CITY OF ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS
TCEQ PERMIT NO. MSW-358C

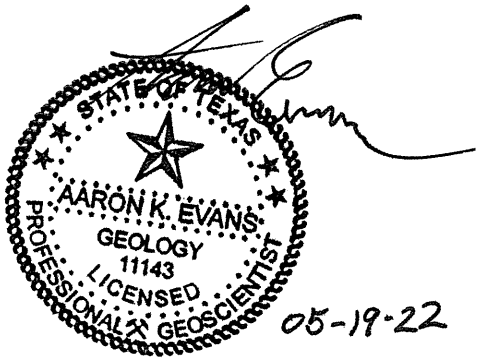
MAJOR PERMIT AMENDMENT APPLICATION

VOLUME 5 OF 6

Prepared for

City of Arlington
and
Republic Waste Services of Texas, Ltd.

May 2022



Prepared by

Weaver Consultants Group, LLC
TBPE Registration No. F-3727
6420 Southwest Boulevard, Suite 206
Fort Worth, Texas 76109
817-735-9770

WCG Project No. 0023-404-11-104

This document is intended for permitting purposes only.

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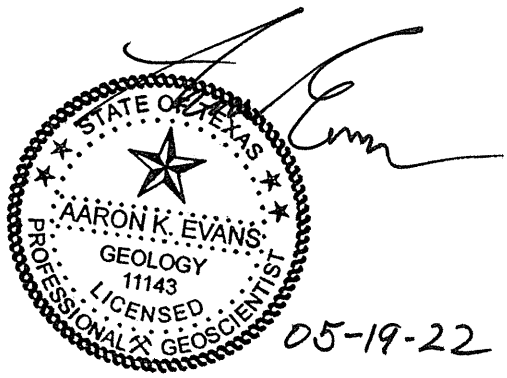
CONTENTS



CITY OF ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS
TCEQ PERMIT NO. MSW-358C

MAJOR PERMIT AMENDMENT APPLICATION

PART III – SITE DEVELOPMENT PLAN
APPENDIX IIIG
GEOLOGY REPORT

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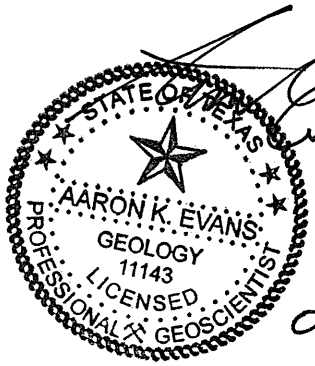

05-19-22

Prepared by

Weaver Consultants Group, LLC
TBPE Registration No. F-3727
6420 Southwest Blvd., Suite 206
Fort Worth, Texas 76109
817-735-9770

WCG Project No. 0023-404-11-102

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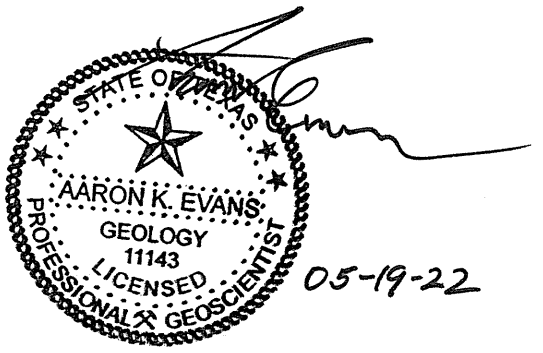

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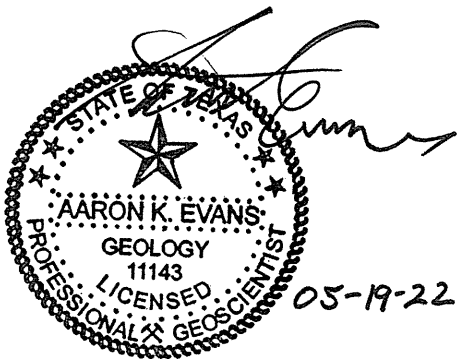

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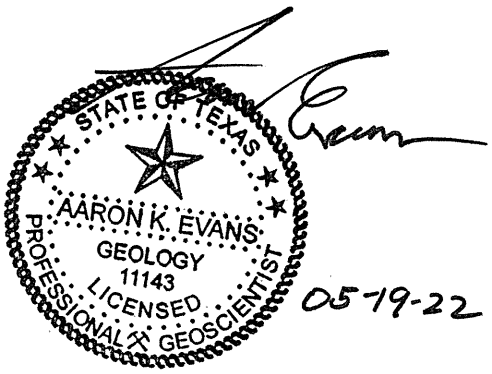
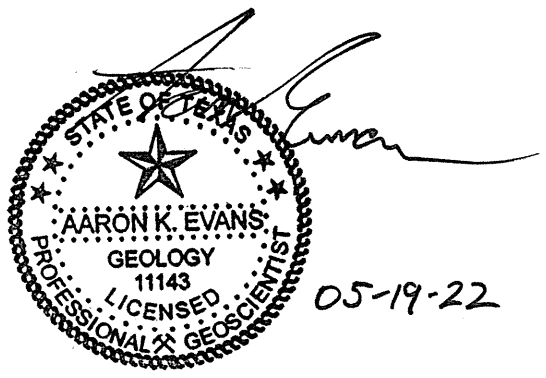


TABLES



GEOLOGY REPORT CERTIFICATION

Site Information

Site: City of Arlington Landfill

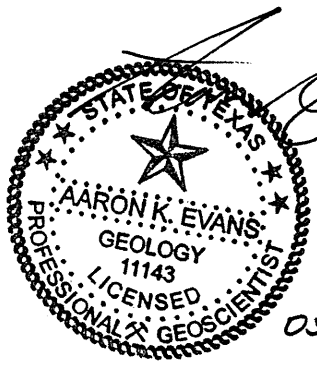
Site Location: Tarrant County

MSW Permit No.: 358C

Qualified Groundwater Scientist Statement

I, Aaron K. Evans, am a Texas-licensed Professional Geoscientist and a qualified groundwater scientist as defined in §330.3(120). I have prepared the Geology Report which constitutes Appendix IIIG of this permit application. In my professional opinion, the Geology Report is in compliance with the requirements specified in 30 TAC §330.63(e). This report has been completed specifically for the City of Arlington Landfill. The only warranty made by me in connection with this report is that I have used that degree of care and skill ordinarily exercised under similar conditions by reputable members of my profession, practicing in the same or similar locality. No other warranty, expressed or implied, is intended.

Firm/Address: Weaver Consultants Group, LLC
6420 Southwest Blvd., Suite 206
Fort Worth, Texas 76109

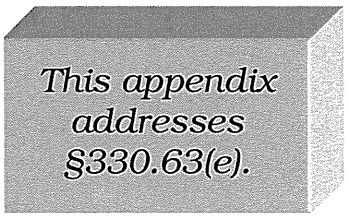


05-19-22

Signature: _____
Aaron K. Evans, P.G., Texas License No. 11143

Date: 05-19-22

1 INTRODUCTION



This Geology Report has been prepared for the City of Arlington Landfill facility pursuant to the waste disposal footprint reconfiguration for permit No. MSW-358C in accordance with Texas Commission on Environmental Quality (TCEQ) Municipal Solid Waste (MSW) rules Title 30 Texas Administrative Code (TAC) §330.63(e). Regional and site-specific geologic and hydrogeologic information are discussed in subsequent sections of this report. The supporting regional and site-specific data are provided within the report text and the accompanying Appendices (IIIG-A through IIIG-E).

2 REGIONAL GEOLOGIC/HYDROGEOLOGIC INFORMATION

2.1 Regional Physiography and Site Topography

According to the USGS 7.5-minute topographic maps of the landfill area (reference Figure IIIG-A-6 in Appendix IIIG-A), the topography in the landfill vicinity generally slopes south to the West Fork of the Trinity River. Based on this map, the natural ground surface elevations within the existing permit boundary area range from a high of approximately 540 ft-msl to a low of approximately 450 ft-msl. The nearest surface water body is the West Fork of the Trinity River, which borders the southern edge of the permit boundary.

According to the Bureau of Economic Geology (BEG, 1996), the landfill is located in the Black Prairie regional physiographic province. The Black Prairie typically has a relatively flat to undulating surface topography that slopes gently to the east. It is described by the BEG as poorly drained with sparse timber.

2.2 Regional Geology

2.2.1 Geologic History

Geologic formations in the site vicinity are predominately Cretaceous-age sediments. These sediments were deposited by northward advancing seas over the underlying Paleozoic strata. The Cretaceous-age Comanche Series and Guld Series sediments represent two major regional sea transgressions. Marine deposition halted toward the end of the Cretaceous period with the retreat of seas gulfward driven by regional uplifting in the west. Erosion of Cretaceous-age sediments began and continued through the Cenozoic Era to present. This erosion produced limited areas of Quaternary alluvium and terrace deposits along stream courses. The landfill is underlain by the Cretaceous-age upper Gulf and Comanche Series sediments with Quaternary alluvium present surficially across the landfill property (prior to development).

2.2.2 Regional Structural Geology

According to Harden, et al. (2004), a wide range of structural features affected the deposition of the Trinity and Woodbine aquifers regionally. Figure IIIG-A-2 (Regional Structural Features Map) presents the major regional structural geologic features.

During the formation of Pangea in the late Paleozoic era, tectonic collisions uplifted and deformed the southern margin of the Laurasian paleocontinent. This tectonic event uplifted the Ouachita Mountains, which were source rock areas for the later deposition of the Trinity and Woodbine sediments (Caughey, 1977). With the early Mesozoic breakup of Pangea, continental rifting occurred to the southeast of the Ouachita Fold Belt which created low-lying areas that were subsequently flooded during the Jurassic period to form the ancestral Gulf of Mexico (Stearn et al., 1979). During this time, the climate was hot with relatively restricted marine flow in the ancestral Gulf of Mexico which caused the deposition of evaporate deposits.

As the ancestral Gulf of Mexico widened during the Mesozoic era, drainage patterns in the area shifted to the southeast, and deposition of the Trinity sediments was initiated in the Early Cretaceous. As the Trinity/Woodbine sediments accumulated, the East Texas Basin underwent syndepositional subsidence (Oliver, 1971), which served to foster the formation of the basinward thickening wedge of sediments that characterize the Cretaceous formations in north Texas. Continued subsidence in the Gulf of Mexico Basin during the Tertiary Period advanced the formation of the Balcones Fault Zone which runs from Central Texas to south of Dallas.

2.2.3 Regional Stratigraphy

Regional stratigraphy consists of Cretaceous-age Gulf Series (Eagle Ford and Woodbine formations) and Comanche Series (Washita, Fredericksburg, and Trinity groups) sediments. Stratigraphic positions, general lithologic characteristics, and approximate depths and thicknesses for these groups are presented in Table 2-1 (modified from Langley, 1999 and Nordstrom, 1982). The Grayson Marl and Mainstreet Limestone formations (undivided) comprise the upper Washita Group sediments that underlay the Woodbine Formation in the vicinity of the landfill.

According to the Texas Bureau of Economic Geology (BEG), the site is located upon Quaternary alluvium and terrace deposit sediments deposited over Woodbine Formation sediments as shown on Figure IIIG-A-1 (Regional Geologic Map) (adapted from the BEG Geologic Atlas of Texas, Dallas Sheet, 1987) and Figure IIIG-A-3 (Regional Geologic Cross Sections) (adapted from Nordstrom, 1982). The underlying Washita Group (Grayson Marl/Mainstreet Limestone) outcrops approximately 2.5-miles northwest of the site at closest extent. The contact between the Woodbine and overlying Eagle Ford Formation occurs approximately 2.5-miles northeast of the site permit boundary at nearest extent (BEG, 1987). Regional cross sections indicate that the Cretaceous system forms a southeastward-thickening wedge extending into the East Texas Basin structural feature. Outcrops of Cretaceous geologic formations generally strike north-northeastward in a monoclinal structure that dips to the east-southeast at rates ranging from 15 to 70 feet per mile (Nordstrom, 1982).

Table 2-1
Regional Stratigraphy in the Vicinity of City of Arlington Landfill

Period	Series	Group or Formation	Approximate Formation Depth and (Thickness) in feet	Lithologic Characteristics and Depositional Environment
Quaternary	Holocene	Alluvium	At Surface (~ 0'-75' thick in Site Area)	Clay, silt, sand, and gravel deposited in fluvial environment.
	Pleistocene	Terrace	At Surface (~ 0'-25' Regionally)	Clay, silt, sand, and gravel deposited in fluvial environment.
Cretaceous	Gulfian	Austin Chalk	Outcrops South of Site (~ 0'-700' Regionally)	Chalk, limestone, marl and occasional fine to medium sand deposited in marine environment.
		Eagle Ford	Outcrops South and East of Site (~ 150'-280' thick Regionally)	Shale with some thin platy beds of siltstone and sandy limestone deposited in marine environment.
		Woodbine	Near Surface (~ 100'-350' thick in Site Area)	Sand, sandstone, clay, shale, lignite deposited in fluvial and marine deltaic environments.
	Comanchian	Washita Group	~ 150' below landfill (~ 350' thick Regionally)	Limestone, marl, and clay; some sand near top deposited in marine environment.
		Fredericksburg Group	~ 500' below landfill (~ 150' thick Regionally)	Limestone, clay, marl, shale, and shell agglomerates deposited in near shore marine depositional environment.
		Trinity Group	~ 650' below landfill (~ 900 feet thick Regionally)	Fine sand, sandy shale, and shale deposited in fluvial, deltaic, and near shore marine environments.
Paleozoic	undifferentiated		~1,550' below landfill	Sandstone, limestone, shale, and conglomerate.

Modified from Langley (1999) and Nordstrom (1982).

2.3 Geologic Processes

2.3.1 Fault and Seismic Data

Seismic impact zone and fault investigations are discussed in the location restrictions in Parts I/II, Appendix I/IIC. As discussed in these sections, no geologic processes, including active faults or seismic impact zones, are located within one mile of the facility permit boundary.

2.3.2 Erosional Processes

Erosional processes in the landfill area are limited to those produced by the Hurricane Creek and West Fork Trinity River drainage systems. These include rill and channel erosion and sheet flow. Natural topographic relief across the site is low and erosion from these processes is minimal. No adverse effects on the site are anticipated and no mass wasting has been observed.

2.3.3 Wetlands Identification

Details regarding jurisdictional wetland areas are provided in the location restriction demonstrations in Appendix I/IIC.

2.4 Regional Aquifer

Regional aquifers beneath the landfill include the Cretaceous-age Woodbine and Trinity aquifers. These aquifers are separated by approximately 500 feet of low permeability Washita and Fredericksburg group sediments. According to Hardin, et al. (2004), the Woodbine and Trinity aquifers are not hydraulically interconnected. The Woodbine Aquifer is situated stratigraphically above the underlying Trinity Aquifer. The Paluxy, Glen Rose, and underlying Twin Mountain formations comprise the Trinity Aquifer system.

2.4.1 Woodbine Aquifer

The TWDB classifies the Woodbine Aquifer as a minor Texas aquifer (Ashworth and Hopkins, 1995) composed predominately of fine-grained, cross-stratified, fluvial sand interbedded with shale, clay, and some gravel (Hopkins, 1996 and Harden, et al., 2004). Woodbine sediments were deposited by fluvial, destructive deltaic, and strand plain depositional systems sourced from erosion of the Ouachita uplift in Oklahoma and Arkansas (BEG, 1971 and Harden, et al., 2004). The Woodbine Formation ranges in thickness from less than 100 feet in south Texas to over 600 feet in down-dip areas of northeast Texas (Harden, et al., 2004). According to Nordstrom (1982) and local water well logs, the Woodbine Formation is approximately 150 feet thick and overlain by approximately 50 feet of alluvium in the vicinity of the landfill.

According to Harden, et al. (2004), Woodbine groundwater is present under confined conditions throughout most of North Texas but may be unconfined in areas of outcrop. Local water well logs indicate approximate Woodbine Aquifer groundwater potentiometric surface elevations ranging from about 430 to 530 ft-msl in the vicinity of the landfill. This is generally consistent with the regional potentiometric contours illustrated in Figure IIIG-A-4 (Regional Woodbine Aquifer Potentiometric Surface Map). The regional Woodbine Aquifer groundwater flow direction follows the regional dip of the formation, to the southeast, with an average rate of groundwater movement reported to be about 10 to 20 feet per year (Nordstrom, 1982). The primary source of recharge to the aquifer is precipitation infiltration on the outcrop, and through Quaternary Alluvium sediments overlaying Woodbine Outcrop (where present) upon which the landfill is founded. The Woodbine Formation outcrop and Quaternary Alluvium areas within 15 miles of the site are shown on Figure IIIG-A-1 (Regional Geologic Map) in Appendix IIIG-A.

Hydraulic properties and groundwater quality in the Woodbine Aquifer is summarized in Table 2-2 (modified from Nordstrom, 1982 and Langley, 1999). According to Nordstrom (1982), the Woodbine Aquifer produces fresh, good quality water from wells completed on or near the outcrop but high iron concentrations in the upper Woodbine may make groundwater undesirable. In general, Woodbine groundwater quality deteriorates rapidly down dip from the outcrop with total dissolved solids, sodium, chloride, and bicarbonate concentrations generally increasing with depth (Nordstrom, 1982).

2.4.2 Trinity Aquifer

The TWDB classifies the Trinity Aquifer as a major Texas aquifer (Ashworth and Hopkins, 1995). From the youngest to oldest, the Trinity Aquifer is comprised of the Paluxy, the Glen Rose, and the Twin Mountain formations. The Paluxy is composed predominately of sand interbedded with clay and shale. Paluxy Formation sediments were derived from the Ouachita and Arbuckle Mountain uplifts in Oklahoma which were deposited in fluvial, deltaic, and strand plain depositional environments (Harden, 2004).

According to the TWDB (Harden, et al., 2004) and local water well logs, the depth to the top of the Trinity Aquifer (top of Paluxy Formation) beneath the landfill is approximately 650 feet below ground surface (-150 ft-msl) and the depth to the bottom of the Trinity Aquifer (bottom of the Twin Mountains Formation) beneath the landfill is about 1,650 ft-bgs (-1,150 ft-msl).

Paluxy groundwater is present under confined conditions throughout most of north Texas but may be unconfined in outcrop areas (Harden, et al., 2004). As illustrated in Figure IIIG-A-5 (Regional Paluxy Aquifer Potentiometric Surface Map), the Paluxy Aquifer groundwater potentiometric surface is near mean sea level in the vicinity if the landfill, indicating confined conditions. The Paluxy groundwater flow direction follows the regional dip of the formation to the east with a rate of groundwater

movement reported to be less than two feet per year (Nordstrom, 1982). The Paluxy outcrops about 20 miles west of the site (BEG, 1987). The primary source of recharge to the Paluxy Aquifer is infiltration of precipitation on outcrop.

Hydraulic properties and groundwater quality in the Paluxy Formation is summarized in Table 2-2 (Nordstrom, 1982 and Langley, 1999). According to Langley (1999), Paluxy Aquifer wells produce small to moderate quantities of fresh water. Based on the water quality parameters listed in Table 2-2, Paluxy groundwater is generally of higher quality than Woodbine Aquifer groundwater.

Table 2-2
Regional Hydraulic Properties and Water Quality Parameters in the Woodbine and Paluxy Aquifers[1]

Hydraulic Properties	Woodbine Aquifer	Paluxy Aquifer
Composition	Sandstone, siltstone, shale	Sandstone, shale
Transmissivity	Average 4,700 gal/day/ft	Range 5,000-10,000 gal/day/ft
Hydraulic Conductivity	Average $2x10^{-3}$ cm/sec	Range $1-3x10^{-3}$ cm/sec
Flow Rate	10-20 ft/yr	1-2 ft/yr
Recharge Zones	On Outcrop	On outcrop (24 miles west of landfill)
Potentiometric Surface	See Figure IIIG-A-4	See Figure IIIG-A-5
Present Water Use	Public supply, industrial, irrigation, and domestic	Public supply, domestic, and some industrial
Water Wells Within 1 Mile	See Figure IIIG-A-6 and Table 2-3	See Figure IIIG-A-6 and Table 2-3
Water Quality Parameters	**Woodbine Aquifer (76 well average)**	**Paluxy Aquifer (51 well average)**
Total Dissolved Solids (mg/l)	877.39	606.70
Chloride (mg/l Cl)	85.88	36.08
Sodium (mg/l Na)	311.76	187.76
Nitrate (mg/l NO_3)	0.67	1.00
Sulfate (mg/l SO_4)	209.18	101.25
Fluoride (mg/l F)	1.30	1.06

[1]Modified from Langley (1999) and Nordstrom (1982).

2.5 Water Well Search

A search to identify Texas-registered water wells within a one-mile radius of the landfill permit boundary included a water well search by Geosearch in January 2022 for records and maps on file in the USGS National Water Information System (NWIS), Texas Submitted Drillers Report Database (SSDRD), TCEQ database, Texas Water Development Board (TWDB) database, and state Water Utility Database (WUD) records. ERIS identified 17 water wells within one-mile of the landfill permit boundary. Weaver

Consultants Group, LLC (WCG) performed an independent water well search which included review of the aforementioned databases, as well as facility records and a field reconnaissance from area roadways, and additional water wells were identified. The Geosearch water well report is provided in Appendix IIIG-A. The information for the 17 identified water wells is summarized in Table 2-3. The water well locations are shown on the Figure IIIG-A-6 in Appendix IIIG-A.

Of the 17 identified water wells, 12 are completed in the Woodbine Aquifer and five are completed in the Upper Trinity Aquifer (Paluxy Aquifer). As indicated on Figure IIIG-A-5, one registered water well is located within 500 feet of the landfill permit boundary is approximately 450 feet north of the landfill permit boundary and is reportedly used for domestic purposes.

Table 2-3
Registered Water Wells Within One Mile of the Landfill[1]

Well Identification Number	Total Well Depth (ft)	Screened Aquifer[2]	Reported Use
TX189570	260	Woodbine	Domestic
TX480231	785	Upper Trinity (Paluxy)	Irrigation
TX200471	150	Woodbine	Irrigation
TX12969	180	Woodbine	Irrigation
32-16-407	200	Woodbine	Industrial
TX196105	80	Woodbine	Irrigation
TX189550	180	Woodbine	Industrial
TX403306	800	Upper Trinity (Paluxy)	Irrigation
32-16-408	348	Woodbine	Industrial
TX383317	815	Upper Trinity (Paluxy)	Irrigation
TX189549	190	Woodbine	Domestic
TX189548	35	Woodbine	Domestic
32-16-704	772	Upper Trinity (Paluxy)	Domestic
32-16-401	900	Upper Trinity (Paluxy)	Domestic
TX204709	132	Woodbine	Irrigation
TX197714	95	Woodbine	Irrigation/Dairy
32-15-602	43	Woodbine	Domestic

Notes: [1] Water well number, depth and use information obtained from digital water well reports.
[2] Water well aquifer designations obtained from water well log records and lithologic information.

2.6 Site Reconnaissance

In February 2022, WCG completed a water well reconnaissance from area roadways. The purpose of the reconnaissance was to identify potential unregistered water wells within a 1-mile radius of the landfill permit boundary. WCG also searched for the presence of springs and faulting within the immediate accessible area within a 1-mile radius of the landfill permit boundary. The reconnaissance was limited by viewing obstructions, including vegetation and structures, and private property access restrictions. The reconnaissance included visual observations for the presence of elevated water tanks, wellhead equipment, pressure balance tanks, small outlying

structures having electrical power drops, and windmills. Based on the reconnaissance field observations, no new water wells, no springs, and no surface expressions of faulting were identified. According to Brune (2002), there are no springs identified in the vicinity of the site and there are no active springs locally.

3 SUBSURFACE INVESTIGATION REPORT

3.1 Site Stratigraphy

3.1.1 Existing Borehole Data

The subsurface characterization for the landfill permit boundary area is supported by 142 previously advanced borings. The boring locations are shown on Figure IIIG-B-1 in Appendix IIIG-B. Boring elevation and depth information is summarized in Table 3-1. The individual lithologic logs are provided in Appendix IIIG-B. The borings were advanced during multiple drilling events conducted between 1988 and 2014 and are further discussed in Section 3.3.

Seven geologic cross sections were constructed by Golder Associates (Golder) in 2014 to illustrate subsurface conditions across the permit boundary (pursuant to the major permit amendment for Permit No. MSW-358B). Copies of the Golder cross sections drawings are provided in Appendix IIIG-C. Five of these cross section drawings were reproduced for this major permit amendment application (Permit No. MSW-385C) and are presented om Figures IIIG-C-2 through IIIG-C-6 in Appendix IIIG-C. A geologic cross section index map is included on Figure IIIG-C-1. Geologic cross sections A-A', B-B', C-C', F-F', and G-G' were reproduced utilizing the same section locations and borings as Golder in 2014 but have been amended to include any additional monitor well borings installed since the issuance of Permit No. MSW-358B and to illustrate the proposed limit of waste boundaries and excavation grades. The lithologic logs and geologic cross sections indicate that the facility's subsurface geology can be divided into five site-specific stratigraphic units consistent with the existing permitted subsurface characterization and include site-specific Strata A, B, C, D and E.

3.1.2 Stratum A

At ground surface in undeveloped areas across the site lies Stratum A. This site-specific stratigraphic unit is present due to the deposition of alluvial sediments. According to the existing site exploration data and subsurface characterization, Stratum A unit sediments are predominately composed of interbedded plastic clays and silts with lesser discontinuous lenses of clayey sand, silty sand, and sand. These sediments exhibit a high degree of compositional heterogeneity with interbedding and abrupt sudden-to-gradational transitions between predominate material composition. Landfill development has removed the Stratum A sediments from within the limits of waste. Predevelopment, this unit existed across the permit boundary with a thickness ranging

from about 1 to 72 feet. The geotechnical testing results for Stratum A indicate a vertical permeability of $5.7x10^{-7}$ cm/sec and a mean horizontal permeability of $1.8x10^{-8}$ cm/sec (Golder, 2014).

3.1.3 Stratum B

Beneath Stratum A lies the Stratum B unit. According to the existing site exploration data and subsurface characterization, Stratum B unit sediments are predominately composed of course-grained transmissive alluvium sediments (clayey sand, silty sand, and sand) with discontinuous lenses of gravel present near the base of the unit. Stratum B sediments are described as mostly moist to wet and containing the Uppermost Aquifer. Landfill development has removed the Stratum A sediments from within the limits of waste. Predevelopment, this unit ranged in thickness up to about 48 feet across the permit boundary area. Portions of Stratum B have been removed by facility development. The geotechnical testing results for Stratum B indicate a vertical permeability of $7.1x10^{-6}$ cm/sec and a mean horizontal permeability of $2.1x10^{-2}$ cm/sec (Golder, 2014). The field slug test results for Stratum B screened piezometers and monitor wells indicate a permeability range of $1.38x10^{-3}$ cm/sec to $6.23x10^{-2}$ cm/sec (Golder, 2014).

3.1.4 Stratum C

Beneath Stratum B lies the Stratum C unit. According to the existing site exploration data and subsurface characterization, Stratum C is characterized as non-transmissive low permeability weathered Woodbine Formation sediments. The uppermost expression of Stratum C is generally marked by clayey shale or shaley clay exhibiting varying degrees of weathering and consolidation. The lowermost portions of Stratum C are described as predominately weathered shale with lesser occurrences of silt or siltstone. Stratum C is represents the aquiclude beneath the overlying transmissive sediments of Stratum B, where present. This unit ranges in thickness up to about 48 feet across the permit boundary area. The geotechnical testing results for Stratum C indicate a mean vertical permeability of $4.8x10^{-8}$ cm/sec and a mean horizontal permeability of $8.8x10^{-8}$ cm/sec (Golder, 2014).

3.1.5 Stratum D

Beneath Stratum C lies the Stratum D unit. According to the existing site exploration data and subsurface characterization, Stratum D is characterized as transmissive weathered Woodbine Formation sediments composed predominately of sandstone and poorly consolidated sands commonly interbedded with weathered shale. Stratum D occurs as discontinuous lenses with thicknesses up to about 52 feet within the permit boundary area. Stratum D sediments are hydraulically isolated from the transmissive sediments of Stratum B across the most of the facility where they are separated hydraulically by Stratum C. In some areas, Stratum D sediments are bounded by Stratum C wholly. Stratum D lenses appear to contact Stratum B sediments in isolated areas near the eastern permit boundary and in the vicinity of monitor well MW-21. Monitor well MW-21 is the only existing groundwater monitor well screened wholly within Stratum D sediments.

The geotechnical testing results for Stratum D indicate a mean vertical permeability of $9.5x10^{-5}$ cm/sec and a mean horizontal permeability of $2.6x10^{-4}$ cm/sec (Golder, 2014).

3.1.6 Stratum E

Stratum E is characterized as a basal unit of non-transmissive low permeability unweathered Woodbine Formation "bedrock" sediments composed predominately of shale with lesser occurrences of interbedded siltstone and limestone. Stratum E is continuous beneath the facility and represents the aquiclude beneath the overlying transmissive sediments of Stratum B and Stratum D. Existing geotechnical borings have penetrated Stratum E up to about 81 feet of Stratum E sediments within the facility permit boundary area. The geotechnical testing results for Stratum E indicate a mean vertical permeability of $1.0x10^{-7}$ cm/sec and a mean horizontal permeability of $5.0x10^{-7}$ cm/sec (Golder, 2014).

3.2 Soil Boring Plan

The existing and approved subsurface characterization for TCEQ Permit No. MSW-358B (Golder, 2014) utilized 135 soil borings to characterize the facility's existing permit boundary area with a permitted elevation of deepest excavation (EDE) of 424.5 ft-msl. Seven additional monitor well borings were advanced since the issuance of Permit No. MSW-358B. Title 30 TAC §330.63(e)(4)(B) requires that 38 borings be advanced to a minimum of 5 feet below the EDE, of which 20 must be advanced to a minimum of 30 feet below the EDE for the characterization of a 400-acre waste fill area. The previously advanced 142 borings include 73 borings advanced to depths exceeding 5 feet below the EDE; of which 40 have been advanced to depths exceeding 30 feet below the EDE. Therefore, the number and depths of the existing (previously drilled) borings exceed the regulatory requirements of Title 30 TAC §330.63(e)(4)(B). Additionally, the proposed reconfigured limits of waste do not include a spatial expansion outside the currently characterized area.

The facility submitted a Soil Boring Plan to TCEQ pursuant to the proposed TCEQ Permit MSW-358C landfill expansion on April 8, 2022. The April 2022 Soil Boring Plan requested use of the previously advanced 142 borings to characterize subsurface conditions beneath the facility. Excerpts from the 2022 Soil Boring Plan are presented in Appendix IIIG-E.

3.3 Previous Site Exploration Summary

A summary of previous site explorations is provided in this section. Information regarding the borings completed at the site are summarized in Table 3-1. The boring logs are presented in Appendix IIIG-B. The borehole locations and original ground surface elevations for each boring are shown on Figure IIIG-B-1. Based on a review of previous permit applications, geotechnical reports, and lithologic logs, it is our understanding that the previously completed soil borings were conducted in accordance with established field exploration methods in general accordance with Title 30 TAC §330.63(e)(4)(c). Subsurface

characterization of the site has been performed during multiple drilling events which are summarized below:

- A total of 75 borings were advanced by EMCON Baker-Shifflet from 1984 to 1995 as part of the initial subsurface investigation and groundwater monitoring network installation efforts.
- Golder Associates advanced 52 additional geotechnical borings from 2008 to 2011 for the purpose of characterizing the permit boundary area.
- Eight groundwater monitor wells (MW-16 through MW-23) were installed by Shaw Environmental in 2010.
- Seven groundwater monitor wells (MW-25 through MW-27 and MW-42 through MW-45) were installed by The Carel Corporation in 2014.

Table 3-1
Summary of Existing Boring Depths and Elevations

Borehole	Northing	Easting	Ground Elevation (ft-msl)	Borehole Total Depth (ft-bgs)	Borehole Bottom Elevation (ft-msl)	Feet Above or Below (XX.X) EDE (ft)	Tally of Borings Advanced at Least 5.0 Feet Below EDE	Tally of Borings Advanced at Least 30.0 Feet Below EDE
1984-1995 Borings by EMCON Baker-Shiflett								
G-1	6978365	2397380	456.5	29.0	427.5	3.0		
G-2	6977342	2397402	452.8	27.5	425.3	0.8		
G-3	6975871	2397872	475.9	64.0	411.9	(12.6)	1	
G-4	6979049	2396813	471.1	34.5	436.6	12.1		
G-5	6978323	2396968	456.4	26.5	429.9	5.4		
G-6	6977324	2396958	451.9	17.0	434.9	10.4		
G-7	6976102	2396966	462.2	31.0	431.2	6.7		
G-8	6978253	2396550	458.3	32.0	426.3	1.8		
EB-3	6978532	2394874	488.8	50.0	438.8	14.3		
EB-6	6979313	2396612	484.9	20.0	464.9	40.4		
EB-6D	6979329	2396658	484.9	54.0	430.9	6.4		
EB-6M	6979340	2396730	485.0	41.0	444.0	19.5		
EB-7	6978015	2396773	467.0	70.0	397.0	(27.5)	2	
EB-8	6977130	2397039	461.4	80.0	381.4	(43.1)	3	1
EB-8M	6977169	2396972	461.5	70.0	391.5	(33.0)	4	2
EB-8MA	6977159	2396912	461.5	70.0	391.5	(33.0)	5	3
EB-9	6976460	2396943	460.7	20.0	440.7	16.2		
EB-9D	6976445	2397077	461.1	50.0	411.1	(13.4)	6	
EB-9I	6976617	2397010	460.3	19.5	440.8	16.3		
EB-10	6976977	2396245	463.7	35.0	428.7	4.2		
EB-10I	6977030	2396310	461.9	34.5	427.4	2.9		
EB-11	6977117	2397690	461.3	26.0	435.3	10.8		
EB-11I	6977134	2397603	460.2	23.5	436.7	12.2		
MW-1	6978346	2393414	479.3	38.0	441.3	16.8		
MW-2	6978991	2395691	476.7	55.0	421.7	(2.8)		
MW-3	6977967	2398625	470.2	64.5	405.7	(18.8)	7	
MW-4	6976915	2398637	469.8	61.5	408.3	(16.2)	8	
MW-5	6975883	2398617	471.1	74.0	397.1	(27.4)	9	
MW-6	6974549	2397351	469.1	58.5	410.6	(13.9)	10	
MW-7	6975084	2396616	469.1	37.5	431.6	7.1		

Note: Depth of EDE for entire facility is 424.5 ft-msl.

