Affected Property Assessment Report Addendum

Simpkins Site
S. Loop 12 at Pemberton Hill Road
Dallas, Dallas County, Texas
VCP Number 2210
Terracon Project No. 94057304

April 2013

Prepared by:

Terracon Consultants, Inc.

Dallas, Texas

Terracon

April 19, 2013

Texas Commission on Environmental Quality
Voluntary Cleanup Program
MC-221
12100 Park 35 Circle
Austin, Texas 78753

Attn: Mr. Mark Riggle, Project Manager
Telephone: (512) 239-3044

Re: APAR Addendum
Simpkins Landfill
South Loop 12 and Pemberton Hill Road
Dallas, Dallas County, Texas
VCP No. 2210
Terracon Project No. 94057304

Dear Mr. Riggle:

Terracon Consultants, Inc. (Terracon) is pleased to submit this Affected Property Assessment Report (APAR) Addendum for the above-referenced site. This document and the additional investigation completed was performed in response to the results of the recent on-site investigation activities completed in November and December 2012 and the comments included in the TCEQ letter dated February 22, 2013, regarding the APAR submitted on December 31, 2012.

1.0 INTRODUCTION

1.1 Site Description

The Simpkins Landfill site consists of approximately 1,447 acres of land located near the intersection of South Loop 12 and Pemberton Hill Road in Dallas, Dallas County, Texas (site). The Simpkins Site is being described as containing Voluntary Cleanup Program (VCP) Tract A (portion of site located north of South Loop 12) and VCP Tract B (portion of site located south of South Loop 12). In addition, a recent investigation was completed on a 74-acre tract located on the northeastern portion of the site, which is a third section of the site referred to as the Pemberton Tract.

The APAR identified two areas that would require additional investigation and/or remedial action. As discussed in the APAR, the soil analytical data for the Pemberton Tract located on the northeastern portion of the site indicates a soil Protective Concentration Level Exceedance (PCLE) zone for various polycyclic aromatic hydrocarbons (PAHs), including benzo[a]pyrene, benzo[b]fluoranthene, benzo[a]anthracene, dibenz[a,h]anthracene, indeno[1,2,3-c,d]pyrene, and 1-methyl naphthalene, associated with fill material in an area of former sand and gravel mining. The fill material contained construction and household debris, and appeared to be related to or partially contributed to by the former on-site Rancho El Progresso operations. The extent of the PCLE zone is largely based on exceedances of the benzo[a]pyrene Tier 1 Critical Protective Concentration

Level (PCL) ($^{Tot}Soil_{Comb}$) of 0.56 mg/kg. Benzo(a)pyrene concentrations exceeding the Critical PCL within the PCLE zone ranged from 4.46 mg/kg (TP-13 at 0-2 feet bgs) to 117 mg/kg (TP-18 at 0 to 2 feet bgs. The PCLE zone is defined vertically by native samples that did not exhibit PAHs above Critical PCLs, and is defined horizontally by sampling data to the south, west, and north, and by the limits of the fill and disturbed area to the east.

In addition to the PAH exceedances, the initial soil analytical data collected to date for the Pemberton Tract indicated a shallow soil PCLE zone for nitrate in the vicinity of a drum of unknown, apparent organic material associated with the operations of the former Rancho El Progresso on the Pemberton Tract. The maximum concentration of nitrate detected in surface soils adjacent to the drum was 142 mg/kg, which exceeds the RAL ($^{GW}Soil_{Ing}$ PCL) of 19 mg/kg. At the time, the PCLE zone was presumed to be limited to the vicinity of the drum that was thought to be the source of nitrate.

Based on the analytical results of the initial investigation completed on Tracts A and B from 2007 to 2009, several on-site groundwater monitoring wells exhibited concentrations of arsenic, lead, and/or thallium above the applicable Tier 1 Critical Residential PCLs/Residential Assessment Levels (RALs). It is believed that the concentrations of arsenic detected above the RALs are likely due to sediment interference and/or reducing conditions in shallow groundwater in the vicinity of the landfill. Based on an evaluation of data associated with the APAR, the concentrations of lead and thallium detected above RALs were believed to be a result of sediment interference in the groundwater samples.

