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28 June 2017
File No. 129611-002

RESPONSE TO COMMENTS

TO: RACER Trust
Robert Hare

FROM: Haley & Aldrich, Inc.
Richard Volpi
Bruce Wilkinson

SUBJECT: Responses to the Missouri Department of Natural Resources (MDNR)
23 May 2017 Comments Letter
Leeds – Northern Parcel, Kansas City, Missouri

For continuity and ease of use when navigating this document, comments, responses, subsequent comments, and subsequent responses associated with the 23 March 2016 Preliminary Scope of Work have been presented in full and in chronological order. That is, each comment received from the MDNR on 5 May 2016 is repeated, followed by a Haley & Aldrich/RACER 17 August 2016 response, followed by a MDNR 23 May 2017 comment, followed by a 28 June 2017 Haley & Aldrich/RACER Response. Please note that the 28 June 2018 responses have been highlighted in yellow for your convenience.

To guide our next discussion, we see the main topics as the following:

- Vinyl chloride in deep groundwater. Is it related to the fill area?
- TICs and EIC analysis
- Soil vapor sampling
- Monitored natural attenuation (MNA)
- New well construction schematic
- Soil profiling

Details related to these topics are included in the comment response summary below.

COMMENT / RESPONSE SUMMARY:

<u>Comment MDNR C1.</u> H&A will provide, for MDNR review, itemized cost estimates for labor, time and materials for all proposed work products to be completed on this project, including time and charges incurred by H&A for preparing the work plans and products and oversight of the work required in the approved work plans.

17 August 2016 H&A Response: An initial detailed estimate was provided in Attachment 3 of the 2016 Annual Budget Request which included preparation of a work plan and an initial estimate for investigation efforts based on prior discussions with MDNR. An updated estimate will be prepared and provided to MDNR once the scope of work for supplemental investigation efforts has been finalized. As work is completed, a summary of costs and associated activities conducted will be provided to MDNR. **Haley & Aldrich to prepare an example of what could be provided to MDNR as a summary of costs and associated activities. No individual labor rates will be used, but general categories (by Task) will be summarized for total labor and material costs spent along with a description of activities completed.

23 May 2017 MDNR Comment: A detailed cost estimate needs to be provided that will summarize the total material and labor costs along with the total hours associated with each task/activity to be performed, and same for each task/activity performed by Haley & Aldrich.

28 June 2017 H&A Response: A detailed cost estimate will be provided to the MDNR.

Comment MDNR C2. Correlation between soil vapor and fill VOCs has been established

17 August H&A 2016 Response: Group discussed that this correlation really has not yet been made. The vinyl chloride concentrations in soil vapor may or may not be directly correlated to the fill. Potential exists that the concentrations may be migrating from off-site or from deep groundwater. Additional investigation efforts proposed will be used to further evaluate the source of previously detected vinyl chloride in soil vapor.

23 May 2017 MDNR Comment: Previous sampling results indicate a connection between soil vapor and fill area material does exist for the target compounds but other compounds not on the target list may or may not have been reported. As a first step prior to additional sampling, post-analysis of previous groundwater and soil sample data for TIC (tentatively identified compound) and/or EIC (extracted-ion chromatogram) analysis is recommended.
[Note: TIC may identify missed compounds not on the target list of compounds and EIC analysis may find individually user-selected compounds of interest that may not have been otherwise identified in the TIC analysis. Compounds include those that have been identified in previous sampling results for MaDEP (Massachusetts Department of Environmental Protection) VOCs and VPH (volatile petroleum hydrocarbon) compounds.]

DHSS Response 05092017: DHSS has interest in the EIC analysis, pending the type of mass chromatogram being proposed. More discussion is warranted on this topic!

28 June 2017 H&A Response: As stated above, we believe that the correlation between soil vapor and fill VOCs has not yet been made. Further discussion with respect to the potential connection between soil vapor and fill area material is warranted.

The rationale for the evaluation of TICs and/or EIC analysis is unclear. The known constituents of concern (COCs) appear to be sufficient to evaluate the site for potential

current and/or future risks and develop a feasible and implementable remedial strategy. In addition, evaluation of TICs and EICs would increase the overall cost of the project (at least $50 per sample – laboratory costs, plus labor to evaluate the TICs and EIC analysis). Further discussion is warranted on this topic.

Comment MDNR C3. Further open discussion is needed re: co-located vapor and groundwater wells

17 August 2016 H&A Response: Haley & Aldrich to further evaluate whether we really need multiple depths for proposed soil vapor sampling. Based on last data set, concentrations between 5 and 10 foot depths were generally consistent; therefore, it may be sufficient to collect soil vapor from one depth for additional investigation efforts. Haley & Aldrich will also consider well construction that allows for collection of both soil vapor and groundwater from a single well completion.

23 May 2017 MDNR Comment: This comment related to feasibility of permanent monitoring wells that will allow the collection of soil vapor and groundwater samples within the fill material areas. Further discussion is needed regarding the design approach, locations and determining accurate water level measurements for proper screen placement.

DHSS Response 05092017: Concur on more discussion.

28 June 2017 H&A Response: Please see the attached monitoring well/soil vapor sampling construction schematic to facilitate further the discussion.

Comment MDNR C4. Further open discussion is needed for evaluating the [explosive] hazard

17 August 2016 H&A Response: Review of analytical results and literature Lower Explosive Limit (LEL) data for common non-methane hydrocarbon VOCs, an explosive condition is not anticipated. For example, the LEL for hexane is given as 1.2% by volume. This equates to an LEL for hexane of 42,296,932 ug/m3. Based on soil vapor results from SVE-02, the total aliphatic VOCs equal 1,140,000 ug/m3. This total VOC value does not approach the LEL of hexane (42,296,932 ug/m3), which is considered a light and flammable hydrocarbon.

To further characterize the hydrocarbon types present and assess whether constituents in soil vapor are potentially combustible or flammable, soil vapor samples will be collected at the three proposed well locations for VOCs with top 10 TICs (TO-15) and APHs (Massachusetts DEP method). Field screening measurements will be collected for oxygen, carbon dioxide, LEL, and methane. A combustible gas meter will also be used to screen soil vapor samples. Pending field screening measurements, laboratory samples may also be analyzed for methane.

Rich Rago discussed the fact that a small amount of oxygen can deplete a large amount of hydrocarbon fairly quickly. So, depending on how much oxygen is in the subsurface at the site, the hydrocarbon concentration data may look significantly different during the next sampling round.

Once the site remedy is determined and if deemed appropriate, periodic monitoring for LEL and using a combustible gas meter can be incorporated into a future O&M plan.

Ultimately, MDNR wants RACER/Haley & Aldrich to be able to indicate whether or not there are risks, what they are, and what will be done to mitigate them. This applies to all aspects of the site (i.e., soil vapor, groundwater, future construction worker, etc.).

23 May 2017 MDNR Comment: Concur. Field screening for oxygen, carbon dioxide, lower explosive limit (combustible gas meter) and methane is required. Results of the field screening for methane and after an LEL (lower explosive limit) evaluation of non-methane hydrocarbon compounds must prove that the soil vapor components are not expected to be explosive and/or flammable. No additional soil vapor sampling is anticipated.

28 June 2017 H&A Response: Further clarity is warranted with respect to comment MDNR C3 and this comment. Comment MDNR C3 appears to indicate that further soil vapor sampling is anticipated while this comment appears to indicate that "no additional soil vapor sampling is anticipated."

Comment MDNR C5. Further open discussion is needed re: need for additional soil vapor sampling data.

17 August 2016 H&A Response: As discussed in MDNR C4, soil vapor samples will be analyzed for VOCs with top 10 TICs (TO-15) and APHs (Massachusetts DEP method). Field screening measurements will be collected for oxygen, carbon dioxide, lower explosive limit (LEL), and methane. A combustible gas meter will also be used to screen soil vapor samples. Pending field screening measurements, laboratory samples may also be analyzed for methane.

MDNR 23 May 2017 Comment: No additional soil vapor samples are needed, unless future review of new data deems it necessary. Existing data has shown to be sufficient for the purpose of evaluating human health exposure risk.

28 June 2017 H&A Response: Further discussion is warranted to define what "…future review of new data…" entails.

Further clarity is warranted with respect to comment MDNR C3 and this comment. Comment MDNR C3 appears to indicate that further soil vapor sampling is anticipated while this comment appears to indicate that no additional soil vapor samples are "needed."

MDNR C6. [no comment C6 found in the preliminary SOW]

MDNR C7. Concur, methane needs to be measured including ethene & ethane, if considered necessary - evaluation of methane hazard may be fundamentally different than VOCs.

17 August 2016 H&A Response: As discussed in prior comments, field screening (and potential subsequent laboratory testing) will be done to identify whether methane is present at the site and if so, to further evaluate the potential combustible/flammable concern expressed by MDNR. This is

separate from analysis of MNA parameters in groundwater (i.e., the ethene and ethane analysis) – which is discussed further in subsequent comments.

23 May 2017 MDNR Comment: Concur. Methane needs to be measured.

DHSS Response 05092017: Concur.

28 June 2017 H&A Response: Further clarity is warranted with respect to comment MDNR C4 and this comment. Comment MDNR C4 indicates that "No additional soil vapor sampling is anticipated" while this comment appears to indicate that additional soil vapor sampling is warranted.

MDNR C8. Please be aware that it is not MDNR's responsibility to assess whether constituents in soil gas are potentially combustible or flammable – Contractor must provide explosive limits for volatile constituents identified in soil gas sampling

17 August 2016 H&A Response: The inclusion of MDNR in the text is meant to incorporate the fact that MDNR will be reviewing the investigation report (prepared by Haley & Aldrich, Inc. documenting the results and our evaluation of the data) and RACER and MDNR will work together to determine an appropriate path forward.

23 May 2017 MDNR Comment: Investigation results are to document whether there is a risk from combustible or explosive conditions based on evaluation of LEL for the compounds of interest and the measurements taken in the field. The purpose/outcome of this requirement is proving there is no combustible/flammable hazard at the site in those areas affected by fill area soil vapor.

DHSS Response 05092017: Concur. Also consider providing permanent monitoring locations for long-term stewardship.

28 June 2017 H&A Response: Further clarity is warranted with respect to comment MDNR C4 and this comment. Comment MDNR C4 indicates that "No additional soil vapor sampling is anticipated" while this comment appears to indicate that additional soil vapor sampling is warranted.

MDNR C9. Further open discussion is needed – data quality and validation needs to be defined

17 August 2016 H&A Response: Prior data packages have been Level II. Request from Andrew is that future data packages be Level III (assuming that does not add significant cost to the project). This means the Level III packages will include things like analytical results, narratives, MB/LCS, etc. but chromatograms are NOT necessary. Intent will be for data validation to be conducted similar to what was done for the Supplemental Site Investigation Report, dated 1/31/2014 (see DUSRs in Appendix D).