Table 3-1
Summary of Existing Boring Depths and Elevations (continued)

Borehole	Northing	Easting	Ground Elevation (ft-msl)	Borehole Total Depth (ft-bgs)	Borehole Bottom Elevation (ft-msl)	Feet Above or Below (XX.X) EDE (ft)	Tally of Borings Advanced at Least 5.0 Feet Below EDE	Tally of Borings Advanced at Least 30.0 Feet Below EDE
1984-1995 Borings by EMCON Baker-Shiflett (continued)								
MW-8	6974911	2395745	468.5	31.0	437.5	13.0		
MW-9	6975053	2394747	468.1	25.5	442.6	18.1		
MW-10	6975149	2393750	467.1	51.5	415.6	(8.9)	11	
PMW-11	6976916	2398196	474.6	29.5	445.1	20.6		
MW-12	6975948	2398553	472.1	60.0	412.1	(12.4)	12	
MW-13	6975912	2397737	475.4	54.5	420.9	(3.6)		
MW-14	6975952	2397136	474.4	39.5	434.9	10.4		
S-1	6975152	2396579	469.3	36.5	432.8	8.3		
S-2	6974583	2397339	468.4	63.0	405.4	(19.1)	13	
S-3	6974546	2398667	464.1	60.0	404.1	(20.4)	14	
S-4	6975205	2396073	465.5	34.0	431.5	7.0		
S-5	6975127	2394806	467.3	41.0	426.3	1.8		
S-6	6975254	2393450	467.2	54.5	412.7	(11.8)	15	
S-7	6977487	2393275	473.4	38.5	434.9	10.4		
S-10	6975903	2397053	467.0	30.0	437.0	12.5		
S-11	6975817	2398653	470.6	75.0	395.6	(28.9)	16	
S-12	6977118	2398702	469.1	43.5	425.6	1.1		
S-13	6977524	2396201	474.3	43.5	430.8	6.3		
S-14	6978385	2393308	478.8	45.0	433.8	9.3		
S-15	6978588	2394815	488.9	50.0	438.9	14.4		
S-16	6978873	2395391	484.4	37.0	447.4	22.9		
S-17	6979242	2396769	483.2	38.0	445.2	20.7		
S-18	6979631	2398345	475.8	37.0	438.8	14.3		
S-19	6979442	2398712	468.7	79.0	389.7	(34.8)	17	4
WP-2	6977097	2396723	462.2	58.5	403.7	(20.8)	18	
1	6978416	2397837	463.8	30.0	433.8	9.3		
2	6977944	2397845	464.1	27.0	437.1	12.6		
3	6977587	2397840	465.5	39.0	426.5	2.0		
4	6977208	2397694	455.8	37.0	418.8	(5.7)	19	
5	6976790	2397670	460.3	40.0	420.3	(4.2)		

Note: Depth of EDE for entire facility is 424.5 ft-msl.

Table 3-1
Summary of Existing Boring Depths and Elevations (continued)

Borehole	Northing	Easting	Ground Elevation (ft-msl)	Borehole Total Depth (ft-bgs)	Borehole Bottom Elevation (ft-msl)	Feet Above or Below (XX.X) EDE (ft)	Tally of Borings Advanced at Least 5.0 Feet Below EDE	Tally of Borings Advanced at Least 30.0 Feet Below EDE
1984-1995 Borings by EMCON Baker-Shiflett (continued)								
6	6976552	2397453	460.1	25.8	434.3	9.8		
7	6976534	2396968	461.1	25.0	436.1	11.6		
8	6976531	2396498	459.2	23.0	436.2	11.7		
9	6976910	2396353	462.4	30.0	432.4	7.9		
10	6977380	2396310	464.3	55.0	409.3	(15.2)	20	
11	6977749	2396205	468.6	53.0	415.6	(8.9)	21	
12	6978174	2396045	470.7	61.0	409.7	(14.8)	22	
13	6978578	2395873	474.6	66.0	408.6	(15.9)	23	
14	6978967	2395741	476.5	64.0	412.5	(12.0)	24	
15	6979128	2396240	484.4	17.0	467.4	42.9		
16	6979267	2396674	487.7	14.0	473.7	49.2		
17	6979375	2397054	483.4	35.5	447.9	23.4		
18	6979204	2397448	467.0	35.0	432.0	7.5		
19	6978907	2397826	463.6	77.3	386.3	(38.2)	25	5
2008/2009 Borings by Golder Associates								
EXP-1	6977351	2390533	481.5	90.0	391.5	(33.0)	26	6
EXP-2	6976555	2390418	467.5	65.0	402.5	(22.0)	27	
EXP-3	6976563	2392080	458.6	90.0	368.6	(55.9)	28	7
EXP-4	6977417	2391628	477.0	85.0	392.0	(32.5)	29	8
EXP-5	6977893	2392497	468.3	98.0	370.3	(54.2)	30	9
EXP-6	6976839	2393331	459.2	60.0	399.2	(25.3)	31	
EXP-7	6975961	2392257	466.8	45.0	421.8	(2.7)		
2010 Borings by Golder Associates								
B-101	6977413	2389488	496.0	110.0	386.0	(38.5)	32	10
B-102	6976827	2389537	472.9	64.0	408.9	(15.6)	33	
B-103	6977102	2390224	485.7	102.0	383.7	(40.8)	34	11
B-104	6976080	2390374	466.5	81.0	385.5	(39.0)	35	12
B-105	6977406	2390956	479.9	94.0	385.9	(38.6)	36	13
B-106	6977075	2390898	467.7	57.0	410.7	(13.8)	37	
B-107	6977261	2391447	473.0	86.0	387.0	(37.5)	38	14

Note: Depth of EDE for entire facility is 424.5 ft-msl.

Table 3-1
Summary of Existing Boring Depths and Elevations (continued)

Borehole	Northing	Easting	Ground Elevation (ft-msl)	Borehole Total Depth (ft-bgs)	Borehole Bottom Elevation (ft-msl)	Feet Above or Below (XX.X) EDE (ft)	Tally of Borings Advanced at Least 5.0 Feet Below EDE	Tally of Borings Advanced at Least 30.0 Feet Below EDE
2010 Borings by Golder Associates (continued)								
B-108	6976511	2393802	466.1	81.0	385.1	(39.4)	39	15
B-109	6975761	2391370	464.3	80.0	384.3	(40.2)	40	16
B-110	6977524	2391558	483.0	97.0	386.0	(38.5)	41	17
B-111	6977079	2391798	464.5	79.0	385.5	(39.0)	42	18
B-112R	6976119	2392250	460.0	75.0	385.0	(39.5)	43	19
B-113R	6976787	2390608	459.7	47.0	412.7	(11.8)	44	
B-114	6975753	2392150	461.7	77.0	384.7	(39.8)	45	20
B-115	6977539	2392239	463.1	77.0	386.1	(38.4)	46	21
B-116	6977088	2392282	465.4	87.0	378.4	(46.1)	47	22
B-117R	6976828	2391998	459.6	72.0	387.6	(36.9)	48	23
B-118R	6975902	2393341	464.3	78.0	386.3	(38.2)	49	24
B-119R	6977761	2392690	464.9	78.0	386.9	(37.6)	50	25
B-120R	6978020	2392969	466.4	79.0	387.4	(37.1)	51	26
B-121R	6977764	2393126	464.4	77.0	387.4	(37.1)	52	27
B-122	6977880	2393323	461.9	75.0	386.9	(37.6)	53	28
B-123R	6977173	2393415	472.7	86.0	386.7	(37.8)	54	29
B-124	6976332	2393449	462.5	80.0	382.5	(42.0)	55	30
B-125	6975546	2393459	464.9	81.0	383.9	(40.6)	56	31
B-126	6976098	2393942	465.3	80.0	385.3	(39.2)	57	32
B-127	6975423	2394235	466.2	80.0	386.2	(38.3)	58	33
B-128	6975893	2394763	463.8	55.0	408.8	(15.7)	59	
B-129	6975329	2395285	464.2	80.0	384.2	(40.3)	60	34
B-130	6975810	2395631	464.6	80.0	384.6	(39.9)	61	35
B-131	6075485	2396017	465.4	65.0	400.4	(24.1)	62	
H-1	6978229	2395709	471.1	54.0	417.1	(7.4)	63	
H-2	6978169	2395719	470.8	39.5	431.3	6.8		
H-3	6977971	2395786	467.5	31.0	436.5	12.0		
H-4	6978258	2395846	470.5	37.5	433.0	8.5		

Note: Depth of EDE for entire facility is 424.5 ft-msl.

Table 3-1
Summary or Existing Boring Depths and Elevations (continued)

Borehole	Northing	Easting	Ground Elevation (ft-msl)	Borehole Total Depth (ft-bgs)	Borehole Bottom Elevation (ft-msl)	Feet Above or Below (XX.X) EDE (ft)	Tally of Borings Advanced at Least 5.0 Feet Below EDE	Tally of Borings Advanced at Least 30.0 Feet Below EDE
2010 Borings by SHAW Environmental								
MW-16	6977391	2398623	464.9	58.0	406.9	(17.6)	64	
MW-17	6976242	2398643	463.6	58.0	405.6	(18.9)	65	
MW-18	6975295	2396154	466.7	30.0	436.7	12.2		
MW-19	6975133	2395242	466.8	30.0	436.8	12.3		
MW-20	6975268	2394256	468.1	30.0	438.1	13.6		
MW-21	6975355	2393378	468.4	56.5	411.9	(12.6)	66	
MW-22	6976107	2396423	463.8	30.0	433.8	9.3		
MW-23	6976818	2398627	464.2	59.0	405.2	(19.3)	67	
2011 Borings by Golder Associates								
B-11.1	6979315	2396880	483.5	60.0	423.5	(1.0)		
B-11.2	6979503	2397859	491.7	50.0	441.7	17.2		
B-11.3	6979020	2398560	473.4	95.0	378.4	(46.1)	68	36
B-11.4	6977656	2398577	472.8	95.0	377.8	(46.7)	69	37
B-11.5	6975945	2398559	473.8	100.0	373.8	(50.7)	70	38
B-11.6	6975838	2397352	463.5	80.0	383.5	(41.0)	71	39
B-11.7	6976057	2396091	463.6	79.0	384.6	(39.9)	72	40
B-11.8	6977608	2395798	470.1	67.5	402.6	(21.9)	73	
B-11.9	6978947	2395522	475.6	75.0	400.6	(23.9)	74	
B-11.10	6978727	2394691	522.2	80.0	442.2	17.7		
2014 Borings by The Carel Corporation								
MW-25	6976653.3	2396292.59	464.1	23.0	441.1	16.6		
MW-26	6977227.5	2396273.7	481.6	44.2	437.4	12.9		
MW-27	6977776.7	2396121.57	466.7	25.0	441.7	17.2		
MW-42	6975799.7	2398504.95	464.2	50.0	414.2	(10.3)	75	
MW-43	6975815.9	2397973.48	463.0	45.0	418.0	(6.5)	76	
MW-44	6975834.9	2397440.88	463.4	37.0	426.4	1.9		
MW-45	6975879.2	2396907.27	463.3	26.0	437.3	12.8		

Note: Depth of EDE for entire facility is 424.5 ft-msl.

4 GROUNDWATER INVESTIGATION REPORT

4.1 Water Level Measurements

Groundwater at the facility has been evaluated using historical water-level data from the former piezometers, former groundwater monitor wells, and existing groundwater monitor wells. Groundwater elevations from the currently approved Subtitle D groundwater monitor wells are provided in Table 4-1 and were measured during monitoring events. Groundwater potentiometric surface contour maps prepared from the March 2021 and September 2021 groundwater gauging data are presented as Figures IIIG-D-1 and IIIG-D-2 in Appendix IIIG-D. A site wide historical highest measured groundwater elevation contour map is presented on Figure IIIG-D-3 in Appendix IIIG-D and includes the highest measured groundwater elevations from the facility existing and former monitor wells and piezometers. The historical groundwater elevation data for the former piezometers and monitor wells was obtained from the facility's 2014 Geology Report (Permit No. MSW-358B). Copies of the historical groundwater elevation data table summaries are provided in Appendix IIIG-D. Copies of historical groundwater contour maps produced by Golder Associates (from Permit No. MSW-358B, Geology Report) and The Carel Corporation (from routine semiannual groundwater monitoring events) are also provided in Appendix IIIG-D.

Table 4-1
Subtitle D Monitoring Event Groundwater Elevations

Date	MW-1	MW-2	MW-3	MW-4	MW-7	MW-8	MW-9	MW-10	MW-11	MW-12	MW-13	MW-14	MW-15	MW-16	MW-17	MW-18	MW-19	MW-20	MW-21	MW-22	MW-23	MW-25	MW-26	MW-27	MW-42	MW-43	MW-44	MW-45
12/1/1994	463.81	462.10	457.69	457.25	442.09	447.72	455.3	451.51	467.39	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
3/1/1995	464.48	462.83	458.16	457.87	444.09	448.84	455.63	451.27	468.28	450.44	450.75	451.93	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
7/1/1995	462.75	462.31	456.72	456.40	440.81	444.80	454.42	450.12	466.58	447.94	448.68	450.74	451.68	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
9/1/1995	460.43	461.80	455.74	455.52	440.94	443.69	451.27	447.50	464.77	445.84	448.57	448.03	448.59	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
1/1/1996	459.73	461.68	455.34	454.97	440.59	442.71	450.08	445.61	464.94	443.42	443.77	445.66	446.95	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
3/1/1996	459.99	461.68	454.97	454.53	440.54	445.42	449.66	444.62	465.23	442.38	442.75	444.78	446.36	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
9/1/1996	456.93	461.92	454.10	453.97	440.98	442.51	449.24	444.76	463.13	441.66	442.30	444.02	446.46	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
3/1/1997	462.36	462.32	457.64	457.38	443.79	449.61	456.61	448.19	467.62	448.30	448.76	449.33	449.62	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
9/1/1997	459.17	461.82	457.86	456.86	441.28	444.15	451.08	447.07	464.22	442.42	439.99	444.80	445.74	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
3/1/1998	463.94	463.48	458.30	458.10	450.72	455.10	460.03	450.87	468.48	453.38	450.85	454.61	454.94	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
7/1/1998	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	445.68	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
9/1/1998	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	442.68	443.26	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
10/1/1998	458.23	452.57	452.93	451.70	439.27	NM	NM	444.44	461.22	441.71	NM	NM	444.21	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
12/1/1998	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	445.68	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
4/1/1999	459.73	462.43	456.35	456.01	441.35	444.44	448.34	444.89	467.51	442.39	442.62	444.55	445.64	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
9/1/1999	455.16	462.72	453.29	452.99	441.39	442.92	447.44	443.54	463.86	441.13	441.44	443.60	445.18	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
3/1/2000	455.56	462.12	455.28	454.87	441.37	442.97	447.11	442.88	466.65	441.76	442.05	443.88	445.17	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
9/1/2000	453.36	461.94	452.93	452.69	440.71	442.16	446.77	442.13	462.63	440.65	441.04	443.49	445.22	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
3/1/2001	459.33	463.00	457.47	457.13	445.08	449.01	450.37	444.56	467.86	448.97	449.29	450.00	450.50	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
9/1/2001	455.27	462.32	455.78	455.54	440.65	443.33	447.73	444.07	464.28	443.73	444.11	445.95	447.13	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
3/1/2002	462.04	462.81	458.24	457.96	444.38	451.96	454.30	445.43	468.35	449.06	449.56	450.91	452.56	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
9/1/2002	455.79	461.62	456.04	455.86	440.45	443.50	448.17	445.30	464.90	442.94	443.31	445.50	447.09	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
3/1/2003	459.04	462.11	457.66	457.4	441.14	444.45	448.42	443.87	468.18	445.20	445.65	447.48	448.60	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
9/1/2003	454.70	462.23	455.48	455.18	440.67	442.62	447.32	442.90	463.89	442.53	442.86	445.17	447.03	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
3/1/2004	457.25	463.47	457.61	457.37	441.63	443.74	447.59	442.59	466.72	444.91	445.47	447.88	449.56	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
9/1/2004	457.68	463.37	457.12	456.97	440.50	444.77	449.16	444.53	466.04	444.54	444.99	447.15	448.88	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
3/1/2005	460.21	463.72	458.10	457.87	440.44	444.81	449.17	444.93	467.02	444.33	445.78	447.74	449.33	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
9/1/2005	453.96	462.69	454.18	453.96	439.88	442.29	447.53	442.60	463.39	442.00	442.38	444.90	446.79	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
3/1/2006	456.43	463.38	456.11	455.78	441.57	443.93	447.93	441.97	465.20	444.98	445.51	447.80	450.15	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
9/1/2006	452.54	462.51	453.35	453.15	439.91	442.06	446.70	441.53	461.75	441.45	441.83	444.47	446.59	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
3/1/2007	456.83	463.72	456.64	456.11	442.15	443.18	447.69	441.65	465.22	443.34	443.58	445.93	447.64	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
6/1/2007	458.39	464.16	458.19	457.94	442.14	443.79	448.61	443.23	466.91	446.78	447.44	449.37	450.23	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
9/1/2007	459.44	464.46	458.04	457.74	440.55	445.34	449.36	444.18	466.04	445.18	445.81	557.94	449.28	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
12/1/2007	458.78	464.05	457.84	457.38	440.12	443.86	448.49	443.37	465.33	443.58	443.92	447.61	448.18	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
3/1/2008	460.21	464.70	458.67	458.5	440.93	445.05	449.16	443.41	466.55	445.25	445.74	447.79	449.63	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
9/1/2008	456.12	463.54	455.60	455.89	440.02	442.42	447.93	442.08	463.76	442.53	442.97	445.59	447.59	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
12/1/2008	455.77	463.28	455.56	455.48	440.00	442.46	447.59	441.39	463.74	441.61	442.13	445.32	447.68	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
3/1/2009	457.30	463.48	457.32	455.89	440.56	442.83	447.75	441.60	467.21	440.88	441.23	444.91	447.53	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
9/1/2009	454.81	463.37	456.79	456.84	439.98	442.39	447.42	440.89	464.69	442.07	442.47	445.15	446.85	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
3/1/2010	460.94	464.36	458.96	456.84	442.70	447.05	450.10	444.24	467.79	NM	447.96	449.83	450.92	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM

NM = Not Measured; groundwater elevation not gauged on this date or no data listed in facility's groundwater database.

Table 4-1
Subtitle D Monitoring Event Groundwater Elevations (continued)

Date	MW-1	MW-2	MW-3	MW-4	MW-7	MW-8	MW-9	MW-10	MW-11	MW-12	MW-13	MW-14	MW-15	MW-16	MW-17	MW-18	MW-19	MW-20	MW-21	MW-22	MW-23	MW-25	MW-26	MW-27	MW-42	MW-43	MW-44	MW-45
9/1/2010	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	450.97	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
12/1/2010	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	458.20	446.51	442.35	448.18	453.52	450.53	449.07	458.05	NM	NM	NM	NM	NM	NM	NM
3/1/2011	460.08	463.11	458.61	458.56	439.95	444.34	449.25	444.12	465.03	443.96	444.48	446.22	447.49	458.81	446.05	442.03	448.01	453.33	450.35	448.75	458.66	NM	NM	NM	NM	NM	NM	NM
6/1/2011	458.02	NM	454.79	NM	NM	NM	NM	NM	NM	NM	NM	NM	447.19	457.66	445.34	441.96	447.00	451.78	448.69	448.56	457.41	NM	NM	NM	NM	NM	NM	NM
9/1/2011	454.64	462.58	NM	454.70	439.67	442.20	447.38	441.69	461.81	440.96	441.65	444.41	446.16	454.86	443.72	441.36	446.36	449.79	447.05	447.65	454.65	NM	NM	NM	NM	NM	NM	NM
11/1/2011	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	456.32	443.46	441.47	445.88	449.14	446.81	447.52	456.26	NM	NM	NM	NM	NM	NM	NM
3/1/2012	461.53	464.59	458.97	458.76	444.10	448.93	449.35	444.22	468.23	447.29	448.18	450.54	452.42	458.90	447.61	446.72	449.54	455.29	451.38	453.2	458.78	NM	NM	NM	NM	NM	NM	NM
9/1/2012	455.00	462.85	454.92	454.70	439.53	442.28	447.46	441.67	463.11	441.4	442.1	444.52	446.30	454.80	443.42	441.40	446.32	449.85	447.12	447.69	454.79	NM	NM	NM	NM	NM	NM	NM
3/1/2013	456.34	462.97	456.88	456.58	439.63	442.03	447.39	441.08	462.88	440.19	441.64	444.33	446.33	456.67	444.9	441.23	446.03	449.56	447.25	447.69	456.60	NM	NM	NM	NM	NM	NM	NM
6/1/2013	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	456.81	NM	NM	NM	NM	NM	NM	456.78	NM	NM	NM	NM	NM	NM	NM
9/1/2013	452.75	462.90	455.41	455.19	440.33	441.73	446.71	439.95	463.95	440.76	441.46	444.85	447.97	445.35	443.44	441.33	445.09	447.34	NM	447.43	455.26	NM	NM	NM	NM	NM	NM	NM
3/1/2014	454.29	463.12	456.58	NM	439.52	441.61	446.94	439.74	463.25	440.98	441.63	443.91	446.01	456.33	443.69	441.08	445.12	447.32	445.43	447.46	456.23	NM	NM	NM	NM	NM	NM	NM
9/1/2014	454.29	463.12	456.58	NM	NM	441.61	446.94	439.74	463.25	NM	NM	444.09	NM	456.33	443.69	441.08	445.12	447.32	445.57	447.46	456.23	450.70	453.03	453.35	439.71	440.20	440.57	443.65
12/3/2014	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	451.59	453.45	453.62	440.04	440.53	440.94	443.97
3/1/2015	452.75	463.52	457.29	NM	NM	441.69	446.37	439.45	464.04	NM	NM	NM	NM	457.18	443.77	441.68	444.74	446.95	445.57	446.95	457.09	452.17	454.42	454.02	441.48	441.90	442.19	445.12
6/11/2015	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	454.41	458.71	455.45	451.55	451.67	452.63	454.60
8/1/2015	458.11	461.71	455.93	NM	NM	444.88	448.96	444.26	463.18	NM	NM	NM	NM	455.84	445.61	442.35	447.52	451.30	445.08	448.96	455.80	451.71	453.91	454.14	443.64	444.19	444.44	447.02
12/1/2015	NM	NM	NM	NM	NM	NM	455.88	NM	NM	NM	NM	NM	NM	NM	NM	NM	455.48	NM	NM	NM	NM	453.63	456.5	455.26	451.38	451.81	452.11	453.67
3/1/2016	461.28	463.20	458.64	NM	NM	446.76	450.00	444.97	465.82	NM	NM	NM	NM	458.43	447.40	444.44	449.16	454.04	452.24	450.15	458.36	452.22	454.29	454.47	446.33	446.87	447.09	448.56
5/31/2016	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	452.5	454.57	454.57	448.96	449.28	449.28	450.19
8/1/2016	458.13	462.55	457.15	NM	NM	445.59	448.75	444.97	463.98	NM	NM	NM	NM	456.96	446.72	444.32	447.74	452.40	450.62	448.95	456.90	451.89	453.88	454.47	445.10	445.44	445.6	447.22
11/14/2016	NM	NM	NM	NM	NM	443.07	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	451.97	NM	NM	NM	NM	NM	NM
3/1/2017	458.94	462.66	458.12	NM	NM	443.48	448.17	445.81	465.58	NM	NM	NM	NM	458.29	445.67	441.86	446.90	451.62	449.44	448.76	457.89	451.97	453.98	454.14	443.85	444.29	444.57	446.84
8/1/2017	454.89	462.38	457.79	NM	NM	442.30	447.32	445.22	463.82	NM	NM	NM	NM	457.65	445.04	441.91	446.38	449.56	447.03	448.00	457.55	451.72	453.62	454.05	443.06	443.42	443.59	445.87
11/10/2017	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
3/1/2018	456.55	462.16	456.26	NM	NM	443.38	NM	444.33	465.13	NM	NM	NM	NM	457.46	443.95	441.47	444.73	448.49	446.06	447.90	457.36	450.39	452.46	453.85	443.95	444.41	443.22	445.62
5/1/2018	NM	462.07	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	445.16	NM	NM	NM	NM	NM	NM	NM	NM	444.16	NM	NM
9/1/2018	453.01	461.82	455.95	NM	NM	441.58	446.94	443.22	462.16	NM	NM	NM	NM	455.85	444.44	441.37	445.35	447.62	445.80	447.73	455.66	451.79	453.42	452.27	442.63	442.99	443.17	445.39
12/1/2018	NM	463.24	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	454.24	NM	NM	NM	NM
3/1/2019	**462.10**	462.58	459.08	NM	NM	446.66	450.74	447.57	466.77	NM	NM	NM	NM	459.10	447.28	444.24	449.11	454.65	451.92	449.58	458.97	452.16	454.01	454.32	446.08	446.50	446.68	448.07
6/1/2019	NM	NM	NM	NM	NM	NM	NM	449.23	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
9/1/2019	456.99	462.16	456.68	NM	NM	443.12	448.42	446.37	464.30	NM	NM	NM	NM	456.59	445.17	441.38	446.81	451.22	448.76	448.07	456.49	451.51	453.42	453.84	443.39	443.77	443.97	446.20
12/1/2019	NM	NM	NM	NM	NM	442.77	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
3/1/2020	460.88	464.45	459.42	NM	NM	448.69	449.90	447.73	466.71	NM	NM	NM	NM	459.24	448.75	451.24	449.64	455.20	451.28	452.40	459.19	455	455.13	457.53	449.04	449.36	449.75	450.62
8/1/2020	457.96	462.58	456.97	NM	NM	443.53	448.65	446.43	464.11	NM	NM	NM	NM	456.89	445.27	441.44	447.49	451.71	448.88	448.32	456.8	451.62	453.73	453.99	443.64	444.13	444.4	446.57
11/1/2020	NM	NM	NM	NM	NM	NM	NM	445.46	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	458.04	NM	NM	NM	NM
3/1/2021	458.52	462.87	458.62	NM	NM	442.77	448.02	445.53	465.47	NM	NM	NM	NM	458.59	445.31	441.58	446.90	451.40	449.04	447.78	458.5	451.82	453.78	454	443.49	443.79	443.91	445.94
6/9/2021	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	447.03	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
9/1/2021	456.94	462.70	457.56	NM	NM	442.86	448.43	445.54	464.89	NM	NM	NM	NM	457.44	444.92	441.21	447.06	450.7	447.93	447.84	457.46	451.57	453.69	453.84	443.20	443.59	443.78	445.95

NM = Not Measured; groundwater elevation not gauged on this date or no data listed in facility's groundwater database.

4.2 Permeability of the Uppermost Aquifer

The hydraulic conductivity testing results performed during previous subsurface investigations at the site were summarized with other geotechnical testing results by Golder in the 2014 Geology Report (Permit No. MSW-358B). The Golder tables summarize geotechnical testing data and field slug testing data by site-specific stratigraphic units A through E. The geotechnical laboratory reports and information pertaining to the performed permeability testing are provided in Appendix IIIE (Geotechnical Report). The laboratory permeability test results and field slug testing results are summarized in Table 4-2 and Table 4-3; respectively.

Laboratory hydraulic conductivity tests results indicate that Stratum B is highly permeable compared to the underlying strata. Only one vertical permeability test exists for Stratum B ($7.1x10^{-6}$ cm/sec) which is more than 300 times higher than the geometric mean vertical permeability of the underlying Stratum C ($2.3x10^{-8}$ cm/sec). The hydraulic conductivity results for Stratum B are also significantly higher than the geometric mean horizontal conductivity of Stratum C ($1.8x10^{-8}$ cm/sec).

The range of contrasting permeability values is reasonable given the sedimentary composition and structure of the sediments tested and accounts for the perched condition of the Uppermost Aquifer. The field slug testing results for Stratum B indicate slightly lower permeability in the western portion of the facility (geometric mean: $5.62x10^{-3}$ cm/sec) when compared to the wells tested in the eastern facility area (geometric mean: $3.62x10^{-2}$ cm/sec).

Table 4-2
Summary of Laboratory Hydraulic Conductivity Testing Results

Stratum	Test Type	Permeability Values (cm/sec)				
		Number of Tests Performed	Minimum	Maximum	Arithmetic Mean	Geometric Mean
A	Horizontal	7	$2.7x10^{-9}$	$6.3x10^{-8}$	$1.8x10^{-8}$	$1.0x10^{-8}$
	Vertical	1	$5.7x10^{-7}$			
B	Horizontal	13	$5.5x10^{-7}$	$6.2x10^{-2}$	$2.1x10^{-2}$	$4.9x10^{-3}$
	Vertical	1	$7.1x10^{-6}$			
C	Horizontal	4	$3.0x10^{-9}$	$3.2x10^{-7}$	$8.8x10^{-8}$	$1.8x10^{-8}$
	Vertical	5	$5.6x10^{-9}$	$1.7x10^{-7}$	$4.8x10^{-8}$	$2.3x10^{-8}$
D	Horizontal	4	$5.2x10^{-10}$	$6.2x10^{-4}$	$2.6x10^{-4}$	$3.8x10^{-6}$
	Vertical	5	$6.3x10^{-10}$	$4.7x10^{-4}$	$9.5x10^{-5}$	$1.0x10^{-7}$
E	Horizontal	3	$1.7x10^{-9}$	$1.5x10^{-6}$	$5.0x10^{-7}$	$1.7x10^{-8}$
	Vertical	5	$9.6x10^{-9}$	$3.5x10^{-7}$	$1.0x10^{-7}$	$4.3x10^{-8}$

Note: Results reproduced from 2014 Golder Associates summary tables in Permit MSW-358B.

Table 4-3
Summary of Field Slug Testing Hydraulic Conductivity Results

Testing Location	Stratum	Facility Area	Hydraulic Conductivity Values (cm/sec)			
			Falling Head	Rising Head	Arithmetic Mean	Geometric Mean
MW-6	B	Eastern	$2.44x10^{-2}$	$1.93x10^{-2}$	$4.11x10^{-2}$	$3.62x10^{-2}$
MW-11	B		$5.84x10^{-2}$	$6.23x10^{-2}$		
MW-1	B	Western	$5.23x10^{-2}$	$4.13x10^{-2}$	$1.40x10^{-2}$	$5.62x10^{-3}$
PZ-104	B		$3.89x10^{-3}$	$3.77x10^{-3}$		
PZ-122	B		$1.38x10^{-3}$	$1.55x10^{-3}$		
PZ-130	B		$3.54x10^{-3}$	$4.14x10^{-3}$		

Note: Results reproduced from 2014 Golder Associates summary tables in Permit MSW-358B.

A site-wide hydraulic gradient was approximated from the IIIG-D-2 (Appendix IIIG-D) groundwater potentiometric surface map between monitor wells MW-1 and MW-18 at 0.0058 ft/ft. An effective porosity has been conservatively estimated at 30 (after Driscoll, 1989). The following groundwater linear velocity calculation uses a hydraulic gradient of 0.0058 ft/ft, a mean horizontal hydraulic conductivity (Kh) value of 4.11 x 10-2 cm/s, and an effective porosity (ne) of 0.30. The formula for the velocity calculation is:

$$V = K_h * i * 1{,}034{,}646 / n_e$$

Where:

V = linear velocity
K_h = radial hydraulic conductivity (cm/sec)
i = hydraulic gradient (ft/ft)
1,034,646 = scalar to convert from cm/sec to ft/year
n_e = effective porosity

Using these values and estimates, the average horizontal groundwater linear velocity in the uppermost aquifer is estimated at 822 ft/yr.

4.3 Hydrogeologic Interpretation

Groundwater at the site is perched within the coarse-grained alluvial sediments of site-specific Stratum B and the interconnected portions of the coarse-grained upper Woodbine Formation sediments of site-specific Stratum D.

4.3.1 Uppermost Aquifer

The first groundwater zone encountered beneath the landfill unit occurs within Stratum B and the interconnecting saturated portions of Stratum D which collectively constitute the Uppermost Aquifer across the site. Groundwater in the Uppermost Aquifer is transmitted predominately within interconnected lenses of Stratum B sediments under unconfined conditions. Where Stratum B and Stratum D sediments are locally interconnected, groundwater may be partially confined. The Stratum D portion of the Uppermost Aquifer appears to be isolated to easternmost permit boundary area and the immediate vicinity around existing point of compliance monitor well MW-21.