In addition to the APAR submitted in December 2012, a Response Action Plan (RAP), dated March 7, 2013, was submitted to the TCEQ VCP. The RAP was intended to serve as an interim RAP for the site to address only the solid waste areas of concern associated with the capped landfill areas. The interim RAP did not include a response action to address PCLE zones associated with chemicals of concern (COCs) at the site. The response action areas outlined in the interim RAP included: 1) an area of slope failure along a portion of the south face of the South Loop Landfill; 2) exposed buried waste surrounding Pond J; 3) portions of the landfills caps with less than 2 feet of final cover; 4) scattered areas of local cap erosion and exposed waste across the Elam and South Loop landfill caps; and 5) surface waste (i.e., waste from illegal dumping) located on the landfill caps. Assessment of these areas is summarized in Appendix 11 (Miscellaneous Assessment) of the APAR.

A topographic map depicting the location of the site is included as Figure 1 (Attachment A), and site plans depicting the site boundaries, pertinent site features, and sampling locations are included as Figures 2A, 2B, 2C, and 2D (Attachment A).

1.2 Scope of Work

Terracon Consultants, Inc. (Terracon) conducted additional on-site investigations in response to your letter dated February 22, 2013 regarding the APAR submitted on December 31, 2012, which

included the following technical comments:

- *Groundwater in the area of the polycyclic aromatic hydrocarbon (PAH) soil Protective Concentration Level Exceedance (PCLE) Zone has not been assessed to determine if the groundwater has been impacted by PAHs. Please install an additional groundwater monitoring well in the area and collect a groundwater sample for PAH analysis.*

- *Several metals in groundwater samples collected from select monitoring wells exceeded their protective concentration levels (PCLs). Arsenic, lead, and thallium were detected in groundwater samples from several monitoring wells that exceed their respective groundwater PCLs. Sediment interference (sample turbidity) was suspected and the wells with the highest concentrations, MW-Q17 arsenic, MW-U8 lead, and MW-F9 lead, MW-W9 lead, MW-V12 thallium, and MW-U22 thallium, were resampled. These samples were analyzed for their respective metal constituent, and analytical results indicated all were below their respective groundwater PCLs. However, one of the wells with a lead exceedance and several of the wells that had a thallium exceedance were not resampled to verify that these exceedances were due to sediment interference. The following monitoring wells should be resampled with samples analyzed for the specified metal; MW-W9 for lead, and MW-K5, MW-K7, MW-J10, MW-L4, MW-L7, MW-M10, MW-N4, MW-O6, MW-P8, MW-P18, and MW-T20 for thallium.*

In addition to the additional investigation requested above, the soil analytical data from the initial investigation for the Pemberton Tract indicated a soil PCLE zone for nitrate in the vicinity of ranching operations associated with the former Rancho El Progresso. As part of this scope of services, Terracon completed additional investigation to further evaluate the presence of nitrate in the on-site soils as a result of a potential release from the drum with unknown contents near the on-site animal pens.

The objectives of the additional investigation were to: 1) evaluate PAHs in the on-site groundwater in the vicinity of the fill material located on the north-central portion of the Pemberton tract; 2) to further evaluate lead and thallium concentrations in the on-site groundwater to confirm previous data were biased by sediment interference; 3) evaluate and remove the drum of unknown substance located near the animal pens from the site; and 4) to evaluate the presence of nitrate in the on-site soils as a potential result of a release from a drum of unknown substance located near the on-site animal pens.

2.0 FIELD ACTIVITIES

2.1 Borings and Monitoring Wells

Terracon's additional field activities were conducted from January 10, 2013 through February 25, 2013, by Mr. Michael Bavoso, a Terracon environmental field professional. In order to further evaluate the presence of nitrate in the on-site soil surrounding the drum of unknown contents and

former animal pens, 12 soil borings were advanced to a depth of 12 feet below ground surface (bgs) using a track-mounted drill rig equipped with direct-push technology.

In addition, one permanent monitoring well (MW-A12-1) was advanced on-site in the vicinity of the PAH PCLE zone. To avoid possible perched water within the fill-material that is not representative of the shallow groundwater bearing unit at the site, and due to limited access to native soils directly down-gradient of the fill-material, the monitoring well was installed within the native material in closest proximity to the PAH PCLE zone. Figures 2C and 2D (Attachment A) are site plans that indicate the approximate locations of all recently installed on-site soil borings and monitoring wells in relation to the pertinent structures and general site boundaries.

