FINAL

Meeting Minutes

Meeting Subject: Former Norwalk Tank Farm Restoration Advisory Board (RAB) Semiannual Meeting	**Meeting Date**: **27 February 2014** **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)
E. Bole (DLA Energy)
R.J. Kraemer (Air Force)
M.T. Wilson (Air Force)
C. Emig (City of Cerritos)
R. Hassan (Parsons)
M. Lucas (Parsons)
D. Mehaffey (Parsons)
P. Ly (WRD)
E. Ferguson (WRD)
M. Wuttig (CH2M HIll)
D. Jablonski (CH2M HIll)
A. Figueroa (City of Norwalk)
M.H. Castro (Resident)
M.S. Castro (Resident)
J. Rios (Resident)

Absentees

Maj. Todd Morin (Commander, DLA Energy)
L. Oppenheim (DLA Energy)
A. Mancillas (Rep. Linda Sanchez)
E. Garcia (Asst. Field Rep. Office of Barbara Boxer)
B. Hoskins
E. Garcia

Acronyms:

AQMD ..... Air Quality Management District
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
GWE ..... groundwater extraction
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
TFE ..... total fluids extraction
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 last Thursday at 5:00 p.m. in the months of February and August unless otherwise voted on by the RAB community membership.

MEETING MINUTES **27 February 2014**

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

M. McIntosh called the meeting to order at 5:08 p.m. The minutes from the August 2013 meeting will be voted on for approval at the next August 2014 meeting.

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

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

Remediation Operations Update

[Slides 16, 17, and 23] M. Wuttig jumped to Slide 16 to provide a site overview to provide a reference for those new residents. He briefly provided a site overview of KMEP areas, remediation systems, and routine testing performed on their active pipelines and the good results. He then showed the Conceptual Site Model (CSM) block diagram to illustrate what's going on.

[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 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 a 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 monitoring this area to make sure the levels continue to stay low which they have been.

[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 vapors goes through a catox system, then discharged to the atmosphere under an Air Quality Management District (AQMD) permit. The liquids go through an oil/water separator to remove free product, then groundwater gets treated through granular activated carbon, followed by fluidized bed bioreactors, which were installed 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. The equivalent fuel treated for the third quarter of 2013 was 2,062 gallons by SVE and in the fourth quarter 8,729 gallons. Since the second remedial action plan addendum was put in place several years ago, the SVE system has recovered the equivalent of 22,505 gallons of fuel. A graph showing cumulative mass removed from the SVE system was presented that shows a slight increase in recovery recently which is due to the depressed groundwater levels so more mass is exposed and removed.

[Slide 8] Over 58 million gallons of groundwater have been extracted from the site since operations began in 1995. In the third and fourth quarters of 2013 over 1.5 million gallons per quarter was extracted.

[Slide 9] M. Wuttig discusses total petroleum hydrocarbon (TPH) removal. 22 gallons (148 pounds) were removed in the third quarter and 24 gallons (158 pounds) in the fourth quarter. That makes 377 gallons (about 2,500 pounds) removed since the Second Addendum was implemented.

[Slide 10] Since 1995 nearly 9,000 gallons of free product has been extracted. 22 gallons of free product accumulated in the holding tank in the third quarter 2013.

[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. We are showing a slight bump recently due to the lower water table and more product.

[Slide 12] M. Wuttig discusses Remediation Systems Operations and states that mostly they had good operation times except the SVE system in the third quarter which was down for blower and motor replacement.

[Slide 13] M. Wuttig states that there are planned shutdowns of the systems for various activities as indicted on the slide.

[Slides 14 and 15] M. Wuttig discusses their robust preventative maintenance program at the site as shown on the slides, which includes these activities: checking pumps monthly, inspection, cleaning, filter bag replacement, inspecting and performing minor repair of SVE wells, backwashing of the granular activated carbon, monitoring SVE treatment pressures, sampling between the activated carbon vessels, check for hydrocarbon breakthrough and changing out the carbon.

August 2013 Soil Vapor Monitoring

[Slides 18 and 19] M. Wuttig spoke about the soil vapor monitoring that was conducted which resulted in no risk to human health in offsite areas. The next event will be in early to mid 2014 as part of baseline biosparge pilot testing, and the results will be reported to the RAB.

Air Sparge Well Abandonment

[Slides 20 and 21] KMEP conducted air sparge well abandonment activities in the southeastern area. The air sparge wells were destroyed since they are no longer functional for remediation. The activities included performing a geophysical survey to ensure that no subsurface utilities would be impacted during well over-drilling or abandonment activities. In addition, air knifing (jetting air) was performed down to 10 feet, which is an added measure to clear for subsurface utilities. We also hand-augured to 8 feet at the off-site locations in Holifield Park. Hollow stem auger methods were used to over-drill 35 of the 36 wells to 50 feet, then pressure grouted to land surface. We were unable to over-drill well B-9 due to subsurface water line conflict. We are currently preparing a report to document the abandonment of this old system.

Conceptual Site Model and Alternate Interim Remedy

[Slide 22] An updated Conceptual Site Model (CSM) and alternate interim remedy was submitted to the Regional Board on September 3 of last year. The CSM basically describes the site and goes through how we are going to remediate the site and get it to closure. It addressed all phases of media: soil, soil vapor, groundwater and free product. Our CSM updated the prior CSM, which was a preliminary CSM performed by the former consultant AMEC. Since this prior one, we performed additional investigations to fill some data gaps that were identified together with Paul. The CSM identified remediation objectives, goals and some performance metrics. We screened a number of technologies to select this new horizontal biosparge interim remedy that we're planning to construct this year. We prepared an implementation plan for that new interim remedy. The CSM document was approved by Paul at the end of last year.

[Slides 23 and 24] The block diagram presents all of the historical data that's been collected to develop the CSM and pulls together all of the elements. It's based on a lot of detailed data and was prepared in accordance with guidance documents. We held some early meetings with Paul in the middle of 2013. We used these ITRC and ASTM guidance documents to assist with preparation of the CSM.

[Slide 25] There was an established framework to go through the remedy evaluation and selection process. Others have used more of a free-form method. Paul wanted to make sure that we invested going through this

process so the selected remedy could be presented to the RWQCB management and confirm that the established process was validated. The process makes sure you have characterized your site, you have all the investigation data you need, you've developed your CSM, and you've developed your concerns for free-phased product. It has a number of screening steps that you go through and three are listed here. The first step involved identifying your remediation goals and objectives. Then you screen an established list of remediation technologies with geologic factors. You have sandy soils, clayey soils, depth to groundwater and a number of other things. There are other engineering factors that you screen for then you come out with your remedial technology that you want to move forward with. Before implementation, you establish your remediation goals and your performance metrics. How long are you going to operate this thing? Forever, or once all the free product is gone? Whatever it might be. Then you implement your remedy, you monitor remediation performance and then at the end, if you demonstrate that your goals were met you are done. The guidance document has the caveat that states if any of these assumptions are not valid you need to go back and collect additional data and start all over – which we hope to not do.