23 May 2017 MDNR Comment: **Concur. Level III laboratory validation needs to be reported if it does not add significant cost to the project.**

DHSS Response 05092017: **Concur.**

28 June 2017 H&A Response: Level III laboratory validation will add approximately 10% to the overall laboratory costs.

MDNR C10. **MDNR management, during the previous meeting, was concerned about the safety of the site with regard to assessing the extent of the fill vapor plume where potential hazards may exist for vapor exposure or potential of flammable or explosive conditions that may exist and the need to alert and protect on-site workers. MDNR also is concerned about utility infrastructure which may act as conduits for vapor movement/migration on the entire site and protection from any future construction in areas outside of the fill areas or extent of the vapor plume**

17 August 2016 H&A Response: Proposed efforts in the 2nd bullet under 'Soil Vapor Sampling' on Page 1 of the preliminary scope of work are intended to address MDNR's concerns regarding vapor exposure or potential flammable or explosive conditions. Also see Response for MDNR C4. Additionally, as part of the investigation efforts, further research of the project files will be conducted to see if there is additional information about private utilities at the site. RACER will review their database and files to see if there are any site-specific drawings that identify utility corridors at the property. Depending on results of supplemental investigation efforts, this issue can be further evaluated.

23 May 2017 MDNR Comment: **Refer to previous comments. The evaluation needs to prove the site is safe from explosive or flammable conditions; the extent of the fill area soil vapor plume needs to be defined for worker safety and protection.**

Concur, further research of site records is recommended to identify unknown surface or underground buried utilities structures (e.g. sanitary, storm sewer, water mains, etc.) that contact/intercept fill material, fill area soil vapor or groundwater that may result in pathways for contaminant transport and exposures. Buried wastewater conduits/lines servicing the former wastewater facility in the south parcel should be included in the records review.

DHSS Response 05092017: **DHSS concurs in the need to identify all utilities, including storm sewers, publicly-owned utilities, etc., in order to evaluate potential future exposures. Also, necessary to identify preferential pathways. DHSS also requests that the location of the former river channel be included in the CSM to potentially identify whether this is a preferential pathway for contaminant migration.**

28 June 2017 H&A Response: As mentioned previously, RACER will review their database and files to see if there are any site-specific drawings that identify utility corridors at the property.

MDNR C11. Concur, new wells needed (see previous comment) - further open discussion is needed to discuss co-located vapor/groundwater wells and correlation with chlorinated VOCs

17 August 2016 H&A Response: Per Response for MDNR C3, Haley & Aldrich will consider well construction that allows for collection of both soil vapor and groundwater from a single well completion.

MDNR expressed concern regarding the vinyl chloride detected in soil vapor in the historic fill area. MDNR stated that while we may or may not find a direct connection between the soil vapor concentrations and the fill, that doesn't mean that it might not be there as a source (i.e., GM may have placed fill that has residual concentrations in it). Other potential scenarios are: 1) the soil vapor concentrations are from a not-yet-identified source that may be traveling to the historic fill area via a preferential pathway (e.g., utility corridors) or 2) soil vapors are the result of volatilization of constituents in deep groundwater traveling up through the soil pores.

MDNR also expressed disagreement with the conceptual site model figure (see Supplemental Site Investigation Report, dated 1/31/2014), indicating that it does not match with cross-sections from a prior/historic report. As part of the proposed scope of work, Haley & Aldrich will re-review prior data along with newly collected data to determine how the conceptual site model should be updated.

Question posed by MDNR: If we left residual concentrations in deep groundwater (i.e., detects of vinyl chloride and cis-1,2-DCE), would there be a way to biodegrade the concentrations (i.e., adding amendment to the subsurface). One concern is that without knowing the source of the concentrations, we would not have a good basis for where to add amendment. While amendment could be added in the locations where the deep groundwater concentrations have been detected, the source may continue to feed contaminants into the area even after amendment was added and spent. This would need to be further evaluated.

23 May 2017 MDNR Comment: Response to this comment indicated the possibility of other scenarios that may help to explain the source of vinyl chloride in fill area soil vapor and in deep groundwater. Although different scenarios could be considered, the presence of VC in the deep groundwater horizon implies that the deep horizon is the chief location where the remnants of the dichlorination process remain. Since there is trace amounts of TCE and DCE detected within the fill area and in the deep groundwater, we believe variable degradation (biotic or abiotic) in the presence of high carbon content zones in the fill material is equally responsible for the presence of VC in the deep groundwater.

Additional investigation being proposed that might find TCE, DCE or VC contamination in soil and groundwater within or below the fill or any of the horizons where groundwater is monitored. However, considering the age of the site fill (i.e., 1950s) and that TCE and DCE have not been found in significant concentrations, we would doubt a source is missed entirely. We also add that there is historical evidence of a confined water zone within the northern section of the fill area, so that we wouldn't find it surprising if the original release of TCE had traveled some distance beyond the extent of the fill areas in the direction upgradient towards

the plant. Back diffusion transport and/or hydraulically motivated flow due to river stages are another possibility. We believe that this is an equally likely explanation than a "snapped off ' plume.

Regarding the conceptual site model (CSM), the cross-section drawing depicts the static groundwater level extends below the depth of fill material, unless the site model does not take into account a fluctuating or seasonally higher water table levels. If this were true, it may explain the appearance of water encountered in various test pits investigated previously or the occurrence may be a result of surface water infiltration.

Further discussion is needed to explain the accuracy of the CSM and the nature of water in the fill material areas versus formation water table.

Amendment to treat (chemically transform or biodegrade) VC and cis-1, 2-DCE in deep bedrock is a consideration compared to the "no further action" alternative and the long-term consequences of off-site migration potential. Although there is some uncertainty without knowing the source of the VC concentrations detected, the appearance of the high concentrations of VC at the location of well MW-3B and lesser concentrations surrounding this location does not disqualify this location (as well as other locations) amenable to some form of amendment.

DHSS Response 05092017: The lack of site contamination other than VC and cis-1,2-DCE in the deeper groundwater is perplexing. Soil gas location SV-9 begins to identify VC in fill material, and may or may not have relevance for deeper groundwater. Where may well drill logs be found for the site? DHSS would like to review historic data including well logs to potentially gain some perspective on the soil morphology and lithology in the area of SV- 9.

28 June 2017 H&A Response: Further discussion is needed with respect to the back-diffusion theory.

As stated above in the 17 August 2016 response, the CSM will be reviewed and amended as necessary to depict groundwater levels. However, further revision of the CSM is dependent on conducting the proposed additional site assessment activities.

Copies of the soil boring logs and monitoring well construction diagrams are included in this response as an attachment.

MDNR C12. Concur with these locations

17 August 2016 H&A Response: The group is in agreement; no further discussion.

23 May 2017 MDNR Comment: Concur. MoDNR will review the locations for final approval.

DHSS Response 05092017: Concur.

28 June 2017 H&A Response: No further discussion.

MDNR C13. Further open discussion is needed for design of the shallow wells in conjunction with the vapor wells.

17 August 2016 H&A Response: Per Response for MDNR C3, Haley & Aldrich will consider well construction that allows for collection of both soil vapor and groundwater from a single well completion.

23 May 2017 MDNR Comment: Concur. Design of the shallow dual-purpose monitoring wells needs to be discussed further.

28 June 2017 H&A Response: Further clarity is warranted with respect to comment MDNR C4 and this comment. Comment MDNR C4 indicates that "No additional soil vapor sampling is anticipated" while this comment appears to indicate that additional soil vapor sampling is warranted.

MDNR C14. Further open discussion is needed re: VOCs, TICs and data reporting/validation

17 August 2016 H&A Response: Similar to analysis for soil vapor samples, shallow groundwater samples will be analyzed for VOCs with top 10 TICs (TO-15) and volatile petroleum hydrocarbons (VPHs; Massachusetts DEP method). Per Response for MDNR C9, future data packages will be requested as Level III and data validation will be conducted similar to what was done for the Supplemental Site Investigation Report, dated 1/31/2014.

23 May 2017 MDNR Comment: Concur, but further recommend looking for selected compounds of interest that may not be identified otherwise in the top-ten TIC analysis using EIC analysis. The same analysis should also be applied to the deep groundwater sampling data.

DHSS Response 05092017: Concur.

28 June 2017 H&A Response: The rational for the evaluation of TICs and/or EIC analysis is unclear. The known constituents of concern (COCs) appear to be sufficient to evaluate the site for potential current and/or future risks and develop a feasible and implementable remedial strategy. In addition, evaluation of TICs and EICs would increase the overall cost of the project (at least $50 per sample – laboratory costs, plus labor to evaluate the TICs and EIC analysis). Further discussion is warranted on this topic.

MDNR C15. Further open discussion is needed re: SVOCs and metals

17 August 2016 H&A Response: The group agreed that based on prior sample results, shallow groundwater does NOT need to be sampled for SVOCs or metals at this time.

23 May 2017 MDNR Comment: Concur. No further action.

DHSS Response 05092017: Concur.

28 June 2017 H&A Response: No further discussion.

MDNR C16. Concur, MaDEP VPH method for groundwater

17 August 2016 H&A Response: The group is in agreement; no further discussion.

23 May 2017 MDNR Comment: Concur.

DHSS Response 05092017: Concur.

28 June 2017 H&A Response: No further discussion.

MDNR C17. Further discussion needed – not sure if this is practical effort [MNA parameter analysis for 3 new shallow wells] with budget limitations?

17 August 2016 H&A Response: The group agreed that MNA data will be collected from shallow groundwater monitoring locations to be installed in the historic fill area since we don't really have data for this area yet. MNA analysis for 3 new shallow wells adds a total of ~$850, which will be slightly offset by removing the SVOC and metals analysis as discussed in MDNR C15.

23 May 2017 MDNR Comment: Generally concur, but technical justification needs to be defined further. A request to collect MNA data will be considered. Further discussion is needed.

28 June 2017 H&A Response: A potential remedy for the site is MNA. Previous assessment activities have indicated that the overall geochemical/environmental conditions in groundwater at the site are conducive to reductive dichlorination, a key component to MNA.

MDNR C18. Purpose? No additional groundwater sampling should be proposed except what is needed for this SOW

17 August 2016 H&A Response: The group discussed benefits of collecting a full round of samples from all new and existing groundwater monitoring wells:

1) Obtain multi-media data (shallow soil vapor, shallow groundwater, and deep groundwater) collected from the same time period to conduct a bigger picture evaluation for an apples-to-apples correlation.

2) Obtain additional data to assess trend of concentrations over time.