Drilling services were performed by W.E.S.T. Drilling, a State of Texas licensed monitoring well driller, using a truck-mounted hollow stem auger (HSA) drilling rig for the monitoring wells and a track-mounted direct-push drilling rig for the soil borings. The work was conducted under the supervision of a Terracon environmental scientist. Soil samples were collected using 5-foot core barrel samplers via the HSA and 4-foot direct-push sample tubes lined with dedicated, acetate liners via the direct-push drilling rig. Drilling equipment was cleaned using a high-pressure washer prior to beginning the project and before beginning each soil boring. Non-dedicated sampling equipment was cleaned using an Alconox® wash and potable water rinse prior to the beginning of the project and before collecting each soil sample.

Soil samples were collected continuously and observed to document soil lithology, color, moisture content and sensory evidence of impairment. Due to the properties of nitrate, the soil samples were not field-screened using a photoionization detector (PID).

The general soil lithology encountered during sample collection consisted of a layer of clayey sand underlain by layers of fine to course-grained sand; however, soil boring MW-A12-1 exhibited sand and clayey sand layers from the surface to approximately 31 feet bgs. A layer of coarse-grained sand and gravels was seen at a depth of approximately 31 feet bgs in soil boring MW-A12-1. Detailed lithologic descriptions are presented on the soil boring logs included in Attachment B.

Odors and/or staining were not detected in the soil samples collected during this additional investigation. The soil boring logs are included in Attachment B.

Groundwater was not encountered during the advancement of soil borings SB-B13-1 through SB-B13-12; however, groundwater was encountered during the advancement of soil boring MW-A12-1 at an approximate depth of 41 feet bgs and the depth to groundwater measurement collected during groundwater sample collection was 36.78 feet bgs.

Following completion, soil borings SB-B13-1 through SB-B13-12 were backfilled and hydrated with bentonite pellets to surface grade.

Subsequent to advancement, soil boring MW-A12-1 was converted to a stickup groundwater monitoring well. The monitoring well was completed using the following methodology:

- Installation of 20 feet of 2-inch diameter, 0.010-inch machine-slotted PVC well screen with a threaded bottom cap;
- Installation of 2-inch diameter, threaded, flush-joint PVC riser pipe to the surface;
- Addition of a pre-sieved 20/40-grade annular silica sand pack from the bottom of the boring to approximately 2 feet above the top of the well screen;
- Addition of at least 2 feet of hydrated bentonite seal from above the sand pack filter zone to the near surface; and,
- Installation of an 8-inch diameter, circular, bolt-down, steel, monitoring well cover with locking well cap inset in a concrete well pad.

The monitoring well construction details are presented on the soil boring log for monitoring well MW-A12-1, which is included in Attachment B.

The monitoring well was developed by surging and removing groundwater with a new, disposable, polypropylene bailer until the groundwater was relatively free of fine-grained sediment. Approximately 25 gallons of groundwater were removed from monitoring well MW-A12-1 during development activities.

Soil cuttings, groundwater and equipment cleaning water generated during the field activities were placed in Department of Transportation (DOT) approved, 55 gallon steel drums, and were closed and appropriately labeled with project-specific information and initial accumulation date. A total of four 55-gallon drums containing soil cuttings and one 55-gallon drum containing groundwater and equipment cleaning water were generated during these field services and were left on the site for subsequent characterization and disposal.

2.2 Soil, Groundwater, and Drum Sampling

Terracon's soil sampling program for the nitrate evaluation involved submitting one soil sample from each soil boring for laboratory analysis. The soil samples collected from the shallow soil zone and/or the interval of most-likely environmental impact based on the field professional's judgment were selected for laboratory analysis. Additional soil samples were collected from each soil boring from the intervals exhibiting a change in lithology and the bottom of the boring. These additional soil samples were submitted to the laboratory and placed on hold for potential contingent analyses if deemed warranted based on the initial analytical results. Based on the initial results, additional soil samples were analyzed for nitrate for vertical delineation.

In addition, during the installation of monitoring well MW-A12-1, soil samples were collected from the interval of most-likely environmental impact based on the field professional's judgment, the capillary fringe zone, intervals exhibiting a change in lithology, and the bottom of the boring. These samples were place on hold for potential contingent analyses if deemed warranted based on the

initial analytical results of the groundwater sample collected from monitoring well MW-A12-1. Soil sample intervals are presented with the soil sample analytical results (Table 1, Attachment C), and are provided on the lithologic boring logs included in Attachment B.

