DRAFT

Meeting Minutes

Meeting Subject: Former Norwalk Tank Farm Restoration Advisory Board (RAB) Semiannual Meeting	**Meeting Date**: **08 August 2013** **Meeting Time**: 5:00 p.m. **Meeting Place**: Norwalk Arts & Sports Complex

RAB, PROJECT TEAM, AND OTHER ATTENDEES

RAB Community Members

M. McIntosh (Co-Chair, Meeting Chair)
T. Winkler

Other Members

P. Cho (RWQCB)
S. Defibaugh (KMEP) (Co-Chair)

Other Attendees

S. Strum (DLA Energy)
R. Hassan (Parsons)
M. Lucas (Parsons)
D. Mehaffey (Parsons)
M. Wuttig (CH2M Hill)
D. Jablonski (CH2M Hill)
Maj. Todd Morin, Commander DLA Energy

Absentees

A. Figueroa (City of Norwalk)
L. Oppenheim (DLA Energy)
C. Emig (City of Cerritos)
P. Ly (WRD)
E. Ferguson (WRD)
A. Mancillas (Rep. Linda Sanchez)

Acronyms:

CHHSLs	California Human Health Screening Levels
CSM	conceptual site model
DFSP	Defense Fuel Support Point
DLA Energy	Defense Logistics Agency Energy
DTSC	Department of Toxic Substances Control
HHRA	Human Health Risk Assessment
KMEP	Kinder Morgan Energy Partners
LNAPL	light non-aqueous phase liquid
MTBE	methyl tertiary-butyl ether
NPDES	National Pollutant Discharge Elimination System
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	tertiary-butyl alcohol
TPH	total petroleum hydrocarbons
VOC	volatile organic compound
WRD	Water Replenishment District

BACKGROUND

DLA Energy Americas West and KMEP are conducting environmental cleanup activities at the area in and surrounding the former Defense Fuel Support Point (DFSP) Norwalk, formerly 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 review and comment on 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.

MEETING MINUTES **08 August 2013**

1. **Introduction** Mary Jane McIntosh, RAB Co-Chair, Meeting Chair

M. McIntosh called the meeting to order at 5:11 p.m. Ms. McIntosh asked for comments on the draft minutes from the February 7, 2013 RAB meeting. S. Defibaugh made a motion for the minutes to be approved as written. M. Lucas seconded the motion. The minutes were approved without opposition.

S. Defibaugh introduced the new Commander, Maj. Todd Morin who will take over Lt. Col Gaffney's position.

M. McIntosh circulated a get well card for B. Hoskins, who just stepped down from RAB a few months ago. He's been in the hospital – now undergoing physical therapy. His notice of resignation was accepted and McIntosh took him a nice engraved glass to show RABs appreciation along with a note from the RAB.

2. **DLA Energy Update** Redwan Hassan, Parsons

General Site Activities

[Slide 3] Submitted Quarterly NPDES Discharge Monitoring Reports for the 4th Quarter 2012 and for the 1st Quarter 2013. Submitted the last Monthly Status Summary Report in March which will be changed to quarterly updates. Free product removal activities took place in February, March, April, May, June, and July. SWPPP sampling was conducted on February 20, March 8, and May 6. A beehive was removed from the site in February. Subsurface survey for soil investigation was done in March to survey all the locations for the DPT sampling.

[Slide 4] Between April and May, the Air Force repaired the security fence and trimmed some of the trees and removed some of the leaves that were in the way for security purposes. A free-product bail down test was completed at GMW-62 in May and June for the conceptual site model (CSM) to be discussed later in this presentation. Site-wide weed abatement was conducted between May 22nd and 29th. The pedestrian path in Holifield Park was repaired and resurfaced and all of the locations from the sampling investigation from last year and this year were surveyed.

Remediation Operations Update

[Slide 5] The remediation system consists of groundwater extraction, soil vapor extraction (SVE), with biosparge and absorbent socks. The goals are for groundwater extraction to contain the mass and SVE to remove and contain the mass. Biosparging is also to contain and remove the mass but is not operational currently. Vacuum recovery is to recover free product and the absorbent socks passively recover product in wells that have sheen and less than 1 inch.

[Slide 6] Presented are the daily and weekly summaries of groundwater extraction and SVE. For the SVE performance and compliance samples were collected for the 1st quarter of 2013 on January 31, February 27, and March 28 and for the second quarter on April 22nd. The groundwater performance and compliance sampling took place in February for the 1st quarter and April and June for the 2nd quarter.

[Slide 7] For the groundwater extraction system there were four wells in operation: two wells in the northwest, GW-2 which is a 4-inch diameter well and GW-13 which is a 6-inch diameter well; and two wells in the northeast, GW-15 and GW-16, both of which are 6-inch diameter wells. The remediation system was on from January 1st through July 31st, except on the following days when it was off: January 7th through 17th for the 1st quarter groundwater sampling; February 12th through April 11th for arsenic discharge limit exceedance – were sampling and trouble-shooting and problem solving was conducted; and subsequently on May 1st through July 2nd to upgrade system and designed and install a second arsenic ion exchange vessel to assist with elevated arsenic concentrations. Also during this last down-time, the granular-activated carbon was changed-out. M. McIntosh asked about long downtime of groundwater extraction system and asked with the additional vessel online will we have better up-time. R. Hassan stated that the system is back in operation and it is being closely monitored. R. Hassan continued with presentation reporting that in the 1st quarter the system operated 36% of the time; but if you exclude the planned shutdowns, the operation was 47%. For the

2nd quarter, it operated 32.5% of the time and 43% of the time excluding planned shutdowns. A lot of time between May and July was spent procuring, designing, and installing the vessel and the carbon change-outs.