M. McIntosh asked to explain to the group why this would be done in the beginning. As she understands from previous reports is we really needed to get an idea of the site as a whole for remediation. It was really driven by a desire from all parties to speed up the process. M. Wuttig replied that since 1995 the remediation technology has been TFE and SVE. Those technologies are terrific for early site remediation when there's a lot of free product in the ground that you can get out. You're getting out tons of contaminant mass. Those technologies are excellent for containing the site; assuring that the contaminants don't migrate downward or outside of the current contaminated area. But once most of that early contaminant mass has been removed, what you have left is what we have now. You have this free product that is no longer one continuous body that you can pump, but is now in discontinuous blobs that are hung up in the soil pore spaces. You just can't get at it with just direct pumping any more. We can keep operating the current SVE and TFE systems but, as you saw from all those graphs, they all kind of went asymptotic, so we're not making progress toward getting to any cleanup levels that Paul could accept for closure. We could keep operating these systems for another 10 years – 20 years – and Steve [would] spend a lot of money to do that. So, instead of just continuing to operate these systems year in and year out without making any meaningful progress, the City wants this site cleaned up so it can be redeveloped and put it to beneficial use. We went through this process and DLA went through a similar process and they'll probably give you an update on it.

Looking at all this from the ground up, what do we need to do to actually make meaningful progress toward cleanup levels? What we came up with is a different technology than the standard pump and treat that's been implemented since 1995. We went through the process and, in parallel, DLA went through the process. We kind of did a fresh look across the entire site.

[Slide 26] As part of the guidance document, it provides 17 remediation technologies for free product sites. We looked at every one of these technologies.

[Slide 27] We looked at all the technologies and looked at the concerns of the site. What are our remediation objectives? What are our remediation goals? What are our performance metrics? What contaminant levels do we have to reach to get to the end point? We categorize them into 3 categories. Free product - LNAPL saturation that's actually in the pore space. We want to get that free product out of the wells so it no longer appears in wells and reduce the amount of free product that was now in these discontinuous blobs in the pore spaces. The free product or LNAPL chemistry – right now, the main chemicals of concern are benzene, toluene, ethylbenzene, xylene, MTBE and TBA. Those chemicals dissolve out of the remaining residual free product and dissolved in groundwater and want to migrate downgradient. We stop it, because we're pumping and treating. You can actually change the chemistry of that remaining free product to remove those chemicals. That was one of our objectives. Once you accomplish these first two objectives – target the dissolved plume, which we're currently containing with pump and treat to keep it from migrating…these chemicals of concern will no longer be in that source area, so they'll no longer be a source for groundwater. Natural degradation of these compounds that occur in the dissolved phase and also within the smear zone where the remaining free product is are very effective at reducing concentrations of the remaining

contaminants in the dissolved phase. We have good site characterization data to show that is occurring. Once we address the free product source area then, over time, the dissolved plume will shrink – it will go away – and at some point we hope to turn off the active remediation systems. That's the goal.

[Slide 28] We evaluated these 17 technologies with criteria, looking at effectiveness, relative cost, implementability, and any potential impacts to third parties, which would include residences to the south.

[Slide 29] What we came up with was biosparging, with the existing SVE system to contain vapors. We're planning to install a horizontal biosparge well. I'll go over some of these points more in the diagram, but it provides optimal contact with the hydrocarbon smear zone. It will greatly reduce the number of remediation wells. If we didn't use this approach and we just went with the vertical biosparge approach, you saw just in that southeastern area that antiquated system we removed. There were 36 wells. There would be over several hundred wells and, for redevelopment, it would be hard to build in between hundreds of wells. This horizontal method is a lot better in addition to being more effective. This will minimize conflicts with future redevelopment. It's going to generate some soil vapors. We're going to use the current SVE system to mitigate potential off-gassing. We'll continue the TFE for hydraulic containment until the plume is stable and then, some time down the road, we're planning to turn that off. Natural Source Zone Depletion (NSZD) refers to natural processes that will work on existing hydrocarbons in the ground and it will biodegrade that leftover hydrocarbon and hopefully change the chemistry until there are no more contaminants of concern. When we're finished with the active remediation, we're going to rely on these NSZD mechanisms. This is an established approach per those guidance documents I showed you earlier. During the pilot testing of the horizontal biosparge well, we're going to be monitoring the system and conducting additional testing to prove that all this occurs. We're personally convinced that all this occurs, but we want to provide the data to the regulator, the City, and all the residences to make it real clear and demonstrate to them that this will work at the end of the active remediation process.

[Slide 30] Project Status – our short-term goals – we have prepared a workplan for the pilot scale system. We had two wells in that workplan, but we're going to reduce it to one. We had one well in the south central – the larger area – and another well in the southeastern area. Our current approach is to do the south central well. We submitted the initial workplan to the Regional Board. Paul provided comments in December. The letter concurred with the approach and conditionally approved well construction. We responded to the comments in a February 14 letter and, in that letter (Paul, you may have missed it), we actually noted that we were going to go with just the south central biosparge well and not do the southeastern one this year. We think that, because that's the bigger area, the biosparge system will have the potential for greater mass removal. S. Defibaugh stated that the well is completely onsite so it gives them more of a chance to really make sure that any emissions or any vapors that might migrate are contained. M. Wuttig also said that the other benefit is we have a lot more SVE wells, offsite soil vapor probes, and groundwater monitoring wells in that area that we can use to monitor the effectiveness of the pilot test, so that's good. We'll be doing that over 2014 basically. Then the long-term goals, once we get our pilot test data, is to expand the biosparge system with several horizontal wells across the site. Then ultimately shut down the pump and treat system and then rely on NSZD for the long-term remediation.

[Slide 31] This is the south central part of the site. This black dashed line is the general extent of the free product that's left in the ground. Our horizontal well is shown by the purple line. What we are going to do is set up our drilling rig right here and at ground surface it's going to start drilling at an angle downward and that's what this purple solid line shows. Once we get down to total depth – and our intent is to go down to just above that clay layer (aquitard), so we want to get as deep as we can so that the injected air has maximum vertical distance to spread out and contact our free product. This purple dashed line shows were our horizontal well is going to be screened.

[Slide 32] This is a cross section. The purple zone shows the hydrocarbons that are left at the smear zone. The brown is the silted clay unit (aquitard). This shows our entry location of our horizontal well. Like I said, we'll start at an angle and go downward. The blue line is the water table. We'll go beneath the water table and then

just sneak along the top of the silted clay unit. We'll inject air in this red zone where it's slotted, so the air will basically bubble out of our horizontal well; it will bubble through the groundwater zone, spread out and those air bubbles will contact this hydrocarbon zone, and finger through the hydrocarbon zone. Two things will happen: one is, it will strip out the more volatile components so the benzene, toluene, ethylbenzene and so forth. Those vapors will migrate up above the water table and we have several SVE wells that will extract that vapor and treat it above ground. Another thing that will happen is we're going to be…this whole zone in here is oxygen-deficient because what microbes can live there are using the hydrocarbon as a food source. They have to breathe just like we do. They've used up all the oxygen in the ground. So because we're going to be injecting air which has 20% oxygen, there is now all of a sudden going to be tons of oxygen and it's kind of like feeding your 5-year-old ice cream. These microbes are just going to go nuts. Because they have all this oxygen, they're going to start really degrading and eating the hydrocarbons that are left. The combination of these two processes are going to reduce the LNAPL - the product that's here. It's going to change the chemistry. It's really going to reduce it down in this area where we do the pilot testing. And then when we expand this to all the areas of the site, it's going to take care of the free product zones all across the site. It's going to change the chemistry, get rid of the contaminants of concern, so that at some point down the road, we can turn off our active pump and treat system.