4.3.2 Lower Confining Unit

The low vertical hydraulic conductivity of Stratum C and Stratum E non-transmissive Woodbine Formation shale sediments and contrasting higher horizontal conductivity of Uppermost Aquifer sediments indicate a directional permeability differential between Uppermost Aquifer and the underlying aquiclude of 4 to 5 orders of magnitude (for Stratum B) and 1 to 2 orders of magnitude (for Stratum D). Under these conditions, groundwater flow occurs horizontally, within the Uppermost Aquifer, above the lower confining unit, and downgradient toward the West Fork of the Trinity River and the southern facility Permit Boundary.

4.3.3 Groundwater Monitoring System

The existing and proposed groundwater monitoring system design includes background and point of compliance (POC) groundwater monitor wells screened within the permitted uppermost aquifer. The groundwater monitoring system design is further discussed in the Groundwater Sampling and Analysis Plan provided in Appendix IIIH of the SDP.

4.4 Contaminant Pathways

In the unlikely occurrence of a release of leachate from the landfill unit, the most probable pathway for the migration of pollutants will occur vertically through the vadose zone and laterally into the permitted uppermost aquifer. Once within the uppermost aquifer, pollutants would be transported within the uppermost aquifer and down gradient in the direction of groundwater flow toward the permitted Point of Compliance and network of existing groundwater detection monitor wells.

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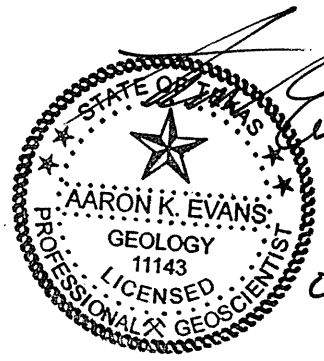
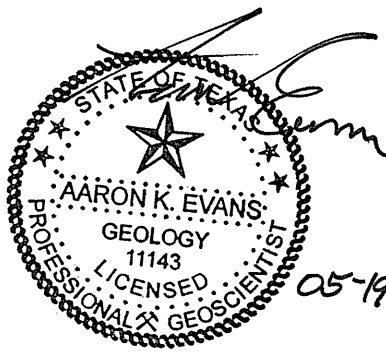
APPENDIX IIIG-A

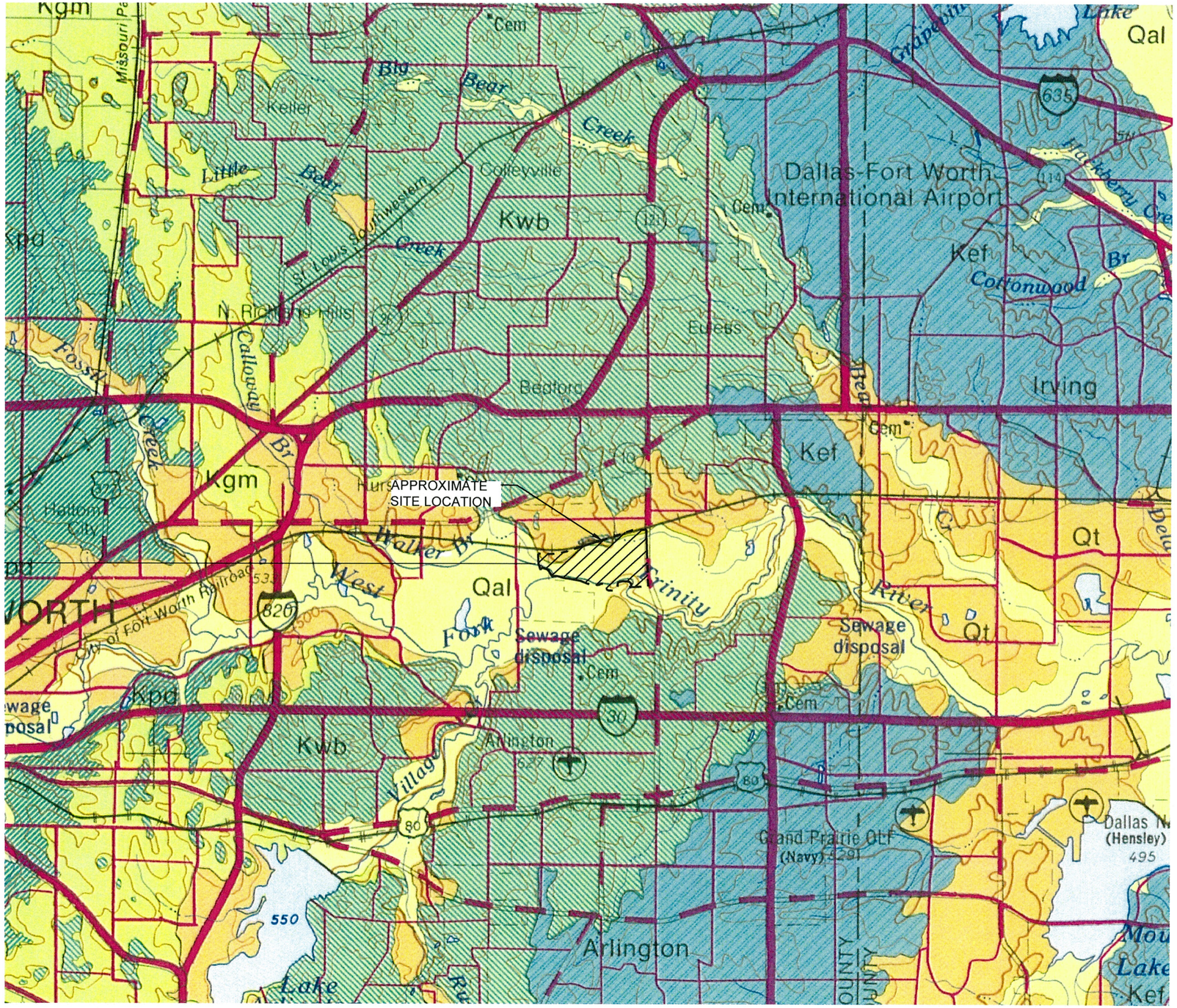
REGIONAL GEOLOGIC DATA

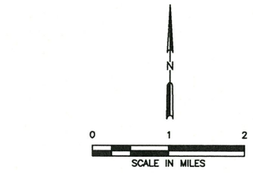


05-19-22

CONTENTS







LEGEND

LANDFILL PROPERTY

Qal Qu — Alluvium and Quaternary deposits undivided

Qt — Fluviatile terrace deposits

EPAwi — Wilcox Group undivided

PAwp / PAkp — Midway Group

Kke — Kemp Clay and Corsicana Marl undivided

Kne — Nacatoch Sand

Knm / Kne / Kmb — Neylandville Marl and Marlbrook Marl

Kpg — Pecan Gap Chalk (?)

Kwc — Wolfe City Sand

Ko — Ozan Formation ("lower Taylor marl")

Kau — Austin Chalk

Ket — Eagle Ford Formation

Kwb — Woodbine Formation

Kgm — Grayson Marl and Main Street Limestone undivided

NOTES:

1. REPRODUCED FROM THE GEOLOGIC ATLAS OF TEXAS, DALLAS SHEET, 1987.

- [ ] DRAFT
- [X] FOR PERMITTING PURPOSES ONLY
- [ ] ISSUED FOR CONSTRUCTION

DATE: 05/2022
FILE: 0023-404-11
CAD: FIG IIIG-A-1 GEOLOGIC MAP.DWG
DRAWN BY: CRA
DESIGN BY: CRA
REVIEWED BY: AKE

Weaver Consultants Group
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NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT
REGIONAL GEOLOGIC MAP

CITY OF ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS

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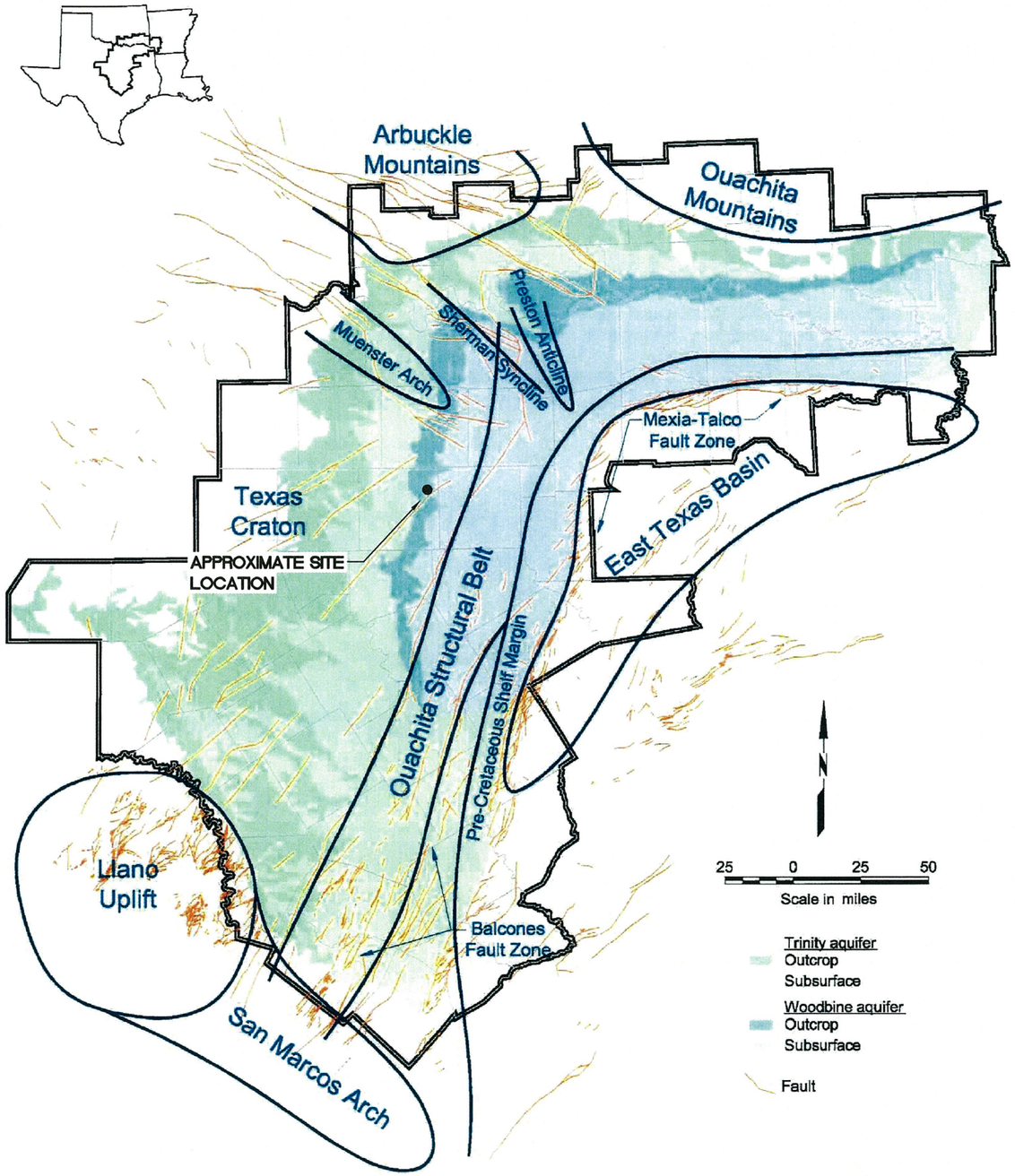
FIGURE IIIG-A-1

O:\0023\404\EXPANSION 2021\PART III\IIIG\FIG IIIG-A-1 REGIONAL GEOLOGIC MAP.dwg



STATE OF TEXAS
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GEOLOGY
11143
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05-19-22

NOTE:

1. REGIONAL STRUCTURAL FEATURES MAP ADAPTED FROM HARDEN ET AL, 2004, NORTHERN TRINITY/WOODBINE AQUIFER GROUNDWATER AVAILABILITY MODEL, TEXAS WATER DEVELOPMENT BOARD.

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REGIONAL STRUCTURAL FEATURES MAP

CITY OF ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS

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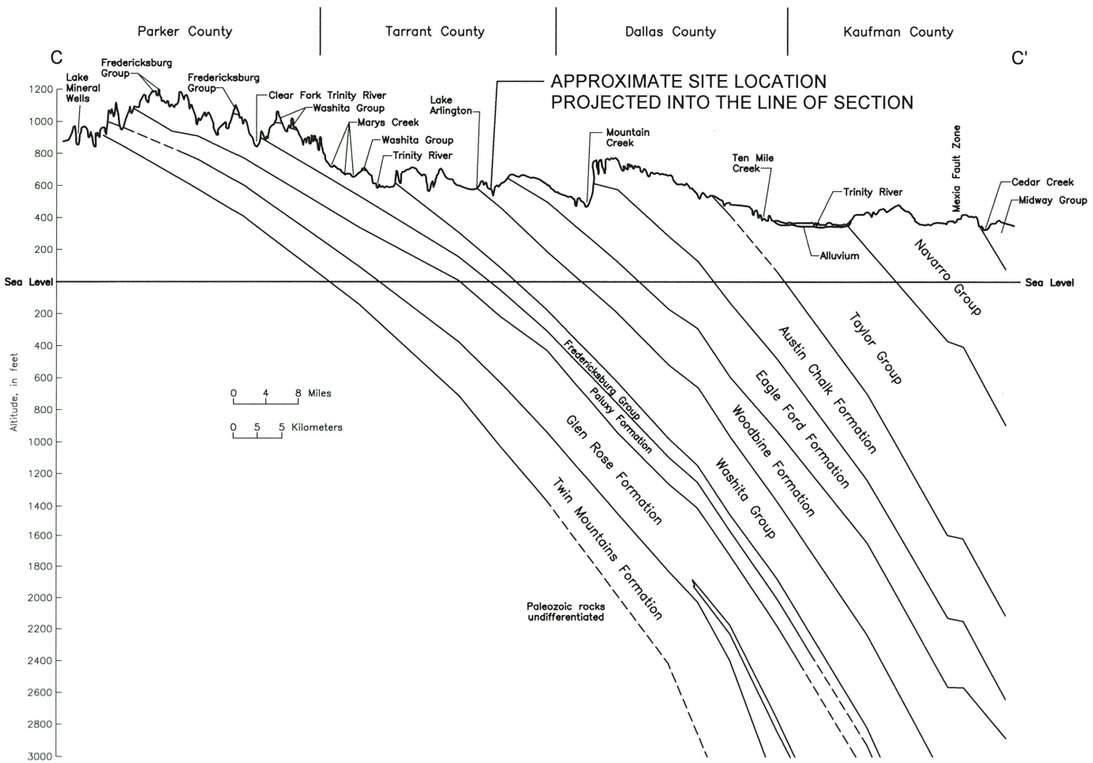
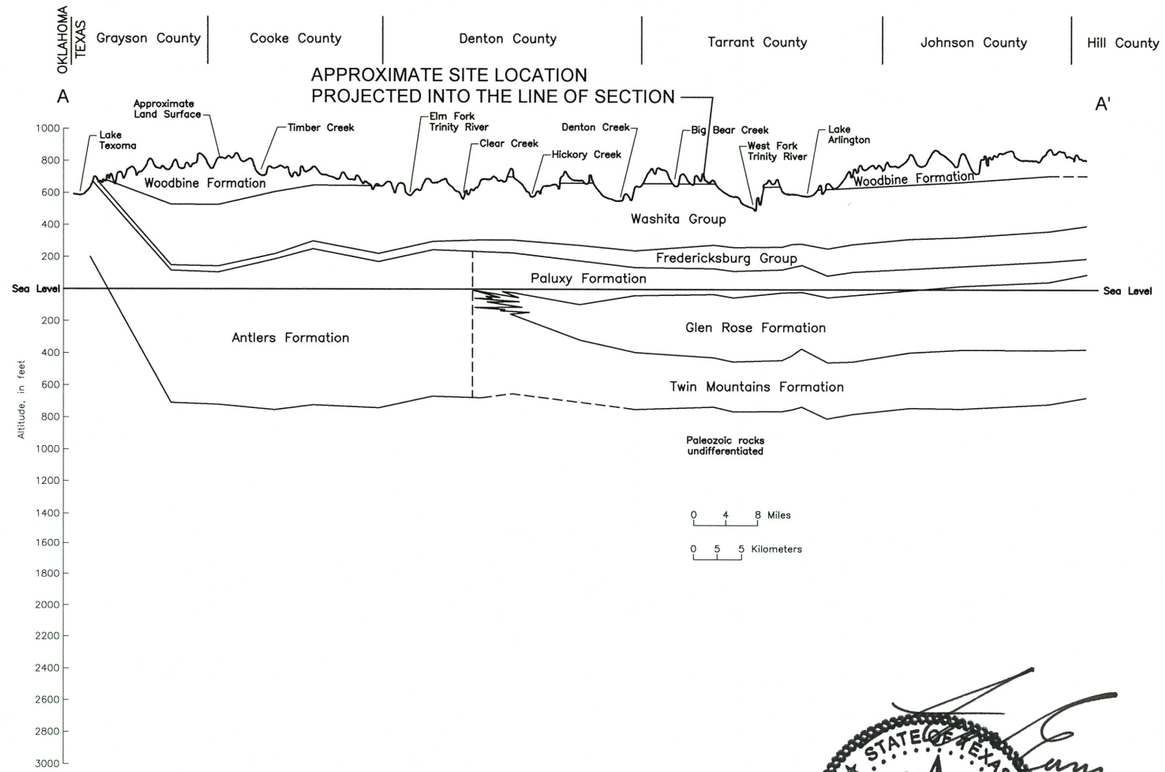
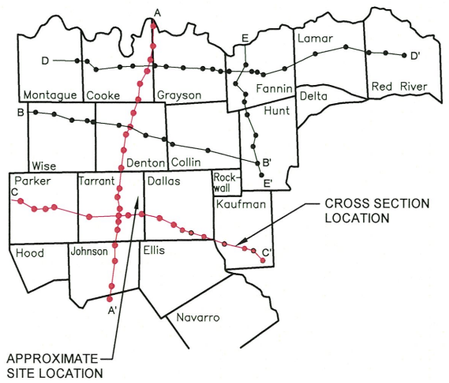
FIGURE IIIG-A-2

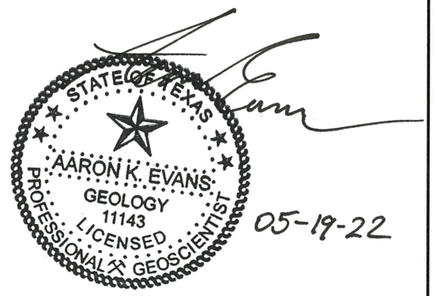
O:\0023\404\EXPANSION 2021\PART III\IIIG\FIG IIIG-A-2-REGIONAL STRUCTURAL FEATURES.dwg







INDEX MAP
NTS



NOTE:

1. CROSS SECTIONS ADAPTED FROM NORDSTROM 1982, OCCURRENCE, AVAILABILITY, AND CHEMICAL QUALITY OF GROUNDWATER IN THE CRETACEOUS, AQUIFERS OF NORTH CENTRAL TEXAS, TEXAS WATER DEVELOPMENT BOARD REPORT 269.

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REGIONAL GEOLOGIC CROSS SECTIONS

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TARRANT COUNTY, TEXAS

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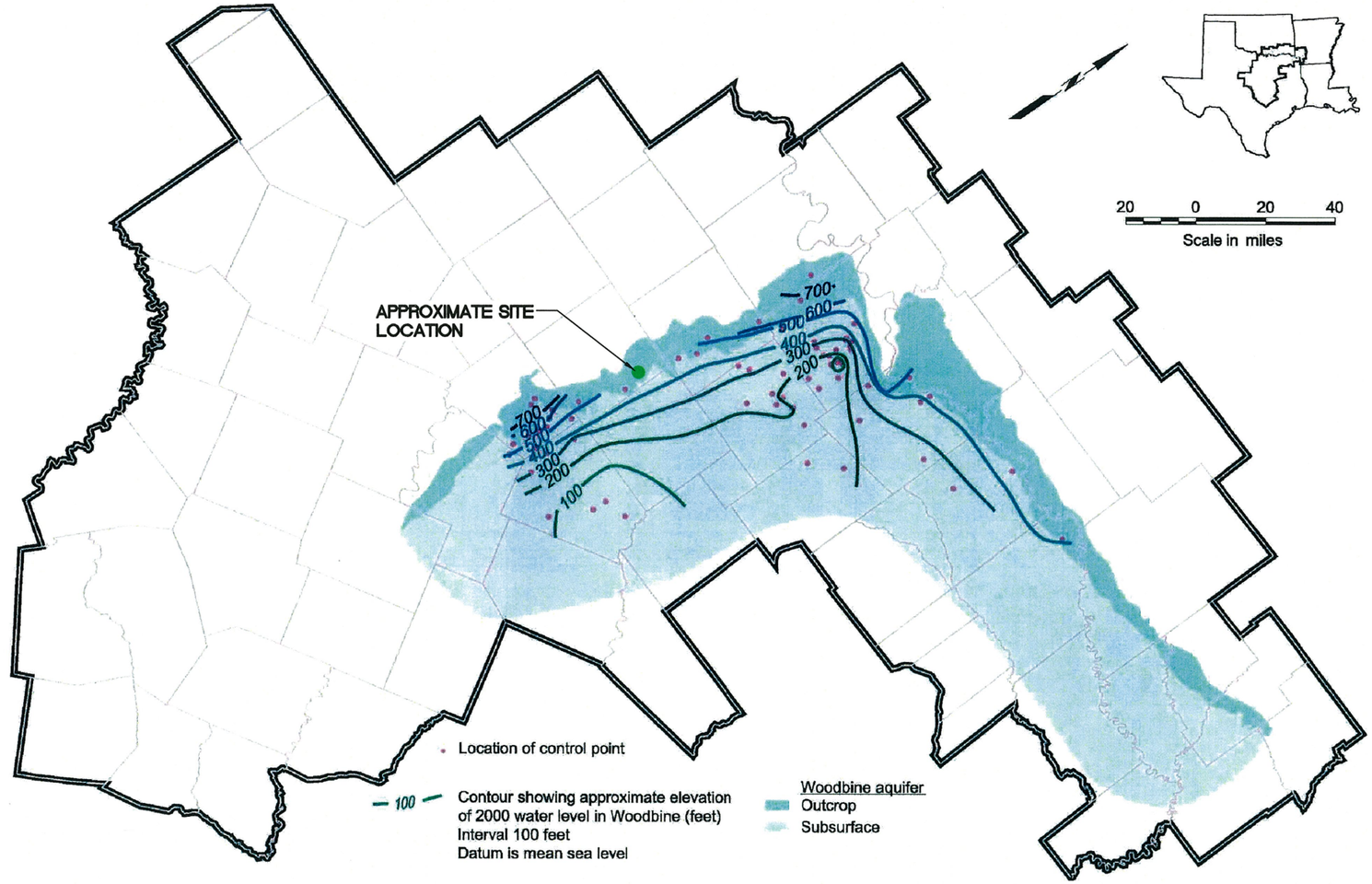
FIGURE IIIG-A-3

O:\0023\404\EXPANSION 2021\PART II\III\G\FIG IIIG-A-3-REGIONAL GEOLOGIC SECTIONS.dwg



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05-19-22

NOTES:

1. WOODBINE AQUIFER POTENTIOMETRIC SURFACE ELEVATIONS MEASURED IN 2000 BY TEXAS WATER DEVELOPMENT BOARD.
2. POTENTIOMETRIC SURFACE MAP ADAPTED FROM HARDEN ET AL, 2004, NORTHERN TRINITY/WOODBINE AQUIFER GROUNDWATER AVAILABILITY MODEL, TEXAS WATER DEVELOPMENT BOARD.

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CAD: IIIG-A-4 WOODBINE AQUIFER.DWG
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REGIONAL WOODBINE AQUIFER POTENTIOMETRIC SURFACE MAP

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TARRANT COUNTY, TEXAS

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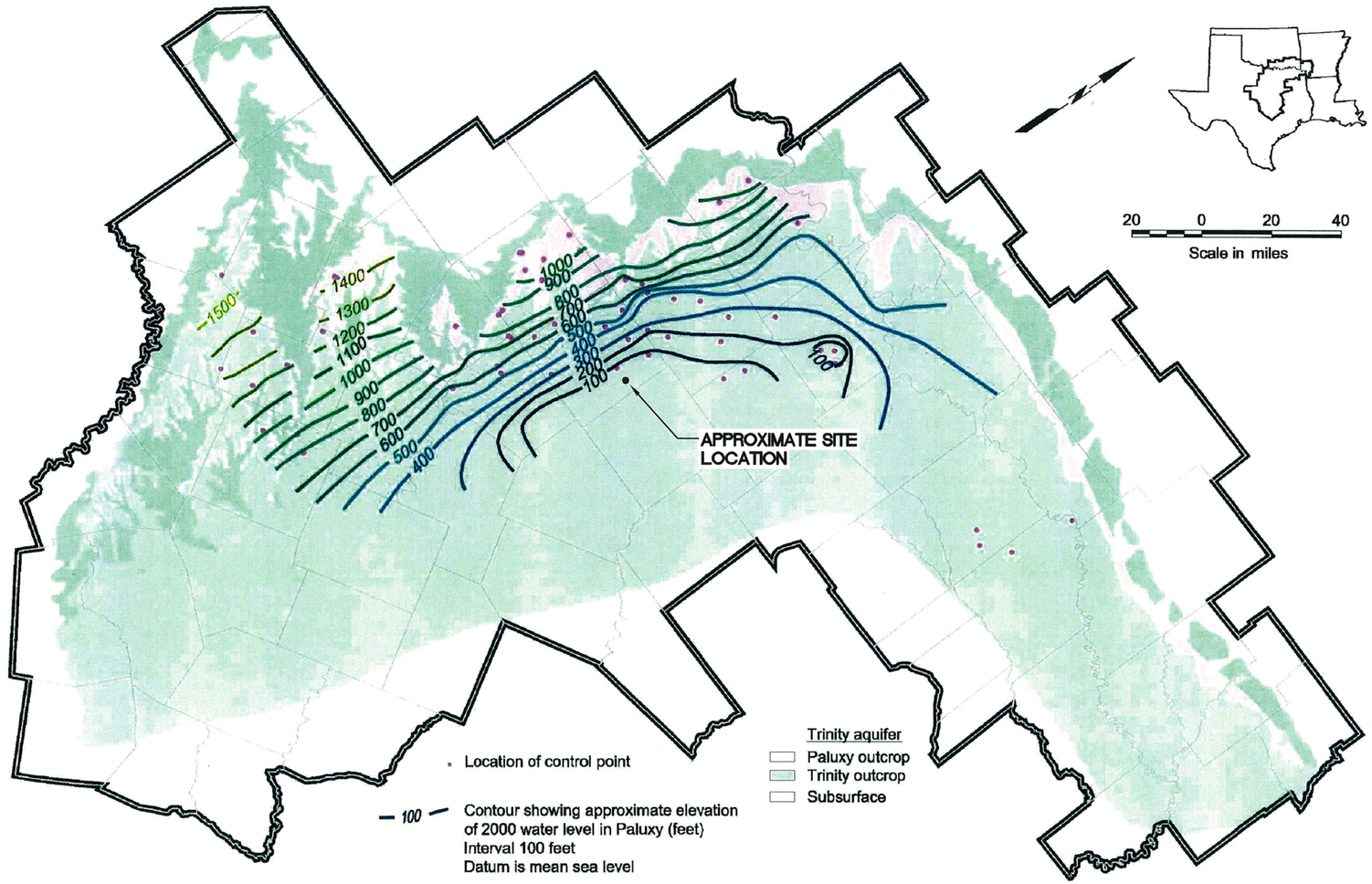
FIGURE IIIG-A-4

O:\0023\404\EXPANSION 2021\PART III\IIIG\FIG IIIG-A-4 REGIONAL KWB MAP.dwg



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NOTES:

1. PALUXY AQUIFER POTENTIOMETRIC SURFACE ELEVATIONS MEASURED IN 2000 BY TEXAS WATER DEVELOPMENT BOARD.
2. POTENTIOMETRIC SURFACE MAP ADAPTED FROM HARDEN ET AL, 2004, NORTHERN TRINITY/WOODBINE AQUIFER GROUNDWATER AVAILABILITY MODEL, TEXAS WATER DEVELOPMENT BOARD.

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FILE: 0023-404-11
CAD: IIIG-A-5_REGIONAL PALUXY MAP.DWG
DRAWN BY: CRA
DESIGN BY: AKE
REVIEWED BY: AKE

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MAJOR PERMIT AMENDMENT
REGIONAL PALUXY AQUIFER POTENTIOMETRIC SURFACE MAP

CITY OF ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS

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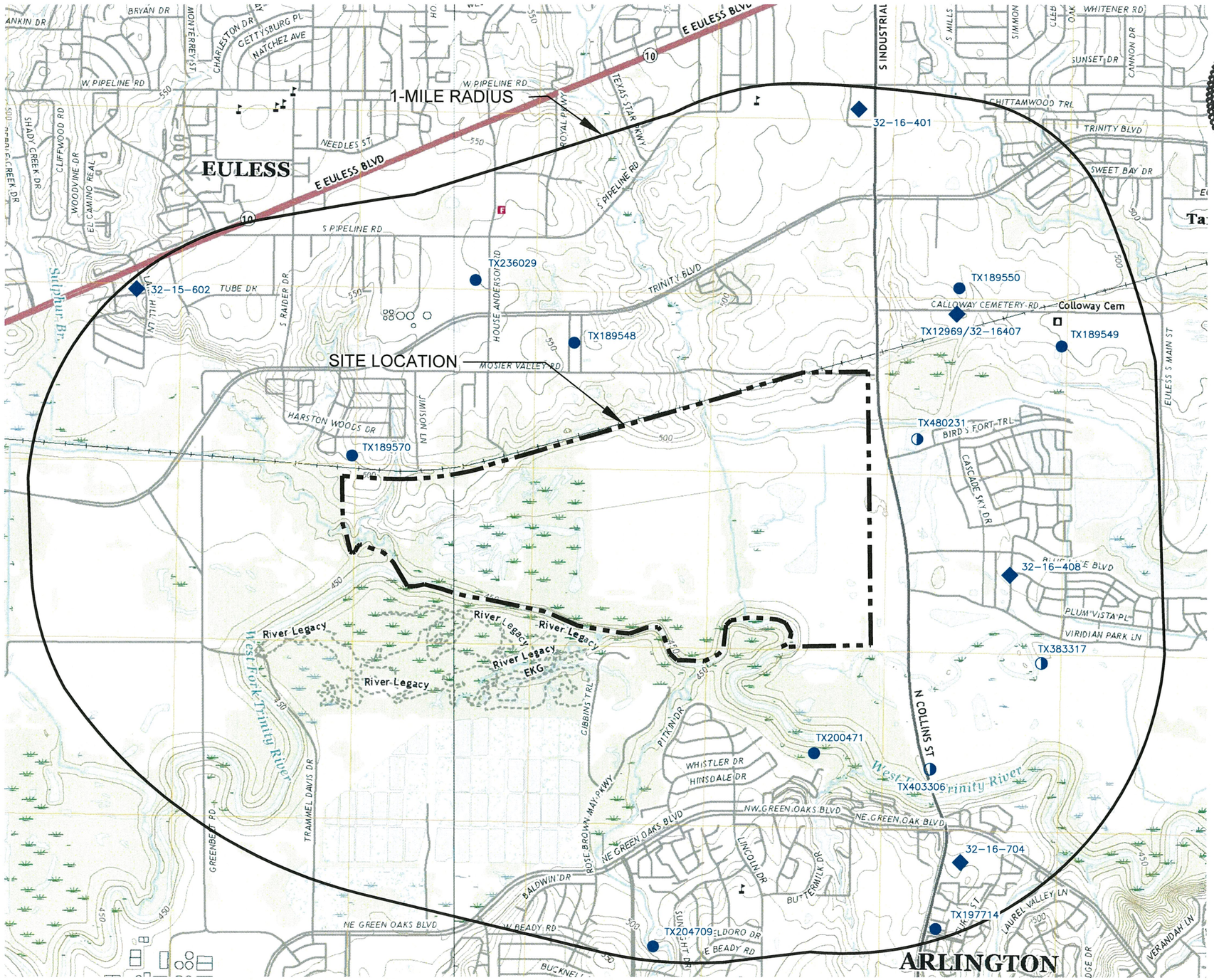
FIGURE IIIG-A-5

O:\0023\404\EXPANSION 2021\PART III\IIIG\FIG IIIG-A-5-PALUXY GW CONTOUR MAP.dwg



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0 1000 2000
SCALE IN FEET

LEGEND

ROAD CLASSIFICATION

Expressway	Local Connector
Secondary Hwy	Local Road
Ramp	4WD
Interstate Route	US Route
State Route	

PERMIT BOUNDARY

EULESS, TX 2019	HURST, TX 2019
TX189570	WATER WELL IDENTIFIED IN TCEQ RECORDS
TX480231	WATER WELL IDENTIFIED IN SSDRD RECORDS
32-16-407	WATER WELL IDENTIFIED IN TWDB RECORDS

Produced by the United States Geological Survey

North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid:Universal Transverse Mercator, Zone 14S

This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

Imagery	NAIP, September 2016 - November 2016
Roads	U.S. Census Bureau, 2015 - 2018
Names	GNIS, 1979 - 2018
Hydrography	National Hydrography Dataset, 2000 - 2018
Contours	National Elevation Dataset, 2003
Boundaries	Multiple sources; see metadata file 2016 - 2017
Wetlands	FWS National Wetlands Inventory 1981 - 1982

NOTES:

1. SITE LOCATION BASE MAP ACQUIRED FROM USGS 7-5 MINUTE TOPOGRAPHIC QUADRANGLE MAPS REFERENCED ABOVE.
2. WATER WELLS IDENTIFIED IN TCEQ, SSDRD, AND TWDB IN JANUARY 2022.
3. WATER WELL LOCATIONS PROVIDED BY ERIS, SSDRD, TCEQ, AND TWDB INTERACTIVE DATABASE VIEWER AND MODIFIED BASED ON REVIEW OF INDIVIDUAL WATERWELL REPORTS.