[Slide 8] The current SVE system is operating from four horizontal wells that extend across the site at the tank farm and an additional six vertical wells in the northeast. The system was on from January through June 30th except on the following days when it was off: January 7th through 17th during the 1st quarter groundwater monitoring event; March 8th through 11th for a repair to the vacuum extraction pipeline; March 25th for an oil change-out on the blower; and May 15th through June 30th where there was a leak in the 8-inch diameter vacuum extraction pipeline between the two carbon vessels which took some time to repair and replace. However, shortly after repair was made and system was operating, the newly repaired pipeline broke so the company that did the repair was going to do a replacement with proper material and installation. M. McIntosh asked what was leaking, if it was leaking or was it under a vacuum. R. Hassan stated it was under a vacuum for the SVE system. R. Hassan continued with presentation stating that the system operation 86% of time for the 1st quarter, but if you exclude the planned shutdown, it was 97%. For the 2nd quarter, where there were problems with the lines it operated 49% of the time. We usually don't have a whole lot of problems with the pipelines and the vessels. They've been there for a few years now and this is the first time, so it's been wear and tear. So once the line is repaired properly it is expected to be in operation for a few more years.

[Slide 9] This graph shows the total mass removal. The blue line is the free product removal - the LNAPL removal from the total fluids extraction back in 1996 down to essentially now where removal since 2000 has pretty much been low. If the scale was bigger, you would notice a slight increase when we began vacuum recovery at GMW-62 and other wells as needed. Essentially the bulk of the site has reached asymptotic levels for the free product recovery. The pink line represents the free product removal combined with SVE. As you can see, back in 2005 it was creeping up and then it slowed down and then it took off and that's when we added some wells in the northeast and also in the truck fueling station. But right now it's leveling out because of the SVE currently performed from the tank farm and northeast, which are pretty much cleaned-up where the currently extraction wells are located. The green line represents the total fuel recovered which includes the groundwater as well as SVE and free product removals. This data collection started in 2002 and is pretty much in line with the other two data sets.

[Slide 10] The 1st quarter 748,341 gallons of groundwater were extracted which is equivalent to 0.028 pounds of TPH mass removed. In the 2nd quarter, 673,397 gallons of groundwater were extracted which is equivalent to 0.026 pounds of TPH mass removed. The total to date since 1996 is 66 million gallons extracted which is equivalent to about 9,912 pounds TPH mass removed. The SVE system removed 2.1 gallons or 14.6 pounds equivalent mass of TPH in the 1st quarter and 1.8 gallons or 13.1 pounds equivalent mass TPH removed in the 2nd quarter. Total to date is about 216,000 gallons or 1.53 million pounds equivalent mass removed.

[Slide 11] Well number GMW-62 is located in Holifield Park and contains free product. We've been requested to report on this well specifically since there has been measurable free product and the well is located in the park. This well is closely monitored and anytime it has more than a foot of product, recovery operations are conducted at the well. It's been a very slow recharge – it takes about a week or two. The table presented shows a breakdown of the recovery results.

[Slide 12] This side shows a graphical presentation of the groundwater and product thickness in GWM-62. Essentially the groundwater has been dropping as the product has been increasing as to be expected. M. McIntosh asked about this and if we can take advantage of the lower groundwater depth and either adjust our system or add additional systems to take advantage of the lower groundwater and try to pull more of the free product out. R. Hassan responded that the CSM will evaluate remedial options and different technologies and provide recommendations for removal.

Supplemental Soil Investigation

[Slide 13] Last year a draft CSM for soil was submitted to the regional board. The regional board requested that we satisfy all the data gaps to make sure that the soil CSM is complete and can be used for future decision making. Therefore, a scope of work letter for supplemental investigation was submitted to the

regional board in March. The goal was to confirm the non-impacted areas, investigate any unknown areas and any data gaps, and confirm impacted areas. Once these three challenges have been met, then the CSM can be completed. To address these issues, samples were collected from 66 soil boring locations. Each soil location was drilled down to about 25 feet to collect multiple samples at various depths for a total of 439 soil samples – 31 of those were duplicate soil samples. Samples were analyzed for TPH gasoline, diesel, and volatile organic compounds.

[Slide 14] This map presents the soil sampling locations. The areas that we subsequently investigated are shown in purple/pinkish text and then step-out sampling locations are shown in brown text. The green locations were completed last year.

[Slide 15] The draft soil CSM was comprised from data from last year. The updated CSM will include all data, including soil, groundwater, and free product. T. Winkler asked about sampling outside the property boundaries. R. Hassan stated that only sampling was done within the boundaries of the tank farm. In 2006 there was a joint effort between Kinder Morgan and DLA that included extensive soil sampling in Holifield Park and the result showed there were no soil impacts off site. M. McIntosh stated that the RAB has copies of that report and results. R. Hassan stated that the revised and final CSM will be submitted to the Regional Board by September 30th. The results from the soil investigation will be incorporated into the CSM and recommendations will be presented.

Conceptual Site Model

[Slide 16] The soil CSM was initially prepared and submitted then the Regional Board requested an LNAPL CSM. That covers the soil phase and also the LNAPL phase of the plume. On March 20th the Regional Board sent a request for a work plan which was submitted on June 27th and July 30th an addendum. Approval from the Board was received August 7th.