If you were to ask me, well, Mark, how long is all that going to take? That's one of the reasons to do the pilot testing. We're going to test the technology. We've have some good contractors that we're talking with. We're going to get a very experienced contractor. We're going to test the construction techniques to make sure everything works here – that we get good air flow and get good contact with our air with this zone because that's key to remediation. Once we get done shaking out our methodology and evaluate the data, we'll expand with other wells. And the pilot test will give us insight into how many years it's going to take to meet our remediation objectives. We're hoping that it's certainly not several decades, which is the track we're currently on.

P. Cho asked about the former vertical air sparge system and performance. M. Wuttig said they tried to find the data but there was hardly any. They found out the system was installed and was started up and it was intermittently operated and after a brief period of time it was shut down. The obvious question is, why, because they had the right technology out there. One of the things that we heard was that contaminant levels might have increased and so people freaked out and because they thought they were taking all the volatiles from the free product and spreading it around. But with the new system, we are going to contain it. M. McIntosh said that operation of this system was about the time that the release was discovered at the 24 block valve in the southeastern corner and my guess, if I remember correctly that was one of the reasons for shutting down that system was when they discovered that release. And they had quite a few other things in that area. I'm not sure exactly the reason why they did that, but it was all right around that same time.

T. Winkler asked how close the drilling is to the active pipeline. M. Wuttig replied that's a good question and showed using the figure the red dash at their pipeline. So we're going to go next to it and then most of our drilling is going to be underneath the pipeline. T. Winkler asked between the wall and the pipeline? Or on the other side of the pipeline? D. Jablonski answered twenty feet at the entry point. We're actually going to go underneath. The pipeline actually does a loop in the central part of the site. By the time we get close to that we'll be well below it. We'll be at 45 feet deep and the pipeline is at about 8 feet deep or so. T. Winkler asked how close to the wall? D. Jablonski stated the wall will be about 40 feet from the well and will be drilling parallel to the wall.

M. Wuttig said one brief thing to note is that Steve asked us to assess that existing southeast vertical system to see if we could re-use it. It costs a lot of money to destroy it. It was a nice, dense network. So we went in and first we had to locate all the wells. A lot of the well heads were covered by grass or dirt. We had to do some old-style hunting and pecking. We finally found them all and then we entered the wells and a lot of them had some backfill. We tried to redevelop. A lot of that redevelopment was partially effective. We put quite a bit of effort into it to try to get it to work, but at some point it became apparent that it was just older, antiquated, and we didn't have good as-builts. It was probably going to be more trouble than it was worth, so

we bit the bullet and said let's destroy this.

Five-Year Action Plan Progress Report

[Slide 33] This is a Five-Year Action Plan Progress Report. There was a Five-Year Action Plan developed several years ago that had a very optimistic schedule to reach closure in five years. All the activities above this line have been accomplished and all the so-called "future activities" are things we haven't gotten to in that optimistic schedule. We may get to them over the course of time as we implement the current approach. Right now you can see that we are submitting the Sixth Annual Remediation Progress Report – so we're just submitting Annual Remediation Progress Reports right now to document our progress, but we're no longer following this initial Five-Year Plan. Mary Jane had asked us to report at the meetings against this Five-Year Plan and I just want to acknowledge the plan and that we're doing what we can do.

Planned Activities

[Slide 34] The planned activities for the next year: to continue operating the current systems in the south central and southeast area, which are the TFE, GWE, SVE systems; continue all the work we're doing to maintain, inspect and collect data on a weekly basis; continue pumping from the onsite and offsite wells where ever we encounter measurable free product. Hopefully the water table doesn't continue to decline and we get some good rains. We're going to continue our robust groundwater monitoring program and monitor our contaminants of concern, which are MTBE and TBA – in the western area. We start that Westside barrier if necessary. We're going to replace bag filter housings at the fluidized bed bioreactors and the granddaddy is to install the horizontal biosparge well in the south central area; install some additional soil vapor monitoring points for monitoring and commence pilot testing, probably in the second quarter 2014. It's not often that engineers get to design a horizontal well 800 feet in length. It's a robust remediation approach. There are not too many sites that have the right geology and hydrogeology profile to be able to do something like this. This is fairly unique and we're really excited to do this.

[Open Discussion] C. Emig asked in the third quarter, your SVE was 12% operational? M. Wuttig said yes. C. Emig asked if there is a fall-back plan or another system standing by so when you're doing the pilot testing, if it drops out, you'll be able to continue right on and not have downtime. S. Defibaugh said they are going to have an interlock system where, if the SVE system shuts down, the air sparge will also shut down, so that if one goes down, the other goes down. We can't do the sparging without the recovery of the vapors. So we'll have control on that. C. Emig said he doesn't think 12% would have been the goal – more like 98%. S. Defibaugh said sure. Those systems are about half a million dollars each, so they don't really make mobile one's of that size, so there's just no way to have a stand-by system. C. Emig asked if parts readily available off the shelf? S. Defibaugh said if we get a blower, they weren't hard to get, but it did take a bit of time to get it to the specification and install. C. Emig said that was a 15-year old product. S. Defibaugh said as you can see in most quarters we have a much better record than that. So I'm pretty confident that we can keep it going.

T. Winkler said all that noise while they're creating this is it going to be high noise level for the neighbors while you're constructing this? S. Defibaugh replied it's going to be the same as any other well we go drill there. M. McIntosh stated there are restrictions that the City has on noise if they act within Caltrans with all the work that they're doing, they are right in my back yard. S. Defibaugh said we won't be drilling at night or anything like that. It will be from 7:00 AM to 5:00 PM or maybe 6:00 PM. P. Cho said this is going to be an exciting time to see if this actually works. I'm looking forward to it. S. Defibaugh stated it should work, actually they've done this quite a bit in the southeastern U.S. and had pretty good results with it, so we're trying it out here.

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

[Slide 2] R. Hassan gave the topics of DLA's presentation which will be remediation operation updates, Five-Year Action Plan Progress Report, Remedial Action Plan Update, planned and future activities and then

address the second semiannual report.

Remediation Operations Update

[Slide 3] This slide shows the current remedial system layout at DFSP Norwalk. The treatment compound is in the north. We do have the green lines leading through to the GWE wells to contain the plume from the northeast and northwest. Then we have SVE wells leading to various areas of the site, especially the tank farm, and also in the truck fueling station. At this point in time, we're only extracting vapor from the eastern area and also from the horizontal wells spanning the tank farm. We do have four horizontal wells radiating from the treatment compound. They're hard to see on this slide, but they show up on your handout. If you look closely, you'll see four lines radiating to different directions. Those are horizontal wells that are extending 600 to 800 feet away from the compound and they're about 25 feet below grade and they are for vapor extraction purposes.