O:\0023\404\EXPANSION 2021\PART III\IIIG\FIG IIIG-A-6-WATER WELL MAP.dwg

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FILE: 0023-404-11
CAD: FIG IIIG-A-6-WELL LOCATION MAP.DWG
DRAWN BY: CRA
DESIGN BY: RJS
REVIEWED BY: AKE

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WATER WELL LOCATION MAP

CITY OF ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS

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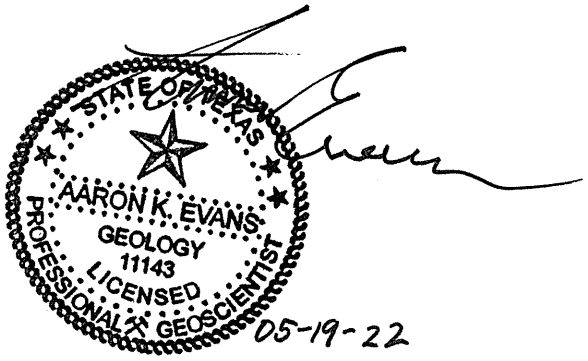
FIGURE IIIG-A-6

GEOSEARCH WATER WELL REPORT



GeoSearch

On time. On target. In touch.™

Texas Water Well Report (Extended Radius)

Target Property:

City of Arlington Landfill Expansion
800 Mosier Valley Rd
Euless, Tarrant County, Texas 76040

Prepared For:

Weaver Consultants Group-Ft. Worth

Order #: 173207
Job #: 431754
Project #: 0023-404-11-109
PO #: ERIS Order #: 22012401053
Date: 01/26/2022

phone: 888-396-0042 · fax: 512-472-9967 · www.geo-search.com

TARGET PROPERTY SUMMARY

City of Arlington Landfill Expansion
800 Mosier Valley Rd
Euless, Tarrant County, Texas 76040

USGS Quadrangle: ***Hurst, TX***
Target Property Geometry: ***Area***

Target Property Longitude(s)/Latitude(s):
(-97.099903, 32.793592), (-97.104945, 32.793488), (-97.104602, 32.793817), (-97.104476, 32.793997), (-97.104489, 32.794512), (-97.104876, 32.795057), (-97.105814, 32.795093), (-97.107113, 32.795098), (-97.107611, 32.795377), (-97.108062, 32.795229), (-97.108429, 32.795163), (-97.108733, 32.794971), (-97.108877, 32.794566), (-97.108792, 32.794083), (-97.108818, 32.793862), (-97.108829, 32.793628), (-97.108979, 32.793447), (-97.109344, 32.793231), (-97.109618, 32.793195), (-97.109886, 32.793123), (-97.110299, 32.793064), (-97.111189, 32.793028), (-97.111726, 32.793411), (-97.112150, 32.794354), (-97.112477, 32.794760), (-97.112769, 32.794870), (-97.113459, 32.794868), (-97.113979, 32.794656), (-97.114569, 32.794548), (-97.115411, 32.794683), (-97.117305, 32.794926), (-97.117992, 32.795170), (-97.119380, 32.795685), (-97.120618, 32.795875), (-97.121603, 32.796030), (-97.123102, 32.796358), (-97.123652, 32.796382), (-97.124028, 32.796477), (-97.124347, 32.796602), (-97.124790, 32.796672), (-97.124944, 32.796730), (-97.125183, 32.796776), (-97.125792, 32.796988), (-97.125989, 32.797109), (-97.126281, 32.797176), (-97.126601, 32.797175), (-97.126834, 32.797106), (-97.127281, 32.797049), (-97.127416, 32.797049), (-97.127603, 32.797076), (-97.127838, 32.797161), (-97.128057, 32.797260), (-97.128212, 32.797381), (-97.128373, 32.797472), (-97.128552, 32.797547), (-97.128560, 32.798146), (-97.128577, 32.798408), (-97.129453, 32.798815), (-97.130066, 32.799010), (-97.130603, 32.799119), (-97.130716, 32.799122), (-97.130839, 32.798759), (-97.131134, 32.798624), (-97.131246, 32.798642), (-97.131690, 32.799697), (-97.131703, 32.802709), (-97.129724, 32.802565), (-97.128659, 32.802493), (-97.127021, 32.802511), (-97.125269, 32.802664), (-97.122505, 32.803174), (-97.111350, 32.805829), (-97.107166, 32.806740), (-97.107123, 32.806857), (-97.103593, 32.807651), (-97.103368, 32.807606), (-97.100868, 32.807597), (-97.100740, 32.807538), (-97.099849, 32.807509), (-97.099726, 32.807359), (-97.099845, 32.804445), (-97.099943, 32.800521), (-97.099903, 32.793592), (-97.099903, 32.793592)

County/Parish Covered:
Tarrant (TX)

Zipcode(s) Covered:

TARGET PROPERTY SUMMARY

State(s) Covered:

DATABASE FINDINGS SUMMARY

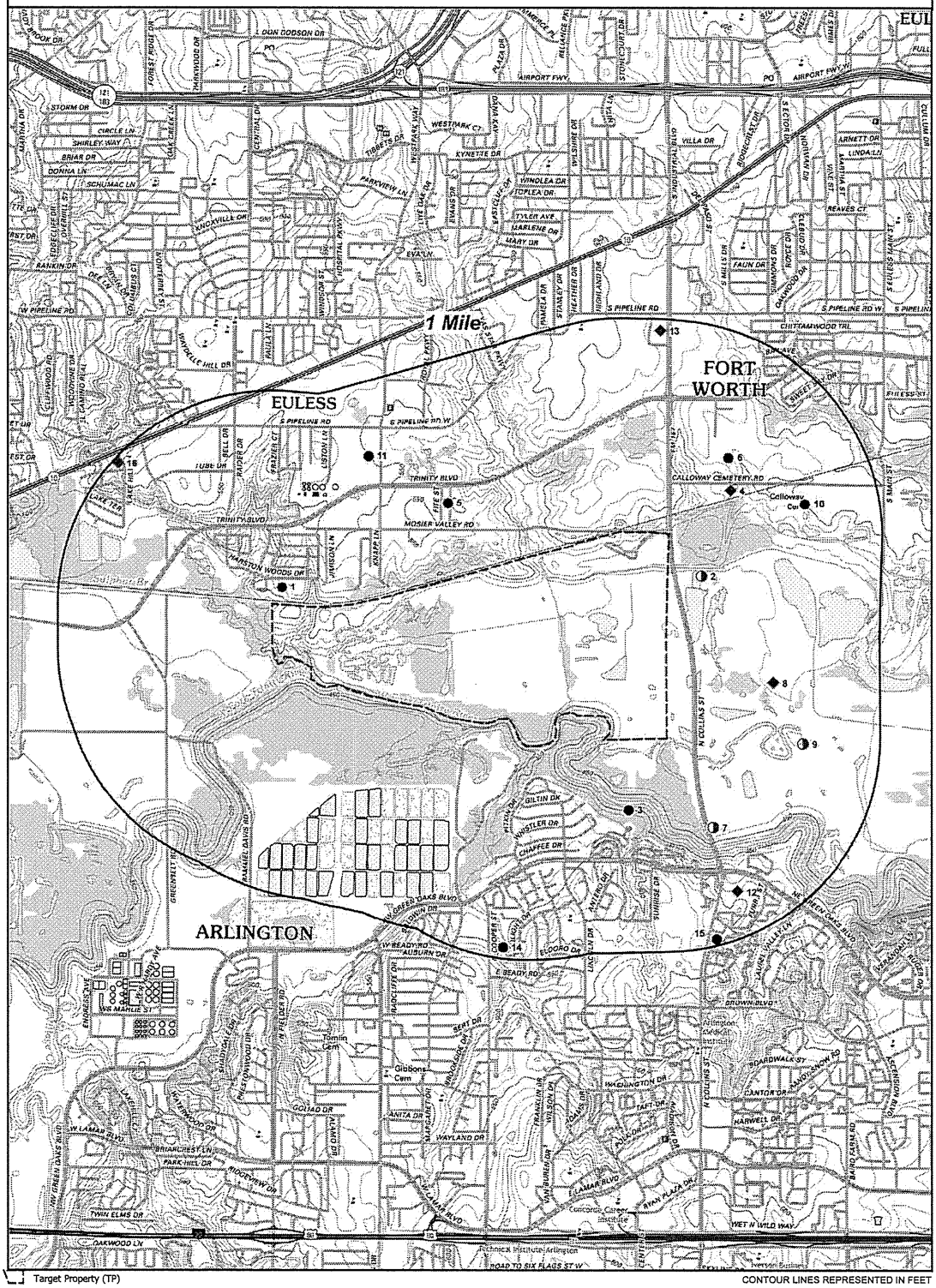
DATABASE	ACRONYM	LOCA-TABLE	UNLOCA-TABLE	SEARCH RADIUS (miles)
FEDERAL				
UNITED STATES GEOLOGICAL SURVEY NATIONAL WATER INFORMATION SYSTEM	NWIS	0	0	1.0000
SUB-TOTAL		**0**	**0**	
STATE (TX)				
SELECT SUBMITTED DRILLERS REPORT DATABASE WELLS	SSDRD	4	0	1.0000
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY WATER WELLS	TCEQ	8	0	1.0000
TEXAS WATER DEVELOPMENT BOARD GROUNDWATER DATABASE	TWDB	5	0	1.0000
WATER UTILITY DATABASE	WUD	0	0	1.0000
SUB-TOTAL		**17**	**0**	
TOTAL		**17**	**0**	

LOCATABLE DATABASE FINDINGS

ACRONYM	SEARCH RADIUS (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
FEDERAL								
NWIS	1.000	0	0	0	0	0	NS	0
SUB-TOTAL		**0**	**0**	**0**	**0**	**0**	**0**	**0**
STATE (TX)								
SSDRD	1.000	0	0	1	2	1	NS	4
TCEQ	1.000	0	1	0	3	4	NS	8
TWDB	1.000	0	0	0	1	4	NS	5
WUD	1.000	0	0	0	0	0	NS	0
SUB-TOTAL		**0**	**1**	**1**	**6**	**9**	**0**	**17**
TOTAL		**0**	**1**	**1**	**6**	**9**	**0**	**17**

NOTES:
NS = NOT SEARCHED
TP/AP = TARGET PROPERTY/ADJACENT PROPERTY

WATER WELL



Target Property (TP)
TCEQ
SSDRD
TWDB

CONTOUR LINES REPRESENTED IN FEET

City of Arlington Landfill
Expansion
800 Mosier Valley Rd
Euless, Texas
76040

N
W E
S

0' 1200' 2400' 3600'
SCALE: 1" = 2400'

GeoSearch www.geo-search.com - phone: 888-396-0042 - fax: 512-472-9967

JOB #: 431754 - 1/26/2022

REPORT SUMMARY OF LOCATABLE SITES

MAP ID#	DATABASE NAME	SITE ID#	DISTANCE FROM SITE	SITE NAME	ADDRESS	CITY, ZIP CODE	PAGE #
1	TCEQ	TX189570	0.085 N	MOSIER VALLEY MOTOR CROSS	3001 JIMISONS LN	EULESS, 76040	1
2	SSDRD	TX480231	0.161 E	VIRIDIAN MUNICIPAL MANAGEMENT DISTRICT	875 BIRD'S FORT TRL	ARLINGTON, 76005	3
3	TCEQ	TX200471	0.329 S	STAN AGGIE	3120 N COLLINS ST	ARLINGTON, 76006	4
4	SSDRD	TX12969	0.340 ENE	CLYDE GODFREY	12600 CALLOWAY CEMETERY RD	FORT WORTH, 76040	7
4	TWDB	32-16-407	0.358 ENE	METRO-ASPHALT CO	12400 CALLOWAY CEMETERY RD	EULESS, 76040	8
5	TCEQ	TX196105	0.348 NNW	TERRY MARSHALL	3408 FITE ST	EULESS, 76040	12
6	TCEQ	TX189550	0.460 NE	ETHTEC CO.	12485 CALLOWAY CEMETERY RD	FORT WORTH, 76040	14
7	SSDRD	TX403306	0.471 SSE	VIRIDIAN MUNICIPAL MANAGEMENT DISTRICT	3103 N COLLINS ST	ARLINGTON, 76006	17
8	TWDB	32-16-408	0.502 E	TEXAS INDUSTRIES	1100 AUTUMN MIST WAY	ARLINGTON, 76006	18
9	SSDRD	TX383317	0.639 E	HCLOFB ARLINGTON, LLC	1200 VIRIDIAN PARK LN	ARLINGTON, 76006	21
10	TCEQ	TX189549	0.655 ENE	SE-GO CO.	12700 CALLOWAY CEMET	EULESS, 76040	22
11	TCEQ	TX189548	0.662 NNW	J.F. GODFREY	3601 HOUSE ANDERSON	EULESS, 76040	25
12	TWDB	32-16-704	0.792 SSE	HATTON SUMMERS	2733 N COLLINS ST	ARLINGTON, 76006	28
13	TWDB	32-16-401	0.944 N	BUCK CONWAY	12214 S PIPELINE RD	EULESS, 76040	32
14	TCEQ	TX204709	0.945 S	PAUL WOODS	2607 N COOPER ST	ARLINGTON, 76006	37
15	TCEQ	TX197714	0.968 SSE	G.W. MCDONALD & SON	2715 N COLLINS ST	ARLINGTON, 76006	39
16	TWDB	32-15-602	0.974 NW	J.H. HACKNEY	3615 LAKE HILL LN	HURST, 76053	41

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY WATER WELLS (TCEQ)

MAP ID# 1 **Distance from Property: 0.08 mi. N**

ID NUMBER:	**TX189570**
STATE ID :	**32-15-6**
OWNER NAME:	**MOSIER VALLEY MOTOR CROSS**
DATE DRILLED:	**04/27/1998**
DEPTH DRILLED:	**260'**
STATIC LEVEL:	**20'**
WATER USAGE:	**DOMESTIC**
LONGITUDE:	**-97.130912000**
LATITUDE:	**32.803883000**

1 PAGE(S) OF DRILLERS' LOGS

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY WATER WELLS (TCEQ)

Water Well ID: 189570

189570

NO MAP

Send original copy by certified mail to: TNRCC, P.O. Box 13087, Austin, TX 78711-3087 — Please use black ink.

ATTENTION OWNER: *Confidentiality Privilege Notice on Reverse Side*

State of Texas
WELL REPORT

Texas Water Well Drillers Advisory Council
P.O. Box 13087
Austin, TX 78711-3087
512-239-0528

1) OWNER MOSIER VALLEY MOTOR CROSS (Name) ADDRESS 6434 MAPLE AVE. (Street or RFD) DALLAS (City) TX. (State) 75235 (Zip)

2) ADDRESS OF WELL: County TARRANT 3100 JIMINSON (Street or RFD) EULESS (City) TX (State) 76040 (Zip) GRID # 33-15-6

3) TYPE OF WORK (Check): ☒ New Well ☐ Deepening ☐ Reconditioning ☐ Plugging

4) PROPOSED USE (Check): ☐ Monitor ☐ Environmental Soil Boring ☒ Domestic ☐ Industrial ☐ Irrigation ☐ Injection ☐ Public Supply ☐ De-watering ☐ Testwell
If Public Supply well, were plans submitted to the TNRCC? ☐ Yes ☐ No

5) X

6) WELL LOG:

Date Drilling: Started 4-24 19 98 Completed 4-27 19 98

DIAMETER OF HOLE

Dia.. (in.)	From (ft.)	To (ft.)
	Surface	
6 3/4"	0	260

7) DRILLING METHOD (Check): ☐ Driven ☒ Air Rotary ☐ Mud Rotary ☐ Bored ☐ Air Hammer ☐ Cable Tool ☐ Jetted ☐ Other

N

From (ft.)	To (ft.)	Description and color of formation material
0-	8	TOP SOIL
8-	14	YELLOW SHALE
14-	26	GRAY SHALE
26-	58	SAND
58-	260	SHALE AND LIME

(Use reverse side if necessary)

8) Borehole Completion (Check): ☐ Open Hole ☐ Straight Wall ☐ Underreamed ☒ Gravel Packed ☐ Other
If Gravel Packed give interval ... from 260 ft. to 15 ft.

CASING, BLANK PIPE, AND WELL SCREEN DATA:

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mfg., if commercial	Setting (ft.) From	Setting (ft.) To	Gage Casing Screen
4"	NEW	PLASTIC	260	0	SCH40
		PERF.	65	25	

9) CEMENTING DATA [Rule 338.44(1)]
Cemented from 15 ft. to 0 ft. No. of sacks used 3
ft. to ft. No. of sacks used
Method used TRIMMIE PIPE
Cemented by DAVID B. MAYNOR
Distance to septic system field lines NONE ft.
Method of verification of above distance

13) TYPE PUMP: ☐ Turbine ☐ Jet ☒ Submersible ☐ Cylinder ☐ Other
Depth to pump bowls, cylinder, jet, etc., 80 ft.

10) SURFACE COMPLETION
☐ Specified Surface Slab Installed (Rule 338.44(2)(A))
☒ Specified Steel Sleeve Installed [Rule 338.44(3)(A)]
☐ Pitless Adapter Used [Rule 338.44(3)(b)]
☐ Approved Alternative Procedure Used [Rule 338.71]

14) WELL TESTS:
Type Test: ☒ Pump ☐ Bailer ☐ Jetted ☐ Estimated
Yield: 25 gpm with 0 ft. drawdown after 1 1/2 hrs.

11) WATER LEVEL
Static Level 20 ft. below land surface Date 4-27-98
Artesian flow gpm Date

15) WATER QUALITY:
Did you knowingly penetrate any strata which contained undesirable constituents?
☐ Yes ☒ No If yes, submit "REPORT OF UNDESIRABLE WATER"
Type of water? WOODBINE Depth of strata 65
Was a chemical analysis made? ☐ Yes ☐ No

12) PACKERS: Type Depth

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief. I understand that failure to complete items 1 thru 15 will result in the log(s) being returned for completion and resubmittal.

COMPANY NAME METRO DRILLING CO. (Type or print) WELL DRILLER'S LICENSE NO. #2899WPKL

ADDRESS 349 BROWN CREEK RD. (Street or RFD) WEATHERFORD (City) TX. (State) 76086 (Zip)

(Signed) (Licensed Well Driller) (Signed) (Registered Driller Trainee)

FILE ID SEQ # RECEIVED NOV 13 1998 COMMENT

SUBMITTED DRILLERS REPORT DATABASE (SDRD)

MAP ID# 2 **Distance from Property: 0.16 mi. E**

TRACK #: **480231**
DATE ENTERED: **2018-05-24**
OWNER NAME: **VIRIDIAN MUNICIPAL MANAGEMENT DISTRICT**
OWNER ADDRESS: **3100 MCKINNON STREET SUITE 1100**
DALLAS, TX 75201
COUNTY: **TARRANT**
LATITUDE: **32.804629000** LONGITUDE: **-97.097056000**
REPORT LINK: **https://www3.twdb.texas.gov/apps/waterdatainteractive/GetReports.aspx?Num=480231&Type=SDR-Well**

WELL LOG:
DRILLING DATE (STARTED): **2017-12-01**
DRILLING DATE (COMPLETED): **2018-03-10**
DEPTH DRILLED: **785'**

WATER LEVEL:
STATIC LEVEL: **NOT REPORTED**
WATER LEVEL DATE: **NOT REPORTED**
TYPE OF WATER: **NOT REPORTED**

TYPE OF WORK:
NEW WELL
PROPOSED USE:
IRRIGATION
COMPANY INFORMATION:
COMPANY NAME: **CENTRAL TEXAS WATER WELL**
COMPANY ADDRESS: **PO BOX 1184**
BOWIE, TX 76230

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY WATER WELLS (TCEQ)

MAP ID# 3 **Distance from Property: 0.33 mi. S**

ID NUMBER:	**TX200471**
STATE ID :	**32-16-7H**
OWNER NAME:	**STAN AGGIE**
DATE DRILLED:	**06/28/1978**
DEPTH DRILLED:	**150'**
STATIC LEVEL:	**20'**
WATER USAGE:	**IRRIGATION**
LONGITUDE:	**-97.102958000**
LATITUDE:	**32.788759000**

2 PAGE(S) OF DRILLERS' LOGS

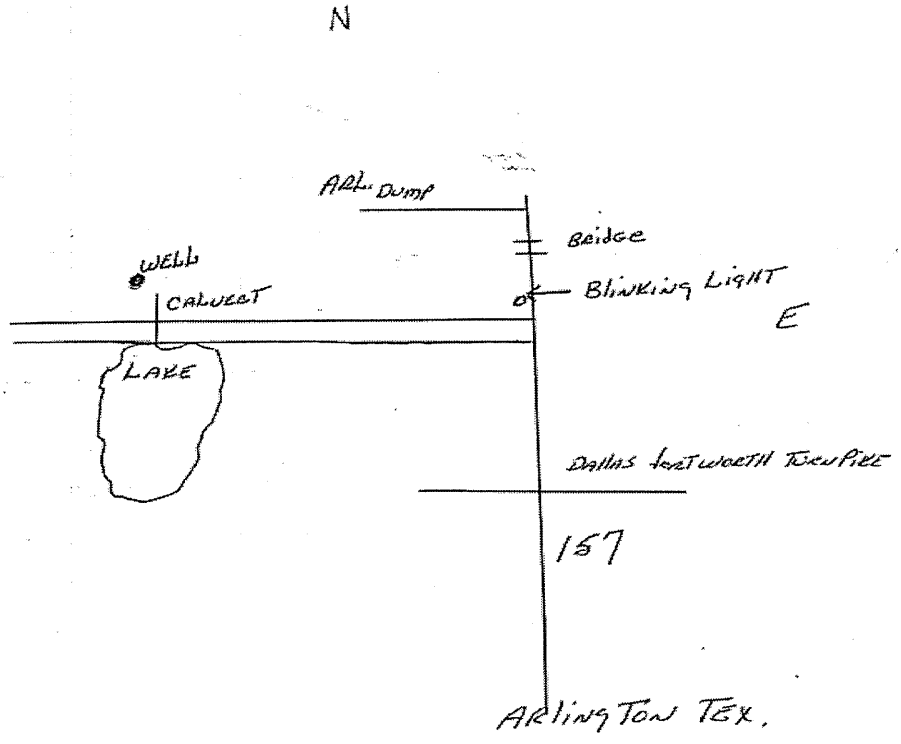
2)LOCATION OF WELL:

The sketch showing the well location must be as accurate as possible, showing landmarks, in sufficient detail so that the well may be plotted on a General Highway Map of the county in which the well is located.

Reference points from which distances are measured and directions given should be of a permanent nature (e.g. highway intersections, center of towns, river and creek bridges, railroad crossings). The distance and direction from the nearest town should always be indicated.

When giving a legal description include a sketch showing location of the well within the described area, e.g. survey abstract.

Information furnished in Section 2) of the TWDBE-OW-53 is very important. Unless the well can be accurately located on a map the value of the other data contained in the Report is greatly reduced.



RECEIVED
AUG 25 1978
DEPT. OF
WATER RESOURCES

RECEIVED
MAY 10 79
CR/TDWR

32-16-7H

Send original copy by certified mail to the Texas Water Development Board P. O. Box 13087 Austin, Texas 78711

State of Texas

WATER WELL REPORT

For TWDB use only
Well No. 32-16-7H
Located on map 102
Received: 7-7-78

1) OWNER:
Person having well drilled STAN AGGIE (Name) Address 611 RYAN PLAZA DR (Street or RFD) (City) (State)

Landowner LINDAC INVESTMENT CORP (Name) Address (Street or RFD) ARLINGTON (City) TEX (State) 76011

2) LOCATION OF WELL:
County TARRANT, City Limits miles in N.W (N.E., S.W., etc.) direction from ARLINGTON TEX (Town)

Locate by sketch map showing landmarks, roads, creeks, hiway number, etc.*

OVER

North

(Use reverse side if necessary)

or Give legal location with distances and directions from adjacent sections or survey lines. -

Labor _____ League _____

Block _____ Survey _____

Abstract No. _____

(NW¼ NE¼ SW¼ SE¼) of Section _____

3) TYPE OF WORK (Check): New Well, Deepening, Reconditioning, Plugging

4) PROPOSED USE (Check): Domestic, Industrial, Municipal, Irrigation, Test Well, Other

5) TYPE OF WELL (Check): Rotary, Driven, Dug, Cable, Jetted, Bored

6) WELL LOG:
Diameter of hole 8 3/4 in. Depth drilled ~~150~~ 100 ft. Depth of completed well 100 ft. Date drilled 6-28-78
All measurements made from 0 ft. above ground level.

From (ft.)	To (ft.)	Description and color of formation material
0	19	Sand clay
19	25	Sand rock
25	100	Gray Sand & clay

9) Casing:
Type: Old, New, Steel, Plastic, Other
Cemented from 14 ft. to 15 ft.

Diameter (inches)	Setting From (ft.)	To (ft.)	Gage
6 5/8 OD Casing	0	100	200

10) SCREEN:
Type _____
Perforated, Slotted

Diameter (inches)	Setting From (ft.)	To (ft.)	Slot Size
6 5/8 OD Casing	64	99	1/8" SLOTTED

(Use reverse side if necessary)

7) COMPLETION (Check): Straight wall, Gravel packed, Other, Under reamed, Open Hole

8) WATER LEVEL:
Static level 20 ft. below land surface Date 6-30-78
Artesian pressure _____ lbs. per square inch Date _____
Depth to pump bowls, cylinder, jet, etc., 90 ft. below land surface.

11) WELL TESTS:
Was a pump test made? Yes No If yes, by whom? RICHARD TICKNOR
Yield: 38 gpm with 70 ft. drawdown after 2 hrs.
Bailer test _____ gpm with _____ ft. drawdown after _____ hrs.
Artesian flow _____ gpm
Temperature of water _____

12) WATER QUALITY:
Was a chemical analysis made? Yes No
Did any strata contain undesirable water? Yes No
Type of water? _____ depth of strata _____

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief.

NAME MADE TICKNOR (Type or Print) Water Well Drillers Registration No. 547

ADDRESS 611 W Sanford (Street or RFD) ARLINGTON (City) TEX (State) 76012

(Signed) Richard D. Ticknor (Water Well Driller) TICKNOR DRILLING SER (Company Name)

Please attach electric log, chemical analysis, and other pertinent information, if available.

Additional instructions on reverse side.

GX

SUBMITTED DRILLERS REPORT DATABASE (SDRD)

MAP ID# 4 **Distance from Property: 0.34 mi. ENE**

TRACK #: **12969**
DATE ENTERED: **2002-10-14**
OWNER NAME: **CLYDE GODFREY**
OWNER ADDRESS: **618 N. BOWEN ROAD**
ARLINGTON, TX 76012
COUNTY: **TARRANT**
LATITUDE: **32.810278000** LONGITUDE: **-97.095000000**
REPORT LINK: **https://www3.twdb.texas.gov/apps/waterdatainteractive/GetReports.aspx?Num=12969&Type=SDR-Well**

WELL LOG:
DRILLING DATE (STARTED): **2002-08-15**
DRILLING DATE (COMPLETED): **2002-08-16**
DEPTH DRILLED: **180'**

WATER LEVEL:
STATIC LEVEL: **32'**
WATER LEVEL DATE: **2002-08-16**
TYPE OF WATER: **NOT REPORTED**

TYPE OF WORK:
NEW WELL
PROPOSED USE:
IRRIGATION
COMPANY INFORMATION:
COMPANY NAME: **BARCO WELL SERVICE**
COMPANY ADDRESS: **PO BOX 1047**
KELLER, TX 76244

TEXAS WATER DEVELOPMENT BOARD GROUNDWATER DATABASE (TWDB)

MAP ID# 4 **Distance from Property: 0.36 mi. ENE**

STATE ID:	**32-16-407**
OWNER'S NAME:	**METRO-ASPHALT CO**
DATE DRILLED:	**00/00/1970**
DEPTH DRILLED:	**200'**
WATER USAGE:	**UNUSED**
LONGITUDE:	**-97.094730000**
LATITUDE:	**32.810410000**
SOURCE:	**TWDB**
DOCUMENT LINK:	**http://s3.amazonaws.com/wellpdfs/documents/3216407/3216407.pdf**

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Woodbine Field No. _____ State Well No. 32-16-407

Owner's Well No. _____ County TARRANT

1. Location: _____ 1/4, _____ 1/4 Sec. _____, Block _____ Survey _____

METRO Mid-County Asphalt Co. 1/2 mi. S. Euless

2. (Owner) ~~Texas Industries, Inc.~~ Address: _____

Tenant: _____ Address: _____

Driller: E.C. Stone Water Well Drlg. Co. Address: _____

3. Elevation of L.S. is 500 ft. above msl, determined by TOPO

4. Drilled: 4-1 1970; Dug, Cable Tool, (Rotary)

5. Depth: Rept. 200 ft. Meas. _____ ft.

6. Completion: Open Hole, (Straight Wall) Underreamed, Gravel Packed

7. Pump: Mfgr. _____ Type Subm

No. Stages _____, Bowls Diam. _____ in., Setting 176 ft.

Column Diam. _____ in., Length Tailpipe _____ ft.

8. Motor: Fuel elec Make & Model _____ HP.

9. Yield: Flow _____ gpm, Pump _____ gpm, Meas., Rept., Est.

10. Performance Test: Date 4-1-70 Length of Test 1/2 hr Made by Stone

Static Level 18 ft. Pumping Level 48 ft. Drawdown 30 ft.

Production 24 gpm Specific Capacity 0.8 gpm/ft.

11. Water Level: 18 ft. (rept. meas.) 4-1 1970 above below _____ which is _____ ft. above below surface.

_____ ft. rept. meas. _____ 19__ above below _____ which is _____ ft. above below surface.

_____ ft. rept. meas. _____ 19__ above below _____ which is _____ ft. above below surface.

_____ ft. rept. meas. _____ 19__ above below _____ which is _____ ft. above below surface.

12. Use: Dom., Stock, Public Supply, (Ind.), Irr., Waterflooding, Observation (Not Used)

13. Quality: (Remarks on taste, odor, color, etc.) _____

Temp. ___ °F, Date sampled for analysis _____ Laboratory _____

Temp. ___ °F, Date sampled for analysis _____ Laboratory _____

Temp. ___ °F, Date sampled for analysis _____ Laboratory _____

14. Other data available as circled: (Driller's Log) (Radioactivity Log) Electric Log, Q-48

Formation Samples, Pumping Test, _____

15. Record by: P. Nordstrom Date 6-4 1975

Source of Data obs, secretary

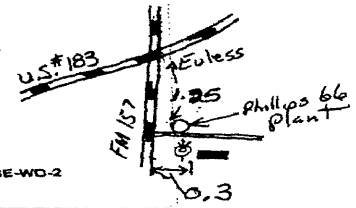
16. Remarks: now on Arlington water

CASING & BLANK PIPE — Cemented From 0 ft. to 180 ft.

Diam. (in.)	Type	Setting, ft. from	to
4 1/2	steel	0	180

WELL SCREEN — Screen Openings

Diam. (in.)	Type	Setting, ft. from	to	#shots
4 1/2	JET PERF	46	51	6
		71	74	4
4 1/2	"	102	104	4
4 1/2	"	114	117	4
4 1/2	"	160	164	5



TWDBE-WD-2 (Sketch)

Q-48

32-16-407

0 - 24	Sand & Gravel
24 - 36	yellow clay (sandy streaks)
36 - 54	Sand
54 - 65	blue shale
65 - 71	Sand
71 - 90	blue shale
90 - 130	blue shale / thin bkn. sandy stks.
130 - 180	Shale / limey sandy streaks

32-16-407

Send original copy by certified mail to the Texas Water Development Board P. O. Box 12386 Austin, Texas 78711

State of Texas

WATER WELL REPORT

For TWDB use only
Well No. 32-16-4E
Located on map
Received:

1) OWNER:
Person having well drilled Metro - Mid-County Asphalt Co. (Name) Address Box 370 (Street or RFD) Euless (City) Texas (State)
Landowner Texas Industries Inc. (Name) Address 8100 Carpenter Fwy. (Street or RFD) Dallas (City) Texas (State)

2) LOCATION OF WELL:
County Tarrant, ½ miles in 5 (N.E., S.W., etc.) direction from Euless, Texas (Town)

Locate by sketch map showing landmarks, roads, creeks, hiway number, etc.*

MAP ATTACHED

North

(Use reverse side if necessary)

or Give legal location with distances and directions from adjacent sections or survey lines.
Labor _____ League _____
Block _____ Survey _____
Abstract No. _____
(NW¼ NE¼ SW¼ SE¼) of Section _____

3) TYPE OF WORK (Check): New Well, Deepening, Reconditioning, Plugging

4) PROPOSED USE (Check): Domestic, Industrial, Municipal, Irrigation, Test Well, Other

5) TYPE OF WELL (Check): Rotary, Driven, Dug, Cable, Jetted, Bored

6) WELL LOG:
Diameter of hole 6 ¾ in. Depth drilled 200 ft. Depth of completed well 180 ft. Date drilled 4-1-70
All measurements made from / ft. above ground level.