[Slides 17, 18, and 19] The CSM will combine the LNAPL, soil, and groundwater chemistry. It will include geology and current groundwater elevation and LNAPL occurrences and plumes. It will be submitted by September 30th. In the draft soil CSM, the boundaries were agreed upon and drawn as shown on CSM figure (slide 19) and represented by the thick red line and where DLA Energy will concentrate their efforts. The blue contours represent the groundwater TPH plumes based on October 2012 data. The little red contours address the impacted shallow soil and the green hatched plumes represent the LNAPL plumes from October 2012. The shallow soil will be addressed first and the deeper soil and groundwater along with the LNAPL would be under a longer-term remediation. T. Winker asked what is meant by shallow soil. R. Hassan stated the top 10 feet of impacted soil. For example, underneath the tank bottoms if done to 10 feet the soil is impacted, then that shallow soil would be excavated – or soil shallower than that. But deeper than 10 feet would be consider as deep soil and that would be tied in with the groundwater and LNAPL remediation and would be long term. Once all impacted shallow soil has been addressed and excavated and removed offsite, then soil will be considered no further action by the Regional Board. M. McIntosh inquired about the lower quadrant that extends into the south, if that area covers the truck loading area. R. Hassan said yes, that's the truck fill station area.

Revised Groundwater Monitoring and Reporting Program

[Slide 20] The current groundwater monitoring program consists of sampling each quarter. There is ample site data that goes back twenty years and evaluating data and trends, resulted in a proposal to reduce the sampling from quarterly to semiannually. The well network and all historical data were reviewed. Some wells were redundant and some have never had any impacts throughout the years and these wells were removed from program and a more streamlined and efficient program was proposed. The objective is to enhance the current network and monitoring program in order to evaluate the dissolved plume behavior over time.

[Slide 21] Scope of work for revised groundwater program is listed on Slide 21 and includes identifying data gaps and redundancies or deficiencies, prepare time series graphs, and evaluating concentrations trends and magnitude.

[Slide 22] A program is presented which proposes specific wells to be sampled and gauged. The reports will be combined to include the entire site as is currently done: CH2M Hill will prepare the combined site-wide groundwater monitoring report for the first semiannual event and Parsons will prepare the second semiannual report. M. McIntosh asked if the annual wells to be sampled will coincide with the semiannual sampling and included in the semiannual report. R. Hassan confirmed that they would be incorporated and sampled at the same time. Kinder Morgan received approval for the revised groundwater program and DLA Energy is still waiting. Once approval and concurrence is received it will become effective. DLA Energy is still operating under the current program.

[Slides 23 and 24] The table shows the exposition wells that we are going to sample and the uppermost aquifer wells to be sampled semiannually. Also listed are the wells that will only be gauged semiannually and the wells to be sampled annually. Slide 24 presents a figure showing the locations of the well network for the proposed program. The Regional Board is currently reviewing proposed program. T. Winkler asked if any wells were eliminated. R. Hassan replied that the program was streamlined to provide a streamlined network. Wells that we've been sampling for years and years and have not shown anything that have been non-detect were streamlined and redundant wells were dropped out of program. However, the wells that persistently showed detects will continue to be monitored. M. McIntosh asked if periodically wells can be added to be sampled. R. Hassan stated he thinks so, with the blessing of the Regional Board. P. Cho stated that typically every three to five years there's a reevaluation of program.

Five-Year Action Plan Progress Report

[Slide 25] Historically free product thickness has been decreasing, but in the last few events it shows some increase and groundwater elevation is dropping. Vacuum product extraction will continue at wells that exhibit over a foot of product thickness as consistently measured in GMW-62 recently. In April 2013 free product was detected in eight wells in the north-central area, two wells in the north-eastern area, and two wells in the truck fueling station which is the most recent gauging data. 193 gallons of free product was recovered for the first semiannual period, which includes data from well GMW-62. T. Winker asked about the groundwater elevation decrease and what that means. R. Hassan said that it is going lower. T. Winker asked if it's because of the work that's been done or because of nature. R. Hassan said nature. It's been dropping regionally and the rainfall has been below average for the last few years. M. McIntosh said that she thinks this will benefit the remediation. She stated that meeting after meeting we've seen nothing but flatline through a lot of the capture so in a way this is actually beneficial for us because now it can flow into the systems naturally. R. Hassan stated we will be reevaluating our approach in the CSM but in the meantime we will continue to recover product from any well showing measureable thickness of a foot.

[Slide 26] The soil vapor extraction system will continue to operate but we will be looking at the system closely. We will be doing rebound testing and if test show no rebound and current areas of SVE have been cleaned and show no impacts, then the next recommendation is to do confirmation soil sampling. Currently there are two areas that SVE is operating in the northeast and the horizontal wells through the tank farm. We will look closely at each area during the rebound test to determine which areas show impacts and those that are no longer impacted. Then from there we recommend confirmation sampling and/or continued operation of the system.

[Slide 27] Groundwater extraction has effectively decreased free product plumes over time. Extraction from the northwest corner and northeast continue and they have been effective in containing the plume which is the purpose of the groundwater extraction system – to contain the plume. Off-site wells continue to show non-detect or decrease trends in TPH and BTEX – although TPH concentrations in most wells are lower or are declining. Groundwater extraction is used for containment. Essentially the idea is not to remediate entirely 100% but to contain it from migration. During the first semiannual period approximately 0.054 pounds of contaminant mass has been destroyed by groundwater extraction and about 9,900 pounds since 1996.

[Slides 28 and 29] The scheduled soil vapor extraction or bioventing operation was January through December 2014 which was based on the revised remedial action plan submitted three years back. However,

in light of the current site conditions, in which we are isolating hot spot areas like the shallow soil – dealing with that first and then dealing with the deeper zone the schedule will be updated. The CSM report that is going to come out in late September with remedial recommendations will have a more realistic schedule. So as far as the shallow soil is concerned, it depends on the CSM report and the decision timeframe and selected approach. M. McIntosh asked about schedule and resale of property. R. Hassan stated that is the underlying decision driver, but the first thing for the property to be used is the shallow soil to be addressed. Also, for the cleanup of the deeper zone, it will only take three or four years but depends on the selected approach by DLA Energy. T. Winkler asked what NFA means – R. Hassan stated no further action.