The system primarily consists, as stated before, similar to Kinder Morgan, it's a TFE, GWE, SVE, and free product recovery. We ceased operating from the TFE simply because there was not enough product that can be recovered through the mechanical system. I will show a graph showing the asymptotic level. And the SVE system is non-operation at the truck fueling station area because of the demolition activities which effected the infrastructure of system. This area is one of the major areas previously slated for the SVE, so therefore, once the shallow soil is excavated from here, then we will revisit the deeper soil and the groundwater. Same thing with the tank farm area.

In the eastern portion there were no soil impacts, especially in the shallow zone. All we had was impacts at the capillary fringe during investigation and drilling. When we got through just above the groundwater, that's when we see the contamination. Also in this area, we've had vertical biosparge wells but because of numerous investigations and the discovery of the increased free product in this area, we focused more on containment, because on the other side of the park we have one well there, GMW-62, that also showed free product – so therefore, we shifted our focus from the passive air sparge to more active containment and vacuum product recovery. Two east GWE wells are GMW-15 and GMW16. GMW-15 has free product as well. At GMW-62, which is in the park, we perform vacuum recovery of free product.

So, we're containing the dissolve-phase both on the northwest and northeast directions. On the vapor extraction, therefore, we're pulsating at this point in time, which means basically that because of the lack of the contamination in the shallow soil, we're going to turn the system off, see if it rebounds, and then at that point, re-start the system. If it doesn't rebound, probably consider doing the confirmation sampling and a little bit more investigation there.

[Slide 4] This is an updated aerial image of the site. This is after the tanks were gone. Previously, Mark showed when the tanks were there. Right now, it's an empty lot with the berms and no infrastructure remains from the former fueling and storage operations. This area is pretty much…especially this area here will be excavated and the soil will be hauled off and it will be more of a groundwater/free product remediation.

[Slide 5] The GWE system is in the northwest and northeast areas. Two wells, GW-2 and GW-13, are extracting from the northwest and two from the northeast, GW-15 and GW-16. The operation of the system was 77.4% in the third quarter and 14.6% in the fourth quarter. The problem in the fourth quarter was due to arsenic issues. We modified design to handle increase in arsenic and added an additional vessel to treat the arsenic so we can meet the discharge levels. That took some time to design and procure new vessel. Also, we did some studies to choose the best resin. The resin that we've been using hasn't been doing the job as well as we expected, so instead of changing out every month, we needed something that could last a little longer. So far, we've been into two months now since we've put in the new vessel and resin and it's looking pretty promising.

On the SVE system, we have the four horizontal wells that are spanning throughout the tank farm that I showed earlier and six vertical wells in the northeast area. We will be pulsating operation and evaluate for next period for continued operation and frequency. In handouts, you'll see a lot of the maintenance that we've

done – the carbon changeouts and things like that to explain the operation times. Because of those activities, we've had very little operation during that time. But in the fourth quarter, when everything was replaced, we had 99.4% operation of the SVE system.

[Slide 6] This graph illustrates the condition of the treatment. In other words, how much hydrocarbons were recovered since the start of the operation. Back in 1996, that's when this system came online and there were pretty much three phases – one was the vapor extraction, the other phase was the groundwater and the third phase was the free product recovery. If you look at it, the blue line here is the free product line. If you look at early years, a lot of the LNAPL was recovered and the soil is stabilized and it continued to be stable. This little uptick here is the new LNAPL that we see at GMW-62 and GW-15 in the northeast and eastern portion of the site. Those two wells were not in place until recently, so therefore, with the vacuum extraction that we're doing there, we see a little blip here.

This one here is vapor extraction primarily, but it is also takes the free product into consideration. As you can see, they seem to be mirroring one another. Here we have had added some of the truck fueling station area in the northeast and the eastern portion, and that is where you see this little uptick here and then it stays pretty much the same. When we were performing demolition, we turned off the vapor extraction system for the truck fueling station. So therefore, the horizontal wells and the eastern boundary area is what this reflects here.

This is then the combination of the two – it's the total – and this data collection started around 2002 and again, this is a combination of all the contaminants that were removed. It's asymptotic level, in looking at the conventional system vs. non-conventional system, this basically tells us the conventional system has reached its effectiveness. It's not removing the residual that's still in the ground. Something else has to be done in an effort to mobilize the remaining impacts, recover as much mass as possible, and then move into monitored natural attenuation (MNA).

[Slide 7] This is a breakdown of the gallons and pounds of hydrocarbon removed through GWE and SVE. The third quarter 1,568,777 gallons, the equivalent of 0.033 lbs of hydrocarbons were removed. In the fourth quarter 304,000 gallons and the total to date removed is 67.8 million gallons, almost 10,000 pounds since April 1996. For the SVE, the breakdown is 0.22 gallons for the third quarter and 0.5055 gallons in the fourth. These are reflective of the up times in the previous slide showed. And the corresponding pounds removed are on the slide. M. McIntosh asked the small amount is reflective of the downtime? R. Hassan said yes. M. McIntosh said it's really small. It's smaller then what we normally get. M. Lucas stated that it's also reflective of where we're extracting from. R. Hassan said that's correct, the eastern boundary and horizontal wells are where we're focused currently and in both areas, when you look at the concentrations coming in, they're very low, which is why we are switching to pulsed operation. M. Lucas said we are hoping by pulsing we'll see an influx of contaminants coming in.

Five-Year Action Plan Progress Report

[Slide 8] The LNAPL Conceptual Site Model was submitted on September 30. I'm not going to talk about this in detail because Mark covered pretty much the bulk of that. We went through the same process – the ITRC system through the different technology evaluations and all that. Just as they have done, we've done one previously for the soil CSM in 2012, and then we updated that with the addition of the groundwater and the LNAPL and then concluded that report on September 30. The process is the same – pretty standard – and we followed that same standard. Our conclusion in terms of the technologies that we would need to apply is slightly different. However, we are interested in seeing the data that Kinder Morgan collects from the biosparge through the horizontal well; just as much as we will share out data when we do our portion of a pilot test. And that's mainly for the deeper soil and groundwater. For the shallow soil, in our case, it's been said many times that we will be excavated and disposing soil offsite.

Groundwater elevation has continued to decrease since 2005. With the decrease of the water table, we're seeing a little bit of increase in the free product in some of the wells. In October 2013, free product was

detected in 9 wells in the north central area, 2 wells in the northeaster area, and 2 wells in the truck fueling station area. 284 gallons of free product was recovered during the reporting period. We have a vacuum truck that comes out and extracts free product. GMW-62, which is located in Holifield Park, along with any onsite wells that has measurable product, are gauged weekly and vacuumed once the thickness reached one foot.

[Slide 9] For the progress of the SVE we're optimizing with pulsed frequencies. And again, I'm not going to go into detail, but that will give us a better result of where we are in the eastern boundary and in the horizontal wells.

The purpose of the GWE is to contain the plume from migrating off-site and to decrease the free product plume over time, which it has done. This slide is about the containment and we're doing that.