From (ft.)	To (ft.)	Description and color of formation material
0	24	SAND & GRAVEL
24	36	YELLOW CLAY (SANDY STREAKS)
36	54	SAND
54	65	BLUE SHALE
65	71	SAND
71	90	BLUE SHALE
90	130	BLUE SHALE / THIN BROKEN SANDY STREAKS
130	180	SHALE / LIMEY SANDY STREAKS

(Use reverse side if necessary)

9) Casing:
Type: Old, New, Steel, Plastic, Other
Cemented from 180 ft. to 0 ft.

Diameter (inches)	Setting From (ft.)	To (ft.)	Gage
4½ O.D.	0	180	8#

10) SCREEN:
Type
Perforated, Slotted

Diameter (inches)	Setting From (ft.)	To (ft.)	Slot Size

7) COMPLETION (Check): Straight wall, Gravel packed, Other LOGGED & PERFORATED, Under reamed, Open Hole

8) WATER LEVEL:
Static level 18 ft. below land surface Date 4-1-70
Artesian pressure _____ lbs. per square inch Date _____
Depth to pump bowls, cylinder, jet, etc., 126 ft. below land surface.

11) WELL TESTS:
Was a pump test made? Yes No If yes, by whom?
Yield: _____ gpm with _____ ft. drawdown after _____ hrs.
Bailer test 24 gpm with 30 ft. drawdown after ½ hrs.
Artesian flow _____ gpm
Temperature of water _____

12) WATER QUALITY:
Was a chemical analysis made? Yes No
Did any strata contain undesirable water? Yes No
Type of water? Iron depth of strata 36-54

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief.

NAME E. C. Stone (Type or Print) Water Well Drillers Registration No. 838
ADDRESS Rt # 1 Box 151-A7 (Street or RFD) Mansfield (City) Texas (State)
(Signed) E. C. Stone (Water Well Driller) E. C. Stone Water Well Drlg. Co. (Company Name)

Please attach electric log, chemical analysis, and other pertinent information, if available.

*Additional instructions on reverse side.

TWDBE-GW-53

Q-48

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY WATER WELLS (TCEQ)

MAP ID# 5 **Distance from Property: 0.35 mi. NNW**

ID NUMBER:	**TX196105**
STATE ID :	**32-16-4**
OWNER NAME:	**TERRY MARSHALL**
DATE DRILLED:	**10/07/1992**
DEPTH DRILLED:	**80'**
STATIC LEVEL:	**20'**
WATER USAGE:	**IRRIGATION**
LONGITUDE:	**-97.117536000**
LATITUDE:	**32.809595000**

1 PAGE(S) OF DRILLERS' LOGS

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY WATER WELLS (TCEQ)

Water Well ID: 196105

ATTENTION OWNER: Confidentiality Privilege Notice on Reverse Side

State of Texas WELL REPORT

Texas Water Well Drillers Board
P.O. Box 13087
Austin, Texas 78711

1) OWNER TERRY MARSHALL (Name) ADDRESS 3408 FITE (Street or RFD) EULESS (City) TX. (State) 76039 (Zip)

2) LOCATION OF WELL: County TARRANT, 3 miles in ESE. (NE, SW, etc.) direction from EULESS (Town)

Driller must complete the legal description below with distance and direction from two intersecting section or survey lines, or he must locate and identify the well on an official Quarter- or Half-Scale Texas County General Highway Map and attach the map to this form.

☐ LEGAL DESCRIPTION:
Section No. _____ Block No. _____ Township _____ Abstract No. _____ Survey Name _____
Distance and direction from two intersecting section or survey lines _____

☑ SEE ATTACHED MAP 32-7-6

3) TYPE OF WORK (Check): ☑ New Well ☐ Deepening ☐ Reconditioning ☐ Plugging

4) PROPOSED USE (Check): ☐ Domestic ☐ Industrial ☐ Monitor ☐ Public Supply ☑ Irrigation ☐ Test Well ☐ Injection ☐ De-Watering

5) DRILLING METHOD (Check): ☑ Mud Rotary ☐ Air Hammer ☐ Jetted ☐ Bored ☐ Air Rotary ☐ Cable Tool ☐ Other _____ ☐ Driven

6) WELL LOG:
Date Drilling: Started OCT. 7 19 97 Completed OCT. 7 19 97

DIAMETER OF HOLE		
Dia. (in.)	From (ft.)	To (ft.)
7 7/8	Surface	80

From (ft.)	To (ft.)	Description and color of formation material
0	28	RED SANDSTONE
28	50	SANDS
50	80	GREY SHALE

(Use reverse side if necessary)

7) BOREHOLE COMPLETION: ☐ Open Hole ☐ Straight Wall ☐ Underreamed ☑ Gravel Packed ☐ Other _____
If Gravel Packed give interval ... from 20 ft. to 80 ft.

8) CASING, BLANK PIPE, AND WELL SCREEN DATA:

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mfg., if commercial	Setting (ft.) From	Setting (ft.) To	Gage Casing Screen
4	N	PVC BLANK	0	20	220 PSI
4	N	PVC PERF.	20	60	.020
4	N	PVC BLANK	60	80	220 PSI

9) CEMENTING DATA [Rule 287.44(1)]
Cemented from 0 ft. to 20 ft. No. of Sacks Used 5
_____ ft. to _____ ft. No. of Sacks Used _____
Method used HAND MIXED
Cemented by MINDERMAN'S WELL SERVICE

10) SURFACE COMPLETION
☑ Specified Surface Slab Installed [Rule 287.44(2)(A)]
☐ Pitless Adapter Used [Rule 287.44(3)(B)]
☐ Approved Alternative Procedure Used [Rule 287.71]

11) WATER LEVEL:
Static level 20 ft. below land surface Date 10-7-97
Artesian flow _____ gpm. Date _____

12) PACKERS: Type N/A Depth

13) TYPE PUMP:
☐ Turbine ☐ Jet ☑ Submersible ☐ Cylinder ☐ Other _____
Depth to pump bowls, cylinder, jet, etc., 60 ft.

14) WELL TESTS:
Type Test: ☑ Pump ☐ Bailer ☐ Jetted ☐ Estimated
Yield: 12 gpm with 10 ft. drawdown after 24 hrs.

15) WATER QUALITY:
Did the drilling penetrate any strata which contained undesirable constituents? ☐ Yes ☐ No If yes, submit "REPORT OF UNDESIRABLE WATER"
Type of water? _____ Depth of strata _____
Was a chemical analysis made? ☐ Yes ☐ No

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief. I understand that failure to complete items 1 thru 15 will result in the log(s) being returned for completion and resubmittal.

COMPANY NAME MINDERMAN'S WELL SERVICE (Type or print) WELL DRILLER'S LICENSE NO. 022210WP

ADDRESS 1629 E. PRICE STREET (Street or RFD) KELLER (City) TX. (State) 76248 (Zip)

(Signed) _____ (Licensed Well Driller) (Signed) _____ (Registered Driller Trainee)

Please attach electric log, chemical analysis, and other pertinent information, if available.

For TWC use only: Well No. 32-16-4 Located on map _____

WWD-012 (Rev. 09/21/88)

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY WATER WELLS (TCEQ)

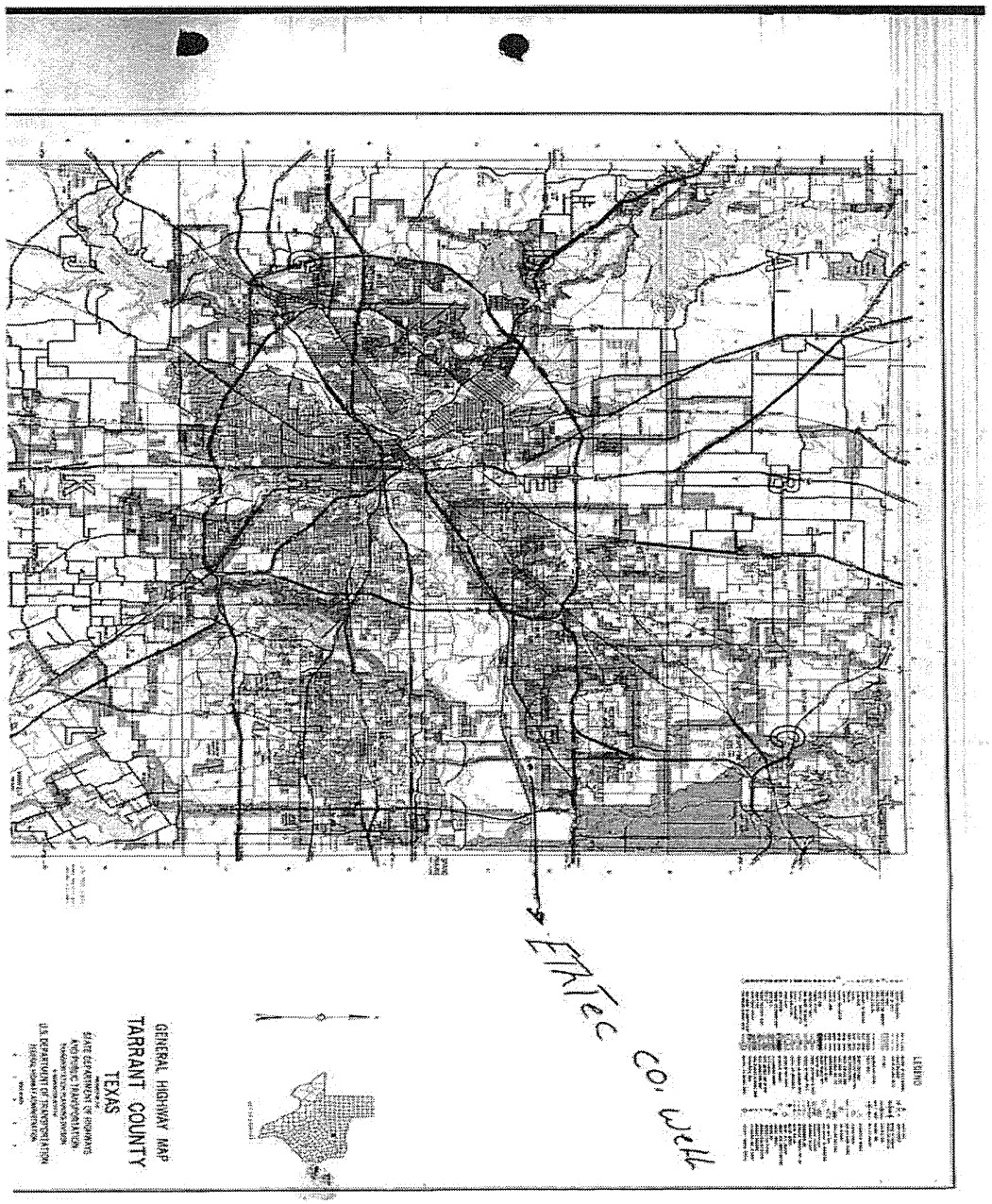
MAP ID# 6 **Distance from Property: 0.46 mi. NE**

ID NUMBER:	**TX189550**
STATE ID :	**32-16-4**
OWNER NAME:	**ETHTEC CO.**
DATE DRILLED:	**10/23/1987**
DEPTH DRILLED:	**180'**
STATIC LEVEL:	**73'**
WATER USAGE:	**INDUSTRIAL**
LONGITUDE:	**-97.094894000**
LATITUDE:	**32.812703000**

2 PAGE(S) OF DRILLERS' LOGS

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY WATER WELLS (TCEQ)

Water Well ID: 189550



Please use black ink. Send original copy by certified mail to the Texas Water Commission P.O. Box 13087 Austin, Texas 78711

State of Texas
WATER WELL REPORT
ATTENTION OWNER: Confidentiality Privilege Notice on Reverse Side

Texas Water Well Drillers Board
P. O. Box 13087
Austin, Texas 78711

1) OWNER Ethtec Co. (Name) Address 12485 Calloway Cemetery Rd (Street or RFD) Ft Worth (City) TEX (State) (Zip)

2) LOCATION OF WELL: County TARRANT 4 miles in S.W. (N.E., S.W., etc.) direction from Euless (Town)

Driller must complete the legal description to the right with distance and direction from two intersecting section or survey lines, or he must locate and identify the well on an official Quarter- or Half-Scale Texas County General Highway Map and attach the map to this form.

☐ Legal description:
Section No. ____ Block No. ____ Township ____
Abstract No. ____ Survey Name ____
Distance and direction from two intersecting section or survey lines ____
☑ See attached map.

3) TYPE OF WORK (Check): ☒ New Well ☐ Deepening ☐ Reconditioning ☐ Plugging

4) PROPOSED USE (Check): ☐ Domestic ☒ Industrial ☐ Monitor ☐ Public Supply ☐ Irrigation ☐ Test Well ☐ Injection ☐ Other

5) DRILLING METHOD (Check): ☐ Driven ☒ Mud Rotary ☐ Air Hammer ☐ Jetted ☐ Bored ☐ Air Rotary ☐ Cable Tool ☐ Other

6) WELL LOG:
Date Drilling: Started 10-15 19 87 Completed 10-23 19 87

DIAMETER OF HOLE

Dia. (in.)	From (ft.)	To (ft.)
12	Surface	180

7) BOREHOLE COMPLETION: ☐ Open Hole ☐ Straight Wall ☐ Underreamed ☒ Gravel Packed ☐ Other
If Gravel Packed give interval . . . from 40 ft. to 180 ft.

From (ft.)	To (ft.)	Description and color of formation material
0	2	Fill DIRT AND SAND
2	16	Yellow Clay
16	34	GREY Shale
34	47	GRAVEL + SAND
47	60	Shale
60	92	SAND
92	116	Lime
116	169	SAND AND Shale Streaks
169	180	Lime

8) CASING, BLANK PIPE, AND WELL SCREEN DATA:

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mgf., if commercial	Setting (ft.) From	Setting (ft.) To	Gage Casing Screen
6⅝	N	PVC	0	180	200
		SAW Slot	80	170	

9) CEMENTING DATA [Rule 319.44(b)]
Cemented from 0 ft. to 40 ft. No. of Sacks Used 26
____ ft. to ____ ft. No. of Sacks Used ____
Method used TRimmy Pipe
Cemented by K Millican

10) SURFACE COMPLETION
☐ Specified Surface Slab Installed [Rule 319.44(c)]
☐ Pitless Adapter Used [Rule 319.44(d)]
☒ Approved Alternative Procedure Used [Rule 319.71]

11) WATER LEVEL:
Static level 93 ft. below land surface Date 10-22-87
Artesian flow ____ gpm. Date ____

12) PACKERS: Type ____ Depth ____

13) TYPE PUMP:
☐ Turbine ☐ Jet ☑ Submersible ☐ Cylinder ☐ Other
Depth to pump bowls, cylinder, jet, etc. 150 ft.

14) WELL TESTS:
Type Test: ☒ Pump ☐ Bailer ☐ Jetted ☐ Estimated
Yield: 50 gpm with 30 ft. drawdown after 6 hrs.

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NOV 09 1987
TEXAS WATER COMMISSION

(Use reverse side if necessary)

15) WATER QUALITY:
Did you knowingly penetrate any strata which contained undesirable water? ☐ Yes ☒ No
If yes, submit "REPORT OF UNDESIRABLE WATER"
Type of water? ____ Depth of strata ____
Was a chemical analysis made? ☐ Yes ☒ No

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief. I understand that failure to complete items 1 thru 12 will result in the log(s) being returned for completion and resubmittal.

COMPANY NAME Millican Well SER. (Type or Print) Water Well Driller's License No. 1563

ADDRESS P.O. Box 18487 (Street or RFD) Ft. Worth (City) TEX (State) 76118 (Zip)

(Signed) Kenneth D. Millican (Licensed Water Well Driller) (Signed) ____ (Registered Driller Trainee)

Please attach electric log, chemical analysis, and other pertinent information, if available.

For TWC use only - 16 - 4
Well No. ____
Located on map ____

TWC-0092 (Rev. 06-10-86) TEXAS WATER COMMISSION COPY

189550

SUBMITTED DRILLERS REPORT DATABASE (SDRD)

MAP ID# 7 **Distance from Property: 0.47 mi. SSE**

TRACK #: **403306**
DATE ENTERED: **2015-08-28**
OWNER NAME: **VIRIDIAN MUNICIPAL MANAGEMENT DISTRICT**
OWNER ADDRESS: **19 BRIAR HALLOW LANE**
HOUSTON, TX 77027
COUNTY: **TARRANT**
LATITUDE: **32.787561000** LONGITUDE: **-97.096121000**
REPORT LINK: **https://www3.twdb.texas.gov/apps/waterdatainteractive/GetReports.aspx?Num=403306&Type=SDR-Well**

WELL LOG:
DRILLING DATE (STARTED): **2012-02-02**
DRILLING DATE (COMPLETED): **2012-07-31**
DEPTH DRILLED: **800'**

WATER LEVEL:
STATIC LEVEL: **NOT REPORTED**
WATER LEVEL DATE: **NOT REPORTED**
TYPE OF WATER: **IRRIGATION**

TYPE OF WORK:
NEW WELL
PROPOSED USE:
IRRIGATION
COMPANY INFORMATION:
COMPANY NAME: **CENTRAL TEXAS WATER WELL**
COMPANY ADDRESS: **PO BOX 1184**
BOWIE, TX 76230

TEXAS WATER DEVELOPMENT BOARD GROUNDWATER DATABASE (TWDB)

MAP ID# 8 **Distance from Property: 0.50 mi. E**

STATE ID:	**32-16-408**
OWNER'S NAME:	**TEXAS INDUSTRIES**
DATE DRILLED:	**00/00/1970**
DEPTH DRILLED:	**348'**
WATER USAGE:	**INDUSTRIAL**
LONGITUDE:	**-97.091289000**
LATITUDE:	**32.797344000**
SOURCE:	**TWDB**
DOCUMENT LINK:	**http://s3.amazonaws.com/wellpdfs/documents/3216408/3216408.pdf**

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Woodbine | Field No. | State Well No. 32-16-408

Owner's Well No. | County TARRANT

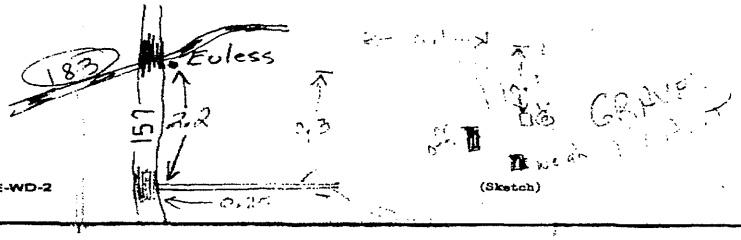
1. Location: 1/4, 1/4 Sec. Block Survey
Hatton-Summers Gravel Plant 2 mi. S. of Euless
2. Owner: Texas Industries Address: 8100 Carpenter Fwy, Dallas
Tenant: Address:
Driller: D.L. MYERS Address:
3. Elevation of L.S. is 460 ft. above msl, determined by TOPO
4. Drilled: 9-3 19 70 ; Dug, Cable Tool (Rotary)
5. Depth: Rept. 348 ft. Meas. ft.
6. Completion: Open Hole, (Straight Wall) Underreamed, Gravel Packed
7. Pump: Mfgr. Red Jacket Type SUBM
No. Stages , Bowls Diam. in., Setting 88 ft.
Column Diam. in., Length Tailpipe ft.
8. Motor: Fuel ELEC Make & Model Franklin HP. 1
9. Yield: Flow gpm, Pump 20 gpm, Meas., (Rept.) Est.
10. Performance Test: Date 9-70 Length of Test Made by Myers
Static Level 50 ft. Pumping Level 100 ft. Drawdown 50 ft.
Production 20 gpm Specific Capacity 0.4 gpm/ft.
11. Water Level: 50 ft. (Rept.) meas. 9 19 70 above below which is ft. above below surface.
ft. rept. meas. 19 above below which is ft. above below surface.
ft. rept. meas. 19 above below which is ft. above below surface.
ft. rept. meas. 19 above below which is ft. above below surface.
12. Use: Dom., Stock, Public Supply (Ind.), Irr., Waterflooding, Observation, Not Used,
13. Quality: (Remarks on taste, odor, color, etc.)
Temp. °F, Date sampled for analysis Laboratory
Temp. °F, Date sampled for analysis Laboratory
Temp. °F, Date sampled for analysis Laboratory
14. Other data available as circled: Driller's Log, (Radioactivity Log) Electric Log, Q-46
Formation Samples, Pumping Test,
15. Record by: P. NORDSTROM Date 4 JUN 19 75
Source of Data ABS
16. Remarks:

CASING & BLANK PIPE — Cemented From 0 ft. to 348 ft.

Diam. (in.)	Type	Setting, ft. from	to
8 5/8	steel	0	25
5 1/2	"	0	348

WELL SCREEN — Screen Openings

Diam. (in.)	Type	Setting, ft. from	to
5 1/2	Gun Perf.	92	96
		206	212
		222	230
		272	276
		286	291



TWDBE-WD-2 (Sketch)

Q-46

32-16-408

32-16-408

GW 7

Send original copy by certified mail to the Texas Water Development Board P. O. Box 12386 Austin, Texas 78711

State of Texas

WATER WELL REPORT

For TWDB use only
Well No.
Located on map
Received:
Form GW 8
Form GW 9

1) OWNER:
Person having well drilled Texas Industries (Name) Address 8100 Carpenter Fwy. (Street or RFD) Dallas, (City) Texas (State)

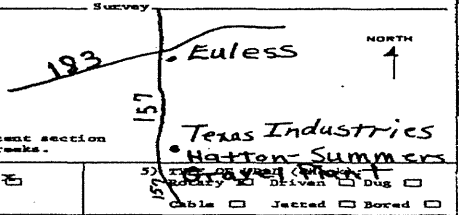
Landowner Texas Industries (Name) Address (Street or RFD) (City) (State)

2) LOCATION OF WELL:
County Tarrant Labor League Abstract No.

NW¼ NE¼ SW¼ SE¼ of Section Block No. Survey
(Circle as many as are known)

2 miles in S (N.E., S.W., etc.) direction from Euless (Town)

Sketch map of well location with distances from adjacent section or survey lines, and to landmarks, roads, and creeks.



3) TYPE OF WORK (Check):
New Well ☒ Deepening ☐
Reconditioning ☐ Plugging ☐

4) PROPOSED USE (Check):
Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

5) TYPE OF WELL (Check):
Rotary ☒ Driven ☐ Dug ☐
Cable ☐ Jetted ☐ Bored ☐

6) WELL LOG:
Diameter of hole 6 3/4 in. Depth drilled 348 ft. Depth of completed well 92-96, 206-212, 222-230, 272-278, 286-291 ft. Date drilled 9-70
All measurements made from 3 ft. above ground level.

From (ft.)	To (ft.)	Description and color of formation material
0	348	Woodbine
		(See Gamma Ray)

(Use reverse side if necessary)

7) COMPLETION (Check):
Straight wall ☒ Gravel packed ☐ Other ☐
Under reamed ☐ Open hole ☐

8) WATER LEVEL:
Static level 50 ft. below land surface Date 9-70
Artesian pressure lbs. per square inch Date

9) CASING:
Type: old ☒ New ☐ Steel ☐ Plastic ☐ Other ☐
Cemented from top ft. to bottom ft.

Diameter (inches)	Setting From (ft.)	Setting To (ft.)	Gage
5½	0	348	.244
8 5/8	0	25	
ie Ground Level to 25'			

10) SCREEN:
Type
Perforated ☒ Slotted ☐

Diameter (inches)	Setting From (ft.)	Setting To (ft.)	Slot size

11) WELL TESTS:
Was a pump test made? ☒ Yes ☐ No If yes by whom?

Yield: 20 gpm with 100 ft. drawdown after hrs
Bailer test gpm with ft. drawdown after hrs
Artesian flow gpm Date
Temperature of water
Was a chemical analysis made? ☐ Yes ☐ No
Did any strata contain undesirable water? ☐ Yes ☐ No
Type of water? Fresh depth of strata

12) PUMP DATA:
Manufacturer's Name Red Jacket
N15BC Pump End
Type Submersible H.P. 1
Designed pumping rate 20 gpm 25 gph ☐
Type power unit 1-ph Franklin Motor
Depth to bowls, cylinder, jet, etc., 88 ft. below land surface.

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief.

NAME D. L. Myers (Type or Print) Water Well Drillers Registration No. 2002

Address 1500 Loop 288 So. (Street or RFD) Denton (City) Texas (State)

(Signed) (Water Well Driller) D. L. Myers (Company Name)

Please attach electric log, chemical analysis, and other pertinent information, if available.

(Q-46)

SUBMITTED DRILLERS REPORT DATABASE (SDRD)

MAP ID# 9 **Distance from Property: 0.64 mi. E**

TRACK #: **383317**
DATE ENTERED: **2014-12-12**
OWNER NAME: **HCLOFB ARLINGTON, LLC**
OWNER ADDRESS: **8200 DOUGLAS AVENUE**
ARLINGTON, TX 75225
COUNTY: **TARRANT**
LATITUDE: **32.793236000** LONGITUDE: **-97.088902000**
REPORT LINK: **https://www3.twdb.texas.gov/apps/waterdatainteractive/GetReports.aspx?Num=383317&Type=SDR-Well**

WELL LOG:
DRILLING DATE (STARTED): **2014-06-01**
DRILLING DATE (COMPLETED): **2014-10-01**
DEPTH DRILLED: **815'**

WATER LEVEL:
STATIC LEVEL: **NOT REPORTED**
WATER LEVEL DATE: **NOT REPORTED**
TYPE OF WATER: **IRRIGATION**

TYPE OF WORK:
NEW WELL
PROPOSED USE:
IRRIGATION
COMPANY INFORMATION:
COMPANY NAME: **CENTRAL TEXAS WATER WELL**
COMPANY ADDRESS: **PO BOX 1184**
BOWIE, TX 76230

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY WATER WELLS (TCEQ)

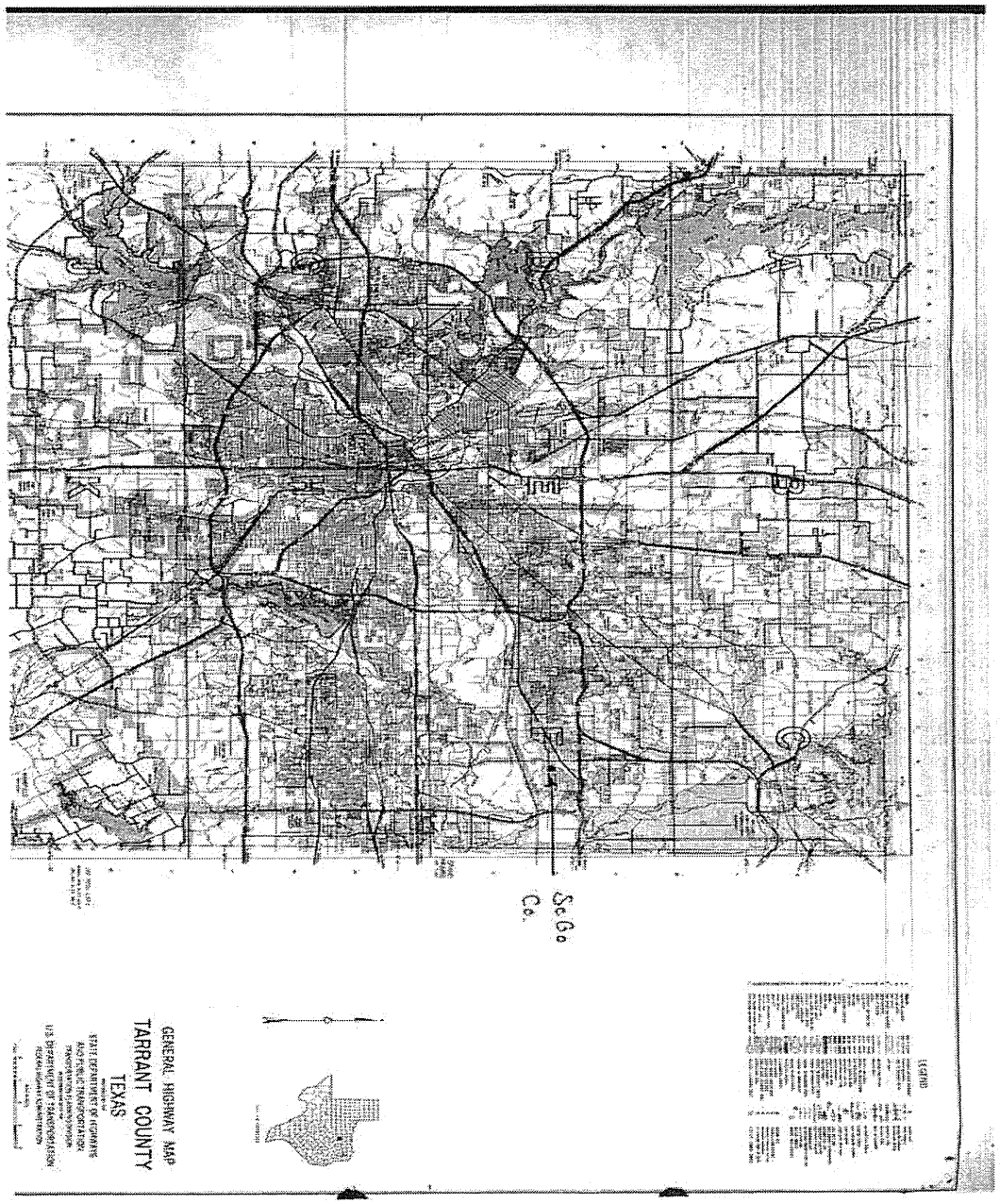
MAP ID# 10 **Distance from Property: 0.65 mi. ENE**

ID NUMBER:	**TX189549**
STATE ID :	**32-16-4**
OWNER NAME:	**SE-GO CO.**
DATE DRILLED:	**05/24/1994**
DEPTH DRILLED:	**190'**
STATIC LEVEL:	**87'**
WATER USAGE:	**DOMESTIC**
LONGITUDE:	**-97.088758000**
LATITUDE:	**32.809543000**

2 PAGE(S) OF DRILLERS' LOGS

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY WATER WELLS (TCEQ)

Water Well ID: 189549



Please use black ink. Send original copy by certified mail to the Texas Water Commission P.O. Box 13087 Austin, Texas 78711

State of Texas
WATER WELL REPORT
ATTENTION OWNER: *Confidentiality Privilege Notice on Reverse Side*

Texas Water Well Drillers Board P. O. Box 13087 Austin, Texas 78711

1) OWNER Se-Go Co (Name) Address 12700 Calloway Cemetery Rd. Eules Tx. 76040 (Street or RFD) (City) (State) (Zip)

2) LOCATION OF WELL: County TARRANT 5 miles in S.W. (N.E., S.W., etc.) direction from Eules (Town)

Driller must complete the legal description to the right with distance and direction from two intersecting section or survey lines, or he must locate and identify the well on an official Quarter- or Half-Scale Texas County General Highway Map and attach the map to this form.

☐ Legal description:
Section No. _____ Block No. _____ Township _____
Abstract No. _____ Survey Name _____
Distance and direction from two intersecting section or survey lines _____
☑ See attached map.

3) TYPE OF WORK (Check): ☑ New Well ☐ Deepening ☐ Reconditioning ☐ Plugging

4) PROPOSED USE (Check): ☑ Domestic ☐ Industrial ☐ Monitor ☐ Public Supply ☐ Irrigation ☐ Test Well ☐ Injection ☐ Other _____

5) DRILLING METHOD (Check): ☐ Driven ☑ Mud Rotary ☐ Air Hammer ☐ Jetted ☐ Bored ☐ Air Rotary ☐ Cable Tool ☐ Other _____

6) WELL LOG:
Date Drilling: Started 5-19 19 94 Completed 5-24 19 94

DIAMETER OF HOLE	Dia. (in.)	From (ft.)	To (ft.)
	8	Surface	190

From (ft.)	To (ft.)	Description and color of formation material
0	2	Top Soil
2	35	Fill DIRT
35	73	Blue Shale
73	120	Shale AND SAND
120	180	SAND and Lime Streaks
180	190	BROWN Shale

(Use reverse side if necessary)

7) BOREHOLE COMPLETION:
☐ Open Hole ☐ Straight Wall ☐ Underreamed
☑ Gravel Packed ☐ Other _____
If Gravel Packed give interval . . . from 50 ft. to 190 ft.

8) CASING, BLANK PIPE, AND WELL SCREEN DATA:

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mfr., if commercial	Setting (ft.) From	Setting (ft.) To	Gage Casing Screen
5	N	PVC	0	190	200
5	N	.030 Slot	120	180	200

9) CEMENTING DATA [Rule 319.44(b)]
Cemented from 0 ft. to 50 ft. No. of Sacks Used 12
_____ ft. to _____ ft. No. of Sacks Used _____
Method used MIX 100 Pound
Cemented by K. MILLICAN

10) SURFACE COMPLETION
☐ Specified Surface Slab Installed [Rule 319.44(c)]
☐ Pitless Adapter Used [Rule 319.44(d)]
☑ Approved Alternative Procedure Used [Rule 319.71]

11) WATER LEVEL:
Static level 87 ft. below land surface Date 5-23-94
Artesian flow _____ gpm. Date _____

12) PACKERS: Type _____ Depth _____

13) TYPE PUMP:
☐ Turbine ☐ Jet ☑ Submersible ☐ Cylinder
☐ Other _____
Depth to pump bowls, cylinder, jet, etc., 160 ft.