Planned Activities

[Slide 30] Groundwater extraction for now will continue until we publish the September 30th CSM report. This is again repeating the same thing. The NPDES reporting will continue. The bottom line is we will prepare and submit the CSM and hopefully that will shed some light on where things are in terms of the impacts – where they are – and decision timeframe and remedial approach.

M. McIntosh stated there were a couple of emails that went out from Paul Cho at the Water Board June 25th and May 3rd that had to do with scheduling for reports. The one on May 3rd was a requirement to submit progress report, and that was sent to John Donovan and it gave the report due dates May 15, August 15, November 15, and February 15. August 15 actually is after we have our RAB meeting. On the same line, the letter that was sent to John Donovan was sent to Steve on June 27th for the semiannual groundwater monitoring report shall be received by the due dates – August 15th and February 15th. Both of those dates fall after our RAB meeting, so I just want to look at either making those dates the first of August, the first of February, the first of the month – or adjust our meeting schedule for later in the month so that we make sure that those reports are in hand so the RAB has the opportunity to look at them and we can discuss them at the meeting. If they come after the August meeting then we don't get to talk about it until February. R. Hassan stated that those are the NPDES and remediation progress reports and they are quarterly. For the semiannual reports we will get those out like what we do now to allow the RAB at least a review of one week prior to meeting.

3. **KMEP Update** Mark Wuttig, CH2M HILL

Remediation Operations Update

[Slide 3] M. Wuttig reviewed KMEP's overall remediation objectives which are contaminant mass containment to make sure the contaminants don't migrate beyond the current extent of the plumes. And also contaminant mass removal with the intent of hopefully cleaning up the site. The remediation systems address two areas: the south central area and the southeastern areas. The systems that are operating are soil vapor extraction (SVE), groundwater extraction (GWE) and total fluids extraction (TFE) systems, which consists of both free product and groundwater combined recovery. There is another third area of the site known as the west side barrier and groundwater extraction was historically performed there, but it was discontinued in 2008 because of declining low concentrations of the contaminants of concern, methyl tertiary-butyl ether (MTBE) and 1,2-dichloroethane (1,2-DCA). Currently we're monitoring to make sure the levels continue to stay low and that they are indeed staying low.

[Slide 4] Overall, in the south central area there are 18 TFE wells; 24 onsite, 6 offsite SVE wells; and two GWE wells. In the southeastern area, there are also a number of similar wells. The treatment and discharge of the vapors – the treatment goes through a catox system, then discharged to the atmosphere under an AQMD permit. The liquids go through an oil/water separator to remove free product, then the groundwater gets treated through granular activated carbon, then fluidized bed bioreactors, which were recently installed a couple of years ago to treat MTBE and TBA, which tend to break through carbon easier than other hydrocarbons such as BTEX. The treated groundwater is subsequently discharged to Coyote Creek under a National Pollutant Discharge Elimination System (NPDES) permit.

[Slides 5 through 7] To keep the systems operating reliably and effectively, a number of routine O&M activities, including weekly inspections, data collection and a number of other activities shown on the slide are conducted. M. Wuttig discusses the operations and maintenance activities and says that as far as the equivalent fuel treated – in the first quarter of 2013 - 1,522 gallons of fuel were treated by the SVE. In the second quarter, a similar amount was treated by the SVE. Since the second remedial action plan addendum was put in place several years ago, the SVE system has recovered the equivalent of 11,712 gallons of fuel. That's quite a bit since remediation began in 1995 it's approaching half a million gallons of fuel, so Kinder Morgan has removed a lot of mass at the site. This is a graph of cumulative mass removed from the SVE system and, similar to Redwan's overview over the first few years, quite a bit of mass was removed and then more recently it's been diminishing returns on mass removed, partly a result of a lot of the mass having already been removed from the vadose zone and the smear zone.

[Slide 8] In addition to the equivalent fuel recovered, we've extracted a lot of groundwater. I won't read all these quantities here, but millions of gallons have been extracted from the site since operations began in 1995. Since 1995, we've extracted over 58 million gallons of water from the two remediation areas (south-central and southeastern areas) and 27 million gallons from the west side barrier that was shut down in 2008. I don't have a slide on this, but Steve and Dan are coordinating with the Water Replenishment District (WRD) about paying now for the water that's extracted because it's not being put to beneficial use. Going forward, Kinder Morgan will likely be paying for that extracted water, because after it's treated it goes to Coyote Creek and ultimately into the ocean. T. Winkler asked about arsenic in the system. M. Wuttig replies that virtually all groundwater contains naturally-occurring arsenic. The issue is the level of arsenic in our treated groundwater above or below the permitted limit discharged to Coyote Creek. In our routine sampling and, compliant with the permit, it was found that the arsenic in our discharged stream is below the limit. So, although we have arsenic, that's fine. M. McIntosh asked about possibly selling the grey water to a contractor to be used for industrial uses. S. Defibaugh replied that it won't be that much and it's drinking water really and M. Wuttig explained about the WRD basically takes imported water from Northern California or the Colorado River, replenishes the groundwater basin, then the city pumps that for potable use. So to pay for the water replenishment activities, to do those activities, they put a tax on that pumped groundwater. So the WRD is saying, "Hey, the City of Norwalk and all the other cities are paying us for that luxury, why does Kinder Morgan get off scott free?" It's not going to be a huge amount of money. It's more of a consistency thing so nobody can say, "Why aren't these guys doing what everybody else is doing"?