To be mindful of the project budget, the group agreed that a one-day sampling event would be conducted to collect samples from the existing monitoring wells (in addition to the already planned shallow groundwater sampling). Sampling will be prioritized such that as many wells will be sampled as can be in one-day, with priority given in the following order:

- MW-03B, MW-04B, MW-03A, MW-04A
- MW-06, MW-07
- MW-08, MW-09
- MW-01B, MW-02B, MW-01A, MW-02B, MW-05

Samples collected will be analyzed for VOCs with top 10 TICs (TO-15) and VPHs (Massachusetts DEP method) (NO SVOC, metals, or MNA analysis).

23 May 2017 MDNR Comment: Generally concur, except, propose an additional reassessment of prior sampling conducted for the deep groundwater locations upgradient and downgradient of the Drum Discovery Area for VOCs, but include TICs and MaDEP VPHs. Previous locations sampled were GP-6D, GP-7D, GP-10D, GP-11D, GP-12A, MW-13A. The need for soil and groundwater profiling should also be considered for discussion.

DHSS Response 05092017: Concur. DHSS is also interested in the EIC analysis. See comment C2 above.

28 June 2017 H&A Response: The rationale for the evaluation of TICs and/or EIC analysis is unclear. The known constituents of concern (COCs) appear to be sufficient to evaluate the site for potential current and/or future risks and develop a feasible and implementable remedial strategy. In addition, evaluation of TICs and EICs would increase the overall cost of the project (at least $50 per sample – laboratory costs, plus labor to evaluate the TICs and EIC analysis). Further discussion is warranted on this topic.

Further clarification is necessary with respect to what "…soil profiling…" entails.

MDNR C19. SOW should include assessment of VPHs in deep groundwater at MW-03B using MaDEP VPH method for groundwater

17 August 2016 H&A Response: Per Response for MDNR C18, groundwater samples will be collected at MW-03B and analyzed for VOCs with top 10 TICs (TO-15) and VPHs (Massachusetts DEP method).

23 May 2017 MDNR Comment: Concur, completion of one-day sampling event to minimize cost. Samples should be analyzed for TICs and EIC. EIC may find individually user-selected compounds of interest that may not have been identified otherwise in the TIC analysis (see MoDNR C2).

DHSS Response 05092017: Concur.

28 June 2017 H&A Response: Concur with the one-day of sampling to minimize costs.

However, the rationale for the evaluation of TICs and/or EIC analysis is unclear. The known constituents of concern (COCs) appear to be sufficient to evaluate the site for potential current and/or future risks and develop a feasible and implementable remedial strategy. In addition, evaluation of TICs and EICs would increase the overall cost of the project (at least $50 per sample – laboratory costs, plus labor to evaluate the TICs and EIC analysis). Further discussion is warranted on this topic.

MDNR C20. Vinyl Chloride in Deep Groundwater. Vinyl chloride contamination in the deep groundwater aquifer that has been detected and validated at the former GM Leeds Assembly Plant site at groundwater locations MW-3B, MW-4B, and GP-11D poses an unacceptable future fate and transport concern if ignored. Natural attenuation in the deep aquifer needs to be screened to evaluate whether groundwater conditions exist for chlorinated contaminant biological degradation, and if conditions are favorable, do the conditions demonstrate that the contaminants can be naturally degraded. Therefore, the preliminary SOW will include analysis/methods to evaluate the biological degradation potential of chlorinated contaminants. The following geochemical/biodegradation analytical parameters and/or screening criteria important to the evaluation include: dissolved oxygen*, nitrate*, manganese (II), iron (II), sulfate*, sulfide*, methane*, oxidation/reduction potential*, pH*, temperature*, carbon dioxide, alkalinity, chloride*, hydrogen, volatile fatty acids, TCE*, PCE*, cis-1, 2 DCE*, VC*, ethene, ethane, chloroethane*, 1,1,1-TCE* - activity associated with microbes can also be identified = Dehalococcoides (Duc) and vinyl chloride reductase (vcrA)?] (Asterisk denotes required analysis)

17 August 2016 H&A Response: As documented in Section 3.2.1 of the Supplemental Site Investigation Report (1/31/2014), natural attenuation data collected in November 2013 indicated that the overall environmental conditions in groundwater were conducive to reductive de-chlorination. All of the parameters identified by MDNR were collected during the November 2013 sampling with the exception of alkalinity, hydrogen, volatile fatty acids, Dhc, vcrA, which were not identified as required analysis. The group concurred that no further analysis for MNA parameters are necessary at this time (except for MNA analysis at the 3 new shallow groundwater wells as discussed in MDNR C17).

23 May 2017 MDNR Comment: Disagree. Further site-specific data is needed to evaluate whether natural attenuation processes are identified in a manner to be considered and evaluated for potential long-term response action.

DHSS Response 05092017: Concur with DNR.

28 June 2017 H&A Response: Review of the data clearly indicates favorable geochemical/environmental conditions in groundwater at the site that are conducive to reductive dichlorination. Further site-specific data will be gathered during sampling of the proposed monitoring wells.

MDNR C21. Further open discussion needed [RE: research on regional groundwater flow and where deep groundwater from the Site may ultimately discharge]

17 August 2016 H&A Response: MDNR wanted an idea of what data would be reviewed to evaluate the regional groundwater flow. As part of the upcoming investigation efforts, Haley & Aldrich will research publicly available data such as information from USGS and the Blue River Corridor to better understand regional flow and potential discharge points of deep groundwater beneath the site.

23 May 2017 MDNR Comment: Concur.

DHSS Response 05092017: Concur.

28 June 2017 H&A Response: No further discussion.

MDNR C22. MDNR has asked and received no response for any information regarding first-hand knowledge of or similar environmental conditions of the other GM-owned sites that could assist MDNR with cleanup of this site - related to similar environmental conditions include chlorinated solvents or degradation products in groundwater and soil vapor exposure risk, or other? We strongly suspect other GM sites have similar environmental cleanup problems or issues – this information could streamline decisions or actions for this GM site

17 August 2016 H&A Response: Bob indicated he does have other sites with similar contaminants but none that have similar site conditions or where the source has not been fully identified (as for deep groundwater at this site).

Bob/Haley & Aldrich will search RACERs database and the project files to look for past activities at the GM Plant that may have contributed to concentrations detected thus far in deep groundwater and in the historic fill area. Look into whether or not this GM Plan was in production during the war. Dates of fill activities were after the war. Update – A GMC Phase II report has been found and is being reviewed. The boxes of site information that were turned over to RACER from the bankruptcy are currently being inspected by Bob for further information.

23 May 2017 MDNR Comment: The response states that other sites with similar contaminants have been assessed but none of the sites have unidentified sources. Further discussion is required.

DHSS Response 05092017: Concur with DNR.

28 June 2017 H&A Response: Bob is in the process of scanning old reports related to the GM Plant and will provide electronic files to MDNR as soon as they are available.

MDNR C23. MDNR has completed this task [RE: EDER Phase II database search]

17 August 2016 H&A Response: Wane to forward a copy of this to RACER and Haley & Aldrich.

23 May 2017 MDNR Comment: MoDNR has prepared a map showing sites within a 1-mile radius of the Leeds-Northern Parcel site. MoDNR understood that the 1-mile radius map would identify those sites currently on the list of state and federal authority but was not assuming an EDR Phase II type database search was required.

DHSS Response 05092017: No comment.

28 June 2017 H&A Response: We are in receipt of the 1-mile radius map.

MDNR C24. Why is this effort relevant and what will this search determine?

17 August 2017 H&A Response: Similar to running a report that identifies State-regulated sites within 1 mile of the Leeds Northern Parcel property, this type of report would provide us with knowledge of any Federally-regulated sites within 1 mile of the property. Considerations may be given to any sites (State or Federal) to their potential impact to the property. The group discussed looking at the Hazardous Waste Service Sites Map online (this may only provide the same State-lead sites as what Wane is providing). If needed, Haley & Aldrich may look into running an EDR report for this information unless a Phase I report is found in the project files that indicates whether any Federal sites are within 1 mile of the property.

23 May 2017 MDNR Comment: Follow-up discussion is needed for what is actually required from MoDNR.

DHSS Response 05092017: No comment.

28 June 2017 H&A Response: We are in receipt of the 1-mile radius map.

MDNR C25. MDNR is concerned why all sampling results from GP-6D, GP-7D and GP-12A along the northern boundary of the site are J-valued data results? Please explain why it was necessary to dilute or otherwise report the values at higher reporting/detection limits for each sample? Please provide the justification along with the independent validations (and report of the validations) performed by H&A and the laboratory. MDNR would like to have some clarity as to what may have been missed in the actual analysis because of the way the results are reported. If necessary, MDNR may ask for more documentation.

17 August 2016 H&A Response: The majority of sample results from GP-6D, GP-7D, and GP-12A were not J-flagged by the laboratory, but rather during data validation completed by Haley & Aldrich. Example, the lab J-flagged the vinyl chloride at GP-6D as "0.528 ug/L - J" (results <RL but ≥MDL and the concentration is an approximate value). Whereas the vinyl chloride values for GP-7D and GP-12A were J-flagged during data validation. As noted in the lab report case narrative, these 3 samples were received with headspace in the vials. The laboratory did not flag the data for this purpose; however, the Haley & Aldrich data validator did add the qualifier to those samples with the following note "Samples received with headspace; positive results are qualified "J", estimated and non-detected analytes as "UJ", estimated reporting limit.

All laboratory reports provided as Appendix C (on disk) of the Supplemental Site Investigation Report (1/31/2014). All validation data usability summary reports (DUSRs) provided as Appendix D.

23 May 2017 MDNR Comment: No further discussion necessary.

DHSS Response 05092017: No comment.

28 June 2017 H&A Response: No further discussion.

Additional Comment from Dennis: Is soil vapor causing issues on neighboring properties? Is there potential that utility corridors may be creating a soil vapor issue at the Rail Loading Building? What restrictions may be necessary on this property or neighboring properties?

17 August 2017 H&A Response: These are topics that will need to be discussed further with the collection of additional data and research into potential utility corridors at the site.