One groundwater sample was collected from each of the following monitoring wells for laboratory analysis: MW-A12-1, MW-K5, MW-K7, MW-J10, MW-L4, MW-L7, MW-M10, MW-N4, MW-O6, MW-P8, MW-P18, MW-T20, and MW-W9. Prior to sample collection, with the exception of monitoring wells MW-O6 and MW-W9, the monitoring wells were purged until geochemical parameter stabilization, and then sampled using low-flow sampling equipment. Due to during low flow sampling, a minimum of three well casing volumes of groundwater monitoring were removed from monitoring wells MW-O6 and MW-W9. Monitoring wells MW-O6 and MW-W9 were then sampled using a new, disposable, polypropylene bailer within 24 hours of purging.

Terracon contracted Environmental Industries to sample and dispose of the unknown substance within the on-site drum. One sample of the unknown substance was collected from the drum.

Soil, groundwater and drum samples were collected into laboratory-prepared glassware, labeled, and placed on ice in sample coolers. The sample coolers were either released via chain-of-custody directly from the sampler to a representative of the analytical laboratory, or were secured with a custody seal and shipped to the selected analytical laboratory. The sample coolers and completed chain-of-custody forms were relinquished to Oxidor Laboratories, LLC in Plano, Texas for analysis on normal turnaround.

3.0 LABORATORY ANALYTICAL METHODS

The soil samples collected from soil borings SB-B13-1 through SB-B13-12 were analyzed for nitrate using EPA Method 9056. The groundwater sample collected from monitoring well MW-A12-1 was analyzed for PAHs using EPA SW-846 Method 8270C. The groundwater sample collected from monitoring well MW-W9 was analyzed for lead using EPA SW-846 Method 6020 and the groundwater samples collected from monitoring wells MW-K5, MW-K7, MW-J10, MW-L4, MW-L7, MW-M10, MW-N4, MW-O6, MW-P8, MW-P18, and MW-T20 were analyzed for thallium using EPA SW-846 Method 6020. The sample collected from the on-site drum was analyzed for volatile organic compounds (VOCs) using EPA SW-846 Method 8260B, toxicity characteristic leaching procedure (TCLP) RCRA Metals using EPA SW-846 Method 6020/7470, nitrate using EPA SW-846 Method 9056, organochlorine pesticides using EPA SW-846 Method 8081A, and herbicides using EPA SW-846 Method 8151A.

Laboratory results are summarized in the tables included in Attachment C, and the executed chain-of-custody forms and laboratory data packages are provided in Attachment D.

4.0 DATA EVALUATION

Terracon compared the detected COC concentrations to the TRRP Tier 1 Critical Residential PCLs /

Residential Assessment Levels (RALs). Review of the Laboratory Review Checklists (LRCs) associated with the laboratory reports did not identify laboratory QC failures that compromised the project objectives. The data were considered usable with respect to TRRP criteria.

4.1 Soil Samples

Nitrate Analysis

Nitrate concentrations above the laboratory SDL were detected in the soil samples collected from soil borings SB-B13-1 through SB-B13-12. The detected nitrate concentrations ranged from 3.4 mg/kg in the soil sample collected from SB-B13-3 at 11 to 12 feet bgs to 420 mg/kg in the soil sample collected from SB-B13-12 at 0 to 1 feet bgs. Terracon compared the detected concentrations of nitrate to the TRRP RAL of 19 mg/kg. With the exception of the soil samples collected from soil borings SB-B13- (11-12 feet bgs), SB-B13-3 (11-12 feet bgs), SB-B13-5 (0-1 feet bgs), SB-B13-7 (0-1 feet bgs), SB-B13-7 (4-5 feet bgs), SB- B13-11 (0-1 feet bgs), and B13-12 (11-12 feet bgs), the detected nitrate concentrations exceeded the TRRP RAL of 19 mg/kg, as summarized in Table 1.

The objective of the additional soil investigation was to delineate the extent of nitrate-affected soils in the vicinity of the drum that was thought to be the source. Review of the nitrate analytical data collected during this investigation indicates the release of material from the drum is not the source of nitrate. The range of detected nitrate concentrations and somewhat erratic distribution with respect to the magnitude of the concentrations is believed to be more characteristic of nitrate concentrations that would be expected at a long-term ranching operation in the vicinity of various animal pens.

4.2 Groundwater Samples

PAHs Analysis

Based on the laboratory results of the groundwater sample collected from monitoring well MW-A12-1, PAHs were not detected at concentrations above laboratory SDLs. The PAH results are summarized in Table 2.