[Slide 9] M. Wuttig discusses total petroleum hydrocarbon (TPH) removal. 31 gallons (208 pounds) were removed in the first quarter and 8 gallons (55 pounds) in the second quarter. That makes 378 gallons (about 2,500 pounds) removed since the Second Addendum was implemented.

[Slide 10] As far as free product itself, since 1995 we've extracted nearly 9,000 gallons, but over the last several years all the free product that we could easily recover and measure in the oil/water separator has already been recovered, so now the free product we do recover is just in small enough quantities where it gets emulsified and we don't measure it separating it out. So we're no longer recovering measurable free product but we have optimized our pumps to address Mary Jane's comment by taking advantage of our historically low water level by adjusting our pumps to get the free product out of the well where we can.

[Slide 11] M. Wuttig explains a chart of the cumulative product recovery and it shows that the cumulative product in the first few years since 1996 – we got a lot out, but now it's basically level. We got a little bit more when we installed a few more wells as a result of the Second Addendum, but now we're back to basically not measuring anymore and we got level cumulative recovery.

[Slide 12] M. Wuttig discusses Remediation Systems Operations and states that their up time has been really good. You can see in the first quarter, for the SVE system, it's been in the mid-80's. The second quarter: average of 73 percent, and 90 percent excluding planned shutdowns. The liquids treatment system has also been very good. In the first quarter, the mid-90's. In the second quarter, it was 83 percent, and 92 percent excluding planned shutdowns. Those are pretty good numbers.

[Slide 13] M. Wuttig goes on to explain that there were planned shutdowns so that there would be static conditions for groundwater monitoring activities. There were also routine maintenance activities due to the fact that the system is old, having been constructed in the mid-1990's, and need quite a bit of maintenance, some of which includes problems with the wiring and the motor controller. M. Wuttig discusses the shutdown of the TFE system for groundwater monitoring activities, routine carbon changeouts, high-level alarms, etc. Because of the recent free product that we've observed, we shut the system down to do some bail down testing. You'll see the results of that testing in our conceptual site model report, which I'll briefly touch on later. For the liquid system, we've had to do a carbon changeout; we've had some high-level alarms which we addressed on the same day that they occur. Cleaning out of the oil/water separator equalization tanks. And again, when we did the bail down testing we shut down that recovery system. S. Defibaugh asked about the SVE blower. D. Jablonski replied that it is mentioned on the next couple of slides. The blower for the SVE system went out, so we've had to replace the blower in its entirety, but it's on order right now and we should get a new one installed and back online hopefully by mid-month.

[Slide 14 and 15] M. Wuttig discusses their robust preventative maintenance program at the site, which includes all these activities: checking pumps monthly, inspection, cleaning, filter bag replacement, inspecting minor repair of SVE wells, backwashing of the granular activated carbon, looking at the SVE treatment pressures, sampling between the activated carbon vessels, check for breakthrough and changing out the carbon. A number of additional preventative maintenance activities and some examples are listed here. I'm not going to go through all these in the interest of time, but they're in your slides.

[Slide 16] M. Wuttig discusses planned remediation activities. We'll continue focusing our efforts on the south central and southeastern areas; continue operating the systems that I described earlier. Recently we added an additional extraction well, GMW-SF-9, to contain the tertiary-butyl alcohol (TBA) in the southeastern area. We'll continue to monitor our constituents of potential concern in the west side barrier. We're going to be replacing the SVE system blower as Dan described. We're going to be doing well rehabilitation of some select offsite extraction wells to improve their performance. Install new backwash assembly to extend the life of the bag filters. And then installing air discharge hoses, retrofitting manifold piping to allow total fluids extraction from well GMW-10 where we recently had some free product accumulate.

Conceptual Site Model

[Slide 17] The Water Board over the past year has requested conceptual site models for soil, LNAPL and groundwater for both DLA Energy and SFPP. Each party has developed an acceptable approach for completion of these CSMs. We met with Paul a couple of months ago to go over our general approach. Paul was happy with the way we're going and basically directed Kinder Morgan to submit the Conceptual Site Model by the end of August. We're on track to do that. It's going to have a lot of good stuff in there in terms of capturing the overview of the site with respect to the soils, the groundwater, all the different contaminants, how they're interacting. It's going to evaluate the number of different technologies and it's going to come up with the technology that we think is better than the one that is currently being implemented – just pump and treat – and getting to ultimate closure. That's a teaser. At the end of August you'll see all that together.

Five-Year Action Plan Progress Report

[Slides 18] M. Wuttig discusses the Five-Year Action Plan Progress Report. There was a schedule put together for the Second Addendum to the RAP. Basically, it ended with predicting closure in August of 2012, which was obviously last year. There have been some updates formally submitted to the Board regarding the schedule and getting to closure. The latest closure prediction was 2013 and that's still off. Hopefully the Conceptual Site Model and the remedy we're going to put forth in there is going to address that issue and we'll have some more realistic things to talk about. This is just a side note: there was also an effectiveness evaluation of the current remediation system submitted in 2010. That's probably dated at this point. Just letting you know that was submitted.

[Slides 19] This is the summary of the schedules. This is the projected completion date. This is April 2007, for example. And this is what was set forth in the Addendum. These are all the completed activities. Here we are going forward. Some of these activities that were put forth in the Addendum, for example, beginning bioventing operations, that's more of a polishing step. We're nowhere near doing any polishing cleanup at the site. So some of these future activities we're not going to be doing. Here's the August 2012 closure date predicted in the Addendum. That's already passed. Going forward we're going to probably get rid of this whole schedule and what we're doing now is shooting for what we're going to be doing going forward, which will involve installing a horizontal biosparge test well in the southeastern area; it will test the technology and hopefully expanding it across the entire site.