14) WELL TESTS:
Type Test: ☐ Pump ☑ Bailer ☐ Jetted ☐ Estimated
Yield: 15 gpm with 10 ft. drawdown after 3 hrs.

15) WATER QUALITY:
Did you knowingly penetrate any strata which contained undesirable water? ☐ Yes ☐ No
If yes, submit "REPORT OF UNDESIRABLE WATER"
Type of water? _____ Depth of strata _____
Was a chemical analysis made? ☐ Yes ☑ No

RECEIVED
AUG 18 1994
TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief. I understand that failure to complete items 1 thru 12 will result in the log(s) being returned for completion and resubmittal.

COMPANY NAME Millican Well Ser. (Type or Print) Water Well Driller's License No. 1563 WT
ADDRESS P.O. Box 820487 (Street or RFD) Ft Worth (City) TX (State) 76182 (Zip)
(Signed) Kenneth D. Millican (Licensed Water Well Driller) (Signed) _____ (Registered Driller Trainee)

Please attach electric log, chemical analysis, and other pertinent information, if available.

For TWC use only Well No. 32-16-4 Located on map _____

TWC-0392 (Rev. 06-10-85) TEXAS WATER COMMISSION COPY

189549

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY WATER WELLS (TCEQ)

MAP ID# 11 **Distance from Property: 0.66 mi. NNW**

ID NUMBER:	**TX189548**
STATE ID :	**32-16-4C**
OWNER NAME:	**J.F. GODFREY**
DATE DRILLED:	**09/01/1967**
DEPTH DRILLED:	**35'**
STATIC LEVEL:	**15'**
WATER USAGE:	**DOMESTIC**
LONGITUDE:	**-97.123906000**
LATITUDE:	**32.812796000**

2 PAGE(S) OF DRILLERS' LOGS

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY WATER WELLS (TCEQ)

Water Well ID: 189548

32-16-9C

Send original copy by certified mail to the Texas Water Development Board P. O. Box 12386 Austin, Texas 78711

State of Texas

WATER WELL REPORT

For TWDB use only
Well No. 32-16-9C
Located on map yes
Received: 12
Form Cd #
Form Cd #

1) OWNER:
Person having well drilled T F God FREY (Name) Address (Street or RFD) (City) (State)
Landowner Same (Name) Address (Street or RFD) (City) (State)

2) LOCATION OF WELL:
County Tarrant Fiber League Abstract No.
NW¼ NE¼ SW¼ SE¼ of Section Block No. Survey
(Quarter as many as are known)
1/2 miles in S (NE, SW, etc.) direction from Arlington (Town)

NORTH

Sketch map of well location with distances from adjacent section or survey lines, and to landmarks, roads, and creeks.

3) TYPE OF WORK (Check):
New Well ☒ Deepening ☐
Reconditioning ☐ Plugging ☐

4) PROPOSED USE (Check):
Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

5) TYPE OF WELL (Check):
Rotary ☐ Driven ☐ Dug ☐
Cable ☒ Jetted ☐ Bored ☐

6) WELL LOG:
Diameter of hole 6 1/4 in. Depth drilled 35 ft. Depth of completed well 35 ft. Date drilled 9-1-67
All measurements made from 0 ft. above ground level.

From (Ft.)	To (Ft.)	Description and color of formation material
0	2	clay, dark
2	18	sandy clay, red
18	33	sand, fine
33	35	gravel, fine

From (Ft.)	To (Ft.)	Description and color of formation material

(Use reverse side if necessary)

7) COMPLETION (Check):
Straight wall ☒ Gravel packed ☒ Other ☐
Under reamed ☐ Open hole ☐

8) WATER LEVEL:
Static level 15 ft. below land surface Date 9-1-67
Artesian pressure lbs. per square inch Date

9) CASING:
Type: old ☐ New ☒ Steel ☐ Plastic ☒ Other ☐
Cemented from ft. to ft.

Diameter (inches)	Setting From (Ft.)	Setting To (Ft.)	Gage
4 1/2			

10) SCREEN:
Type
Perforated ☐ Slotted ☐

Diameter (inches)	Setting From (Ft.)	Setting To (Ft.)	Slot size

11) WELL TESTS:
Was a pump test made? ☐ Yes ☒ No If yes by whom?
Yield: gpm with ft. drawdown after hrs
Bailer test 2 gpm with 8 ft. drawdown after 1/2 hrs
Artesian flow gpm Date
Temperature of water
Was a chemical analysis made? ☐ Yes ☒ No
Did any strata contain undesirable water? ☐ Yes ☒ No
Type of water? depth of strata

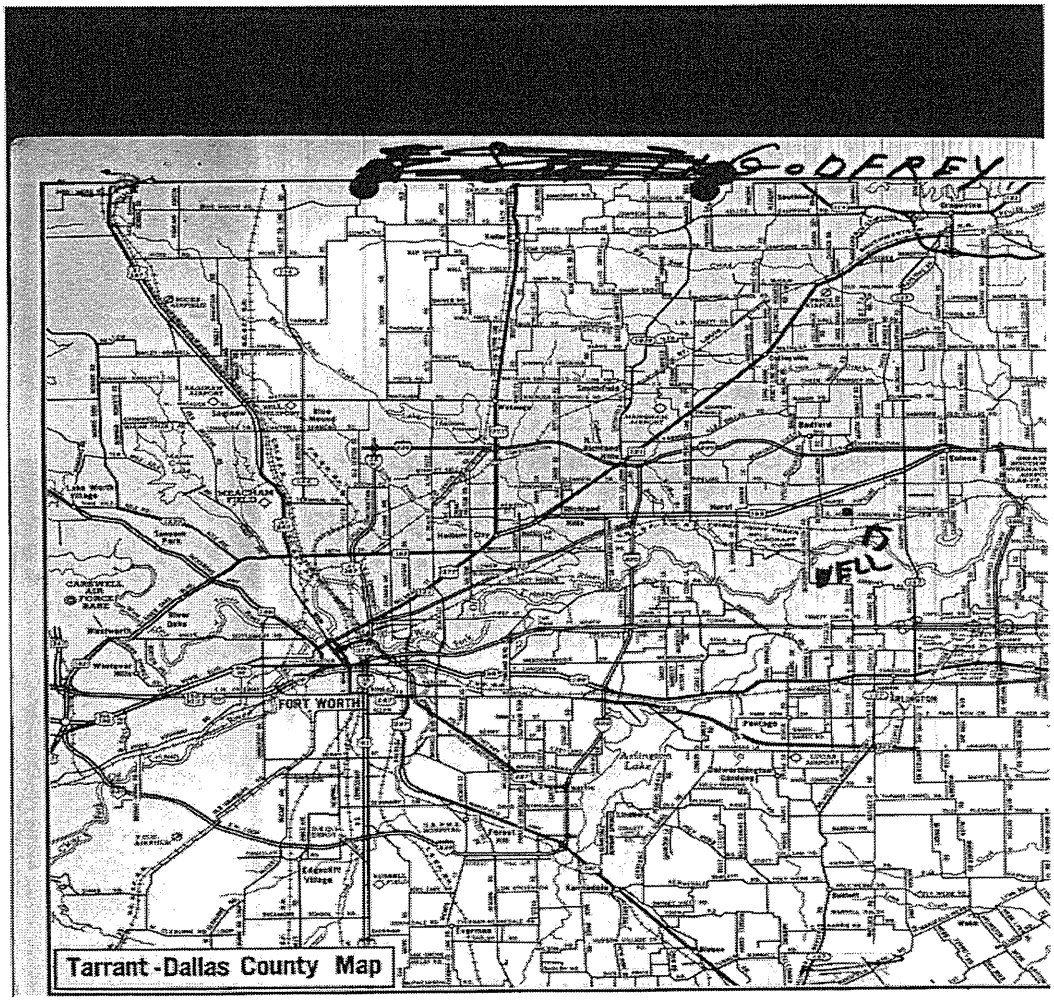
12) PUMP DATA:
Manufacturer's Name Jet Products
Type Jet H.P. 1/2
Designed pumping rate gpm ☒ gph ☐
Type power unit Electric
Depth to bowls, cylinder, jet, etc., 30 ft.
below land surface.

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief.

NAME Wade Jackson (Type or Print) Water Well Drillers Registration No. 647
Address 1516 W. Sanford (Street or RFD) Arlington (City) Tex. (State)
(Signed) Wade Jackson (Water Well Driller) T. C. Low Drilling Service (Company Name)

Please attach electric log, chemical analysis, and other pertinent information, if available.

189548


GODFREY
WELL
FORT WORTH
Tarrant - Dallas County Map

TEXAS WATER DEVELOPMENT BOARD GROUNDWATER DATABASE (TWDB)

MAP ID# 12 Distance from Property: 0.79 mi. SSE

STATE ID:	32-16-704
OWNER'S NAME:	HATTON SUMMERS
DATE DRILLED:	00/00/1940
DEPTH DRILLED:	772'
WATER USAGE:	DOMESTIC
LONGITUDE:	-97.094180000
LATITUDE:	32.783180000
SOURCE:	TWDB
DOCUMENT LINK:	http://s3.amazonaws.com/wellpdfs/documents/3216704/3216704.pdf

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer PALUXY Field No. F-47 State Well No. 32-16-704

Owner's Well No. County TARRANT

1. Location: 1/4, 1/4 Sec., Block, Survey

2. Owner: HATTON Summers Address:

Tenant: Address:

Driller: J.L.LMYERS & Sons Address:

3. Elevation of LSD is 490 ft. above msl, determined by TOPO

4. Drilled: 1940 ; Dug, Cable Tool, Rotary,

5. Depth: Rept. 772 ft. Meas. ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. Type cyl

No. Stages , Bowls Diam. in., Setting ft.

Column Diam. in., Length Tailpipe ft.

8. Motor: Fuel elect Make & Model HP. 2

9. Yield: Flow gpm, Pump gpm, Meas., Rept., Est.

10. Performance Test: Date Length of Test Made by

Static Level ft. Pumping Level ft. Drawdown ft.

Production gpm Specific Capacity gpm/ft.

CASING & BLANK PIPE

Cemented From ft. to ft.

Diam. (in.)	Type	Setting, ft. from	to
6			
4			

11. Water Level:

	ft. rept. meas.	19	above below	which is ft.	above below surface.
212.8	ft. rept. meas.	8-20 19 53	above below	which is ft.	above below surface.
234.2	ft. rept. meas.	11-23 19 54	above below	which is ft.	above below surface.
	ft. rept. meas.	19	above below	which is ft.	above below surface.

12. Use: (Dom) (Stock) Public Supply, Ind., Irr., Waterflooding, Observation, Not Used,

13. Quality: (Remarks on taste, odor, color, etc.)

Temp. — °F, Date sampled for analysis 8-20-53 Laboratory USGS

Temp. °F, Date sampled for analysis Laboratory

Temp. °F, Date sampled for analysis Laboratory

WELL SCREEN

Screen Openings

Diam. (in.)	Type	Setting, ft. from	to

14. Other data available as circled: (Driller's Log) Radioactivity Log, Electric Log,

Formation Samples, Pumping Test,

15. Record by: Date 2-4 1976

Source of Data R NORDSTROM

16. Remarks:

TWDBE-WD-2 (Sketch) 32-16-704

Thickness	Depth	Formation
3	3	Surface soil
31	34	Sand and rock
21	55	Dry sand
30	85	Shale
22	107	Gumbo
9	116	Water sand
10	126	Gray shale
7	133	Dry sand
152	285	Shale
15	300	Chalk rock
45	345	Shale
1	346	Rock'
34	380	Gray shale
115	495	White rock
50	545	Shale
64	609	Limestone
11	620	Shale
59	679	Hard rock
2	681	Water sand
39	720	Gray shale
8	728	Sand
3	731	Hard limestone
10	741	Gray shale
30	771	Water sand
1	772	Dark shale

TEXAS WATER DEVELOPMENT BOARD GROUNDWATER DATABASE (TWDB)

State ID: 32-16-704

Typewrite (Black ribbon) or Print Plainly
(soft pencil or black ink)
Do not use ball point pen

~~Texas State Department of Health Laboratories~~
~~4400 West 18th Street~~
~~Austin, Texas 78756~~
U.S.G.S.

TWDBE-GW ONLY
Program No. _____
Proj. No. _____

CHEMICAL WATER ANALYSIS REPORT

Send report to:
Ground Water Data and Protection Division
Texas Water Development Board
P.O. Box 13087
Austin, Texas 78711

County XU TARRANT
State Well No. 32-16-704
Well No.
Date Collected 08-20-53
By

Location
Source (type of well) Cyl Elec 2 Owner HATTON SUMNERS
Date Drilled 1940 Depth 772 ft. WBF KCPA
Producing intervals _____ Water level 212.8 ft.
Sampled after pumping _____ hrs. Yield _____ GPM meas. est. Temperature _____ °F _____ °C
Point of collection well Appearance ☐ clear ☐ turbid ☐ colored ☐ other
Use Dom/S Remarks

(FOR LABORATORY USE ONLY)

CHEMICAL ANALYSIS

KEY PUNCHED

Laboratory No. _____ Date Received _____ Date Reported _____

	MG/L	ME/L
Silica	13	
Calcium	2	
Magnesium	1	
Sodium	257	
Total		
☐ Potassium		
☐ Manganese		
☐ Boron		
3/ ☐ Total Iron	1.7	
☐ (other)		
%Na	99	
SAR		
RSC		
Specific Conductance (micromhos/cm3)	1080	
Diluted Conductance (micromhos/cm3)	x	

	MG/L	ME/L
Carbonate		
Bicarbonate	498	
Sulfate	126	
Chloride	16	
Fluoride		
Nitrate	2.0	
pH	8.9	
Total		
1/ Dissolved Solids (sum in MG/L)	649	
Phenolphthalein Alkalinity as C aCO_3		
Total Alkalinity as C aCO_3		
Total Hardness as C aCO_3	4	
2/ Nitrogen Cycle		
Ammonia - N		
Nitrite - N		
Nitrate - N		
Organic Nitrogen		

" ☐ " items will be analyzed if checked.

1/ The bicarbonate reported in this analysis is converted by computation (multiplying by 0.4917) to an equivalent amount of carbonate, and the carbonate figure is used in the computation of this sum.
2/ Nitrogen cycle requires separate sample.
3/ Total iron requires separate sample.

TWDBE-WD-1 (Rev. 1-25-72)

Analyst _____ Checked By _____

TEXAS WATER DEVELOPMENT BOARD GROUNDWATER DATABASE (TWDB)

MAP ID# 13 Distance from Property: 0.94 mi. N

STATE ID:	**32-16-401**
OWNER'S NAME:	**BUCK CONWAY**
DATE DRILLED:	**00/00/1953**
DEPTH DRILLED:	**900'**
WATER USAGE:	**DOMESTIC**
LONGITUDE:	**-97.100400000**
LATITUDE:	**32.821260000**
SOURCE:	**TWDB**
DOCUMENT LINK:	**http://s3.amazonaws.com/wellpdfs/documents/3216401/3216401.pdf**

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer PALUXY Field No. F-35 State Well No. 32-16-401

Owner's Well No. County TARRANT

1. Location: 1/4, 1/4 Sec., Block, Survey

2. Owner: Buck Conway Address:

Tenant: Address:

Driller: (do) Address:

3. Elevation of LSD is 593 ft. above msl, determined by TOPO

4. Drilled: 19 53 ; Dug, Cable Tool, Rotary,

5. Depth: Rept. 900 ft. Meas. ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. Type Cyl

No. Stages, Bowls Diam. in., Setting 368 ft. 443

Column Diam. in., Length Tailpipe ft.

8. Motor: Fuel elect Make & Model HP. 2

9. Yield: Flow gpm, Pump 18 gpm, (Meas.) Rept., Est.

10. Performance Test: Date Length of Test Made by

Static Level ft. Pumping Level ft. Drawdown ft.

Production gpm Specific Capacity gpm/ft.

CASING & BLANK PIPE

Cemented From ft. to ft.

Diam. (in.)	Type	Setting, ft. from	to
7			

11. Water Level: 246.87 ft. (rept.) (meas.) 12-10 19 53 above/below which is ft. above/below surface.

249.47 ft. (rept.) (meas.) 5-6 19 54 above/below which is ft. above/below surface.

289.10 ft. (rept.) (meas.) 11-23 19 54 above/below which is ft. above/below surface.

295.30 ft. (rept.) (meas.) 4-21 19 55 above/below which is ft. above/below surface.

12. Use: (Dom.) (Stock) Public Supply, Ind., Irr., Waterflooding, (Observation) (Not Used) plate welded on casing

13. Quality: (Remarks on taste, odor, color, etc.)

Temp. 7 °F, Date sampled for analysis 8-6-53 Laboratory USGS

Temp. °F, Date sampled for analysis Laboratory

Temp. °F, Date sampled for analysis Laboratory

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log,

Formation Samples, Pumping Test,

15. Record by: P. NORDSTROM Date 2-4 1976

Source of Data

16. Remarks:

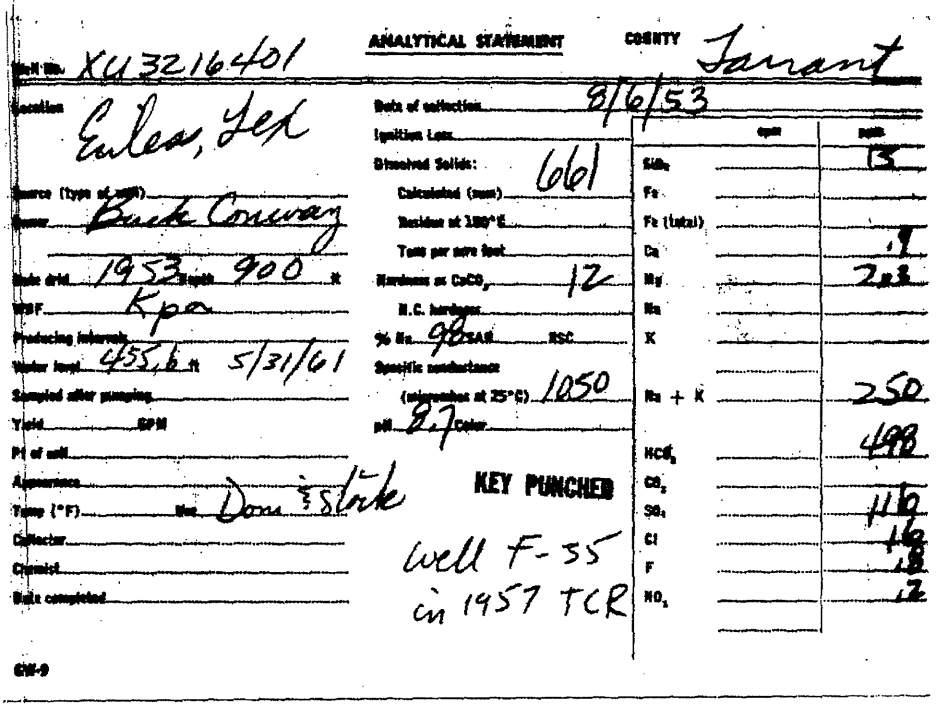
WELL SCREEN

Screen Openings

Diam. (in.)	Type	Setting, ft. from	to

Obs Well

TWDBE-WD-2 (Sketch) 32-16-407



Well No. XU3216401 — ANALYTICAL STATEMENT — COUNTY Tarrant

Location: Euless, Tex
Source (Type of well):
Owner: Buck Conway
Date drld: 1953 Depth: 900 ft
WSF: Kpa
Producing interval:
Water level: 455.6 ft 5/31/61
Sampled after pumping:
Yield: GPM
Pt of unit:
Appearance:
Temp (°F): Use: Dom & Stock
Collector:
Chemist:
Date completed:

Date of collection: 8/6/53
Ignition Loss:
Dissolved Solids: 661
Calculated (sum):
Residue at 180°C:
Tons per acre foot:
Hardness as $CaCO_3$: 12
N.C. hardness:
% Na: 98 SAR: RSC:
Specific conductance (micromhos at 25°C): 1050
pH: 8.7 Color:

KEY PUNCHED

well F-55
in 1957 TCR

	ppm	epm
SiO_2		13
Fe		
Fe (total)		
Ca		.9
Mg		2.3
Mn		
K		
Na + K		250
HCO_3		498
CO_3		
SO_4		116
Cl		16
F		.8
NO_3		.2

GW-9

KEY PUNCHED

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Water Resources Branch XW 32-16-401 356

LSD EL 640'

Water Level Measurements — Field No. 356

Owner Buck Conway — Office No. F-35

Tenant Sale — County TARRANT

Location Tenaha 20th Hwy 183 on Hwy 157 — Type of well Bakwell

Measuring Point top of 1½" steel plate

Height of Meas. Point above land-surface datum 1.5'

Date	Depth to water below meas. point	Ht. M.P. above L.S.D.	Depth to water below L.S.D.	Meas. by	Remarks (pumping, M.P. changed, etc.)
12-10-53	248.37	1.5	246.87	ERL	Pump set 247 3ct'
2-4-54	248.38	~	246.88	ERL	2 inch gas line
[illegible]	[illegible]				[illegible]
2-4-54	252.20		250.70		1/2 inch 20 min
3/19/54	249.60		248.10	~	~ 18 gals
5/5/54	250.97	1.5	249.47	ERL	
6/15/54	253.79		252.29	ERL	
7-20-54	265.41		263.91	ERL	SD - 15 min 1/2 hr SD 45 min
8-17-54	267.98		266.48	ERL	
9-28-54	284.14		282.64	ERL	S.D. - 1 hr 30 min
10-15-54	287.10		285.60	ERL	
11-23-54	290.60		289.10	~	
12-16-54	292.48		290.98	ERL	
2-15-55	294.03		292.53	ERL	~ ~ NP
4-21-55	296.80		295.30	~	~ ~
7-6-56	343.2		341.7		
9-6-56	355.55	1.5	353.05		Pump not at set
9/18/56	[illegible]		No Meas.		Casing wet
3/18/57	401.5		400.0	ERL	

9-185—July 1931 Revised

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES BRANCH

XW 32-16-401 356

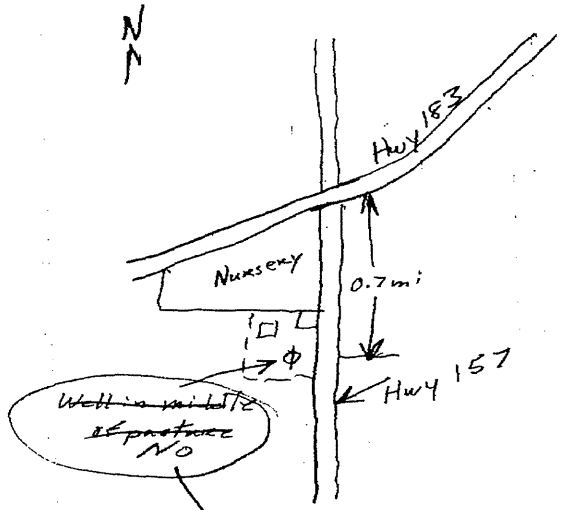
WELL SCHEDULE

Date 2-6, 1953 Field No. [illegible]

Record by E. R. Leggett Office No. F-35

Source of data Buck Conway

1. *Location:* State Texas County Tarrant
Map 6.1 miles N. of Hwy. 80 on paved road Mar.
¼ ¼ sec. T N S R E W
2. *Owner:* Buck Conway Address Box 66 Fairfax
Tenant Address
Driller Buck Conway Address Do.
3. *Topography*
4. *Elevation* 542.45 (Above) (Below) MSL - 1.5 ft
5. *Type:* Dug, drilled, driven, bored, jetted 2-6 1953
6. *Depth:* Reptd. 900 ft. Meas. ft.
7. *Casing:* Diam. 7 in., to in., Type
Depth 900 ft., Finish Perf. See Elec. Log
8. *Chief Aquifer* Paluxy
Others
9. *Water level* 248.37 ft. (meas) (reptd.) 12-10 1953 (above) (below)
1½" steel plate which is 1.5 ft. (above) (below) surface
10. *Pump:* Type Jack - Cyl. Capacity G. M.
Power: Kind Electric Horsepower 2
11. *Yield:* Flow G.M., Pump 8-10 G.M., Meas., Reptd. Est.
Drawdown ft. after hours pumping G. M.
12. *Use:* Dom., (Stock) PS, RR., Ind., Irr., Obs. To be used as PS well.
Adequacy, permanence
13. *Quality* Temp °F.
Taste, odor, color Mpby Sample for Chem. Anal. Yes No
Unfit for
14. *Remarks:* (Log, Analyses, etc.) See Elec. Log



5/13/63

I attempted to find this well two years in a row but was unable to locate it

RLB

Sketch is from old record

Located well in 1964; well is behind conc. batching plant near small white pump house! Plate welded on casing, no way to meas.

CWA

(100 yds from hwy. 157)

20' North

owner says he will cut hole in it later on if we will meas. well next year.

Don't bother stop 1/25

X432-16-401

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY WATER WELLS (TCEQ)

MAP ID# 14 **Distance from Property: 0.94 mi. S**

ID NUMBER:	**TX204709**
STATE ID :	**32-16-7**
OWNER NAME:	**PAUL WOODS**
DATE DRILLED:	**01/09/2000**
DEPTH DRILLED:	**132'**
STATIC LEVEL:	**45'**
WATER USAGE:	**IRRIGATION**
LONGITUDE:	**-97.113113000**
LATITUDE:	**32.779453000**

1 PAGE(S) OF DRILLERS' LOGS

Send original copy by certified return receipt requested mail to: TDLR, P.O. Box 12157, Austin, TX 78711

ATTENTION OWNER: Confidentiality Privilege Notice on reverse side of Well Owner's copy (pink)

State of Texas WELL REPORT

Texas Department of Licensing & Regulation
P.O. Box 12157
Austin, TX 78711
512-463-7880

1) OWNER Paul Woods (Name) ADDRESS 2607 N Cooper Arlington, Tx 760 1 (Street or RFD) (City) (State) (Zip)

2) ADDRESS OF WELL'S LOCATION: County Tarrant (Street, RFD or other) Same address (City) (State) (Zip) Long. * Lat. * Grid # 32-16-7

3) TYPE OF WORK (Check): ☒ New Well ☐ Deepening ☐ Reconditioning ☐ Plugging

4) PROPOSED USE (Check): ☐ Monitor ☐ Environmental Soil Boring ☐ Domestic ☐ Industrial ☒ Irrigation ☐ Injection ☐ Public Supply ☐ De-watering ☐ Testwell
If Public Supply well, were plans submitted to the TNRCC? ☐ Yes ☐ No

5) * 32°46.78N
*097°06.77W
N

6) WELL LOG:
Date Drilling: Started 1-8 19 00 Completed 1-9 19 00

DIAMETER OF HOLE

Dia. (in.)	From (ft.)	To (ft.)
8 3/4	Surface	132

7) DRILLING METHOD (Check): ☐ Driven ☒ Air Rotary ☐ Mud Rotary ☐ Bored ☐ Air Hammer ☐ Cable Tool ☐ Jetted ☐ Other

8) Borehole Completion (Check): ☐ Open Hole ☐ Straight Wall ☐ Underreamed ☒ Gravel Packed ☐ Other
If Gravel Packed give interval from 132 ft. to 25 ft.

From (ft.)	To (ft.)	Description and color of formation material
0	2	Top soil
2	10	Red sandy clay
10	30	Yellow clay
30	80	Sand
80	92	Gray shale
92	132	Sand

(Use reverse side of Well Owner's copy, if necessary)

CASING, BLANK PIPE, AND WELL SCREEN DATA:

Dia. (in.)	New or Used	Steel, Plastic, etc. Perf., Slotted, etc. Screen Mfg., if commercial	Setting (ft.) From	Setting (ft.) To	Gage Casing Screen
4	N	Plastic	127	surf	
		Slotted	127	47	

9) CEMENTING DATA
Cemented from 0 ft. to 25 ft. No. of sacks used 7
Bentonite 25 ft. to 30 ft. No. of sacks used 4
Method used Measured & top loaded
Cemented by Geyer Drilling co. Inc.
Distance to septic system field lines or other concentrated contamination * ft.
Method of verification of above distance * city sewer

10) ☐ Well plugged within 48 hours

Casing left in well: From (ft.)	Casing left in well: To (ft.)	Cement/bentonite placed in well: From (ft.)	Cement/bentonite placed in well: To (ft.)	Sacks used:

10) SURFACE COMPLETION
☐ Specified Surface Slab Installed
☒ Specified Steel Sleeve Installed
☐ Pitless Adapter Used
☐ Approved Alternative Procedure Used

11) WATER LEVEL:
Static level 45 ft. below land surface Date 1-9-00
Artesian flow gpm. Date

12) PACKERS: Type Depth
NONE

13) TYPE PUMP:
☐ Turbine ☐ Jet ☐ Submersible ☐ Cylinder ☐ Other
Depth to pump bowls, cylinder, jet, etc. 120 ft.

14) WELL TESTS:
Type test: ☐ Pump ☒ Bailer ☐ Jetted ☐ Estimated
Yield: 20 gpm with 15 ft. drawdown after 1 hrs.

15) WATER QUALITY:
Did you knowingly penetrate any strata which contained undesirable constituents?
☐ Yes ☒ No If yes, submit "REPORT OF UNDESIRABLE WATER"
Type of water? Depth of strata
Was a chemical analysis made? ☐ Yes ☒ No

I certify that I drilled this well (or the well was drilled under my direct supervision) and that each and all of the statements herein are true and correct. I understand that failure to complete items 1 thru 15 will result in the log(s) being returned for completion and resubmittal.

COMPANY NAME Geyer Drilling Co. Inc. (Typed or Printed) WELL DRILLER'S LICENSE NO. 4789 WPKI

ADDRESS 108 W. Broad St (Street or RFD) Mansfield (City) TX (State) 76063 (Zip)

(Signed) BS Hamilton (Licensed Well Driller) (Signed) (Registered Driller Trainee)

Please attach electric log, chemical analysis, and other pertinent information, if available.

TDLR FORM 001WWD (4/98) White - TDLR Yellow - DRILLER Pink - WELL OWNER

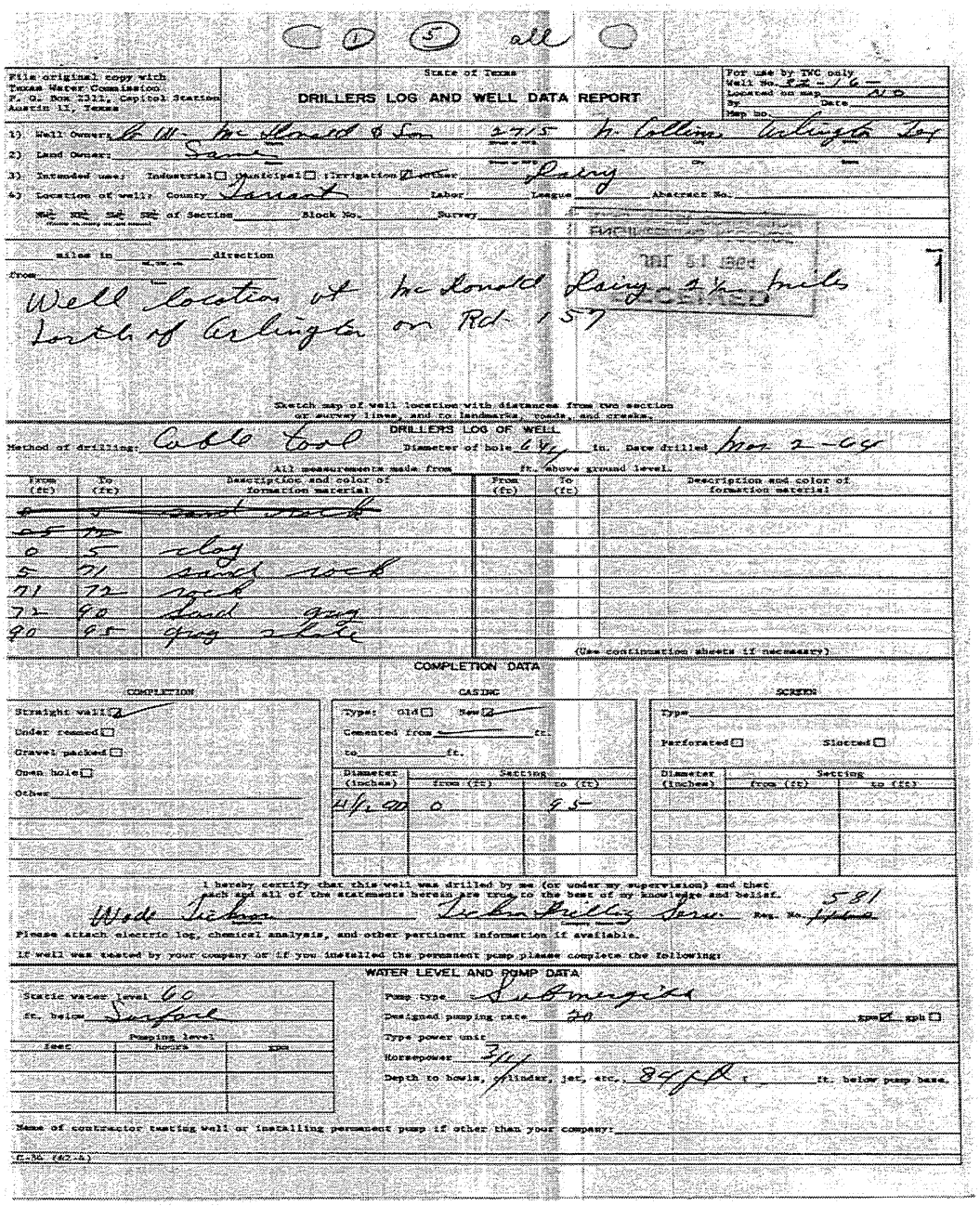
204709

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY WATER WELLS (TCEQ)

MAP ID# 15 **Distance from Property: 0.97 mi. SSE**

ID NUMBER:	**TX197714**
STATE ID :	**32-16-?**
OWNER NAME:	**G.W. MCDONALD & SON**
DATE DRILLED:	**03/02/1964**
DEPTH DRILLED:	**95'**
STATIC LEVEL:	**60'**
WATER USAGE:	**IRRIGATION/DAIRY**
LONGITUDE:	**-97.095834000**
LATITUDE:	**32.780003000**

1 PAGE(S) OF DRILLERS' LOGS



C D (5) all C

File original copy with Texas Water Commission P. O. Box 2311, Capitol Station Austin 11, Texas

State of Texas

DRILLERS LOG AND WELL DATA REPORT

For use by TWC only
Well No. 58-16
Located on map A-D
By Date
Map No.