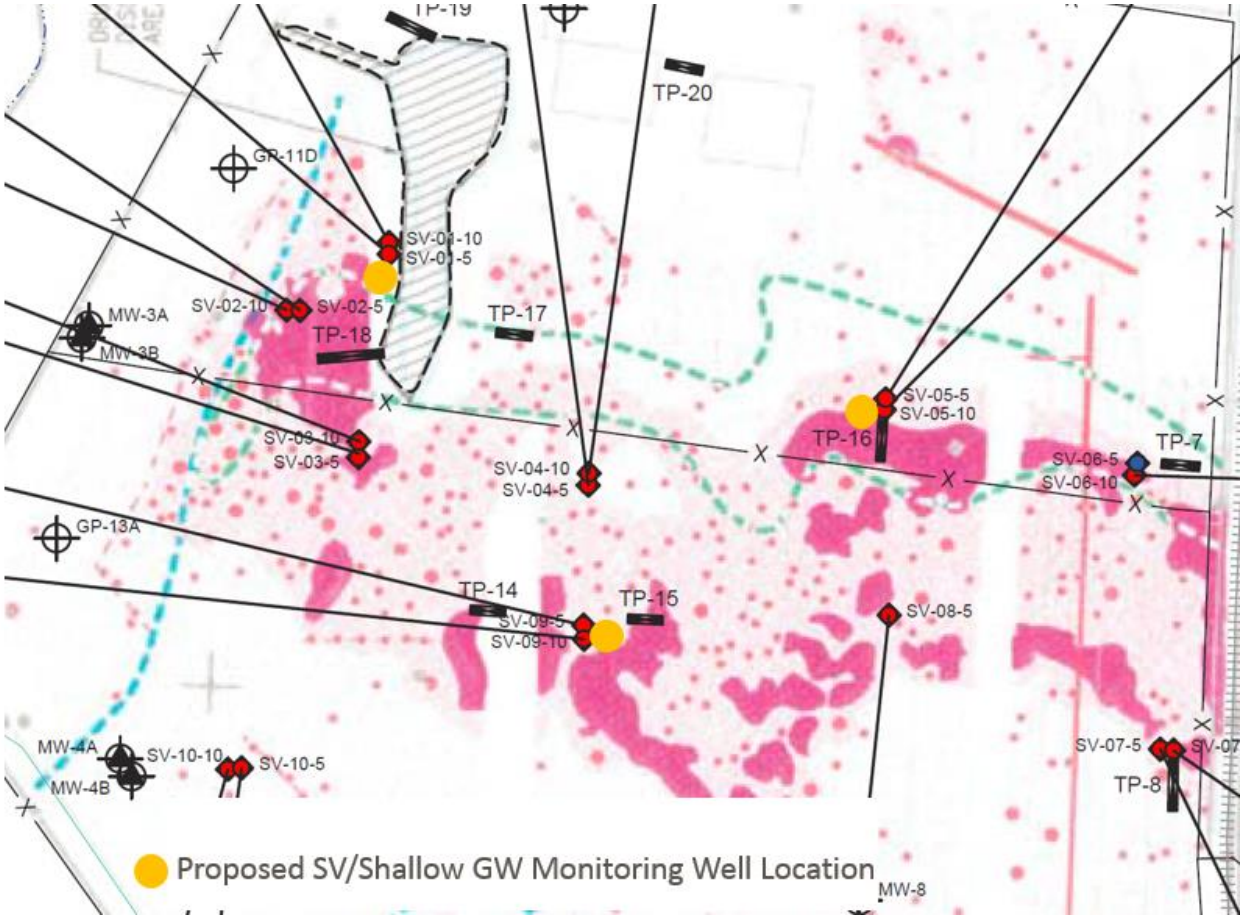
23 May 2017 Comment: Recommend the collection of additional data as necessary to determine the extent of soil vapor impacts and whether it is a concern to neighbors, on-site workers.

28 June 2017 H&A Response: Additional collection of soil, groundwater, and soil vapor samples are proposed in the fill area.

Figure showing the proposed soil vapor and shallow groundwater monitoring well locations

** Soil vapor wells to be installed at locations consistent with visual, olfactory, & analytical data from prior activities

** Shallow groundwater wells to be co-located with the soil vapor wells to further characterize impacts within/below areas of historic fill



ATTACHMENT A

BORING LOGS AND MONITORING WELL CONSTRUCTION DIAGRAMS

HALEY & ALDRICH

TEST BORING REPORT

Boring No. MW-01A

Project Former Leeds Assembly Plant-Northern Parcel, South of 6817 Stadium Drive, Kansas City, MO
Client RACER Trust
Contractor Terracon

File No. 37294-015
Sheet No. 1 of 1
Start 2/15/2012
Finish 2/15/2012
Driller John, Kevin
H&A Rep. J. Knightly

Ground Elev.: 764.11
Vert. Datum: 1050504.652
Horiz. Datum: 2787928.489

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type				Rig Make & Model: Truck-Mounted
Inside Diameter (in.)				Bit Type:
Hammer Weight (lb)			-	Drill Mud:
Hammer Fall (in.)			-	Casing:
				Hoist/Hammer:
				PID Make & Model: MiniRAE 2000

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Well Diagram	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	PID Readings (ppm) (sample/bkgd)
0			0.5 2.5		763.1 1.0 762.6 1.5 761.6 2.5		ASPHALT GRAVEL Loose, slag material, glassy, no noticeable odor, dry	0.0
			2.5 5.0			ML	Soft to slightly stiff, brown, SILT with clay, non to slightly plastic, some iron mottings and iron nodules, no noticeable odor, wet	0.0
5			5.0 7.5			ML	Same, increase in stiffness/plasticity, much iron mottling, roots	0.0
			7.5 10.0					0.0
10			10.0 12.0			ML	Same from 10 to 12 ft	0.0
							Concrete from ~12 ft, brick fragments Hydraulic hose, with silty CLAY material	0.0
15			15.0 17.5		749.6 14.5	ML	Soft to locally slightly stiff, tan/brown, SILT with clay, non to locally slightly plastic, iron mottling, roots, no noticeable odor, wet	0.0
			17.5 20.0					0.0
20					744.1 20.0		Bottom of Exploration 20.0 ft	
							Note: 10 gallons water used to hydrate bentonite chips.	

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water

Sample ID
- O - Open End Rod
- T - Thin Wall Tube
- U - Undisturbed Sample
- S - Split Spoon Sample

Well Diagram
- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary
- Overburden (ft) 20
- Rock Cored (ft) 0
- Samples
- **Boring No.** MW-01A

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None
Toughness: L - Low M - Medium H - High
Plasticity: N - Nonplastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High V - Very High

***Note: Maximum particle size is determined by direct observation within the limitations of sampler size.**

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-TEST BORING-07-1-SDG 37294_LIBRARY.GLB HA-TB+CORE+WELL-07-1.GDT G:\GINT07\KANSAS\37294\37294_MW01A-MW09.GPJ Jun 14, 12

HALEY & ALDRICH

TEST BORING REPORT

Boring No. MW-01B

Project Former Leeds Assembly Plant-Northern Parcel, South of 6817 Stadium Drive, Kansas City, MO
Client RACER Trust
Contractor Terracon

File No. 37294-015
Sheet No. 1 of 3
Start 2/16/2012
Finish 2/16/2012
Driller John, Kevin
H&A Rep. J. Knightly

Ground Elev.: 763.8
Vert. Datum: 1050516.156
Horiz. Datum: 2787922.776

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type				Rig Make & Model: Truck-Mounted
Inside Diameter (in.)				Bit Type:
Hammer Weight (lb)			-	Drill Mud:
Hammer Fall (in.)			-	Casing:
				Hoist/Hammer:
				PID Make & Model: MiniRAE 2000

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Well Diagram	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	PID Readings (ppm) (sample/bkgd)
0					763.1		ASPHALT	
					0.8		GRAVEL FILL	
					762.3		Loose, brown, SLAG, non plastic, no noticeable odor, dry	
					1.5			
			2.0		761.8	ML	Small layer of loose, tan/buff FILL, silty, no noticeable odor, dry	0.0
			2.5		2.0			
			2.5		761.3	ML	Soft to slightly stiff, brown, SILT with clay, non to slightly plastic, no noticeable odor, moist	0.0
			5.0		2.5			
5			5.0					0.0
			7.5					
			7.5				Same, bulky texture, minor iron mottling	0.0
			10.0					
10			10.0				Same	0.0
			12.5					
			12.5					0.0
			15.0					
					749.8			
					14.0		Slightly stiff, darker brown, slightly plastic, concrete pieces in spoon, no noticeable odor, wet	
15					748.8			
			15.0		15.0		Concrete/brick FILL	0.0
			17.5		747.8			
					16.0		Soft, tan, SILT with minor clay, non plastic, no noticeable odor, some roots, iron mottling, wet to free water	
			17.5				Some very small sand grains (< 1 mm)	
			20.0					
20			20.0				Same	0.0
			22.5					
			22.5					0.0
			25.0		740.8			
					23.0	CL	Soft, gray, CLAY with some silt, non to slightly plastic, no noticeable odor, wet	
25								

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water

Sample ID
O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample

Well Diagram
Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary
Overburden (ft) 60
Rock Cored (ft) 0
Samples

Boring No. MW-01B

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None
Toughness: L - Low M - Medium H - High
Plasticity: N - Nonplastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High V - Very High

***Note: Maximum particle size is determined by direct observation within the limitations of sampler size.**

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-TEST BORING-07-1-SDG 37294_LIBRARY.GLB HA-TB+CORE+WELL-07-1.GDT G:\GINT07\KANSAS\37294\37294_MW01A-MW09.GPJ Jun 14, 12

HALEY& ALDRICH

TEST BORING REPORT

Boring No. MW-01B
File No. 37294-015
Sheet No. 2 of 3

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Well Diagram	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	PID Readings (ppm) (sample/bkgd)
25			25.0 27.5					0.3
			27.5 30.0				Same	
30			30.0 32.5				Same, some wood (branches) fragments	0.0
			32.5 35.0					0.0
35			35.0 37.5				Same	0.0
			37.5 40.0					0.0
40							No sample in sample, slideout of continuous sampler and split spoon	
			43.5 45.5					0.0
45								
			48.5 50.5				Same - splitspoon	0.0
50					710.3 53.5			
			53.5 55.5				Weathered limestone BEDROCK, free water, no noticeable odor, splitspoon blow counts 10,6,14,12	0.0
55								
			58.5 60.5					0.0
60					704.3 59.5 703.8 60.0		Gray/brown, competent SHALE, laminated fissole, blow counts 5,13,33,52 Bottom of Exploration 60.0 ft	

Note: Concrete and brick fill encountered at ~15 ft in boring. Decided to move boring to

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. MW-01B

HALEY & ALDRICH

TEST BORING REPORT

Boring No. MW-01B
File No. 37294-015
Sheet No. 3 of 3

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Well Diagram	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	PID Readings (ppm) (sample/bkgd)
							7'E, 2'S of original location, drilled down to 15 ft with center bit. Filled original boring with chip bentonite, hydrated with 25 gallons water. Sampler sliding out of continuous sampler beginning at ~40 ft. Decided to use splitspoon with catcher beginning at ~45 ft. Water added during well construction - 5 gallons.	