Planned Activities

[Slide 20] M. Wuttig discusses planned activities for 2013/2014. We'll prepare the CSM Report, submit that by the end of the third quarter; conduct some routine planned soil vapor sampling in the southern offsite area in August. Recall we originally had proposed to do it semiannual, but because of the low levels we have seen in a prior sampling event, we agreed with Paul that annual would be appropriate. So then by the end of the third quarter our CSM will identify the best option to facilitate cleanup. We're going to look at air sparging, biosparging, insitu stripping, injection of chemicals. And just a preview, as you already know now, we're going to be focusing on biosparging as the most promising technology. The horizontal delivery lines to get maximum contact area with the contaminants. We'll be preparing a workplan for a pilot scale remediation system in the third quarter. Kinder Morgan hopes to initiate construction of the pilot remediation system in the fourth quarter. And then at the very end of this year into the first quarter of next year we'll be starting the system up, including shakedown testing. By the time we get to the next RAP meeting, hopefully we'll have some initial performance data of how that system is looking.

Revised Groundwater Monitoring and Reporting Program

[Slide 21] M. Wuttig states similar to DLA Energy, a revised plan was proposed and included a sampling and analysis plan (SAP). There's a lot of detail on this slide, so I'll just summarize it in a few words. Basically, Kinder Morgan submitted an Evaluation Report of the current monitoring program and we've looked at redundancies in data collection, so if we had two wells right next to one another that were basically collecting the same data we would eliminate one. If there were some data gaps where we need to sample a well in this area, but none were being sampled, we would pick a well to add to the sampling program. The SAP was approved by the Water Board on June 27, 2013. So we went through and did that and we also basically recommended that everything be done on a semiannual basis. Currently it would be done on either monthly, quarterly, or semiannual – we think that semiannual frequency is the right frequency. More frequent is not really adding value. Less frequent and you're going a long time between samples and not capturing the seasonal nature of changes. So we submitted the Evaluation Report and Paul agreed with it. We followed up with a Revised Sampling and Analysis Plan and it basically has a nice table of what was being monitored, what is currently going to be monitored so we can easily see the changes and that's what we will be implementing going forward. DLA Energy is just a baby step behind us, so hopefully when we get their revised plan submitted and approved we'll all be on the revised program.

T. Winkler asked about the Five-Year Progress Report. S. Defibaugh replied that the idea on that was that we were going to get a switch from doing a lot of pump and treat and well vapor extraction to doing more passive things. And frankly, we still have product out there so we just never got to the point where we felt we could just switch off to a lot more passive solution. M. McIntosh said also, at the time, there was a real need to really step up their remediation process. The Five Year Plan was adopted by the Regional Water Quality Control Board representative at the time to kind of put a little fire back under the agencies to really step up. M. Wuttig said there were some good things that came out of that. For example, there were a number of additional extraction wells installed to capture that free product between wells, so that was a benefit, but it still didn't really address the underlying limitations of the pump and treat technology. Back to five years ago, horizontal drilling was more of an emerging technology for site remediation since that time. Horizontal

biosparging is where you basically get underneath your LNAPL smear zone and you deliver oxygen so it bubbles up and really penetrates the entire zone effectively. That's been successfully applied at countless sites across the country now. We have direct experience with some Kinder Morgan projects and other clients where it's really proven to be an effective tool and it's resulted in shutting down those active pump and treat systems and just basically going to the more passive approach. That, I think, is what's going to get us over the hump.

4. **First Semiannual 2013 Monitoring Update** Mark Wuttig, CH2M HILL

[Slide 22] M. Wuttig begins by stating that everyone should have a copy of the report. It's the new slimmer format. Previously we would submit it with all the appendices printed out and the lab data and they were 4- or 5-inch monster reports. Now they're much friendlier to carry around. Much more environmentally friendly. The current program we performed includes sentry events for a select number of wells just as early warning wells. Then we sampled the full suite of wells semiannual in April. Historically, the southeastern area, we were doing monthly sampling of these wells here because that was a sensitive area in Holifield Park. There was some indication that the plume could have been advancing so it warranted more frequent monitoring. We did that for several years and have improved our understanding of what's happening in the southeastern area and we no longer think that monthly sampling is necessary. We put that in our revised SAP and Paul approved it and agreed that we didn't need to sample that frequently. So we've discontinued the monthly monitoring.

[Slide 23] M. Wuttig discusses well gauging and sampling and states that low-flow purging were used. 193 wells were gauged. A lot of wells we have robust control on our groundwater control system. We sampled 101 wells. The active remediation systems remained on during the gauging and sampling. The DLA Energy SVE system remained on but the liquid system was turned off.

[Slide 24] M. Wuttig discusses a summary of the finding in the uppermost aquifer groundwater elevations. Just a quick summary of the aquifer system. We have two water bearing zones. We have the shallow system, which goes down to about 50 feet below ground. It's mostly sands. Then we have a 30-foot clay zone: the aquitard. Then we have what's known as the Exposition Aquifer. That's a regional water supply aquifer. Basically the uppermost groundwater zone is what's impacted by the historical site operations. The Exposition Aquifer is not impacted. I'm going to explain some of the details about that. Overall we had a long-term decline in groundwater elevations. I'll show you a hydrograph and walk you through that. We are approximately 1.3 feet lower than the one-year-ago sampling event: a historical low since the 1990's when monitoring began. The horizontal grading is northward. I'll show you a map of that. The Exposition Aquifer – groundwater levels have also declined by about half a foot. The horizontal gradient is almost opposite where, the shallow aquifer is towards the north and the deeper Exposition is towards the southeast. That demonstrates that the two groundwater flow systems are detached and separated by the aquitard, which is a good thing.