Remedial Action Plan Update

[Slide 10] For the soil remedial schedule, we're scheduled to do SVE or bioventing operation. This was the original plan, to do what we submitted in the Revised Remedial Action Plan. However, we departed from that plan to the LNAPL CSM that was proposed recently in 2013 where cleanup goals for soil were established. The shallow soil is of immediate interest, so we're going to excavate down to 10 feet – hopefully in the second or third quarter of this year – and we will submit a report. Following the report will be a request for NFA to the RWQCB like Paul suggested. M. McIntosh asked for time schedule. R. Hassan replied that DLA is going through contract review process, so hopefully the earliest we can start will probably be in the second quarter – once they conclude their reviews. M. McIntosh asked if that will hold up any other additions to remediation systems? R. Hassan stated that the remediation system are currently operating. The only thing new is that the SVE system is operating under a pulsed schedule so we can monitor and evaluate to determine if we need to continue with SVE or do some confirmation sampling in the selected areas. This gives us a little time to also look into how best to take advantage of the open excavation pits, so we can address this top five feet below ten, say within 15 feet or so, if we need to add some nutrients or something like that. At the same time, it will also allow us to propose our pilot test for the deeper groundwater and LNAPL.

Planned and Future Activities

[Slide 11] The operation of the systems will continue. We will conduct the semiannual 2014 groundwater sampling event in April and will work with Kinder Morgan and CH2M Hill for the report preparation – just as they helped us with this report. NPDES reports will continue to be submitted quarterly. Excavation, as been previously discussed, will be conducted.

[Slide 12] Everything boils down to the CSM and the recommendations. Essentially it looked at where we are with remediation and what the conventional systems (installed in the late '90s) have done, and where do we go from here. Conventional systems have done what they can do and now we're moving into non-conventional, innovative, more procedural plume remediation. We will focus on mass-removal of the residual free product and degrade as much as possible. As it degrades, there will be some increased dissolved-phase, but essentially what we're trying to get at here is to remove as much mass as possible or degrade it and then leave it to natural attenuation. Hopefully, do some passive bioventing or some way of introducing oxygen into the subsurface to promote a little bit more biodegradation. But ultimately, it won't be 100% clean, but it will be to a point where natural attenuation will be the ultimate solution.

DLA will be evaluating the results from the Kinder Morgan's biosparge pilot testing and stated that at the end of March a letter to RWQCB will be submitted discussing DLAs remedial strategy including a plan for pilot testing. Some of the technologies we're looking at include…in situ chemical oxidation, which is one of the technologies that we proposed in the LNAPL CSM. And then polish that up with either sparging or bioventing if we remove the bulk of the mass. That gives us 70-80% of the mass removed. The rest we just want to leave it up to natural attenuation. M. McIntosh asked if we have a slide on DLAs CSM? R. Hassan replied that we did not prepare it this time because we were doing the semiannual and it would be similar to KMEPs as we've followed the same guidance diagram to create a similar block diagram. But we can present

update if any in the next RAB meeting.

T. Winkler stated that the top 10 feet of soil will be removed at the impacted areas and requested a visual as to where that is. R. Hassan said at the bulk of the tank farm, not each tank had a release, there were just a few tanks that had a few releases (and he showed it on a map). At the truck fueling station and the water tank the majority of the soil will be excavated as this is the area that has the most soil impact. The other areas are right here and then right here in this tank and this tank here. And there are a couple tanks here that have a little bit. Now, up here, we have some impact, but that's just up to five feet. It doesn't extend below that. So when we say we're going to be excavating the soil, we're not excavating the entire site. The bulk of the site is fine. It's just the selected areas. Not all the tanks have had a release. Just very few. In fact, one of these in here, the problem is that there was some overspill a long, long time ago during site operations.

5. **Second Semiannual 2013 Groundwater Monitoring Update** Redwan Hassan, Parsons

[Slide 13] The second semiannual 2013 sampling event was conducted in October 2013 jointly by DLA and Kinder Morgan. There were 166 wells gauged and 110 wells sampled. The remedial systems were off except for DLAs SVE system, which has no major impact for the groundwater. We were just vapor extracting in the vadose zone – in the shallow soil.

[Slide 14] The groundwater elevation was approximately 1.2 foot lower than those reported a year earlier in October 2012. The groundwater elevation is at a historical low since monitoring began back in the 90's. The horizontal gradient was approximately 0.0006, which is primarily flat. The Exposition aquifer groundwater elevations were about two feet lower than reported for 2012. Essentially both the shallow perched aquifer and the Exposition were impacted with this drought that we're going through. The horizontal gradient again was flat and it was toward the east-southeastward. The Exposition aquifer as Mark showed in that block diagram flows differently than the perched shallow aquifer that we are currently monitoring and remediating.

[Slides 15 and 16] These are the water level contours. You can see overall they go bottom to top – south to north. There are some deviations on the interior partly because of the groundwater extraction system. But in general, the groundwater gradient is very, very flat. This is the Exposition aquifer and the groundwater gradient is quite contrary to the upper groundwater aquifer. It's going southeast.

[Slide 17] The graph that Mark referred to earlier showed the decrease of the groundwater over time. We picked two wells – one in the east, GMW-60, and MW-15, which is by the truck fueling station on the south side of the site. The red is the GMW-60 and the blue is MW-15, and you can see over time how the groundwater elevations were decreasing. That's been the trend that we've observed over the course of the years since the 90's and that seems to be all across the site. E. Ferguson (WRD) asked if there was another chart for the Exposition wells showing water levels over time. R. Hassan replied that we do not have that in this presentation and just did it for shallow perched aquifer. But we can look at those, there are only five wells.

[Slide 18] Free product was measured in 31 of the 166 wells gauged. The north central area wells that had free product were GMW-7, -18, -21, -35, -45 and TF-15, TF-18, TF-20 and TF-23. In the eastern side it was GMW-62 which is in Holifield Park and GW-15, one of the extraction wells. The truck fueling station area had GMW-4 and GMW-58 with free product. In the south central area, GMW-9, -10, -22, -24, -25, GMW-O-11, -O-12, -O-20, -O-23, GWR-3 and MW-SF-1, -SF-2, -SF-13, -SF-14, -SF-15 and -SF-16. In the southeastern area, GMW-36 and GMW-O-15. The thicknesses ranged from sheen – pretty much 0.02 to about 5.42 feet. And I believe we chose that one – GMW-62 to illustrate the hydrograph, and that was the one in Holifield Park. Because of the decline in the water levels, we believe that we're seeing a lot of this smear zone being exposed and therefore contributing to the increased thickness in the product.

