheduled to talk to Dr. Lee of RWQCB tomorrow to discuss the cleanup goals issue. She will email everyone an update after the call.

Planned Activities

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

- Design and implement selenium treatment option for the GWTS
- Site-wide weed abatement
- Conduct sentry and semiannual groundwater monitoring events
- Prepare and submit NPDES DMR for 2nd and 3rd quarters 2010
- Prepare and submit Second Supplemental Investigation Report for TFS, Water Tank, and NE Settling Pond Areas
- Re-pipe and configure VES from the fan through the treatment stream; startup and optimize VES
- Prepare and submit LNAPL (light, non-aqueous phase liquids) characterization and vapor monitoring program work plan
- Submit No Further Action for soil in the NE corner of site.

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Tank Removal Update

Col Keyes said that the Air Force, which owns the Tank Farm property, is preparing statement of work for the tank removal project. The proposed work includes the tanks, piping, TFS, appurtenances, pump house, and two sheds (but not the berms). The contracting for the work will be conducted through the U.S. Army Corps of Engineers. Col Keyes said that the Corps of Engineers would likely give a presentation at the next RAB meeting and will do other community awareness activities to be a good neighbor during the work activities. Mr. Hoskins said that tank cutting makes a lot of noise, and he would like to see the same noise standards as used on the previous tank cutting project.

3. KMEP Update Mark Wuttig, CH2M HILL

Mr. Wuttig introduced himself as CH2M HILL's project manager for this site, and Dan Jablonski introduced himself as the project geologist. Mr. Wuttig thanked Shioh-Whei Chou and Alex Padilla of AMEC Geomatrix for their help in the transition period.

Remediation Operations Update

Mr. Wuttig said that he and Mr. Jablonski poured over the latest groundwater monitoring report and site data. One thing in particular that stood out to them is the free product levels. Levels used to be up to 10 feet in large areas across the site, but now the levels are down to one foot and less. This is a big success story in the cleanup process.

Mr. Wuttig gave an overview of KMEP's remediation objectives, cleanup areas and remediation systems. He described the well systems in the South-Central and southeastern areas. He also described the treatment and discharge of SVE vapors and TFE liquids. Next he went over their operation and maintenance activities, including weekly inspections and data collection, monthly pump inspections, measurement of individual well vapor concentrations, collection and analysis of system influent and effluent vapor and groundwater samples, and gauging of select remediation wells.

Mr. Wuttig discussed KMEP's Soil Vapor Extraction (SVE) system. He said the equivalent fuel treated is based on weekly monitoring of influent vapor concentration, vapor extraction flow rate, and the hours of operation. The conversion of pounds to gallons is 6.6 pounds per gallons. In the first quarter of 2010, 22 gallons (or 144 pounds) were treated. In the second quarter of 2010, 73 gallons (480 pounds) were treated. Since KMEP's Second Addendum to the revised RAP, 2,974 gallons (19,631 pounds) were treated. Approximately 454,732 gallons, or 3 million pounds, have been treated since 1995. Mr. Wuttig then displayed a graph showing the cumulative fuel removed by vapor extraction to date.

Mr. Wuttig next discussed KMEP's Total Fluids Extraction/Groundwater Extraction (TFE/GWE) system. He said that for the first quarter of 2010, 739,990 gallons of groundwater were extracted from the South-Central area and 193,233 gallons were extracted from the southeastern area. For the second quarter of 2010, 791,007 gallons of groundwater were extracted from the South-Central area and 285,776 gallons were extracted from the southeastern area. Total groundwater extracted since September 1995 includes: 41,407,316 gallons from the South-Central area; 10,280,375 gallons from the Southeastern 24-Inch Block Valve area; and 26,902,604 gallons from the West Side Barrier area. Mass of THP removed in the groundwater extracted included 9 gallons, or 58 pounds, in the first quarter of 2010 and 11 gallons, or 73 pounds, in the second quarter. Since implementing the Second Addendum, 151 gallons, or 999 pounds, of TPH mass has been removed. Mr. Wuttig said that free product has generally decreased since implementing the Second Addendum. The volume of free product recovered now is small and emulsified. Since 1995, 8,917 gallons of free product has been extracted. He next displayed a graph of extracted groundwater and recovered product. He said that with free product, they are now just dealing with drabs that are left. He said groundwater is pumped for hydraulic containment, and the West Side Barrier wells have been shut off. Mr. Cho asked if the number of wells over time could be added to the chart. Ms. Chou said that seven new wells were installed in 2007 as part of the revised RAP.