[Slides 24 and 25] These are the water level contours. You can see overall they go bottom to top. There are some deviations on the interior partly because of the groundwater extraction system. This red line is an overall average where it's going from south to north. This is the Exposition Aquifer separated by the 30 feet of clay. Here you can see the water table – actually these are potentiometric contours. They go left to right, so the flow direction is more toward the southeast like this.

[Slide 27] Free product for this event was measured in 22 of the 193 wells. Basically in all the remediation areas – the north central, the eastern, the truck rack, the south central and the southeastern area – we measured free product. I think Redwan's graph was a good one that typifies many of the wells where just recently it's gone from less than a foot to a little more than a foot in some of the wells. The overall thicknesses measured range from 0.02 feet to 6.07 feet.

[Slide 28] Here's a hydrograph. This group of data here are from water wells from the upper aquifer system. This group of wells here are all of the Exposition Aquifer wells – all five of them. You can see here – this is

1993 through 2013, so this is the entire timeframe. What this jagged line here is annual precipitation. You read the precipitation over here, so you can see right here that the precipitation was just a little over 20 inches. You may remember the 1997-98 El Nino winter where we had high precipitation. Then in 2005 there was another high precipitation year. Since 2005, we've been pretty much below average. The last couple of years have been real dusters. You can see, for example, after the 2005 high rainfall year the water levels went up in upper aquifer; they went up in the Exposition aquifer. Since then, however, they've just declined. Currently we're sitting right here. You can visually draw a line here, which is lower than they have ever been at the site. That's why we're seeing the free product come into some of the wells now, because that capillary is exposed and is draining back to the water table and that includes some product.

Slide 29] Exp-1, -2 and -3 are sampled twice by DLA Energy and SFPP. The other wells are sampled once by SFPP. All the results were non-detect, except for some very minor detections of MTBE in Exp-3 and 1,2-DCA in Exp-3. These were detected at very low concentrations at below 1 micrograms per liter (µg/L). In general, they're not repeatable. If you go to re-sample either immediately or at the next sampling event you probably won't see those detects. M. McIntosh asked about split samples and D. Jablonski replied that there were splits for both of those. On the first one MTBE was detected in both samples. 1,2-DCA looks like it was detected in the DLA sample. So it was sampled in January, so we also sampled in April.

[Slide 30] In discussing the Uppermost Aquifer Wells, in most areas, the lateral extents of all the different contaminants remain similar to those in the previous monitoring events. We did have one anomalous detection of TBA in offsite upgradient well GMW-O-17 in April. That was the first detection since monitoring began there in April 2009. We collected a confirmation sample and it was non-detect for all the VOCs, including TBA. This was one of those one-time things. Occasionally you'll see something you can never explain it. It wasn't repeated.

[Slides 31 through 35] M. Wuttig discusses a series of slides showing changes in plumes for TPH, benzene, 1,2-DCA, MTBE and TBA showing the data from April 2013. Keep in mind the concentrations are influenced by water table fluctuations. I'll discuss a little of that.

[Slide 31] This is the TPH map and, for the newcomer, what was implemented a number of years ago to try and make the data easier to see what was increasing, what was decreasing, we color coded all the results boxes. The red boxes mean that the constituents increased by a certain percentage from the one-year-ago sampling event. The blue boxes mean that the concentrations decreased. So red is increased and blue is decreased. Each well tends to have its own signature and you can correlate changes in concentrations to the differences in the water table elevation. Sometimes the boxes are color-coded and it may or may not directly relate to whether a plume is shrinking or expanding. It's just a function of what the water table elevation is doing. We tried to improve our methodology where we were comparing to a semiannual event ago, but if the semiannual event ago was, for example, dry and now we're doing wet, we would expect there to be a change. We just recently went to comparing to the one-year ago data. We were hoping we'd see a bunch of white boxes, but we still have a number of red boxes and a number of blue boxes. It kind of makes sense because when you look at that hydrograph of the water levels, they change long-term in addition to just seasonally, so it's really complex. You have to look at the plume extents over time to really see if things are expanding or shrinking. Overall, the plume is shrinking, but it's slow. M. McIntosh stated since a year ago there's been a lot more activity in the system and changes in the system, and especially with DLA Energy. R. Hassan stated that if you look at that northeast, you'll see GW-15 and the surrounding, so you'll see that we're pumping a lot of water. M. McIntosh asked if we'll see a change like this because of the increased remediation and R. Hassan said that's correct. M. McIntosh said that's her point. So even though it looks crazy, it's not. There are a lot of legitimate reasons why we would have changes in the data. M. Wuttig wanted to draw attention to one new well that was also recently put in – GMW-O-24 in Holifield Park. That well has been non-detect for the last semiannual event and this event for all constituents, except MTBE. When we installed it, our initial sample detected MTBE at 1 µg/L - so extremely low. It's been below 5 ever since. We just think it's residual from before hydraulic containment was implemented there.

[Slide 32] This is the benzene that looks very similar to the TPH map. It shows our south central remediation area here, the southeastern remediation area here, where concentrations were non-detect downgradient at Holifield Park, and then the northern remediation areas up here.

[Slide 33] 1,2-DCA. This is the plume where it is related to the Westside Barrier, so the plume appeared to have been travelling in this direction. The Westside Barrier consisted of several extraction wells up here and just natural degradation combined with the mass removal by the pump and treat reduced the concentrations to where it's very low right now. We no longer pump and treat that.