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. MW-01B

HALEY & ALDRICH

TEST BORING REPORT

Boring No. MW-02A

Project Former Leeds Assembly Plant-Northern Parcel, South of 6817 Stadium Drive, Kansas City, MO
Client RACER Trust
Contractor Terracon

File No. 37294-015
Sheet No. 1 of 1
Start 2/17/2012
Finish 2/17/2012
Driller John, Kevin
H&A Rep. J. Knightly
Ground Elev.: 762.4
Vert. Datum: 1050103.331
Horiz. Datum: 2787459.959

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type				Rig Make & Model: Truck-Mounted
Inside Diameter (in.)				Bit Type:
Hammer Weight (lb)			-	Drill Mud:
Hammer Fall (in.)			-	Casing:
				Hoist/Hammer:
				PID Make & Model: MiniRAE 2000

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Well Diagram	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	PID Readings (ppm) (sample/bkgd)
0					761.7		ASPHALT/CONCRETE and GRAVEL	
					0.8			
			1.0 2.5			ML	Medium stiff, brown, SILT with clay, medium plastic, slight iron mottling, no noticeable odor, moist	0.0
			2.5 5.0				Variably more silty (zones)	0.0
5			5.0 7.5				Occasional pebbles, maximum diameter noted 4 mm, angular grains, very few in number	0.0
			7.5 10.0			ML	Soft to medium stiff, SILT with minor clay, non to slightly plastic, no noticeable odor, moist to wet	0.0
							Limestone gravel pieces, largest 2 cm diameter, angular grains, no noticeable odor	
10			10.0 12.5		752.4 10.0	CL	Hard, stiff, brown, clay-rich FILL with limestone pieces (1 cm maximum diameter noted), no noticeable odor, moist	0.0
					750.4 12.0	ML	Soft to slightly stiff, brown, SILT with minor clay, non to slightly plastic, no noticeable odor, moist to wet	0.0
			12.5 15.0					
15			15.0 17.5			ML	Same, free water present in sample from ~15 to 17 ft where material is very soft, non plastic	0.0
			17.5 20.0				Slightly increasingly clay content soft to medium stiff, non to slightly plastic, some minor iron mottling, no noticeable odor	0.0
20					742.4 20.0		Bottom of Exploration 20.0 ft	
							Note: 10 gallons water used to hydrate bentonite chips.	

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water

Sample ID
- O - Open End Rod
- T - Thin Wall Tube
- U - Undisturbed Sample
- S - Split Spoon Sample

Well Diagram
- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary
- Overburden (ft) 20
- Rock Cored (ft) 0
- Samples

Boring No. MW-02A

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None
Toughness: L - Low M - Medium H - High
Plasticity: N - Nonplastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High V - Very High

***Note: Maximum particle size is determined by direct observation within the limitations of sampler size.**

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-TEST BORING-07-1-SDG 37294_LIBRARY.GLB HA-TB+CORE+WELL-07-1.GDT G:\GINT07\KANSAS\37294\37294_MW01A-MW09.GPJ Jun 14, 12

HALEY & ALDRICH

TEST BORING REPORT

Boring No. MW-02B

Project Former Leeds Assembly Plant-Northern Parcel, South of 6817 Stadium Drive, Kansas City, MO
Client RACER Trust
Contractor Terracon

File No. 37294-015
Sheet No. 1 of 2
Start 2/21/2012
Finish 2/21/2012
Driller John, Kevin
H&A Rep. J. Knightly

Ground Elev.: 762.31
Vert. Datum: 1050096.805
Horiz. Datum: 2787460.006

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type				Rig Make & Model: Truck-Mounted
Inside Diameter (in.)				Bit Type:
Hammer Weight (lb)			-	Drill Mud:
Hammer Fall (in.)			-	Casing:
				Hoist/Hammer:
				PID Make & Model: MiniRAE 2000

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Well Diagram	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	PID Readings (ppm) (sample/bkgd)
0							CONCRETE, GRAVEL FILL	0.0
			1.0 2.5					
			2.5 5.0		759.3 3.0			
5			5.0 7.5			ML	Soft to slightly stiff, brown, SILT with clay, non to slightly plastic, some roots, no noticeable odor, moist	0.0
			7.5 10.0					0.0
					753.3 9.0	CL	Stiff, brown, silty CLAY/CLAY, plastic, pebbly (maximum grain size 3 mm noted, angular grains), no noticeable odor, moist	0.0
10			10.0 12.5					
					749.8 12.5	ML	Medium stiff, brown, SILT with clay, moderately plastic, no noticeable odor, moist	0.0
15			12.5 15.0					
			15.0 17.5				Same, water saturated	0.0
			17.5 20.0				Slight increase in clay content from ~18 to 19 ft	0.0
20			20.0 22.5				Same	0.0
			22.5 25.0					0.0
					738.8 23.5	CL	Stiff, brown, silty CLAY, plastic, pebbles 3 mm maximum diameter noted, angular grains, no noticeable odor, wet	0.0
25								

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water

Sample ID
O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample

Well Diagram
Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary
Overburden (ft) 58.5
Rock Cored (ft) 0
Samples

Boring No. MW-02B

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None **Toughness**: L - Low M - Medium H - High **Plasticity**: N - Nonplastic L - Low M - Medium H - High **Dry Strength**: N - None L - Low M - Medium H - High V - Very High

***Note: Maximum particle size is determined by direct observation within the limitations of sampler size.**

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-TEST BORING-07-1-SDG 37294_LIBRARY.GLB HA-TB+CORE+WELL-07-1.GDT G:\GINT07\KANSAS\37294\37294_MW01A-MW09.GPJ Jun 14, 12

HALEY & ALDRICH

TEST BORING REPORT

Boring No. MW-02B
File No. 37294-015
Sheet No. 2 of 2

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Well Diagram	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	PID Readings (ppm) (sample/bkgd)
25			25.0 27.5				No recovery	
			27.5 30.0		734.8 27.5	ML	Soft to slightly stiff, brown, SILT with clay, non to slightly plastic, some small pebbles (1 mm maximum diamter noted), no noticeable odor, water saturated	0.0
30			30.0 32.5					0.0
			32.5 35.0		730.3 32.0	CL	Stiff, brown, CLAY with minor silt, plastic, no noticeable odor, water saturated	0.0
35			35.0 37.5		727.3 35.0	CL	Becomes softer, less plastic, iron mottling at base	0.0
			37.5 40.0		724.3 38.0	ML	Slightly stiff, dark gray, SILT with clay, slightly plastic, no noticeable odor, water saturated	
40			40.0 42.5					0.0
			42.5 45.0		720.3 42.0	ML	Stiff, olive-green, SILT, plastic, no noticeable odor, water saturated	0.0 0.0
45			45.0 47.5				Same	0.0
			47.5 50.0					
50			50.0 52.5		712.3 50.0	SM	Soft, silty fine SAND, well sorted, non plastic, no noticeable odor, water saturated	0.0
					711.8 50.5	GW	Poorly sorted GRAVEL (2 cm maximum diameter noted, angular grains), some fines, water saturated	
55					704.8 57.5		Gray, competent SHALE	
					703.8 58.5		Bottom of Exploration 58.5 ft	

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. MW-02B

HALEY & ALDRICH

TEST BORING REPORT

Boring No. MW-03A

Project Former Leeds Assembly Plant-Northern Parcel, South of 6817 Stadium Drive, Kansas City, MO
Client RACER Trust
Contractor Terracon

File No. 37294-015
Sheet No. 1 of 1
Start 2/16/2012
Finish 2/16/2012
Driller John, Kevin
H&A Rep. J. Knightly
Ground Elev.: 761.48
Vert. Datum: 1050398.49
Horiz. Datum: 2786745.936

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type				Rig Make & Model: Truck-Mounted
Inside Diameter (in.)				Bit Type:
Hammer Weight (lb)			-	Drill Mud:
Hammer Fall (in.)			-	Casing:
				Hoist/Hammer:
				PID Make & Model: MiniRAE 2000

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Well Diagram	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	PID Readings (ppm) (sample/bkgd)
0					761.0		ASPHALT	
			0.5 2.5		0.5	CL	Small amount of gravel, then stiff, brown, silty CLAY FILL, plastic, wood fragments, small brick pieces, no noticeable odor, moist	2.9
			2.5 5.0			CL	Same	0.0
5					756.5			
			5.0 7.5		5.0	ML	Soft to slightly stiff, brown, SILT with minor clay, non to slightly plastic, some iron mottling with depth, no noticeable odor, moist to wet	0.0
			7.5 10.0					0.0
10			10.0 12.5			ML	Same	0.0
			12.5 15.0				Increase in moisture to wet, less iron mottling	0.0
15			15.0 17.5			ML	Same	0.0
			17.5 20.0		744.0 17.5	CL	Increase in clay to silty CLAY at ~18 ft, stiff, plastic, some iron mottling, no noticeable odor, wet	0.0
20					741.5 20.0		Bottom of Exploration 20.0 ft	
							Note: 10 gallons water used to hydrate bentonite chips.	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water

Sample ID
O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample

Well Diagram
Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary
Overburden (ft) 20
Rock Cored (ft) 0
Samples

Boring No. MW-03A

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None
Toughness: L - Low M - Medium H - High
Plasticity: N - Nonplastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High V - Very High

***Note: Maximum particle size is determined by direct observation within the limitations of sampler size.**

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-TEST BORING-07-1-SDG 37294_LIBRARY.GLB HA-TB+CORE+WELL-07-1.GDT G:\GINT07\KANSAS\37294\37294_MW01A-MW09.GPJ Jun 14, 12

HALEY & ALDRICH

TEST BORING REPORT

Boring No. MW-03B

Project Former Leeds Assembly Plant-Northern Parcel, South of 6817 Stadium Drive, Kansas City, MO
Client RACER Trust
Contractor Terracon

File No. 37294-015
Sheet No. 1 of 2
Start 2/20/2012
Finish 2/20/2012
Driller John, Kevin
H&A Rep. J. Knightly

Ground Elev.: 761.43
Vert. Datum: 1050392.912
Horiz. Datum: 2786742.702

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type				Rig Make & Model: Truck-Mounted
Inside Diameter (in.)				Bit Type:
Hammer Weight (lb)			-	Drill Mud:
Hammer Fall (in.)			-	Casing:
				Hoist/Hammer:
				PID Make & Model: MiniRAE 2000