Metals Analysis

Based on the laboratory results of the groundwater sample collected from MW-W9, lead was not detected at a concentration above the laboratory SDLs. In addition, the groundwater samples collected from monitoring wells MW-K5, MW-K7, MW-J10, MW-L4, MW-L7, MW-M10, MW-N4, MW-O6, MW-P8, MW-P18, and MW-T20 did not exhibit thallium concentrations above the laboratory SDLs. The groundwater lead and thallium results are summarized in Table 3.

4.3 Drum Sample

The sludge within the on-site drum was sampled for waste characterization purposes. Based on the laboratory results nitrate, pesticides, and herbicides were not detected above the laboratory SDLs. The sample exhibited a TCLP Barium concentration of 3.20 mg/L and a methyl ethyl ketone concentration of 1.44 mg/kg. All remaining VOC and TCLP metals concentrations were below the laboratory SDLs. The executed chain-of-custody forms and laboratory data packages are provided in Attachment D.

5.0 FINDINGS AND RECOMMENDATIONS

Nitrate

The results of the recent on-site nitrate investigation indicate detected concentrations of nitrate in the soil at the former on-site ranch ranging from 3.4 mg/Kg to 420 mg/kg. Review of the nitrate analytical data collected during this investigation indicates the release of material from the drum is not the source of nitrate and that the contents of the drum appear to be a non-hazardous substance associated with the on-site ranching operations. Conversely, the range of detected nitrate concentrations and somewhat erratic distribution with respect to the magnitude of the concentrations is believed to be more characteristic of nitrate concentrations that would be expected at a long-term ranching operation in the vicinity of various animal pens. Based on the apparent agricultural deposition of nitrate associated with the ranching operation, the detected nitrate concentrations do not appear to warrant further assessment or response action under TRRP. In addition, the maximum detected nitrate concentration of 420 mg/kg is well below the Tier 1 Residential $^{Tot}Soil_{Comb}$ PCL of 130,000 mg/kg for nitrate. Furthermore, analysis of groundwater from the nearby water well and monitoring wells resulted in nitrate concentrations ranging from 1.56 mg/L to 3.17 mg/L, indicating that nitrate deposition from long-term ranching operations has not resulted in elevated nitrate concentrations in the shallow groundwater bearing unit.

The laboratory results from the PAH analysis completed on the groundwater sample collected from monitoring well MW-A12-1 do not indicate that a release of PAHs has impacted the groundwater in the vicinity of the on-site fill material. Based on the results from the previous on-site investigation and the recent on-site investigation, the soils impacted by PAHs above the RAL will be addressed in a RAP to be submitted to the TCEQ.

The results obtained during the original investigation for various monitoring wells, including MW-W9, MW-K5, MW-K7, MW-J10, MW-L4, MW-L7, MW-M10, MW-N4, MW-O6, MW-P8, MW-P18, and MW-T20, exhibited lead and/or thallium concentrations above the applicable RALs. These concentrations were thought to be a results of sediment interference. Based on the laboratory results obtained during the recent groundwater sampling event on Tracts A and B, lead and thallium were not detected above the laboratory SDLs in the groundwater samples collected from monitoring wells MW-W9, MW-K5, MW-K7, MW-J10, MW-L4, MW-L7, MW-M10, MW-N4, MW-O6, MW-P8, MW-P18, and MW-T20. Based on the results from the recent groundwater sampling event, it

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appears that the lead and thallium concentrations previously detected in the on-site monitoring wells were the result of sediment interference and no further investigation appears warranted.

Please contact either of the undersigned at (214) 630-1010 if you have questions regarding the information provided in the report.

Sincerely,
Terracon

Prepared By:

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Reviewed By:

Scott M. Kolodziej, P.G.
Group Manager

STATE OF TEXAS
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Enclosure

cc: TCEQ, Region 4 Office, Fort Worth, Texas
Ms. Lori Frauli-Trulson, City of Dallas Office of Environmental Quality

LIST OF ATTACHMENTS

Attachment A: Figure 1 – Topographic Map
Figure 2A – Affected Property Map (Tract A)
Figure 2B – Affected Property Map (Tract B)
Figure 2C – Affected Property Map (Pemberton Tract)
Figure 2D – Site Detail Map

Attachment B: Boring Logs

Attachment C: Table 1 – Summary of Soil Analytical Data – Pemberton Tract
Table 2 – Summary of Groundwater Analytical Data – Pemberton Tract
Table 3 – Summary of Groundwater Analytical Data – Tracts A & B

Attachment D: Laboratory Data Sheets