Mr. Wuttig said that the SVE system was in operation just over 50 percent of the time in both the first and

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second quarters of 2010. The TFE/GWE system operated 40 percent of the time in the first quarter and 49 percent of the time in the second quarter of 2010. The SVE downtime was due to main breaker trips and a high temperature alarm. The TFE/GWE downtime was due to maintenance and monitoring activities, high level alarms, pump repairs, and high selenium concentrations. They are working through the downtime issues, and the systems have not been down since July 10. In June, there was a diesel-power generator that had a fuel leak. Mr. Defibaugh said they are working to clean up the leak through excavation and will prepare a letter report. Mr. Wuttig said that they are currently conducting maintenance activities on conveyance lines, pumps, and wells in the TFE/GWE system. These activities have increased system downtime, but they will increase performance and decrease future downtime.

Mr. Wuttig next described the ongoing preventative maintenance activities, including flow totalizer maintenance; checking pump operation; pump inspection, cleaning, and maintenance; well development; bag filter replacements; re-catalyst back pressure monitoring; and sampling between GAC vessels.

Mr. Wuttig said they plan to continue focusing remedial efforts on South-Central and southeastern areas, including troubleshooting and restarting the SVE system; continue operating the TFE/GWE, and SVE systems; continue weekly maintenance, inspections, and data collection; selenium management; and monitoring of 1,2-DCA (1,2-dichloroethane) and MTBE in western area.

Selenium Management

Mr. Wuttig said KMEDP's groundwater treatment system has a limited capacity to treat selenium in groundwater. Selenium is a naturally occurring constituent in groundwater and is not related to KMEDP's or DESC's operations. KMEDP's discharge limit under their NPDES permit is 4.1 µg/L for the average monthly effluent limitation (AMEL) and 8.2 µg/L for the maximum daily effluent limitation (MDEL), which is similar to DESC's permit.

Mr. Wuttig said that selenium transport is complex and depends on whether groundwater is in a more oxidizing or reducing state. Oxidizing conditions occur when lower organics (e.g., fewer hydrocarbon contaminants) are in groundwater, so there is less consumption of dissolved oxygen. These "oxic" conditions will result in "Selenate" which is less prone to adsorption. Reducing conditions occur when there is higher organics in groundwater, so more consumption of dissolved oxygen occurs. The "anoxic" conditions will result in "Selenite" which is more prone to adsorption. As hydrocarbons are removed from the subsurface during remediation, groundwater has shifted from an "anoxic" to a more "oxic" state, which results in more selenium in the extracted groundwater. This is a sign of remediation progress.

Mr. Wuttig said that prior to January 2009, selenium was either non-detect or detected at low concentrations in the system's effluent. In 2009, they began seeing increased concentrations. The system was shut down and restarted on two occasions. In April 2010, AMEC Geomatrix prepared a Selenium Management Evaluation with considered options for dealing with the selenium. Options recommended included adjusting the pumping configuration; blending the effluent with water from the Westside Barrier Wells; and discharge to the sanitary sewer. They are currently adjusting the pumping configuration. It was initially successful, but the number of wells is gradually decreasing. They began blending, but selenium concentrations rose in the selected Westside Barrier Well, so the blending option was discontinued. Mr. Hoskins asked if they considered discharging the effluent to the phytoremediation area. Mr. Wuttig said no; it would probably require a surface discharge permit from the RWQCB. Ms. Chou said with the amount of water, it could cause a flooding problem. Mr. Wuttig also discussed subsurface reinjection and other options. They recently collected samples to evaluate feasibility. However, they received conflicting results from two different laboratories, so they plan to take new samples and send to three laboratories to compare results.