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Well Diagram	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	PID Readings (ppm) (sample/bkgd)
0					760.4		CONCRETE	
			1.0 2.5		1.0	SC	Stiff, dark gray/black grading to more brown color, silty CLAY FILL, gravelly, plastic, no noticeable odor, moist to wet	0.0
			2.5 5.0					0.0
5					756.4			
			5.0 7.5		5.0	ML	Soft to slightly stiff, brown, SILT with clay, non to slightly plastic, some iron mottling, no noticeable odor, moist to wet	0.0
			7.5 10.0					0.0
10			10.0 12.5				Same	0.0
			12.5 15.0					0.0
15			15.0 17.5				Overall increase in moisture to wet at 15 ft At ~16 ft, increase in iron mottling, some roots	0.0
			17.5 20.0					0.0
20			20.0 22.5		741.4 20.0			0.0
			22.5 25.0					0.0
25					736.0	CL	Increase in clay to silty CLAY at ~24 ft (gradual), stiff, plastic, minor iron mottling, no noticeable odor, wet	

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water

Sample ID
O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample

Well Diagram
Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary
Overburden (ft) 56.5
Rock Cored (ft) 0
Samples

Boring No. MW-03B

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None **Toughness**: L - Low M - Medium H - High
Plasticity: N - Nonplastic L - Low M - Medium H - High **Dry Strength**: N - None L - Low M - Medium H - High V - Very High

***Note: Maximum particle size is determined by direct observation within the limitations of sampler size.**

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-TEST BORING-07-1-SDG 37294_LIBRARY.GLB HA-TB+CORE+WELL-07-1.GDT G:\GINT07\KANSAS\37294\37294_MW01A-MW09.GPJ Jun 14, 12

HALEY & ALDRICH

TEST BORING REPORT

Boring No. MW-03B
File No. 37294-015
Sheet No. 2 of 2

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Well Diagram	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	PID Readings (ppm) (sample/bkgd)
25			25.0 27.5			ML	Soft to slightly stiff, brown, SILT with clay, non to slightly plastic, some roots and iron mottling noted, no noticeable odor, water saturated	0.0
			27.5 30.0					0.0
30			30.0 32.5				Increase in clay content, some small sand grains (<10%), <1 mm maximum diameter noted	0.0
			32.5 35.0		728.9 32.5	CL	Medium stiff, dark gray, silty CLAY, moderately plastic, iron mottling, blocky texture, no noticeable odor, water saturated	0.0
35			35.0 37.5		726.4 35.0	ML	Increase in silt content to SILT with clay, soft, non to slightly plastic, no noticeable odor, water saturated	0.0
			37.5 40.0					0.0
40			40.0 42.5				Same, some small sand grains (<5%), 1 mm maximum diameter noted	0.0
			42.5 45.0					0.0
45			45.0 47.5				Becomes soft to loose to slightly stiff, olive-green, SILT, non to slightly plastic, no noticeable odor, water saturated	0.0
			47.5 50.0				Pronounced iron mottling at ~50 ft	1.2
50			50.0 52.5		711.4 50.0	SM	Soft, silty fine SAND, well sorted, no noticeable odor, water saturated	4.9
					710.4 51.0	CL	Stiff, olive-green, CLAY, plastic, no noticeable odor, wet	
					709.4 52.0	GW	Poorly sorted GRAVEL, some fines, angular grains, limestone pieces, water saturated	
			52.5 55.0		708.4 53.0		Olive-green, clay-rich GRAVEL, large gravel pieces, plastic, no noticeable odor	1.9
55					706.4 55.0		Gray, compentent SHALE	
					704.9 56.5		Bottom of Exploration 56.5 ft	

Note: 15 gallons water added to hydrate bentonite.

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. MW-03B

HALEY & ALDRICH

TEST BORING REPORT

Boring No. MW-04A

Project Former Leeds Assembly Plant-Northern Parcel, South of 6817 Stadium Drive, Kansas City, MO
Client RACER Trust
Contractor Terracon

File No. 37294-015
Sheet No. 1 of 1
Start 2/17/2012
Finish 2/17/2012
Driller John, Kevin
H&A Rep. J. Knightly

Ground Elev.: 761.7
Vert. Datum: 1050202.564
Horiz. Datum: 2786760.058

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type				Rig Make & Model: Truck-Mounted
Inside Diameter (in.)				Bit Type:
Hammer Weight (lb)			-	Drill Mud:
Hammer Fall (in.)			-	Casing:
				Hoist/Hammer:
				PID Make & Model: MiniRAE 2000

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Well Diagram	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	PID Readings (ppm) (sample/bkgd)
0							CONCRETE and GRAVEL	
			1.0 2.5		760.2 1.5	CL	Stiff, brown, silty CLAY FILL with gravel, plastic, gravelly with maximum diameter noted ~2 cm, no noticeable odor, moist	0.0
			2.5 5.0				Same	0.0
5			5.0 7.5			CL	Same	0.0
					754.7 7.0		0.5 in. gravel layer, loose, no noticeable odor	
			7.5 10.0		754.2 7.5	ML	Soft to slightly stiff, tan/brown, SILT with clay, non to slightly plastic, no noticeable odor, moist to wet	0.0
10			10.0 12.5				Same	0.0
			12.5 15.0				Considerable iron staining between ~13.5 and 14.5 ft, slight increase in moisture and clay content	0.0
15			15.0 17.5				Same, wet	0.0
			17.5 20.0		743.2 18.5	SC	Grades to medium stiff, brown, silty CLAY, moderately plastic, much iron mottling, no noticeable odor, wet	0.0
20					741.7 20.0		Bottom of Exploration 20.0 ft	
							Note: 10 gallons water used to hydrate bentonite chips.	

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water

Sample ID
O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample

Well Diagram
Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary
Overburden (ft) 20
Rock Cored (ft) 0
Samples

Boring No. MW-04A

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None **Toughness**: L - Low M - Medium H - High **Plasticity**: N - Nonplastic L - Low M - Medium H - High **Dry Strength**: N - None L - Low M - Medium H - High V - Very High

***Note: Maximum particle size is determined by direct observation within the limitations of sampler size.**

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-TEST BORING-07-1-SDG 37294_LIBRARY.GLB HA-TB+CORE+WELL-07-1.GDT G:\GINT07\KANSAS\37294\37294_MW01A-MW09.GPJ Jun 14, 12

HALEY & ALDRICH

TEST BORING REPORT

Boring No. MW-04B

Project Former Leeds Assembly Plant-Northern Parcel, South of 6817 Stadium Drive, Kansas City, MO
Client RACER Trust
Contractor Terracon

File No. 37294-015
Sheet No. 1 of 2
Start 2/17/2012
Finish 2/17/2012
Driller John, Kevin
H&A Rep. J. Knightly
Ground Elev.: 761.74
Vert. Datum: 1050194.502
Horiz. Datum: 2786765.354

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type				Rig Make & Model: Truck-Mounted
Inside Diameter (in.)				Bit Type:
Hammer Weight (lb)			-	Drill Mud:
Hammer Fall (in.)			-	Casing:
				Hoist/Hammer:
				PID Make & Model: MiniRAE 2000

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Well Diagram	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	PID Readings (ppm) (sample/bkgd)
0					761.2		CONCRETE	
			1.0		0.5	CL	Stiff, brown, silty CLAY FILL with some gravel, plastic, maximum gravel diameter noted is ~1 cm, no noticeable odor, moist	0.0
			2.5					
			2.5				Same	0.0
			5.0					
5			5.0					0.0
			7.5		755.7			
					6.0	ML	Soft to slightly stiff, tan/brown, SILT with minor clay, slighly plastic, minor iron mottling, no noticeable odor, moist to wet	
			7.5					0.0
			10.0					
10			10.0				Same, continued SILT with minor clay, iron mottling, moist to wet	0.0
			12.5					
			12.5					0.0
			15.0					
15			15.0			ML	Same, blocky texture, moist to wet	0.0
			17.5					
			17.5					0.0
			20.0					
20			20.0					0.0
			22.5					
					739.2			
			22.5		22.5		Sllightly stiff, SILT with clay, slightly plastic, some iron nodules, no noticeable odor, visible water	0.0
			25.0					
25								

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water

Sample ID
O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample

Well Diagram
Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary
Overburden (ft) 51
Rock Cored (ft) 0
Samples

Boring No. MW-04B

Field Tests:
Dilatancy: R - Rapid S - Slow N - None
Toughness: L - Low M - Medium H - High
Plasticity: N - Nonplastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High V - Very High

***Note: Maximum particle size is determined by direct observation within the limitations of sampler size.**

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

HALEY & ALDRICH

TEST BORING REPORT

Boring No. MW-04B
File No. 37294-015
Sheet No. 2 of 2

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Well Diagram	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	PID Readings (ppm) (sample/bkgd)
25			25.0 27.5					
			27.5 30.0		734.2 27.5	CL	Stiff to very stiff, brown, CLAY, plastic to very plastic, considerable iron mottling and nodules, maximum diameter noted ~1 cm, no noticeable odor, moist to wet	0.0
30			30.0 32.5		731.7 30.0	CL	Very stiff, black/dark gray, CLAY, very plastic, no noticeable odor, moist	0.0
					730.2 31.5	ML	Small layer of silty material, highly weathered, much iron mottling	
			32.5 35.0		729.7 32.0	CL	Continued dark gray CLAY as above	0.0
35			35.0 37.5		724.7 37.0	CL	Stiff, dark gray, silty CLAY, plastic, noticeable silt content, no noticeable odor, wet	0.0
			37.5 40.0					
40			40.0 42.5				Same, slight increase in silt content, free water noticeable	0.0
			42.5 45.0				Becomes olive-green in color	0.0
45			45.0 47.5				Same	0.0
			47.5 50.0					0.0
					713.2 48.5	ML	Soft, loose to slightly stiff, olive-green, SILT, non to slightly plastic, pronounced iron mottling, no noticeable odor, wet to water saturated	
50			50.0 52.5		711.7 50.0	SM	Loose, silty SAND, fine grained, well sorted, non plastic, water saturated	0.0
					710.7 51.0	GW	Loose, reddish color, well graded GRAVEL, some fines, non plastic, angular grains, no noticeable odor, water saturated	
			52.5 55.0		709.2 52.5	GC	Stiff, olive-green, clay-rich GRAVEL, large limestone gravel pieces, plastic, no noticeable odor,	0.0
55					705.2 56.5		Gray, competent SHALE	
					704.7 57.0		Bottom of Exploration 57.0 ft	

NOTE: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

Boring No. MW-04B

HALEY & ALDRICH

TEST BORING REPORT

Boring No. MW-05

Project Former Leeds Assembly Plant-Northern Parcel, South of 6817 Stadium Drive, Kansas City, MO
Client RACER Trust
Contractor Terracon

File No. 37294-015
Sheet No. 1 of 1
Start 2/15/2012
Finish 2/15/2012
Driller John, Kevin
H&A Rep. J. Knightly