[Slides 19 and 20] This is the free product in 1996, fourth quarter, and this is the 2013 free product. So you can see, when you look at it, back when the remediation system started on both sides, how widespread and continuous the LNAPL was and how it has broken into small pieces now across the site. So that's one of the

reasons we have not been able to extract because it has been reduced to a residual level. M. McIntosh asked to back that up real quick. I still have a concern about the free product and about what's going on the eastern boundary site. 100% says it's part of our park, but if you look at the previous slide when, in '96 where the plumes were, I have a hard time believing that that plume in the center disintegrated. I understand the two others, but not all the way. Can you explain how that could have happened? Or is there maybe something else we don't see? What could be the explanation for having that free product right on that boundary line where we didn't see it in '96? R. Hassan replied, if you remembered what triggered the investigation in the park? It was because this plume was extending to some of the wells, like GMW-58 and GMW-59. This plume was extending, and our thinking at that time…it was requested that we do an investigation in the park. That's what triggered it. Now, the interesting part is this – when we did the investigation in the park, none of these wells that we put in, including GMW-62 which has the free product right now, didn't show any free product. Now subsequently, we put in the extraction wells here, and when we started extracting from GMW-15, that's when we began to see it in GMW-62 at the park. Interestingly, in the park we have a number of wells that are east of that well and to this day, not only do they not show free product – they don't even have any dissolved concentrations. Also, we looked at the well that was in the park that was owned by…right now by Thrifty Oil West. That well came back non-detect, if you recall. It did not have any free product, so we haven't really nailed down the reason why, but if you look at the circumstances that led to that investigation and to the subsequent pumping, could it be that the plume was slightly moving to the east and then when we put in the well and we started extracting from here, we triggered something? We don't know the full answer. But the interesting thing is that it's very isolated. M. McIntosh said that's what I don't…I can't wrap my thoughts around that, because we have wells in between and wells to the side and wells behind it that don't have free product. R. Hassan said the other thing is that we tried to investigate the Golden West plume and pipelines and no success there. So that mystery still remains, but there are some logistics that we're considering, such as could it be result from the pumping? So we may shut down the pumping and see over time what happens. But I just go back to why we investigated Holifield Park. The main reason why we did that was because this plume was slightly going to the east, and I think that's when the Regional Board said we're suspicious that this plume is going further east and let's look at that.

P. Cho asked for the screen interval of GMW-62 and if we've done any forensic analysis from this well. R. Hassan said we did the fingerprint of the groundwater and M. Lucas confirmed that we did forensic on the free product at GMW-62 and screened from 20 to 40 feet. P. Cho asked what's the current status? Is it increasing or expanding or… R. Hassan said it's not laterally expanding because the wells that are east of it, on the property side -south and north, they're not showing anything. But the vertical thickness seems to be increasing. GMW-15, interestingly, when we put that well in as an extraction well, it didn't have any LNAPL. But when we started pumping, it slowly seemed to pull it in. There is a possibility that there is an outside source. That has not been ruled out. But from what we see, it's kind of a unique situation. M. McIntosh said the most likely outside source if it's not coming from DLA and Kinder Morgan has tested those pipelines and physically checked them, so if there's an outside source, the most logical source would be from where? Does the Board have any jurisdiction or authority to require Thrifty Oil to cooperate and have their pipeline inspected? P. Cho said the pipeline is very difficult because regulations include their own inspection. M. McIntosh said if I remember correctly from the email that was sent, their pipeline was certified cleaned and they described how they cleaned it and I believe they filled it. R. Hassan confirmed yes. M. McIntosh said so, unless there was something residual there that nobody knew about, I can't imagine where it would come from. R. Hassan said in 2006, when we trenched the eastern boundary right along inside the property, that's when we saw their line, including the Powerine line, and we believe both of those lines are inactive and have been inactive for a long time. P. Cho said we may take an additional look at this area. R. Hassan said one of the things that I would probably also request from the Board is the well PW-07, which is in the parking lot of Holifield Park. The one was put in by Golden West, and the reason was they had a huge release, which is well published a long time ago, and that was where they had a leading edge that was spreading continuously. In an effort to see the leading edge of that, they put that well in just to monitor if it would reach there. That's why we are a little curious about Thrifty Oil. P. Cho said he thinks they're going to

remove it. They say there's no problem if we do that. R. Hassan said meaning that they confirm their LNAPL is spreading? P. Cho said correct. I think that's what they're saying. R. Hassan said okay, but that was the reason they put that well in there.

So, to continue, this is the breakup and the new thing is right here (near the eastern area). This one was also new relative to 1996. So it's getting less and less and progress is being made. I think that's the message I'm trying to convey.

[Slide 21] The wells were sampled in the Exposition aquifer. We sampled EXP-1, -2, -3 both jointly by DLA and Kinder Morgan, and then EXP 4 & 5 were sampled exclusively by Kinder Morgan. All of our results were non-detect, except for the following: TPH as diesel was detected in EXP-1 and EXP-2 in the Kinder Morgan split sample results, in which the concentrations were 130 µg/L and 140 µg/L respectively. 1,2-DCA was also detected in EXP-3 in our split sample at an estimated concentration of 0.36J µg/L, which is below the laboratory detection limit, which is really just a trace level. These types of low level detections have been detected before in the Exposition wells. We periodically see those. They are very low and when we resample we don't see them or in the subsequent semiannual sampling period they seem to disappear. It's been up and down with this, but you have to look into the lab also. We don't consider it being anything that's coming from the shallow aquifer. It's very well protected at the site. That block diagram that Mark showed – that aquitard – it's pretty extensive across the site.

[Slide 22] In the uppermost aquifer wells, in most areas, the lateral extent of TPH, benzene, TBA, and 1,2-DCA in groundwater remain relatively similar to those of the previous monitoring event. Concentrations are influenced by water fluctuations, which is obvious.

[Slide 23] Here is the TPH plume. The red boxes are showing increases by 10% or more. The white or grey are no change meaning that they remained the same. And then the blue boxes show the decrease by 10% or more. So you can see that a substantial number of wells – because the whites are not relatively easy to see - remain the same and then there was a considerable drop, but there were some that have shown some increase in the TPH.

[Slide 24] The benzene is the same story. The red is an increase by 10% or more, the blue decrease by 10% or more and the white or grey is no change.

[Slide 25] The 1,2-DCA plume, again, is right in this area here. Red-increase, blue-decrease.

[Slide 26] MTBE – again, the same; Red-increasing, white-neutral and blue-decreasing.

[Slide 27] TBA, which is a byproduct of MTBE, is again, the same. You see some increases in some of the wells and a few decreases.

[Open Discussion]

T. Winkler asked where the trucks would go with the excavated soil. R. Hassan stated that the soil would sent to an off-site recycling facility to be treated. Any soil that we take out from the site will be soil that's contaminated. Clean soil that meets the regulation will be used as a backfill. The soil that is impacted will go to an off-site recycling facility for treatment. We still have to get the contractors in line so, when that happens, then we will know the specific facility that it's going to go to.