[Slide 34] MTBE is related here to the south central area and the southeastern area. Here you can see our downgradient well and we're showing it's right there at the well at the detection limit and here you have some in the northern remediation area also.

[Slide 35] TBA is very similar to the MTBE. TBA is a breakdown product of MTBE, so you would expect it to be co-located with MTBE. It has a similar footprint.

[Open Discussion] T. Winkler asked if MTBE is no longer pumped through fuel systems and S. Defibaugh replied No. It is not used in gas in California any more. Ethanol is used instead, but unfortunately it's in the groundwater. It takes quite a while for it to break down. T. Winkler asked when the active SFPP pipelines will be pigged again – S. Defibaugh replied. M. McIntosh asked S. Defibaugh to provide a quick report on any planned maintenance on the pipelines and schedule. Steve replied that he does not know the pipeline maintenance schedule but believes it's every five years. He will find out a quick schedule, any plans for pipelines, cleaning, pigging, etc. Steve will report back on this.

5. **Regulatory Agency Update** Paul Cho, RWQCB

Based on Redwan and Mark's presentation you know the progress over the last six months. We focused on the Conceptual Site Models and focus is the tracking of remediation, so that's essentially one of the reasons for the Progress Report requirement. Down the road, we're going to have two semiannual groundwater monitoring reports and four quarters of Progress Reports. The Progress Report will focus on the remediation system and give us all the details. So we will have just two reports to look at – the Groundwater Monitoring Report and the Progress Report which will update all to what's been done over the last six months. This provides a streamlined version for the public to look at the progress. Also, the CSM provides boundaries set for DLA Energy and Kinder Morgan. The Regional Board really wants to have the groundwater monitoring network system so we know who's responsible for the wells for monitoring and also for soil cleanup. That's kind of a capture of the last six months of the work. I have to mention that we had a meeting with DLA Energy and the City and it was very productive. We have a commitment from DLA Energy for the schedule for the next six to eight months. Possibly early next year, once their funding is allocated, we're going to have some soil excavated for the shallow soil and hopefully we can do some tasks forward for the development. So that's the great progress that I can report. I give you the great meeting with Kinder Morgan where we finalized the approach for the LNAPL CSM and this is a very good report that you are going to receive because that's going to justify the future technology for the free product. If you look at it, we are going forward with redevelopment and long-term site closure. We're going to go with the shallow soil closure that we talked about for so many days over the last three years. If there are any questions from the public or members I can gladly answer. Something that I missed? By the way, on Tuesday we did the site visit at the tank farm. We looked at Kinder Morgan's system and we were satisfied that nobody complained about the noise. I don't know, maybe the location of exhaust…but didn't have any complaint about the noise. So that's very good. So we are doing our job and hopefully we have all this progress. Any questions?

[Open Discussion] M. McIntosh wanted to thank both DLA and Kinder Morgan for a job well done. No complaints. I really feel like our communication level is excellent; especially this last year. I was concerned when we went from quarterly meetings to semiannual meetings that there would be a breakdown in communication. All parties have done a great job sending emails out and making phone calls. Paul, I want to

thank you especially because you've really come on-board more than any rep we've had from the Regional Water Quality Control Board as far as actively participating in communication and emails – sending me copies of emails. I think everything's working great and I really think that the work that you're putting in now we're going to really see a lot of benefit next year from that. So job well done. I do have a couple of questions the first is if there have been any more sightings of coyotes at the tank farm? Redwan replied that we haven't seen them in awhile. Mary Jane continued and stated that coyotes in local areas have become more aggressive, so just keep an eye out and have your personnel keep an eye out if there's any in the tank farm. And if there are, write it down. Just continue the landscaping and cleanup at the site. The only complaint I got is from Wanda Sterner, who used to be on our board. Apparently she has a house that backs right up to the site and got a letter from the Air Force about her trees that were extending over the fence. But she did complain that there are an awful lot of rats. So I don't know if there's any kind of treatment that you guys do. We've always had rats around the tank farm but I did tell her that we'd address that. Redwan - this is the first we've heard about the rats. Is she the one who owns the pomegranate tree? Mary Jane said yes, the Air Force wants her to trim those. I will let her and the Air Force take care of that because I don't want any part of that dog fight. The other thing is, have you guys noticed any changes or anything going on since they started that freeway construction? They're very close to the tank farm. They're right at Bloomfield and Rosecrans. Especially since they're working directly behind my house and Bob the Builder is out and they have that big impact driller or whatever they have. My house shakes. Literally my furniture bounces. I don't know if that causes any issues or anything at the tank farm. Redwan - I don't know, I will ask the guys if they feel it in the field. I don't know if it will have any impact on the groundwater. Yeah, if they feel it I'll ask them to report to us.

P. Cho asked about newsletter and R. Hassan stated he would look into this and discuss with DLA Energy. Possibly bring it back semiannually. P. Cho noted that all documents should continue to be sent to the library. T. Winkler asked about GeoTracker and P. Cho replied.

6. **Set Date and Agenda for Next Meeting**

The next semiannual RAB meeting will be held on Thursday, February 13, 2014, at 5:00 p.m. in the Norwalk Arts & Sports Complex. The agenda is to include remediation system updates, semiannual monitoring report, and five-year plan updates.

7. **Public Comment Period**

Ms. McIntosh made a motion to adjourn the meeting. Mr. Defibaugh adjourned the meeting at 6:54 p.m.

ACTION ITEMS		
Item	**Responsible Party**	**Due Date**
Find out about Semiannual Tank Farm Newsletter	Parsons/DLA Energy	02/13/14
Get SFPP Schedule on Active Pipeline Maintenance Activities	KMEP	02/13/14
Next RAB meeting	All	02/13/14