Mr. Wuttig expects KMEDP's new NPDES permit in October 2010, which may include revised selenium concentrations. In the short term, they will continue adjusting pumping configurations. They will also continue to look into other options, such as discharge to the sanitary sewer and onsite treatment options. He said they should have a treatment option started by early 2011.

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Additional Assessment Update

Mr. Wuttig stated that additional assessment work is being conducted for the Southeastern 24-Inch Block Valve Area, the South-Central Residential Area Vapor Study, and the Vertical Assessment of LNAPL in Soil.

He stated that field work for additional off-site assessment in the southeastern area was completed in July 2008 and included sampling in the uppermost aquifer. Supplemental vertical delineation was completed in November 2009 and included drilling and sampling in the Exposition aquifer. A work plan for a step-out investigation in vicinity of well GMW-O-18 was submitted to RWQCB in April 2010 and will be performed upon approval. This investigation is planned to delineate groundwater impacts in the southeastern area and will include direct push sampling and continuous coring at five locations. Mr. Wuttig displayed an aerial photo showing the proposed sampling locations. Two locations are onsite, and three locations are in Holifield Park.

Mr. Wuttig next discussed the South-Central Residential Area Vapor Study conducted in 2006. There was a recent increase in concentrations in offsite well GMW-O-14, so the RWQCB requested additional vapor monitoring to make sure concentrations are still below California Human Health Screening Levels (CHHSLs). Mr. Wuttig displayed a map showing the 10 planned sampling locations. He said they will have protocols in place to ensure analyses of the samples are representative of the subsurface conditions.

Mr. Wuttig said that the objectives of the Vertical Assessment of LNAPL in Soil are to further evaluate vertical distribution of and the composition of LNAPL in the South-Central and southeastern areas and to confirm the presence of the aquitard across the site. They will collect samples and conduct cone penetrometer testing (CPT) and LIF (laser induced fluorescence) testing. They will collect soil cores from the smear zone to determine if it is located at the top of the current water table. The water table could have been lower at the time of the initial release. Mr. Wuttig suspects the smear zone is at the current water table, but if it was not, it could indicate a missing component in the current cleanup. He next showed a map of the historical extent of free product, and said that this assessment will help make sure the remediation is targeted in the right locations. They will also need to complete a couple of access agreements prior to sampling.

Five-Year Action Plan Progress Report

Mr. Wuttig said that KMEP's Second Addendum to Remedial Action Plan was submitted to RWQCB in November 2006 and was approved in April 2007. Remediation system enhancements included expanding the SVE and TFE system into onsite areas where residual LNAPL appeared to remain. The initial estimate for submitting a closure request was scheduled for August 2012. An update was provided to the RAB in February 2010 revising the estimate to September 2013. A Remediation System Effectiveness Evaluation report was provided by AMEC on May 14, 2010.

Joint Capture Zone Analysis Update

Mr. Wuttig said that an initial groundwater model for a capture zone analysis in the southeastern area was prepared in October 2000. The model has been updated to configure three wells pumping 5.5 gpm total and predicts the capture of TBA, which is the most widespread constituent in this area. The updated model for the South-Central area includes pumping of four wells at 20 gpm total, which predicts capture of TBA. Mr. Wuttig also displayed maps showing the predicted capture zones for these two areas.

Tracer Testing and Fuel Transported

Mr. Wuttig said that fuels transported by KMEP's pipelines at the site include various grades of gasoline, marine diesel, diesel, and various grades of jet fuels. Tracer gas testing was conducted in 2003, when the release at the intermediate block valve in South-Central area was identified. Tracer testing was also conducted in 2005 and 2006. Both of these tests had no tracer gas detections. Mr. Defibaugh said that this testing consists of injecting tracer gas into the fuel, and then the line is checked at multiple points for soil vapor. He said it is very complicated and expensive. Mike Hanak of KMEP described pipeline integrity testing. He said that it is required by law to be performed every five years. The law requires only static pressure testing, but KMEP goes beyond the minimal requirements by also running pigs in the pipeline. This was last conducted in 2007, so the next testing will be conducted in 2012. Mr. Wuttig also said that an

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automated leak detection system was installed at each of the five block valves in 2007.