Ground Elev.: 763.14
Vert. Datum: 1050099.953
Horiz. Datum: 2787861.482

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type				Rig Make & Model: Truck-Mounted
Inside Diameter (in.)				Bit Type:
Hammer Weight (lb)			-	Drill Mud:
Hammer Fall (in.)			-	Casing:
				Hoist/Hammer:
				PID Make & Model: MiniRAE 2000

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Well Diagram	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	PID Readings (ppm) (sample/bkgd)
0					762.6		ASPHALT	
					0.5		GRAVEL - 0.5 to 0.75 in. base	
					761.6			
					1.5	CL	Stiff, hard, varicolored, siltyy CLAY FILL, some gravel, no noticeable odor, moist	
			2.5					0.0
			5.0					
5			5.0			CL	Becomes stiff, hard, dark brown, silty CLAY FILL, some gravel - 0.5 to 0.75 in., no noticeable odor, moist	0.0
			7.5		757.1			
					6.0		Dark brown SLAG, some glass, loose, no noticeable odor	
					756.1			
					7.0	SM	Loose, tan, fine SAND FILL, moderately poorly sorted, maximum grain size ~1 to 2 mm, no noticeable odor, moist	0.0
			7.5					
			10.0					
10			10.0				Same, maximum diameter noted ~3 mm	0.0
			12.5					
			12.5				Same	0.0
			15.0					
					748.1			
15			15.0		15.0	ML	Soft, tan/brown, SILT with minor clay, non to slightly plastic, some iron mottling in root traces (more with depth), no noticeable odor, wet - particularly with depth	0.0
			17.5					0.0
			20.0					
20					743.1			
					20.0		Bottom of Exploration 20.0 ft	
							Note: 10 gallons water used to hydrate bentonite chips.	

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water

Sample ID
- O - Open End Rod
- T - Thin Wall Tube
- U - Undisturbed Sample
- S - Split Spoon Sample

Well Diagram
- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary
- Overburden (ft) 20
- Rock Cored (ft) 0
- Samples

Boring No. MW-05

Field Tests:
Dilatancy: R - Rapid S - Slow N - None
Toughness: L - Low M - Medium H - High
Plasticity: N - Nonplastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High V - Very High

***Note: Maximum particle size is determined by direct observation within the limitations of sampler size.**

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

HALEY & ALDRICH

TEST BORING REPORT

Boring No. MW-06

Project Former Leeds Assembly Plant-Northern Parcel, South of 6817 Stadium Drive, Kansas City, MO
Client RACER Trust
Contractor Terracon

File No. 37294-015
Sheet No. 1 of 1
Start 2/14/2012
Finish 2/14/2012
Driller John, Kevin
H&A Rep. J. Knightly
Ground Elev.: 761.06
Vert. Datum: 1050558.07
Horiz. Datum: 2787405.972

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type				Rig Make & Model: Truck-Mounted
Inside Diameter (in.)				Bit Type:
Hammer Weight (lb)			-	Drill Mud:
Hammer Fall (in.)			-	Casing:
				Hoist/Hammer:
				PID Make & Model: MiniRAE 2000

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Well Diagram	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	PID Readings (ppm) (sample/bkgd)
0					760.3		CONCRETE (9.5 in. thick)	
					0.8			
					759.6		GRAVEL	
			1.5		1.5	CL	Stiff, black/dark brown, silty CLAY FILL, cinders, glass, hydrocarbon-like odor, moist	75.2
			2.5					
		No Sample	2.5					
			5.0					
5					756.1			
			5.0		5.0	ML	Soft to slightly stiff, dark gray, SILT with minor clay, non to slightly plastic, slight hydrocarbon-like odor, moist	0.0
			7.5					
			7.5				Same, slight increase in moisture	0.0
			10.0					
10			10.0				Same, blocky texture	0.0
			12.5					
			12.5			ML	Same, soft to slightly stiff, SILT with minor clay, slight hydrocarbon-like odor, increase in moisture	0.0
			15.0					
15			15.0				Same, wet	0.0
			17.5					
			17.5				Free water in sampler at 17.5 ft	0.0
			20.0					
20					741.1			
					20.0		Bottom of Exploration 20.0 ft	
							Note: 10 gallons water used to hydrate bentonite chips.	

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water

Sample ID
- O - Open End Rod
- T - Thin Wall Tube
- U - Undisturbed Sample
- S - Split Spoon Sample

Well Diagram
- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary
- Overburden (ft) 20
- Rock Cored (ft) 0
- Samples

Boring No. MW-06

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None **Toughness**: L - Low M - Medium H - High **Plasticity**: N - Nonplastic L - Low M - Medium H - High **Dry Strength**: N - None L - Low M - Medium H - High V - Very High

***Note: Maximum particle size is determined by direct observation within the limitations of sampler size.**

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-TEST BORING-07-1-SDG 37294_LIBRARY.GLB HA-TB+CORE+WELL-07-1.GDT G:\GINT07\KANSAS\37294\37294_MW01A-MW09.GPJ Jun 14, 12

HALEY & ALDRICH

TEST BORING REPORT

Boring No. MW-07

Project Former Leeds Assembly Plant-Northern Parcel, South of 6817 Stadium Drive, Kansas City, MO
Client RACER Trust
Contractor Terracon

File No. 37294-015
Sheet No. 1 of 1
Start 2/14/2012
Finish 2/14/2012
Driller John, Kevin
H&A Rep. J. Knightly
Ground Elev.: 762.55
Vert. Datum: 1050754.196
Horiz. Datum: 2787115.912

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type				Rig Make & Model: Truck-Mounted
Inside Diameter (in.)				Bit Type:
Hammer Weight (lb)			-	Drill Mud:
Hammer Fall (in.)			-	Casing:
				Hoist/Hammer:
				PID Make & Model: MiniRAE 2000

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Well Diagram	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	PID Readings (ppm) (sample/bkgd)
0					762.1		ASPHALT and GRAVEL	
			0.5 2.5		0.5	CL	Soft to slightly stiff, tan/olive, silty CLAY FILL, slightly plastic, some iron mottling, no noticeable odor, moist	0.0
			2.5 5.0				Brick, glass fragments Same as above	0.0
5					757.6			
			5.0 7.5		5.0	ML	Becomes more silty to primarily silt, soft, non-plastic, some roots, no noticeable odor, moist	6.6
			7.5 10.0					0.0
10			10.0 12.5			CL	Slight increase in clay content with depth, no noticeable odor, moist to wet	0.0
			12.5 15.0					0.0
15			15.0 17.5			ML	Same, free water in sampler bag ~15.5 to 16 ft	0.0
			17.5 20.0				Slightly stiff, SILT with clay, slightly plastic, no noticeable odor	0.0
20					742.6 20.0		Bottom of Exploration 20.0 ft	
							Note: 10 gallons water used to hydrate bentonite chips.	

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water

Sample ID
- O - Open End Rod
- T - Thin Wall Tube
- U - Undisturbed Sample
- S - Split Spoon Sample

Well Diagram
- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary
- Overburden (ft) 20
- Rock Cored (ft) 0
- Samples

Boring No. MW-07

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None
Toughness: L - Low M - Medium H - High
Plasticity: N - Nonplastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High V - Very High

***Note: Maximum particle size is determined by direct observation within the limitations of sampler size.**

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-TEST BORING-07-1-SDG 37294_LIBRARY.GLB HA-TB+CORE+WELL-07-1.GDT G:\GINT07\KANSAS\37294\37294_MW01A-MW09.GPJ Jun 14, 12

HALEY & ALDRICH

TEST BORING REPORT

Boring No. MW-08

Project Former Leeds Assembly Plant-Northern Parcel, South of 6817 Stadium Drive, Kansas City, MO
Client RACER Trust
Contractor Terracon

File No. 37294-015
Sheet No. 1 of 1
Start 2/14/2012
Finish 2/14/2012
Driller John, Kevin
H&A Rep. J. Knightly

Ground Elev.: 762.38
Vert. Datum: 1050138.389
Horiz. Datum: 2787095.077

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type				Rig Make & Model: Truck-Mounted
Inside Diameter (in.)				Bit Type:
Hammer Weight (lb)			-	Drill Mud:
Hammer Fall (in.)			-	Casing:
				Hoist/Hammer:
				PID Make & Model: MiniRAE 2000

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Well Diagram	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	PID Readings (ppm) (sample/bkgd)
0					761.4		ASPHALT and GRAVEL	
			1.0 2.5		1.0	ML	Soft to slightly stiff, gray/tan, SILT with minor clay, non to slightly plastic, no noticeable odor, moist	0.0
			2.5 5.0				Slight increase in clay	0.0
5			5.0 7.5			ML	Soft to slightly stiff, brown, SILT with minor clay, non to slightly plastic, some roots, blocky texture, no noticeable odor, moist	0.0
			7.5 10.0				Same	0.0
					752.9			
10			10.0 12.5		9.5 751.9	CL	Medium stiff, brown, silty CLAY, moderately plastic, no noticeable odor, moist	0.0
					10.5	ML	Soft, brown, SILT, non plastic, some dark root traces, no noticeable odor, moist	
			12.5 15.0					
15			15.0 17.5				Becomes wet at ~15 ft Same, some iron nodules and iron mottling	0.0
			17.5 20.0				Slight increase in clay content	0.0
20					742.4 20.0		Bottom of Exploration 20.0 ft	
							Note: 10 gallons water used to hydrate bentonite chips.	