1) Well Owner: B W Mc Donald & Son 2715 N. Collins Arlington Tex
2) Land Owner: Same
3) Intended use: Industrial ☐ Municipal ☐ Irrigation ☑ Other Dairy
4) Location of well: County Tarrant Labor League Abstract No.
NW NE SW SE of Section Block No. Survey

miles in Direction
from

Well location of Mc Donald Dairy 2 1/2 miles North of Arlington on Rd 157

MAY 31 1954 RECEIVED

1

Sketch map of well location with distances from two section or survey lines, and to landmarks, roads, and creeks.

DRILLERS LOG OF WELL

Method of drilling: Cable tool Diameter of hole 6 1/4 in. Date drilled Mar 2-04

All measurements made from ft. above ground level.

From (ft)	To (ft)	Description and color of formation material	From (ft)	To (ft)	Description and color of formation material
0	2	Sand rock			
2	5	clay			
5	71	sand rock			
71	72	rock			
72	90	Sand gyp			
90	95	gyp + lime			

(Use continuation sheets if necessary)

COMPLETION DATA

COMPLETION
Straight wall ☑
Under reamed ☐
Gravel packed ☐
Open hole ☐
Other

CASING
Type: Old ☐ New ☑
Cemented from ft.
to ft.

Diameter (inches)	Setting from (ft)	Setting to (ft)
4 1/2 OD	0	95

SCREEN
Type
Perforated ☐ Slotted ☐

Diameter (inches)	Setting from (ft)	Setting to (ft)

I hereby certify that this well was drilled by me (or under my supervision) and that each and all of the statements herein are true to the best of my knowledge and belief. 581

Wade Jackson Jackson Drilling Service Reg. No. (if applicable)

Please attach electric log, chemical analysis, and other pertinent information if available.

If well was tested by your company or if you installed the permanent pump please complete the following:

WATER LEVEL AND PUMP DATA

Static water level 60
ft. below Surface

Test	Pumping level hours	gpm

Pump type Submergible
Designed pumping rate 20 gpm ☑ gph ☐
Type power unit
Horsepower 3/4
Depth to bowls, cylinder, jet, etc. 84 ft. ft. below pump base.

Name of contractor testing well or installing permanent pump if other than your company:

T-56 (8/2-A)

TEXAS WATER DEVELOPMENT BOARD GROUNDWATER DATABASE (TWDB)

MAP ID# 16 **Distance from Property: 0.97 mi. NW**

STATE ID:	**32-15-602**
OWNER'S NAME:	**J.H. HACKNEY**
DATE DRILLED:	**00/00/1936**
DEPTH DRILLED:	**43'**
WATER USAGE:	**UNUSED**
LONGITUDE:	**-97.144052000**
LATITUDE:	**32.812250000**
SOURCE:	**TWDB**
DOCUMENT LINK:	**http://s3.amazonaws.com/wellpdfs/documents/3215602/3215602.pdf**

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

Aquifer Woodbine | Field No. | State Well No. 32-15-602

Owner's Well No. | County TARRANT

1. Location: 1/4, 1/4 Sec., Block, Survey

2. Owner: J. H. Hackney Address:

Tenant: Address:

Driller: (do) Address:

3. Elevation of is 563 ft. above msl, determined by

4. Drilled: 19 36 ; Dug, Cable Tool, Rotary,

5. Depth: Rept. ft. Meas. 43 ft.

6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed

7. Pump: Mfgr. Type

No. Stages , Bowls Diam. in., Setting ft.

Column Diam. in., Length Tailpipe ft. NONE

8. Motor: Fuel Make & Model HP.

9. Yield: Flow gpm, Pump gpm, Meas., Rept., Est.

10. Performance Test: Date Length of Test Made by

Static Level ft. Pumping Level ft. Drawdown ft.

Production gpm Specific Capacity gpm/ft.

CASING & BLANK PIPE

Cemented From ft. to ft.

Diam. (in.)	Type	Setting, ft. from	to

11. Water Level: 41.46 ft. (Rept./Meas.) 11-19 1970 above/below top cement pad which is 1.7 ft. above/below surface.

38.75 ft. (Rept./Meas.) 11-13 1972 above/below LSD which is ft. above/below surface.

38.55 ft. (Rept./Meas.) 11-13 1973 above/below LSD which is ft. above/below surface.

38.30 ft. (Rept./Meas.) 11-14 1974 above/below LSD which is ft. above/below surface.

12. Use: (Dom.), Stock, Public Supply, Ind., Irr., Waterflooding, Observation Not Used.

13. Quality: (Remarks on taste, odor, color, etc.)

Temp. °F, Date sampled for analysis Laboratory

Temp. °F, Date sampled for analysis Laboratory

Temp. °F, Date sampled for analysis Laboratory

WELL SCREEN

Screen Openings

Diam. (in.)	Type	Setting, ft. from	to

14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, Formation Samples, Pumping Test,

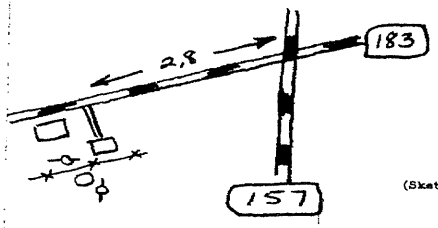
15. Record by: Cunningham Date 11 19 70

Source of Data owner

16. Remarks:

Obs Well

4 N

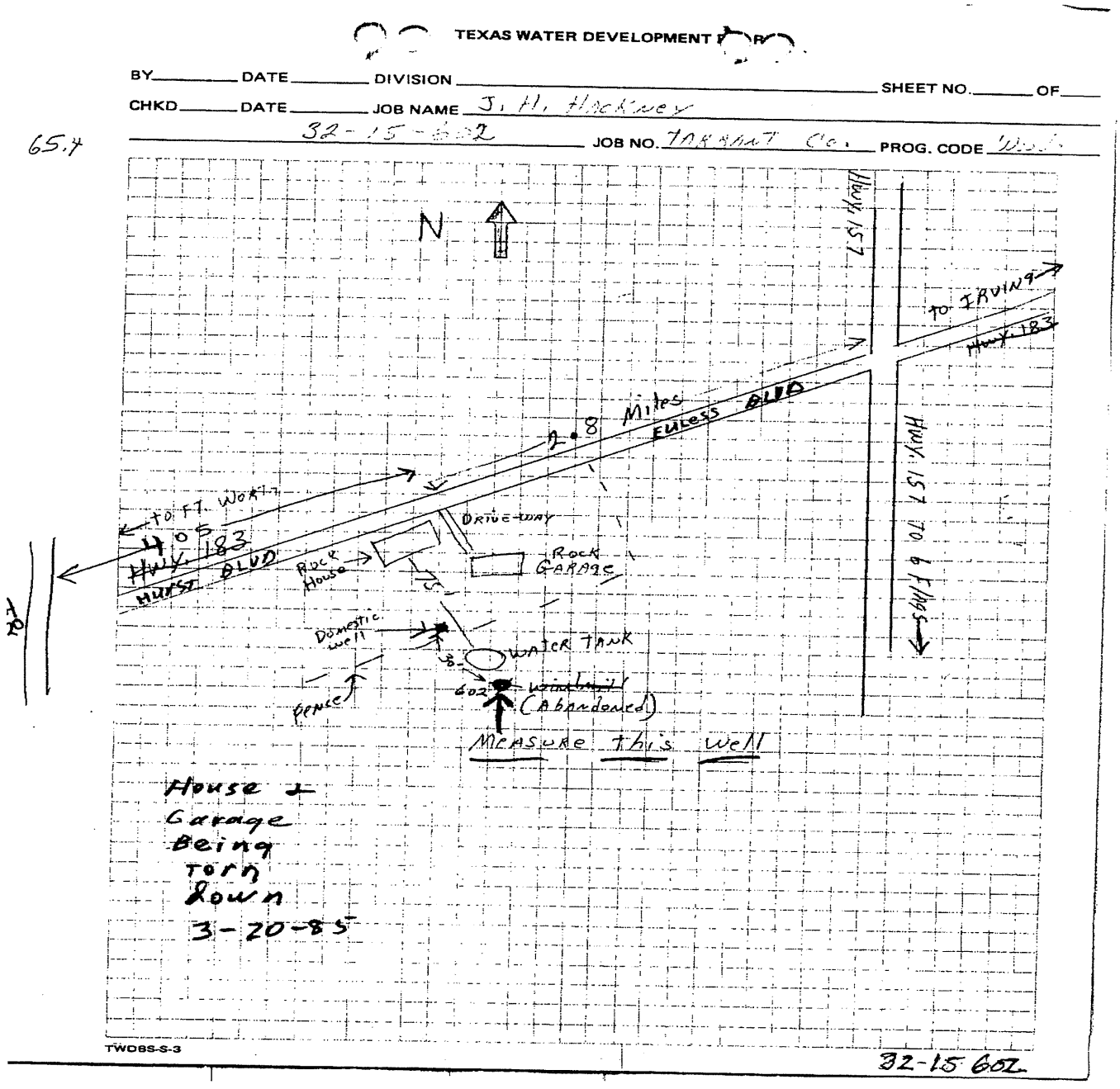


(Sketch)

TWDBE-WD-2

obs.

32-15-602



NWIS United States Geological Survey National Water Information System

VERSION DATE: 1/2020

The U.S. Geological Survey (USGS) National Water Information System (NWIS) includes water inventory data originating from all 50 states, plus border and territorial sites, including data from as early as 1899. This database includes selected site types limited to Groundwater Sites and Spring Sites from the 1.5 million plus sites within NWIS. Surface-Water, Atmospheric, and Other Site types are excluded. Disclaimer: Water Data for the Nation is the USGS public web interface to much of the data stored and managed within NWIS. It is not, however, configured to present all NWIS data and users may need to contact local Water Science Centers to obtain some information. NWIS data is updated on a regularly scheduled basis, and current condition data is generally updated upon receipt at local Water Science Centers.

ENVIRONMENTAL RECORDS DEFINITIONS - STATE (TX)

SSDRD Select Submitted Drillers Report Database Wells

VERSION DATE: 8/2021

This Texas Water Development Board database was created from the online Texas Well Report Submission and Retrieval System (a cooperative TDLR, TWDB system) that registered water-well drillers use to submit their required reports. The system was started in February 2001 and is optional for the drillers to use. This data excludes the following well types: Monitor Wells, Environmental Soil Borings, Injections Wells, De-watering and Test Wells.

TCEQ Texas Commission on Environmental Quality Water Wells

VERSION DATE: NR

The Texas Commission on Environmental Quality (TCEQ) maintains a filing system of plotted and unnumbered water wells. Plotted water wells are filed according to the County indicated by the driller and the state well number assigned by State of Texas personnel. Given the available location information provided by the driller, personnel identify where the approximate well location should be. After well placement a state well number is assigned indicating that the well lies within a specific 2.5' section of a 7.5' quadrangle. This method allows for quicker, more refined, reference when researching a specific area. Unnumbered water wells have not been assigned a state well number. This can occur for a variety of reasons; however it does not mean the well cannot be accurately spotted. Unnumbered water well records are filed according to County and are often broken up by year or by a span of years.

TWDB Texas Water Development Board Groundwater Database

VERSION DATE: 5/2021

The Texas Water Development Board Groundwater Database contains information for more than 123,500 sites in Texas including data on water wells, springs, oil/gas tests, water levels, and water quality. The purpose of the Board's data collection effort over the years has been to gain representative information about aquifers in the state in order to do water planning. It is very important, however, to realize that the wells in the database represent only a small percentage of the wells that actually exist in Texas. A registered water well driller is required by law to send in a report to the State for every well that is drilled. This requirement began in 1965, and we estimate that approximately 500,000 wells have been drilled in Texas since then. Of the 1,000,000 plus water wells drilled in Texas over the past 100 years, more than 130,000 have been inventoried and placed into the TWDB groundwater database. State well numbers have been assigned to these based on their location within numbered 7 1/2 minute quadrangles formed by lines of latitude and longitude. This database contains well information including location, depth, well type, owner, driller, construction and completion data.

WUD Water Utility Database

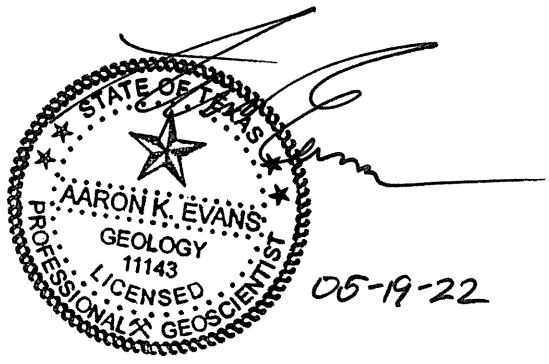
VERSION DATE: NR

The Water Utility Database is defined as a collection of data from Texas Water Districts, Public

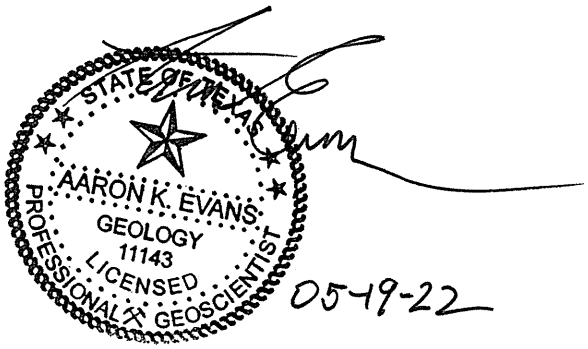
Drinking Water Systems and Water and Sewer Utilities who submit information to the TCEQ. This database is an integrated database designed and developed to replace over 160 stand alone legacy systems representing over 5 million records of the former Texas Water Commission and the Texas Department of Health.

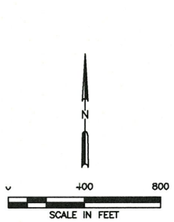
APPENDIX IIIG-B

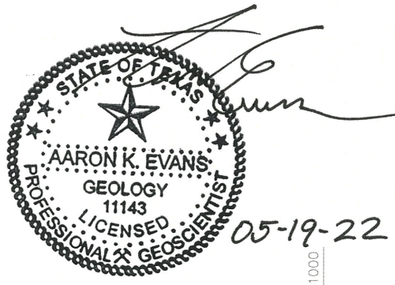
SITE EXPLORATION DATA

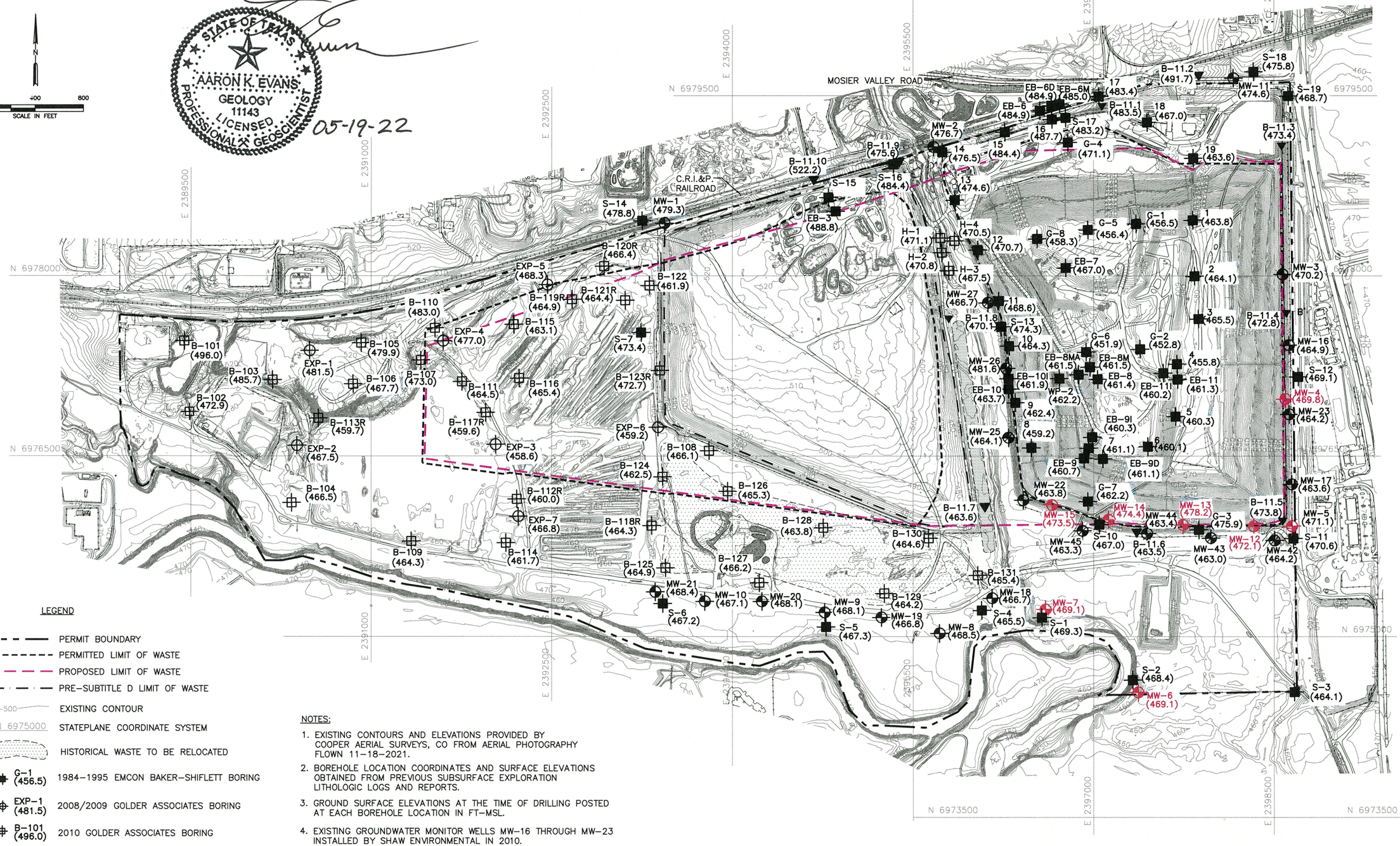


CONTENTS









LEGEND

- PERMIT BOUNDARY
- PERMITTED LIMIT OF WASTE
- PROPOSED LIMIT OF WASTE
- PRE-SUBTITLE D LIMIT OF WASTE
- 500 EXISTING CONTOUR
- N 6975000 STATEPLANE COORDINATE SYSTEM
- HISTORICAL WASTE TO BE RELOCATED
- G-1 (456.5) 1984-1995 EMCON BAKER-SHIFLETT BORING
- EXP-1 (481.5) 2008/2009 GOLDER ASSOCIATES BORING
- B-101 (496.0) 2010 GOLDER ASSOCIATES BORING
- B-11.1 (483.5) 2011 GOLDER ASSOCIATES BORING
- MW-1 (479.3) EXISTING GROUNDWATER MONITOR WELL
- MW-14 (674.4) FORMER GROUNDWATER MONITOR WELL

NOTES:

1. EXISTING CONTOURS AND ELEVATIONS PROVIDED BY COOPER AERIAL SURVEYS, CO FROM AERIAL PHOTOGRAPHY FLOWN 11-18-2021.
2. BOREHOLE LOCATION COORDINATES AND SURFACE ELEVATIONS OBTAINED FROM PREVIOUS SUBSURFACE EXPLORATION LITHOLOGIC LOGS AND REPORTS.
3. GROUND SURFACE ELEVATIONS AT THE TIME OF DRILLING POSTED AT EACH BOREHOLE LOCATION IN FT-MSL.
4. EXISTING GROUNDWATER MONITOR WELLS MW-16 THROUGH MW-23 INSTALLED BY SHAW ENVIRONMENTAL IN 2010.
5. EXISTING GROUNDWATER MONITOR WELLS MW-25 THROUGH MW-27 AND MW-42 THROUGH MW-45 INSTALLED BY THE CAREL CORPORATION IN 2014.

O:\0023\404\EXPANSION 2021\PART II\IIIG\FIG IIIG-B-1-BOREHOLE LOCATION MAP.dwg

☐ DRAFT
☒ FOR PERMITTING PURPOSES ONLY
☐ ISSUED FOR CONSTRUCTION

DATE: 05/2022
FILE: 0023-404-11
CAD: IIIG-B-1-BOREHOLE LOCATION MAP.DWG
DRAWN BY: CRA
DESIGN BY: AKE
REVIEWED BY: AKE

Weaver Consultants Group
TBPE REGISTRATION NO. F-3727

PREPARED FOR
CITY OF ARLINGTON
AND
REPUBLIC WASTE SERVICES OF TEXAS, LTD

REVISIONS

NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT
BOREHOLE LOCATION MAP

CITY OF ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS

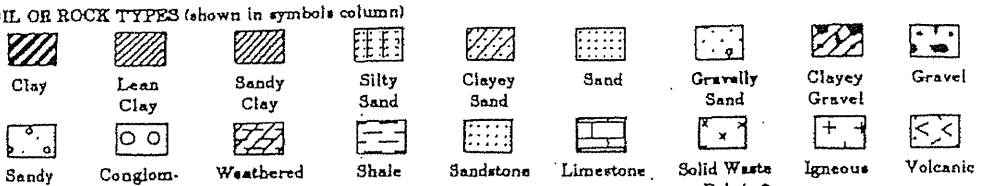
WWW.WCGRP.COM

FIGURE IIIG-B-1

1984-1995 EMCON BAKER-SHIFLETT BORING LOGS

GENERAL NOTES

SOIL OR ROCK TYPES (shown in symbols column)



* may be used in combination with other types

DRILLING AND SAMPLING SYMBOLS:

U : Thin-walled Tube - 3" O.D., unless otherwise noted
S : Split Barrel Sampler - 2" O.D., unless otherwise noted
Example: 25 = 25 blows/12" after 6" seating interval; 50/7 = 50 blows/7" after 6" seating interval; REF = 50 blows <6"
C : Double Tube Core Barrel
T : THD Cone Penetrometer
Example: T60 = 60 blows/12"; T4.5" = 100 blows/4.5"

A : Auger Sample
W : Wash Sample
P : Packer Test
D : Denison Sample

RELATIVE DENSITY OF COARSE-GRAINED SOILS:

Penetration Resistance Blows/foot	Relative Density
0 - 4	Very loose
4 - 10	Loose
10 - 30	Medium dense
30 - 50	Dense
over 50	Very dense

CONSISTENCY OF FINE-GRAINED SOILS:

Unconfined Compressive Strength, Qu, tsf	Consistency
Less than 0.25	Very soft
0.25 to 0.50	Soft
0.50 to 1.00	Firm
1.00 to 2.00	Stiff
2.00 to 4.00	Very stiff
4.00 and higher	Hard

TERMS CHARACTERIZING SOIL STRUCTURE:

Slickensided : Having inclined planes of weakness that are slick and glossy in appearance.
Fissured : Containing shrinkage cracks, frequently filled with fine sand or silt; usually more or less vertical.
Laminated : Composed of thin layers of varying color and texture.
Interbedded : Composed of alternate layers of different soil types.
Calcareous : Containing appreciable quantities of calcium carbonate.
Well graded : Having wide range in grain sizes and substantial amounts of all intermediate particle sizes.
Poorly graded : Predominantly of one grain size; or having a range of sizes with some intermediate size missing.

DEGREE OF WEATHERING:

Unweathered : Rock in its natural state before being exposed to atmospheric agents.
Slightly weathered : Noted predominantly by color change with no disintegrated zones.
Weathered : Complete color change with zones of slightly decomposed rock.
Severely weathered : Complete color change with consistency, texture, and general appearance approaching soil.

SUBSURFACE CONDITIONS:

Soil and rock descriptions on the boring logs are a compilation of field data as well as from laboratory testing of samples on those strata for which laboratory classification test results are presented on the boring logs. These classifications are based only on the actual samples tested, and the classification is then assigned to the remainder of the stratum interval based on visual classification. If laboratory classification test results are not presented on the boring log for a particular stratum, then that stratum was classified by visual-manual procedures only. The stratification lines represent the approximate boundary between materials and the transition can be gradual.

Classification of soils based upon visual-manual procedures was performed in general accordance with ASTM Standard D 2488. Classification of soils based upon laboratory test results was performed in general accordance with ASTM Standard D 2487.

Water-level observations have been made in the borings at the times indicated. It must be noted that fluctuations in the ground-water level may occur due to variations in rainfall, hydraulic conductivity of soil strata, construction activity, and other factors.

Figure 4-A.2

LOG OF BORING NO. G- 1

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 3973.4 N -1142.0
Surface El.: 456.5' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Hand Penetrometer, TSF	Penetration Blows / Foot	Recovery %	RQD	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
5	U-1, S-2		SILTY SAND (SM), orange tan & gray, dense, calcareous, w/iron stains		31			20		21	18	3	46	
			448.5											
10	U-3, U-4, U-5, U-6		SILTY SAND, w/gravel (SM), tan, dense, rounded to subrounded										12	
			444.0											
15	U-7, U-8, U-9, C-10		- clayey sand seams, w/clay laminations & iron stains @ 12 ft. SHALE, gray, clayey, soft to hard		T92/8.5"			17	123	41	21	20	87	1.0
20														
25	C-11		- sandy below 26 ft.											
			427.5		T6"			14	123				63	
30														
35														
40														
45														
50														

Completion Depth:	29.0 ft.
Date Boring Started:	1/5/94
Date Boring Completed:	1/6/94
Engineer/Geologist:	DRF
Project No.:	1019-002-002

Remarks:

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF BORING NO. G- 2

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 3718.4 N -2101.1
Surface El.: 452.8' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Hand Penetrometer, TSF	Penetration Blows / Foot	Recovery %	RQD	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
5	U-1		SILTY CLAYEY SAND (SC-SM), tan to gray, medium dense	2.0				19		19	14	5	46	
			447.8											
	U-2		SILTY SAND, w/gravel (SM), tan, medium dense											
	U-3													
10	U-4		- clay seams @ 9 ft.											
	U-5													
	U-6		440.8											
	U-7		SHALE, dark gray, clayey, soft to hard, carbonaceous, w/light gray silt laminations		75/11"									
15	C-8													
	C-9							23	109					2.6
20														
	C-10													
25			- w/sand below 26 ft.											
			425.3		78/11"								73	
30														
35														
40														
45														
50														

Completion Depth: 27.5 ft.
Date Boring Started: 1/7/94
Date Boring Completed: 1/7/94
Engineer/Geologist: DRF
Project No.: 1019-002-002

Remarks:

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

Permit Issued: February 12, 2014

LOG OF BORING NO. G-3

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 3755.9 N -3604.8
Surface El.: 475.9' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Hand Penetrometer, TSF	Penetration Blows / Foot	Recovery %	RQD	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			CLAY, dark brown to gray, apparent fill, w/gravel & calcareous nodules											
5														
10			461.9											
15			FAT CLAY (CH), dark gray to brown, firm to stiff, w/iron stains											
20	U-1			2.5				21	105	51	17	34	90	
25	U-2			2.5				19	114	51	17	34	86	3.2
30	U-3			1.5										
			443.9											
35	U-4		LEAN CLAY, w/sand (CL), dark brown & gray, firm	1.0				21	114	33	13	20	73	0.7
			440.4											
			- free water encountered @ 35.5 ft.											
			SILTY SAND (SM), tan, medium dense, calcareous							32	13	19	73	
40	S-5				20									
45	S-6				11					18	18	NP	33	
50														

Completion Depth: 64.0 ft.
Date Boring Started: 1/11/94
Date Boring Completed: 1/11/94
Engineer/Geologist: DRF
Project No.: 1019-002-002

Remarks:

Continued Next Page

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF BORING NO. G- 3

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 3755.9 N -3604.8
Surface El.: 475.9' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Hand Penetrometer, TSF	Penetration Blows / Foot	Recovery %	RQD	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
			420.9											
55			SAND, w/silt & gravel (SP-SM), tan, medium dense — 419.9										9	
					T3"									
	C-7		SHALE, dark gray, clayey, moderately hard to hard											
	C-8							19	115	50	23	27		4.3
60			- very hard claystone seam @ 61.5 ft.					19	118	46	26	20	97	2.7
			411.9		T5"									
65														
70														
75														
80														
85														
90														
95														
100														

Completion Depth: 64.0 ft.
Date Boring Started: 1/11/94
Date Boring Completed: 1/11/94
Engineer/Geologist: DRF
Project No.: 1019-002-002

Remarks:

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF BORING NO. G- 4

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 3624.4 N -341.1
Surface El.: 471.1' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Hand Penetrometer, TSF	Penetration Blows / Foot	Recovery %	RQD	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			SANDY SILTY CLAY (CL-ML), yellow, red & gray, soft to very stiff, w/some fine gravel											
5	U-1			3.5										
10	U-2							13	115	18	14	4	54	
			459.1											
15	U-3		LEAN CLAY, w/sand (CL), light brown & gray, stiff to very stiff, w/iron stains	3.25				19	112	35	17	18	76	1.5
			452.1											
20	U-4		SILTY SAND (SM), light gray, medium dense											
			448.6											
25	U-5		SILTY SAND w/gravel (SM), tan, medium dense										13	
			447.1											
	C-6		SHALE, dark gray, clayey soft to hard, w/soft clay seams		T1.5*			17	104					1.3
30	C-7				T2.5*			13	117					2.2
			436.6											
35														
40														
45														
50														

Completion Depth: 34.5 ft.
Date Boring Started: 1/6/94
Date Boring Completed: 1/6/94
Engineer/Geologist: DRF
Project No.: 1019-002-002

Remarks:

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF BORING NO. G- 5

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 3572.7 N -1057.3
Surface El.: 456.4' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Hand Penetrometer, TSF	Penetration Blows / Foot	Recovery %	RQD	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
			SANDY SILTY CLAY (CL-ML), tan, soft, w/iron stains & roots											
			452.4											
5	U-1		SILTY SAND (SM), tan, medium dense, w/iron stains & clay seams		23			25		25	25	NP	42	
	S-2		448.4											
	U-3		SAND w/gravel (SP), tan, very dense - clayey sand layer, w/gravel & ironstone @ 9.5 ft.										4	
10	S-4		445.4		60									
	C-5		SHALE, gray, clayey, soft to moderately hard, carbonaceous, w/silt lenses & fossils					15	128					2.8
15														
20														
	C-6		- w/sand from 22.8 ft. to 24.6 ft.											
25			429.9		T9.5"									
30														
35														
40														
45														
50														

Completion Depth: 26.5 ft.
Date Boring Started: 1/5/94
Date Boring Completed: 1/5/94
Engineer/Geologist: DRF
Project No.: 1019-002-002

Remarks:

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF BORING NO. G- 6

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 3294.0 N -1984.8
Surface El.: 451.9' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Hand Penetrometer, TSF	Penetration Blows / Foot	Recovery %	RQD	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			SILTY CLAYEY SAND (SC-SM), light brown & gray, medium dense, w/roots, iron stains, & calcareous nodules											
5	U-1							19		22	18	4	45	
			444.4											
			SILTY SAND, w/gravel (SM), tan, medium dense											
	U-2		442.9											
10	U-3		SHALY CLAY (CH), dark gray, stiff to very stiff, w/sand seams, iron stains & slickensides	2.5	T20			26	98	57	24	33	95	1.1
			439.9											
	C-3		SHALE, dark gray, clayey, moderately hard to hard					10	135					12.9
15								19	120					0.7
			434.9		T4.5"									
20														
25														
30														
35														
40														
45														
50														

Completion Depth: 17.0 ft.
Date Boring Started: 1/10/94
Date Boring Completed: 1/10/94
Engineer/Geologist: DRF
Project No.: 1019-002-002

Remarks:

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF BORING NO. G- 7

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 2964.4 N -3137.4
Surface El.: 462.2' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Hand Penetrometer, TSF	Penetration Blows / Foot	Recovery %	RQD	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
5	U-1		LEAN CLAY, w/sand (CL), brown, stiff to hard, w/rootlets & calcareous nodules	2.5				24	103	49	16	33	83	1.5
			454.2											
10	U-2		SILTY CLAYEY SAND (SC-SM), light brown to orange tan, medium dense, w/iron stains, root holes, & calcareous nodules					14	117	19	13	6	46	0.6
			450.2											
15	U-3 S-4		SAND, w/silt & gravel (SP-SM), orange tan, very dense		58								7	
			442.2											
20	U-5 C-6		SHALE, dark gray, clayey, soft to hard, carbonaceous, w/lignite laminae		T8.5"									
25	C-7							9	133	36	15	21	97	
30			431.2		T3.5"			11	136	36	15	21		
35														
40														
45														
50														

Completion Depth: 31.0 ft.
Date Boring Started: 1/10/94
Date Boring Completed: 1/10/94
Engineer/Geologist: DRF
Project No.: 1019-002-002

Remarks:

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF BORING NO. G- 8

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 3171.3 N -1012.6
Surface El.: 458.3' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Hand Penetrometer, TSF	Penetration Blows / Foot	Recovery %	RQD	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			FAT CLAY, w/sand (CH), tan to red, soft											
	U-1		453.8					27		51	17	34	75	
5			SILTY SAND (SM), tan, medium dense, w/clay & iron stains											
			451.3											
			SILTY SAND, w/gravel (SM), tan, dense											
	U-2												13	
10	S-3		446.8		46									
			SHALY CLAY (CL), dark gray, very stiff to hard, carbonaceous, w/shells & slickensides											
15	S-4		441.3		54					45	18	27		
	C-5		SHALE, dark gray, clayey, moderately hard to hard, w/slickensides					10	122					13.2
20														
	C-6		- w/sand 23.5 ft. to 25.3 ft.		T2*			12	129					5.4
25														
			- w/sand 28 ft. to 29.7 ft.											
30			426.3		T2.5*									
35														
40														
45														
50														

Completion Depth: 32.0 ft.
Date Boring Started: 1/4/94
Date Boring Completed: 1/4/94
Engineer/Geologist: DRF
Project No.: 1019-002-002

Remarks:

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF BORING NO. EB- 3

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 1663.4 N -277.0
Surface El.: 488.8' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Hand Penetrometer, TSF	Penetration Blows / Foot	Recovery %	RQD	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			FILL, consisting of brown & tan sandy clay, w/iron stains — 488.3											
5			SAND, reddish-tan & tan, w/cemented seams, w/iron stains — 479.8											
10			SAND, light-brown to red/tan & tan, seams less cemented w/depth, w/iron stains — 471.8											
15			SAND, reddish-tan, w/iron stains — 464.8											
20			SAND, reddish-brown to gray, lightly to moderately cemented, w/dark gray shale partings & seams, w/iron stains — 454.8											
25			SAND, gray & tan, lightly to moderately cemented, w/shale partings & seams — 447.8											
30			SAND, gray, lightly cemented, w/shale seams — 438.8											
35														
40														
45														
50														

Completion Depth: 50.0 ft.
Date Boring Started: 9/16/88
Date Boring Completed: 9/16/88
Engineer/Geologist: EBS
Project No.: 1019-002-002

Remarks:

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF PIEZOMETER NO. EB- 6

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 3496.0 N -36.4
Surface El.: 484.9' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Elev.	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
			SAND, tan & gray, fill	483.2										
			SILTY CLAYEY SAND, reddish-tan & dark brown, moist, w/alternating clay seams, carbonaceous	481.4										
5			CLAY, w/sand, shaly, dark brownish-gray, moist, carbonaceous, oxide stains - light gray & gray below 4 ft.	477.9										
			SILTY SAND, light gray & gray, moist, lightly cemented	474.4										
10			SHALE, dark brownish-gray, carbonaceous, w/slickensides	469.9										
15			CLAYEY SAND, tan & red, moist, oxide stains	468.9										
			SAND, gray, moist, mottled	468.4										
			SANDSTONE, gray, lightly cemented, w/loose sand seams	464.9										
20														
25														
30														
35														
40														
45														
50														

Completion Depth: 20.0 ft.
Date Boring Started: 2/27/89
Date Boring Completed: 2/27/89
Engineer/Geologist: EBS
Project No.: 1019-002-002

Remarks: Piezometer plugged 7/7/93.