5. Semi-Annual Monitoring Event Mark Wuttig, CH2M HILL

Mr. Wuttig said that Sentry monitoring event activities were conducted by DESC in January 2010 and by KMEP in March 2010. Semiannual event monitoring event activities were conducted by DESC in April 2010 and by KMEP in May 2010. KMEP also conducted monthly sampling from March through June 2010 in the southeastern area. He said that both parties plan to coordinate their sampling activities more closely next time.

Mr. Wuttig said that low-flow methods were used to get better samples, and the system was turned off prior to sampling to achieve equilibrium. A combined 135 wells were gauged and 111 wells were sampled. Groundwater levels in April/May 2010 were generally similar to those encountered during previous events.

Mr. Wuttig next displayed a graph showing historical groundwater elevations in the water table wells and in the Exposition aquifer wells from the early 1990s to present. The graph also showed annual precipitation. He said this is key to understanding the seasonal changes. During light rain years, the water levels were at historic lows. The water table levels are typically lower in the fall and higher in the spring, correlating to the rain levels. The Exposition water levels have a little bit of a lag time since it is deeper. This is also evidence of the aquitard between the water table and the Exposition aquifer.

Free product was detected in 3 of 135 wells gauged and in 3 supplemental wells gauged by Parsons. Mr. Wuttig showed a map and indicated the free product located in the northern tank farm area, eastern area, truck rack area, South-Central area, and southeastern area. He also displayed a map showing the groundwater elevations and flow direction in the Exposition aquifer.

Two Exposition aquifer wells had low detections of benzene and MTBE. The hits were below detection limits and were not repeatable in other samples. Therefore they may be anomalies, but they will continue monitor these wells closely in the future.

In the uppermost aquifer wells, the lateral extents of TPH, benzene, 1,2-DCA, and MTBE in groundwater remain similar to those interpreted during recent previous events. Mr. Wuttig said that concentrations are influenced by water level fluctuations. He next displayed plume maps for each. He also displayed a map of TBA, which shows the highest levels in the northeast and southeastern areas, with other smaller areas. Mr. Hassan said that the TBA in the northeast area may be due to the pumping rates.

Mr. Emig said that he noticed that some wells are not always analyzed for the complete suite of TPH in both semiannual monitoring events. He suggested the samples should be analyzed for all four at each sampling event to provide better results. Ms. Chou said that this was due to some of the wells not part of the regular semiannual schedule being sampled voluntarily, and therefore they may not have been sampled for the complete suite.

Ms. McIntosh asked about the benzene plume map, which had several wells with increased concentrations. Mr. Wuttig said it could be seasonal, and Mr. Hassan said the charts do show an overall downward trend.

Mr. Wuttig next displayed graphics with historical 1,2-DCA concentrations and precipitation for two wells in the west side area, then historical benzene and precipitation for three wells in the South-Central area. Then he showed historical TBA concentrations and precipitation for four wells in the southeastern area. The graphs show the seasonal changes.

6. Set Date and Agenda for Next Meeting

The next semiannual RAB meeting will be held on Thursday, February 10, 2011 at 5:00 p.m. in the Norwalk Arts & Sports Complex. The agenda is to include remediation system updates, additional assessment updates, five-year plan updates, and tank removal update.

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7. Public Comment Period

Mr. Defibaugh and Ms. McIntosh discussed a proposal to change the meeting schedule. Mr. Defibaugh requested an additional two weeks to give more time to get the semiannual monitoring reports completed. He said the reports are due to RWQCB every February 1st and August 1st. Therefore, if the meetings were scheduled on the second Thursdays of February and August, the consultants could get the reports distributed the RAB members at least one week in advance of the meeting. Everyone present agreed, and Ms. McIntosh said she would contact the other RAB members not present. She also requested a notice be sent to RAB mailing list.

Mr. Defibaugh adjourned the meeting at 10:14 p.m.

ACTION ITEMS		
Item	Responsible Party	Due Date
Next RAB meeting	All	2/10/11