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water

Sample ID
O - Open End Rod
T - Thin Wall Tube
U - Undisturbed Sample
S - Split Spoon Sample

Well Diagram
Riser Pipe
Screen
Filter Sand
Cuttings
Grout
Concrete
Bentonite Seal

Summary
Overburden (ft) 20
Rock Cored (ft) 0
Samples

Boring No. MW-08

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None
Toughness: L - Low M - Medium H - High
Plasticity: N - Nonplastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Medium H - High V - Very High

***Note: Maximum particle size is determined by direct observation within the limitations of sampler size.**

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-TEST BORING-07-1-SDG 37294_LIBRARY.GLB HA-TB+CORE+WELL-07-1.GDT G:\GINT07\KANSAS\37294\37294_MW01A-MW09.GPJ Jun 14, 12

HALEY & ALDRICH

TEST BORING REPORT

Boring No. MW-09

Project Former Leeds Assembly Plant-Northern Parcel, South of 6817 Stadium Drive, Kansas City, MO
Client RACER Trust
Contractor Terracon

File No. 37294-015
Sheet No. 1 of 1
Start 2/15/2012
Finish 2/15/2012
Driller John, Kevin
H&A Rep. J. Knightly

Ground Elev.: 762.29
Vert. Datum: 1050146.97
Horiz. Datum: 2786889.56

	Casing	Sampler	Barrel	Drilling Equipment and Procedures
Type				Rig Make & Model: Truck-Mounted
Inside Diameter (in.)				Bit Type:
Hammer Weight (lb)			-	Drill Mud:
Hammer Fall (in.)			-	Casing:
				Hoist/Hammer:
				PID Make & Model: MiniRAE 2000

Depth (ft)	Sampler Blows per 6 in.	Sample No. & Rec. (in.)	Sample Depth (ft)	Well Diagram	Stratum Change Elev/Depth (ft)	USCS Symbol	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION (Density/consistency, color, GROUP NAME, max. particle size*, structure, odor, moisture, optional descriptions GEOLOGIC INTERPRETATION)	PID Readings (ppm) (sample/bkgd)
0					761.8		ASPHALT	
			0.5		0.5	ML	Soft to slightly stiff, gray/tan, SILT with clay, non to slightly plastic, no noticeable odor, moist	0.0
			2.5		761.3 1.0			
			2.5			CL	Increase in clay content to silty CLAY, stiff, plastic, no noticeable odor, moist	0.0
			5.0					
5			5.0			ML	Soft, SILT with minor clay, non plastic, no noticeable odor, moist	0.0
			7.5					
			7.5				Increase in moisture to wet	0.0
			10.0					
10			10.0			ML	Same, some iron motting in root traces	0.0
			12.5					
			12.5				Very wet, very slight increase in clay	0.0
			15.0					
15			15.0			ML	Same, variably gray to brown	0.0
			17.5					
			17.5				Increase in iron mottling and moisture to total depth	0.0
			20.0					
20					742.3 20.0		Bottom of Exploration 20.0 ft	
							Note: 10 gallons water used to hydrate bentonite chips.	

Water Level Data					
Date	Time	Elapsed Time (hr.)	Depth (ft) to: Bottom of Casing	Bottom of Hole	Water

Sample ID
- O - Open End Rod
- T - Thin Wall Tube
- U - Undisturbed Sample
- S - Split Spoon Sample

Well Diagram
- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary
- Overburden (ft) 20
- Rock Cored (ft) 0
- Samples

Boring No. MW-09

Field Tests: **Dilatancy**: R - Rapid S - Slow N - None **Toughness**: L - Low M - Medium H - High **Plasticity**: N - Nonplastic L - Low M - Medium H - High **Dry Strength**: N - None L - Low M - Medium H - High V - Very High

***Note: Maximum particle size is determined by direct observation within the limitations of sampler size.**

Note: Soil identification based on visual-manual methods of the USCS as practiced by Haley & Aldrich, Inc.

H&A-TEST BORING-07-1-SDG 37294_LIBRARY.GLB HA-TB+CORE+WELL-07-1.GDT G:\GINT07\KANSAS\37294\37294_MW01A-MW09.GPJ Jun 14, 12

Client: Haley & Aldrich, Inc.	Sample Data / Piezometer	Sampler: Aaron B., Robert T.
Site Rep.: John Knightly	Sheet	
Site Name: Former Leeds Assembly Plant Site	*Page 1 of 4*	
Location: Kansas City, MO	6620 Track Unit	Date: 10/28/2013

	Location	Sample	Depth of	H2O	Surface	Succ.	Exp.	Comments	Time	
#	I.D	Type	Sample/Installation	Level	Cover	Y/N		On-Site: 8:00	Start	Finish
1								Wait on Client	8:00	8:15
2								Health & Safety Meeting	8:15	8:45
3								Setup	8:45	9:00
4	GP-7D	WS	59.5'	--	AS	Y	1-EP,66.0'-PY	D/AB	9:00	11:30
5	GP-6D	WS	57.0'	--	CO	Y	1-EP,60.0'-PY	D/AB	11:35	12:40
6								Lunch	12:55	1:25
7								Wait on Client	1:25	1:45
8								Find Next Location	1:45	1:55
9	GP-10D	WS	56.5'	--	AS	Y	1-EP,60.0'-PY	D/AB	2:00	2:55
10	GP-11D	WS	57.2'	--	AS	Y	1-EP	D/AB	3:00	4:10
11	GP-12A	WS	25.0'	--	AS	N	1-EP	No water / Pull out	4:15	4:35
12	GP-12A	WS	35.0'	--	AS	Y	1-EP	Wait for Water / Leave In Over Night	4:35	5:45
13								Off-site		5:45
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SS=Soil Sample	LBPL=Large-Bore PVC Liner	CO=Concrete	SP=Sump Point	AB=Abandon
DSM=Disc.Macro Soil Sample	PL=PVC Liner	AS=Asphalt	S=5' Screen	L=Liter
DS=Discrete Soil Sample	CB=Catch Basket	DT=Dirt	R=5' Riser	V=Voa
WS=Water Sample	PY=Poly Tubing	GR=Gravel	H=H-Plug Cap	D=Decon
SV=Soil Vapor	EX=Extractor	GS=Grass	PZ=Piezometer	
EP=Expendable Point	RF=Refusal	BR=Brick	ST=Shelby Tube	

PSA Environmental 1625 Southeast Decker Street Lee's Summit, MO 64081
1-816-525-7483

GPS: North_____ West_____

Client: Haley & Aldrich, Inc.	Sample Data / Piezometer Sheet	Sampler: Aaron B., Robert T.
Site Rep.: John Knightly		
Site Name: Former Leeds Assembly Plant, Inc.	*Page 2 of 4*	
Location: Kansas City, MO	6620 Track Unit	Date: 10/29/2013

	Location	Sample	Depth of	H2O	Surface	Succ.	Exp.	Comments	Time	
#	I.D	Type	Sample/Installation	Level	Cover	Y/N		On-Site: 9:00	Start	Finish
1								Setup / Health & Safety Meeting	9:00	9:30
2	GP-12A	WS	35.0'	--	AS	Y	40.0'-PY	D/AB	9:30	10:15
3								Equipment Blank	10:15	10:30
4	GP-13A	WS	40.0'	--	AS	Y	1-EP	Leave overnight	10:30	11:30
5								Lunch	11:45	12:45
								Wait On Client	12:45	1:05
6	SV-10	SV	10.0'	NA	AS	Y	1-EP,13.0'-TT	D/AB	1:10	3:10
7	SV-10	SV	5.0'	NA	AS	Y	1-EP,8.0'-TT	D/AB	2:00	3:00
8	SV-2	SV	10.0'	NA	AS	Y	1-EP,13.0'-TT	D/AB	3:20	4:05
9	SV-2	SV	5.0'	NA	AS	Y	1-EP,8.0'-TT	D/AB	3:40	4:25
10	SV-1	SV	10.0'	NA	AS	Y	1-EP,13.0'-TT	D/AB	4:40	5:30
11	SV-1	SV	5.0'	NA	AS	Y	1-EP,8.0'-TT	D/AB	4:50	5:40
12								Load Up	5:40	5:55
13								Off-Site		6:00
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DS=Discrete Soil Sample	CB=Catch Basket	DT=Dirt	R=5' Riser	V=Voa
WS=Water Sample	PY=Poly Tubing	GR=Gravel	H=H-Plug Cap	D=Decon
SV=Soil Vapor	EX=Extractor	GS=Grass	PZ=Piezometer	
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GPS: North_____ West_____

Client: Haley & Aldrich, Inc.	Sample Data / Piezometer Sheet	Sampler: Aaron B.
Site Rep.: John Knightly		
Site Name: Former Leeds Assembly Plant, Inc.	*Page 3 of 4*	
Location: Kansas City, MO	6620 Track Unit	Date: 10/30/2013

	Location	Sample	Depth of	H2O	Surface	Succ.	Exp.	Comments	Time	
#	I.D	Type	Sample/Installation	Level	Cover	Y/N		On-Site: 8:50	Start	Finish
1							Setup / Health & Safety Meeting		8:50	9:00
2	SV-5	SV	10.0'	NA	AS	Y	1-EP,13.0'-TT	D/AB	9:15	10:38
3	SV-5	SV	5.0'	NA	AS	Y	1-EP,8.0'-TT	D/AB	9:30	10:30
4	SV-6	SV	10.0'	NA	AS	Y	1-EP,13.0'-TT	D/AB	10:45	12:10
5	SV-6	SV	5.0'	NA	AS	Y	1-EP,8.0'-TT	D/AB	10:55	12:05
								Rain Delay	12:10	12:45
6	GP-13A	WS	40.0'	--	AS	Y	45.0'-PY		12:45	1:00
7	GP-13A	AB	40.0'	NA	AS	Y		Pull/AB	1:10	1:20
8	SV-3	SV	10.0'	NA	AS	Y	2-EP,13.0'-TT	D/AB	2:00	3:10
9	SV-3	SV	5.0'	NA	AS	Y	1-EP,8.0'-TT	D/AB	2:25	3:15
10								Rain Delay	3:45	4:25
11								Off-site		4:25
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GPS: North_____ West_____

Client: Haley & Aldrich, Inc.	Sample Data / Piezometer Sheet	Sampler: Aaron B.
Site Rep.: John Knightly		
Site Name: Former Leeds Assembly Plant, Inc.	*Page 4 of 4*	
Location: Kansas City, MO	6620 Track Unit	Date: 10/31/2013

	Location	Sample	Depth of	H2O	Surface	Succ.	Exp.	Comments	Time	
#	I.D	Type	Sample/Installation	Level	Cover	Y/N		On-Site: 9:00	Start	Finish
1								Setup / Health & Safety Meeting	9:00	9:15
2	SV-9	SV	10.0'	NA	AS	Y	1-EP,13.0'-TT	D/AB	9:15	11:00
3	SV-9	SV	5.0'	NA	AS	Y	1-EP, 8.0'-TT	D/AB	9:30	11:05
4	SV-4	SV	10.0'	NA	AS	Y	1-EP,13.0'-TT	D/AB	11:10	12:35
5	SV-4	SV	5.0'	NA	AS	Y	1-EP, 8.0'-TT	D/AB	11:15	12:30
	SV-8	SV	10.0'	NA	AS	N	1-EP	Pulled Water/AB	12:45	12:50
6	SV-8	SV	10.0'	NA	AS	N	1-EP	Pulled Water/AB	12:50	1:00
7	SV-8	SV	5.0'	NA	AS	Y	1-EP, 8.0'-TT	D/AB	1:15	2:30
8	SV-7	SV	10.0'	NA	AS	Y	1-EP,13.0'-TT	D/AB	2:50	4:30
9	SV-7	SV	5.0'	NA	AS	Y	1-EP, 8.0'-TT	D/AB	3:20	4:20
10								Load Up Tooling & Rig	4:25	4:40
11								Patch Holes	4:40	5:00
12								Dump D Water	5:00	5:15
13								Off-site		5:30
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