P. Cho asked about the semiannual contours and the color-coding and ten percent increase is compared to what? R. Hassan stated to the year before, so for us it October. P. Cho said but there's no follow-up. R. Hassan said hold on; so, then there's April sampling which CH2M Hill compares to the April, so you have every six months we've seen a comparison. S. Defibaugh said the reason we do it annually since the last event, turns out there's too much noise throughout the seasons, so by looking at it at the same time of year

each time, you can see the longer term trends. M. McIntosh: my concern with that, again, I understand that we have talked about the fluctuations, but my concern with that is, if we're going back a full year and it's 10%, well, from just six months ago, could it actually be a 20% increase? Or, could it be now decreasing levels and we're not really looking at them? S. Defibaugh: as the water table goes up and down with the seasons, sometimes you will see concentrations move up and down. But that's why you have these figures here with the whole trend line over time, because then you can see what's going up or down or a lot of what you'll see is bouncing around. P. Cho: I think we need some type of statistical kind of reporting; concentration limit based on the data set; some kind of investigation with these red box so there's follow-up action work to do. And I think that's a good point, because if it's 10% over that ten years, you kind of lose the trend of that. So maybe we need some kind of statistical analysis. R. Hassan: yes, that's something that we can look at, but also that's leading up to saying there's a new source, but the source this time would be that smear zone that's been exposed. M. McIntosh: I don't think it necessarily has to be a new source. My main concern is not so much the fluctuation of the water table – we understand that – but you're looking at putting in new systems and upgrading systems and things like that – if you wait a full year to compare how you're doing in an area, you're not really able to gauge efficiently how well your system is working. Where if you go at least just from the last groundwater monitoring. I don't know when that changed, because it had been every six months we were comparing another six months. S. Defibaugh: about a year ago we made that change. That was my suggestion because we were seeing so many red boxes and blue boxes. We'd have one season we'd have a lot of red and the next season we'd have a lot of blue, and it just wasn't really representative of long-term trends. So year over year, that's when you really see if it's a true trend or not and just a seasonal fluctuation. It looked like a lot of the percentage changes – the big percentage changes – but where a 10% change in absolute terms is a relatively small change. It's been 10 ppm to 11 ppm. R. Hassan: Yeah, and then to see the effectiveness of our system, we've already determined that the conventional systems have done what they can. That's why we're going to this other direction.

M. McIntosh: What type of system - you may have already covered it – but, what are you looking at? R. Hassan: So, ideally what we would like to do is two things. When we excavate the soil down to 10 feet, we're looking at some type of treatment that we can introduce from that point on. Let's say we put a trench in there and just introduce some treatment, like persulfate or something that would tackle the 15-foot to -20-ft soil zone so we don't have to come back and worry too much about that. That would help biodegrade those areas. So that's for the top 15 – 20 feet. When you get down to the 25 feet, you're pretty much in the smear zone and into the groundwater. With that, the main focus is the LNAPL, because that's the source – and the capillary fringe in those areas. With those, we're looking at some type of chemical oxidation where we can just go selectively to the hotspot areas and treat those and get the maximum mass degraded and then polish it up with some type of biosparge or bioventing as needed. So we are looking at A) remove the mass and B) in situ injection probably through direct-push technology to introduce the chemicals to oxidize the area. If we remove the bulk of the mass and we leave everything to either biosparging or bioventing, then we will be eliminating the extraction of the water over time. In the short-term, we will continue because we have to contain it from further migration. Our ultimate goal is to continue with that. The one thing economically we have to take advantage of is the infrastructure that is already onsite. We have the compressors to generate the biosparge and we have the blowers that we're using for vapor extraction that we can convert into bioventing, so that the overall costs will be decreased and the infrastructure that exists can be taken advantage of.

M. McIntosh asked based on your conceptual model, do you think that the bioventing is going to be feasible? R. Hassan said that's the polishing technology. What's feasible in our LNAPL CSM – I think we pretty much clearly say that in situ chemical oxidation is the technology we're going to use. M. McIntosh: But you won't know that until you actually do the excavation? R. Hassan: No, we won't know until we do a pilot test. M. McIntosh: So we're looking at, according to your schedule, you're looking at doing the soil excavation second/third quarter of the year? So that takes us through September. Then you would do the pilot testing after that? R. Hassan: Yes, the pilot test is not going to be one-year long, it's just a short term test. M. McIntosh: Understood, but by the time that you get the pilot testing done, between the reporting to the governing agency and all of that, that could take us into 2015. That's my concern. We went through the CSM

and that took us a year? 18 months? and I'm just concerned about the time frame for DLA's portion of the project. R. Hassan: you're right on one portion – and that's for the LNAPL and the groundwater. But the shallow soil after it's been excavated, there's still some soil that's in between the 10-foot and where the groundwater is. And that one we are thinking about is that as the excavation is taking place and we have the pit open, introduce some treatment into that zone. So at least the bulk of the vadose zone is being addressed. So what you've got left is the LNAPL and the groundwater, and those – we would like to do, toward the end of the year, the pilot test – early to mid-2015 – going to full-scale. These are pretty fast. Again, this technology – we're hoping to get the results quicker and if we get good results, then the full-scale will be implemented in the hotspot zones. And then the bioventing is just a polishing technology.

M. McIntosh: Do you want to discuss the fact sheet? R. Hassan: Yeah, the fact sheet went out to 9,000 residents, a one-mile radius from the site. I only got one call and three people showed up. So that's big progress. M. McIntosh: When you do the list again, I would like to have this sent out prior to this meeting so we can see how effective it was. At least we had a couple of people show up. But I didn't get one. Can you please make sure that at least the RAB members get it, that's what Tim used to do. M. Lucas: They did have a list. I'm surprised you didn't get one because your same address from the RAB distribution list was used. Did you, Steve? S. Defibaugh said he got one. M. Lucas asked if Paul got one. It went to the RAB. They had their distribution list. I'll follow up on that. R. Hassan: We just have to double check the addresses. M. McIntosh: Yes, thanks. So that way at least I know then that it went out. M. Lucas: It should have gone to you. A. Figueroa asked how many did you say went out? R. Hassan answered nine thousand over a one-mile radius from the site which was the standard for how they've done it in the past.

T. Winkler: You said the soil is going to be removed, but Mary Jane said that you'd be replacing it. M. McIntosh: With clean soil. R. Hassan: With clean soil, yes. T. Winkler: But not right away? R. Hassan: No, it will be right away. There are a few things we need to do. A few steps we need to look. One is when we excavate the soil we have to take samples and then we segregate the clean from the contaminated soil. Use the clean soil as backfill and the difference, bring imported clean soil to backfill and then compact it.

M. McIntosh: From previous testing, the soil that is in the berm was clean soil according to the report that you have. I would assume, for development purposes it's better not to have the berm. Why not use the clean soil instead of the backfill? R. Hassan: When we did the berm sampling, we did it without really having the soil management plan, so now that we put the soil management plan into place, the frequency of sampling is more stringent. In other words, we sampled every 100 feet, so now we have to go back and sample every 25 feet. In addition, you have to deal with the concrete and the asphalt. In the one area, there is a fire hydrant line that needs to be dealt with, so it's a lot quicker. DLA's responsibility is to clean the site, but the infrastructure of the site – the way it's built – I believe probably decisions will be made by the Air Force. So we didn't want to demolish those berms because we don't know what the future use will be.

C. Emig: Just looking at this fact sheet, it's small type. It looks to me like the blurb about when this event was going to take place is almost like an afterthought. It gives me the impression that they really don't want to have anyone come to or call. If I want the public to come, I'd put it in big letters. For instance, I'd remove this section down here and that's where I would put the flyer – the information about the next meeting. Or put it up at the top. M. McIntosh: Well, this is the first one that Parsons has done. Prior to Parsons taking this over, Tim White with URS was our facilitator. And what was being sent out - which was a very nice newsletter – what was being sent out was…I believe it was…8-1/2 x 11 or 11 x 17 folded? It was like a three-fold. It was front and back, English-Spanish, but it had much bigger print and it was much easier to read and there was a fairly large about the next RAB meeting and information on who to contact along with pictures, so. T. Winkler: They did a press release, too. M. McIntosh: Yeah, and then there were press releases that went out also. This is a good start, but I do have to agree with Charlie. This is not the type of newsletter that we had been sending out. It is a little bit more difficult to read, so I don't know if you can take a look at doing something similar to what was being done previously by URS. I'm sure it probably will cost a little bit more but not too much. R. Hassan: We welcome the comments and most definitely, yes. M. McIntosh: The one URS was sending out was being sent out quarterly. You're only sending out twice a year. R. Hassan: Yeah,

there used to be a quarterly RAB meeting. Now it's semiannually so we wanted to mirror that. M. McIntosh: Yeah, and that's not a problem. My point was, it's no longer being sent out quarterly – it's now being sent out semiannually, so the cost shouldn't be as much as what it was costing for quarterly. R. Hassan: Yes. And we will make the improvement that was suggested.

C. Emig: If anyone should be on this list, it should be you Mary Jane. M. McIntosh: It's just an oversight. R. Hassan: Yeah well, it's the mailing that didn't work. You'll have to check with the U.S. Postal Service, because Mary used the list that we had. M. McIntosh: For some reason, I always get my bills though. They never miss a bill. R. Hassan: OK, maybe we jot down your address wrong. M. McIntosh: Yeah they could lose everything else but they never lose my bills.

T. Winkler asked if the units in this chart, are they the same on every column? R. Hassan said all the groundwater should be in micrograms per liter. It's parts per billion. It's the same.

M. Wilson said a general comment and observation. I was very impressed. This was my first RAB meeting ever. I was very impressed with the professionalism, the information, and just the dialogue as this goes forward. From an Air Force perspective, we don't get out here very often. March ARB actually controls-owns this site, so from a San Antonio perspective, we oversee the disposition of it. We're looking forward to helping facilitate this property back into a useful status that would really benefit the local economy. Anyway, I just wanted to thank everyone. It was really nice meeting a lot of folks I haven't met before. It's good seeing the folks I had seen before, and I just want to say thank you snacks and I just everybody has been so hospitable and so kind. M. McIntosh: It's a big difference from 16 years ago, Mike. Big difference for the few of us that were around during that time. And I have to say that comes from just one, we've kind of all been on the board for a long time, so that helps. But also, too, both agencies and their environmental consultants have really stepped up their game along with Paul from the Regional Water Quality Control Board. They've really stepped up their game to make this a priority.

P. Cho: I have one technical comment. I have a question for CH2M Hill. PZ-5, there's a constant increase so, do we just keep sampling this? If you look at some charts, and this one, the concentrations. S. Defibaugh: Yes, that's one that we've been tracking for a long time because it has been increasing. It's in Holifield Park. M. McIntosh: So that and GMW-62. Those I really think need more investigation. P. Cho: So my question is, if we see the existence of this constant increase trend what are we doing about it? S. Defibaugh: Well, the thing is that we looked at already whether or not there was a new release - so we discounted that.

M. Wuttig: Can I make a comment on that? So look at also GMW-O-18 and PZ-5. That used to be the downgradient well or the most downgradient well and early on concentrations were elevated back in the late 90s. They decreased through the mid-2000s and then beginning in 2009 or 2010, they started going up because, per the Regional Board's request, groundwater extraction was initiated from GMW-O-18. So what was formerly downgradient and naturally attenuating, now was extracting groundwater and pulling the contaminants source further into Holifield Park. And that's why the concentrations were increasing. Now, contamination was pulled further into Holifield Park but it was anchored at well GMW-O-18, so whether that was a smart move or not, is debatable. Nevertheless, that was the request and we complied, so PZ-5 was an innocent bystander in the middle of the plume and well GMW-O-18. So as GMW-O-18 now pulled the plume into Holifield Park, it overran PZ-5 and so that's why you have the elevated concentrations in PZ-5. S. Defibaugh: One thing we did do, Paul, was because of the increased concentrations, we did add an additional well in Holifield Park to make sure that we were fine. M. Wuttig: So now we have GMW-O-24 as a further step-out and we did see MTBE around 1 μg/L or right near the detection limit and that's fine. That's an extremely low level residual concentration and I recommend we don't pump from that well because you'll pull the plume another notch into Holifield Park.

M. McIntosh: Is there any way to put something on the tank farm site to start pulling that back? M. Wuttig: No. It is what it is. You know, it was probably not the best move to do this, so now what we need to do is just continue containing, keep it where it's at and get on with the biosparge and just remediate that whole area and be done. M. McIntosh: But aren't we actually looking at putting in something on the park side? Have we

MEETING MINUTES	**27 February 2014**

talked about that? S. Defibaugh: What we're looking at are horizontal wells in that area. M. Wuttig: We're going to treat it from the bottom up. M. McIntosh: Something to pump and treat on top. M. Wuttig: Yeah, we're going to address the whole area when we get there.

M. McIntosh: All right, review action items and set date for next meeting. That would be August. Yeah, the fourth Thursday in August. 28th.

M. McIntosh: Action items? Mary, I think you were out of the room but there's several of us – Adriana, myself and Charlie – we didn't get the meeting minutes from the last meeting, so we couldn't approve them. So if we can have on the agenda the review of August 8, 2013 meeting minutes and review of February 27, 2014 meeting minutes. And then the meeting minutes need to come with a copy of the agenda prior to the meeting and in U.S. mail, please. T. Winkler: Paul doesn't have to send you anything. He's saving paper. M. McIntosh: He is saving paper. But for the meeting minutes and the agenda, I'd like to have that. We also still have Eugene Garcia. I talked to him a few months ago. He hasn't expressed any interest not to be on the board, but I will follow up with since it's kind of been spotty with his attendance. But he is all snail mail. He doesn't have a computer, fax machine – anything like that. So definitely everything needs to be sent by mail to him. Thank you for getting the report in ahead of time. That was great. Appreciate that. And then if we can just make sure when it comes to the downtime – if we have significant downtime like that again – if you would just send me an email to let me know what's going on. That way, if I have questions later it's not such a surprise. Also, when we're going over the agenda – setting the agenda – if you'll let me be part of that process again. Just send me the agenda, what Tim used do send me a draft for review and then I would approve it. I understand it went to Steve. I just haven't seen it.

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

The next semiannual RAB meeting will be held on Thursday, August 28, 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 7:54 p.m.

ACTION ITEMS		
Item	**Responsible Party**	**Due Date**
Review of minutes from Aug. 8, 2013 and Feb. 27, 2014	Parsons	02/28/14
Next RAB meeting	All	08/28/14