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF PIEZOMETER NO. EB- 6D

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 3550.6 N -29.9
Surface El.: 484.9' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Elev.	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
			SAND, tan & gray, FILL	483.2										
			SILTY CLAYEY SAND, reddish-tan & dark brown, moist, w/alternating clay seams, carbonaceous	481.4										
5			CLAY, w/sand, shaly, dark brownish-gray, moist, carbonaceous, oxide stains - light gray & gray below 4.5 ft.	477.9										
10			SHALE, sandy, clayey, dark brownish-gray, carbonaceous, w/slickensides											
				469.9										
15			CLAYEY SAND, tan & red, moist, oxide stains	468.9										
			SAND, gray, moist, oxide stains	468.4										
			SANDSTONE, gray, lightly cemented, w/loose sand seams, oxide stains											
20			- purple red, moderately cemented from 21 to 23 ft.											
25														
30			- highly cemented 32 to 33 ft. - brownish-gray below 33 ft.											
35														
				444.9										
40			SHALE, dark brownish-gray, w/sand seams, carbonaceous											
				440.9										
			SANDY CLAY, brownish-gray, stiff	439.9										
45			SANDSTONE, grayish-tan, moderately cemented	437.9										
			CLAYEY SAND, medium gray, dense	436.9										
			SANDY CLAY, dark brownish-gray, stiff,											
50														

Completion Depth: 54.0 ft.
Date Boring Started: 2/27/89
Date Boring Completed: 2/27/89
Engineer/Geologist: EBS
Project No.: 1019-002-002

Remarks:

Continued Next Page

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF PIEZOMETER NO. EB- 6D

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 3550.6 N -29.9
Surface El.: 484.9' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
			w/slickensides										
			433.4										
			SILTY SAND, w/clay, tannish-gray, light to moderately cemented										
			431.9										
			SHALE, clayey, w/sand seams, gray & light gray										
			430.9										
55													
60													
65													
70													
75													
80													
85													
90													
95													
100													

Completion Depth: 54.0 ft.
Date Boring Started: 2/27/89
Date Boring Completed: 2/27/89
Engineer/Geologist: EBS
Project No.: 1019-002-002

Remarks:

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF PIEZOMETER NO. EB- 6M

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 3637.3 N -39.6
Surface El.: 485.0' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			CLAYEY SAND, dark reddish-brown										
			481.5										
5			CLAYEY SAND, dark brown & gray, oxide stains										
			- gray & light gray below 7.5 ft. 476.5										
10			SHALE, clayey, gray & light gray										
			- dark brownish-gray below 12 ft.										
15			- gray below 15 ft.										
			467.5										
20			SANDSTONE, tan & light gray, w/loose sand seams, oxide stains										
25			- purple red layer, 25 ft. - moderately cemented below 25 ft.										
			- light tannish-gray below 28.5 ft.										
30			446.0										
35			SHALE, dark brown, w/tan sand partings										
			444.0										
40													
45													
50													

Completion Depth: 41.0 ft.
Date Boring Started: 3/20/89
Date Boring Completed: 3/20/89
Engineer/Geologist: EBS
Project No.: 1019-002-002

Remarks:

TEMPLATE - GPJ GT

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF PIEZOMETER NO. EB- 7

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 3306.7 N -1284.4
Surface El.: 467.0' MSL

Depth, feet	Sample	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			SAND, w/clay, tan & light brown, moist, loose-moderately dense — 465.0										
			SANDY CLAY, dark brown, gray & tan, sand seams, oxide stains — 463.5										
5			SAND, w/clay, tan & light brown, moist, loose — 461.7										
			SANDY CLAY, dark brown & tan, moist, firm — 460.8										
			SILTY CLAY, w/sand, dark brown, moist, oxide stains — 457.7										
10			CLAYEY SAND, w/silt, brownish-gray, moist - reddish tan & gray, wet, w/root holes below 10 ft.										
15			- wet below 16 ft. — 449.0										
			CLAYEY SAND, w/gravel, variegated fine gravel - medium to coarse gravel below 20 ft. — 444.3										
25			SHALE, dark brownish-gray, w/sand seams, carbonaceous — 441.5										
			SILTY CLAY, dark brownish-gray, stiff - shaly, w/lignite accretion below 29.5 ft. - dark greenish-gray, cemented below 33 ft. — 433.0										
35			SILTY SAND, w/clay, gray, medium dense — 431.3										
			CLAY, shaly, brownish-gray, w/lignite layers & seams - dark grayish-brown below 43 ft. - lignite layer, dark gray, 5 in. — 421.3										
45			SANDY SILTY CLAY, dark brownish-gray, stiff, slightly shaly										
50													

Completion Depth: 70.0 ft.
Date Boring Started: 2/28/89
Date Boring Completed: 2/28/89
Engineer/Geologist: EBS
Project No.: 1019-002-002

Remarks:

Continued Next Page

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF PIEZOMETER NO. EB- 7

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 3306.7 N -1284.4
Surface El.: 467.0' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
1			466.3										
			SAND, dark brownish-gray, w/alternating sandstone & clay seams, dark brownish-gray, dense										
55			408.5										
			CLAY, w/sand seams, dark brownish-gray, stiff, slightly shaly										
60			406.5										
			SANDSTONE, brown, moderately cemented										
			405.5										
			SILTY CLAYEY SAND, dark gray, dense, w/lignite accretions										
			404.0										
			403.5										
65			SANDSTONE, light brown, moderately cemented										
			401.5										
			SHALE, sandy-clayey, dark gray										
			400.5										
			SANDSTONE, grayish-brown, lightly cemented										
			SILTY CLAYEY SAND, brownish-gray, dense										
70			397.0										
75													
80													
85													
90													
95													
100													

Completion Depth: 70.0 ft
Date Boring Started: 2/28/89
Date Boring Completed: 2/28/89
Engineer/Geologist: EBS
Project No.: 1019-002-002

Remarks:

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF PIEZOMETER NO. EB- 8

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 3300.3 N -2192.3
Surface El.: 461.4' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			CLAY, w/fine gravel, [illegible] red, moist, w/oxide stains										
			SAND, tan, poorly graded, moist — 457.4										
5			CLAY, w/fine gravel & sand, dark brownish-gray, moist, stiff, w/oxide stains - medium gray below 7 ft. — 452.4										
10			SANDY CLAY, w/fine gravel, gray & reddish tan, moist, firm, w/oxide stains — 450.4										
			SAND, w/clay & fine gravel, reddish-tan & gray, moist, medium dense, w/oxide stains — 448.4										
			GRAVELLY SANDY CLAY, gray & red, moist, firm, w/ironstone gravel — 446.4										
15			SANDY SILTY CLAY, w/gravel, gray & red, wet, firm, w/ironstone gravel - gray below 16 ft.										
20													
25			— 434.4										
			SAND, w/gravel, brown, wet, medium dense — 429.4										
30			SANDY CLAY, reddish-brown & gray, wet, soft to firm										
35													
40			- gray, shaly, w/sand partings & calcareous nodules below 40 ft.										
45			— 413.4										
			SAND, gray, w/calcareous seams										
50													

Completion Depth: 80.0 ft.
Date Boring Started: 3/3/89
Date Boring Completed: 3/3/89
Engineer/Geologist: EBS
Project No.: 1019-002-002

Remarks:

Continued Next Page

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF PIEZOMETER NO. EB- 8

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 3300.3 N -2192.3
Surface El.: 461.4' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
			409.1										
55			SHALE, sandy, light gray, w/calcareous seams										
			- w/sandstone seams, gray below 56 ft.										
60													
65			- olive gray below 65.5 ft.										
70			- clayey, dark gray, fossiliferous below 69.5 ft.										
75													
			381.4										
80													
85													
90													
95													
100													

TEMPLATE_FAULT

Completion Depth: 80.0 ft.
Date Boring Started: 3/3/89
Date Boring Completed: 3/3/89
Engineer/Geologist: EBS
Project No.: 1019-002-002

Remarks:

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF PIEZOMETER NO. EB- 8M

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 3268.2 N -2134.5
Surface El.: 461.5' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			CLAY, w/fine gravel & sand, brown to gray, w/oxide stains										
5			- dark brownish gray below 4 ft.										
			452.5										
10			SANDY CLAY, w/fine gravel, gray & reddish tan, w/oxide stains										
			446.5										
15			SANDY SILTY CLAY, w/gravel, gray & red, w/oxide stains										
20													
25													
			433.5										
30			SAND, w/gravel, brown to variegated										
			427.0										
35			SANDY CLAY, reddish-brown & gray										
40			- gray, shaly, w/sand partings below 41 ft.										
45			- very sandy below 48 ft.										
50													

Completion Depth: 70.0 ft.
Date Boring Started: 4/10/89
Date Boring Completed: 4/10/89
Engineer/Geologist: EBS
Project No.: 1019-002-002

Remarks:

Continued Next Page

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

TEMPLATE: PAMPA1.GT

LOG OF PIEZOMETER NO. EB- 8M

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 3268.2 N -2134.5
Surface El.: 461.5' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
			409.0										
55			SHALE, sandy, light gray - w/occasionnl sandstone seams										
60													
65			- olive gray below 65 ft.										
			391.5										
70													
75													
80													
85													
90													
95													
100													

Completion Depth: 70.0 ft.
Date Boring Started: 4/10/89
Date Boring Completed: 4/10/89
Engineer/Geologist: EBS
Project No.: 1019-002-002

Remarks:

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF PIEZOMETER NO. EB- 8MA

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 3207.2 N -2128.1
Surface El.: 461.5' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			CLAY, sandy brown to gray										
5													
10			452.0 SANDY CLAY, w/fine gravel, tan to gray										
15			- silty below 15 ft.										
20													
25													
30													
35													
40			422.0 CLAY, shaly, gray & tan, slightly sandy										
45			- gray below 43 ft.										
50													

Completion Depth: 70.0 ft.
Date Boring Started: 7/7/89
Date Boring Completed: 7/7/89
Engineer/Geologist: EBS
Project No.: 1019-002-002

Remarks:

Continued Next Page

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

TEMPLATE: P...ALOT

LOG OF PIEZOMETER NO. EB- 8MA

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 3207.2 N -2128.1
Surface El.: 461.5' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
			410.5										
55			SHALE, sandy, gray, w/sandstone seams										
60													
65													
70			391.5										
75													
80													
85													
90													
95													
100													

Completion Depth:	70.0 ft.
Date Boring Started:	7/7/89
Date Boring Completed:	7/7/89
Engineer/Geologist:	EBS
Project No.:	1019-002-002

Remarks:

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

TEMPLATE: PAMPALL.GT

LOG OF PIEZOMETER NO. EB- 9

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 3046.7 N -2801.8
Surface El.: 460.7' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			SANDY CLAY, brown & gray, w/oxide stains, calcareous nodules & scattered gravel										
5			454.2										
10			CLAYEY SAND, tan, w/clay seams & scattered gravel ▼										
15			446.7 SAND, w/gravel, tan										
20			443.2 SHALE, sandy, gray, w/sand seams & partings										
25			440.7										
30													
35													
40													
45													
50													

Completion Depth: 20.0 ft.
Date Boring Started: 3/24/89
Date Boring Completed: 3/24/89
Engineer/Geologist: EBS
Project No.: 1019-002-002

Remarks: Groundwater elevation calculated at 453.3 ft. from measurement taken on 1/5/94.

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF PIEZOMETER NO. EB- 9D

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 3162.3 N -2843.5
Surface El.: 461.1' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			SANDY CLAY, brown, firm to stiff, w/oxide stains, calcareous nodules, & scattered gravel										
5			- tan below 5.5 ft.										
			454.1										
10			CLAYEY SAND, tan, medium dense, w/clay seams & scattered gravel										
			447.1										
15			SANDY CLAY, dark brown, stiff, w/oxide stains, w/fine gravel										
			446.1										
			SAND, w/gravel, tan, medium dense										
			443.1										
20			SHALE, sandy, gray, w/sand seams & partings										
25													
30													
			429.6										
35			SHALE, gray, w/lignite seams, sand seams & siltstone seams - jointed										
40													
45													
			414.1										
50			SAND, gray, w/shale partings & seams, moderately cemented										
			411.1										

Completion Depth: 50.0 ft.
Date Boring Started: 3/23/89
Date Boring Completed: 3/23/89
Engineer/Geologist: EBS
Project No.: 1019-002-002

Remarks: Piezometer plugged 7/7/93.

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

TEMPLATE: EMPALGT

LOG OF PIEZOMETER NO. EB- 91

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 3146.2 N -2657.5
Surface El.: 460.3' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			SANDY CLAY, tan, w/some organic material										
5			453.3										
10			CLAYEY SAND, tan & brown, w/clay seams & scattered gravel										
15			444.3										
20			SAND, w/gravel, tan										
25			442.3										
30			SHALE, gray, w/sand partings										
35			440.8										
40													
45													
50													

Completion Depth: 19.5 ft.
Date Boring Started: 8/16/90
Date Boring Completed: 8/16/90
Engineer/Geologist: EBS
Project No.: 1019-002-002

Remarks: Groundwater elevation calculated at 451.0 from measurement taken on 1/5/94.

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

TEMPLATE - APALOT

LOG OF PIEZOMETER NO. EB-10

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 2526.8 N -2112.1
Surface El.: 463.7' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Elevation	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration - Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			SANDY CLAY, brown											
5														
10			- tan & brown below 9 ft.	452.7										
15			CLAYEY SAND, tan	444.7										
20			SAND & GRAVEL, tan, w/some clay binder	439.7										
25			SAND, tan & light gray, w/scattered gravel	435.7										
30			SHALE, gray, sandy, w/sand partings	428.7										
35														
40														
45														
50														

Completion Depth: 35.0 ft.
Date Boring Started: 4/23/90
Date Boring Completed: 4/23/90
Engineer/Geologist: EBS
Project No.: 1019-002-002

Remarks: Piezometer plugged 7/8/93.

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF PIEZOMETER NO. EB-101

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 2616.6 N -2086.4
Surface El.: 461.9' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			SAND, brown, slightly clayey										
			455.9										
5			SANDY CLAY, brown & tan, w/scattered fine gravel										
			448.9										
10			CLAYEY SAND, tan & brown, w/scattered fine gravel										
15													
20													
25													
30			431.4										
			CLAY, shaly, gray										
			428.9										
			SHALE, gray, carbonaceous										
35			427.4										
40													
45													
50													

Completion Depth: 34.5 ft.
Date Boring Started: 4/23/90
Date Boring Completed: 4/23/90
Engineer/Geologist: EBS
Project No.: 1019-002-002

Remarks: Piezometer plugged 7/2/93.

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF PIEZOMETER NO. EB-11

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 3845.9 N -2349.5
Surface El.: 461.3' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			SANDY CLAY, dark gray & brown, w/scattered fine gravel										
5													
			452.3										
10			CLAYEY SAND, tan										
15													
			441.8										
20			SANDY GRAVEL, variegated										
			437.3										
25			- clay seams @ 24 ft.										
			SHALE, gray, sandy, w/sand partings 435.3										
30													
35													
40													
45													
50													

Completion Depth: 26.0 ft.
Date Boring Started: 4/18/90
Date Boring Completed: 4/18/90
Engineer/Geologist: EBS
Project No.: 1019-002-002

Remarks: Groundwater elevation calculated @ 455.1 from measurement taken on 1/5/94.

TEMPLATE: PAMPALL.GPJ

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF PIEZOMETER NO. EB-111

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 3922.9 N -2394.4
Surface El.: 460.2' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			SANDY CLAY, dark gray & brown, w/scattered fine gravel										
5													
10			- tan below 9 ft.										
			446.2										
15			CLAYEY SAND, tan										
			443.7										
20			SANDY GRAVEL, variegated, becomes coarser w/depth										
			438.7										
			SHALE, dark gray, sandy, w/sand partings										
			436.7										
25													
30													
35													
40													
45													
50													

Completion Depth: 23.5 ft.
Date Boring Started: 4/18/90
Date Boring Completed: 4/18/90
Engineer/Geologist: EBS
Project No.: 1019-002-002

Remarks: Groundwater elevation calculated @ 451.0 from measurement taken on 1/5/94.

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

TEMPLATE PAMPAL.GT

LOG OF MONITOR WELL NO. MW- 1

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 214.3 N -27.0
Surface El.: 479.3' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Monitor Well Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
			FILL MATERIAL, sandy clay, dark brown, soft, very moist, w/scattered fine gravel										
			475.3										
5	U-1		CLAYEY SAND (SC), reddish brown, loose, wet, iron stained, w/gravel & sandy clay layers, fine to medium grained, noncalcareous										
	U-2												
	U-3												
10	U-4		- saturated at 10 ft.						13	12	1	23	
15	U-5		- increase in gravel below 15 ft., w/coarse gravel below 17 ft.				15		48	17	31	22	
	U-6												
20													
			456.3										
25	U-7		SANDY CLAY (CL), gray w/reddish brown & tan, hard, dry, w/fine-grained sand & scattered fine gravel, iron stained, noncalcareous, blocky		4.5+		19	126	17	12	5	55	
	U-8				3.5								
30	S-9		- clayey sand layer w/clay seams at 29.5 ft.										
			449.3										
	S-10		GRAVELLY SAND (SW), light reddish brown, loose, wet, medium grained, well graded - fine to coarse gravel below 32 ft.										
35	S-11												
			441.8										
	S-13		SHALE, dark gray, sandy										
			441.3										
40													
45													
50													

Completion Depth:	38.0 ft.
Date Boring Started:	3/30/93
Date Boring Completed:	3/31/93
Engineer/Geologist:	DDM
Project No.:	1019-002-002

Remarks: Borehole sampled to 38 ft.; monitoring well installed to 37 ft. Water level measured at 19.2 ft. after well development.

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF MONITOR WELL NO. MW- 2

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 2539.1 N -68.0
Surface El.: 476.7' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Monitor Well Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0	S-1		SANDY CLAY (CL), light brown, soft to firm, dry, noncalcareous, w/disseminated gravel, iron staining & organic material		2.0								
			473.7										
5	S-2		SILTY SAND (SM) w/clay, light brown to tan, loose to medium dense, dry, fine-grained, w/iron staining & organic material										
			469.5										
			SANDY CLAY (CL), brown to light brown, soft to firm, dry, w/clayey sand layers, slightly calcareous, some organic material & iron staining										
			467.0										
10	S-3		SILTY SAND (SM) w/clay, light brown to tan, loose, wet at 10.0 ft., fine-grained, w/clay seams		2.0								
			466.2										
			SANDY CLAY (CL), light gray to tan, firm to stiff, moist, noncalcareous, highly iron stained w/ironstone, soft & very moist below 13.0 ft.		2.0 2.0 1.0 0.5		17	118	29	12	17	61	
15	S-4		461.2										
			CLAYEY SAND (SC), light gray & tan, medium dense, wet, fine-grained, iron stained w/ironstone, some organic material & scattered fine gravel				16		18	13	5	35	
20	S-5		- gravel seam at 19.8 ft. - wet below 20.0 ft. - clay layer from 21.8 - 22.5 ft.										
			451.5										
25	S-6		- gravel seam at 25.0 ft.										
			SANDY CLAY (CL), light grayish brown, soft, wet, w/iron staining & ironstone				21		30	11	19	66	
			- clayey sand layer from 28.5 ft. to 29.5 ft.										
30	S-7												
			- gray below 34.0 ft.										
35	S-8		440.7										
			SILTY CLAYEY SAND (SC-SM), gray, medium dense, wet, fine-grained, w/scattered gravel, some iron staining				18		17	16	1	34	
40	S-9		- clay layer from 40.0 ft. to 41.5 ft.		0.5								
			- light brown to tan below 41.5 ft.										
45	S-10		- medium-grained & wet from 44.5 ft. to 45.0 ft.									56	
			- clay layer at 48.0 ft.									58	
50			426.7										

Completion Depth: 55.0 ft.
Date Boring Started: 2/22/93
Date Boring Completed: 2/22/93
Engineer/Geologist: DDM
Project No.: 1019-002-002

Remarks: Pilot boring drilled & sampled to a total depth of 54.5 ft. on 1-25-93 & pressure grouted upon completion. Monitoring well installed to 55 ft. on 2-22-93. Water level measured at 20.0 ft. after well development.

Continued Next Page

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF MONITOR WELL NO. MW- 2

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 2539.1 N -68.0
Surface El.: 476.7' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Monitor Well Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
	S-11		- gravelly sand at 49.4 ft. w/fine gravel										
			SAND w/silt, light brown, loose to medium dense, wet, fine to medium-grained										
			424.2										
			SANDY GRAVEL, wet, fine to coarse gravel, w/fine to medium-grained sand, sandstone at 54.5 ft.										
55			422.2 / 421.7										
			SHALE, dark gray										
60													
65													
70													
75													
80													
85													
90													
95													
100													

TEMPLATE: EXPALGT

Completion Depth:	55.0 ft.
Date Boring Started:	2/22/93
Date Boring Completed:	2/22/93
Engineer/Geologist:	DDM
Project No.:	1019-002-002

Remarks: Pilot boring drilled & sampled to a total depth of 54.5 ft. on 1-25-93 & pressure grouted upon completion. Monitoring well installed to 55 ft. on 2-22-93. Water level measured at 20.0 ft. after well development.

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF MONITOR WELL NO. MW- 3

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 5033.8 N -1862.1
Surface El.: 470.2' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Monitor Well Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			FILL MATERIAL, clay w/sand, dark grayish brown, stiff, dry, calcareous, w/some iron staining & gravel										
5	U-1		461.2		3.0								
10	U-2		CLAY (CL), w/sand, dark gray to grayish brown, stiff, slightly moist to moist, calcareous, w/calcareous inclusions, w/fine gravel - clayey sand layer from 10 ft. to 11 ft.		3.0								
15	U-3				2.0		21	123	39	13	26	69	
	U-4				2.5								
20	U-5		448.2		2.0								
	U-6		SANDY CLAY (CL), brown, firm to stiff, moist, calcareous, w/calcareous inclusions & fine gravel, iron stained below 25 ft.		2.0								
25	U-7				2.0		17		35	13	22	65	
	U-8				2.0								
30			437.2										
	U-9		CLAY (CH), w/some sand, grayish brown, firm to very stiff, moist, calcareous, w/trace of very fine gravel, some iron staining		1.5								
35	U-10				3.0		26	118	62	22	40	92	
40	U-11				3.5								
45													
50			420.2										

Completion Depth: 64.5 ft.
Date Boring Started: 3/31/93
Date Boring Completed: 4/2/93
Engineer/Geologist: DDM
Project No.: 1019-002-002

Remarks: Borehole sampled to 64.5 ft.; monitoring well installed to 63 ft. Water level measured at 18.3 ft. after well development.

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EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF MONITOR WELL NO. MW- 3

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 5033.8 N -1862.1
Surface El.: 470.2' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Monitor Well Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
50	U-12		SANDY CLAY (CL), light gray & tan, soft, very moist to wet, w/fine-grained sand, calcareous, iron stained, some organic material						27	17	10	53	
	U-13		416.2										
55	U-14		GRAVELLY SAND, dense, saturated, medium to coarse-grained sand, w/fine to coarse gravel										
60			407.2										
	S-15		SHALE, sandy, dark gray										
			405.7										
65													
70													
75													
80													
85													
90													
95													
100													

Completion Depth: 64.5 ft.
Date Boring Started: 3/31/93
Date Boring Completed: 4/2/93
Engineer/Geologist: DDM
Project No.: 1019-002-002

Remarks: Borehole sampled to 64.5 ft.; monitoring well installed to 63 ft. Water level measured at 18.8 ft. after well development.

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF MONITOR WELL NO. MW- 4

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 4758.6 N -2847.7
Surface El.: 469.8' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Monitor Well Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			FILL MATERIAL, clay, dark grayish brown, stiff to very stiff, slightly moist, calcareous, w/scattered fine gravel										
5	U-1				3.5								
	U-2				2.5								
10	U-3				3.0								
	U-4		457.8										
			CLAY (CH), w/some sand, dark gray & brown, stiff, dry to slightly moist, calcareous w/calcareous inclusions & scattered fine gravel		3.0								
15	U-5				2.5		25		57	19	38	85	
20	U-6		- brown below 20 ft. w/some sand		2.5								
	U-7				2.0								
25			441.8										
			SILTY CLAYEY SAND (SC-SM), brown, reddish brown & tan, loose, wet, fine-grained, iron stained										
30	U-8		438.8		2.0								
	U-9		CLAY (CL), w/sand, gray & brown, stiff, moist, w/organic material, calcareous, w/calcareous inclusions		2.5								
			435.8										
35	U-10		SANDY CLAY (CL), light grayish brown & tan, soft, very moist to wet, calcareous, w/calcareous inclusions & organics				20		29	14	15	61	
	U-11		433.3										
			SILTY SAND (SM) w/clay, light brown to tan, loose, wet, fine grained						23	17	6	31	
40	S-12		- saturated below 40 ft. w/decrease in clay										
	S-13												
	S-14												
45	S-15												
	S-16												
50													

Completion Depth: 61.5 ft.
Date Boring Started: 3/25/93
Date Boring Completed: 3/26/93
Engineer/Geologist: DDM
Project No.: 1019-002-002

Remarks: Borehole sampled to 61.5 ft.; monitoring well installed to 61 ft. Water level measured at 23.2 ft. after well development.

Continued Next Page

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF MONITOR WELL NO. MW- 4

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 4758.6 N -2847.7
Surface El.: 469.8' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Monitor Well Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
55	S-17												
	S-18		GRAVELLY SAND, medium to coarse-grained sand, w/fine to coarse gravel										
60	S-19		414.8										
			SHALE, dark gray, hard, fissile										
			408.8 / 408.2										
65													
70													
75													
80													
85													
90													
95													
100													

Completion Depth:	61.5 ft.
Date Boring Started:	3/25/93
Date Boring Completed:	3/26/93
Engineer/Geologist:	DDM
Project No.:	1019-002-002

Remarks: Borehole sampled to 61.5 ft.; monitoring well installed to 61 ft. Water level measured at 23.2 ft. after well development.

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF MONITOR WELL NO. MW- 5

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 4463.8 N 3813.6
Surface El.: 471.1' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Monitor Well Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
	U-1		FILL MATERIAL, clay, dark brown & grayish brown, stiff, slightly moist, scattered gravel, calcareous, w/calcareous inclusions, some sand, some iron staining		3.0								
	U-2				2.5								
5	U-3				2.0								
	U-4				3.0								
			463.1										
	U-5		CLAY (CH), w/sand, dark gray to grayish brown, very stiff to stiff, slightly moist, calcareous, w/some iron staining, sparse calcareous inclusions & very fine scattered gravel		4.5								
10	U-6				2.5								
	U-7				2.0		26	101	58	21	37	83	
15	U-8				2.0								
	U-9				2.5								
20	U-10		- soft & moist at 21 ft.		1.5								
25	U-11		- brown below 25 ft.		3.0								
30	U-12		- wet at 30 ft.		2.5 4.0								
35					3.0								
	U-13		- gray & light brown, w/iron staining		1.5		23		51	17	34	86	
40													
			426.1										
45	U-14		SANDY CLAY (CL), gray & tan, firm, moist to wet, w/fine grained sand & clayey sand partings & seams, calcareous, iron staining		2.0								
	U-15		423.6		3.5								
			CLAY (CL), w/some sand, dark gray, very stiff,										
50													

TRACT.TMP\ALGT

Completion Depth: 74.0 ft.
Date Boring Started: 3/3/93
Date Boring Completed: 3/5/93
Engineer/Geologist: DDM
Project No.: 1019-002-002

Remarks: Borehole sampled to 73.5 ft.; monitoring well installed to 74 ft. Water level measured at 25.2 ft. after well development.

Continued Next Page

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF MONITOR WELL NO. MW- 5

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 4463.8 N -3813.6
Surface El.: 471.1' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Monitor Well Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
55	U-16		dry, calcareous, blocky, w/gravel seams		2.5		27		48	20	28	84	
			411.1										
60	U-17		SANDY CLAY (CL), gray, soft to firm, wet, calcareous, w/fine to coarse grained sand & gravel, w/clayey sand seams		0.5								
	U-18		- iron staining below 63 ft.		2.0				32	15	17	62	
65	U-19				2.0								
			404.6										
	U-20		CLAYEY SANDY GRAVEL, gray, saturated, coarse gravel w/fine to coarse sand & clay		1.5								
			402.6										
70	U-21		SANDY CLAY (CL), gray, firm, moist, w/fine grained sand										
			401.1										
	S-22		GRAVELLY SAND w/clay, gray & tan, medium dense, wet										
			- fine to coarse sandy gravel at 71.5 ft.										
			397.6										
75			SANDY SHALE, dark gray										
			397.1										
80													
85													
90													
95													
100													

Completion Depth:	74.0 ft.
Date Boring Started:	3/3/93
Date Boring Completed:	3/5/93
Engineer/Geologist:	DDM
Project No.:	1019-002-002

Remarks: Borehole sampled to 73.5 ft.; monitoring well installed to 74 ft. Water level measured at 25.2 ft. after well development.

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF MONITOR WELL NO. MW- 6

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 2879.4 N -4792.3
Surface El.: 469.1' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Monitor Well Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
	U-1		SANDY CLAY (CL), gray & yellowish tan, firm to very stiff, dry, calcareous, w/iron staining, w/clayey sand partings & seams		1.5								
	U-2		465.6		2.0								
					4.5								
5	U-3		SANDY CLAY (CL), gray & tan, dry, calcareous, w/fine grained sand, w/clay seams						23	16	7	52	
	U-4		462.1		2.5								
			CLAY (CH), w/some sand, dark gray to brown, stiff to very stiff, dry, calcareous, w/calcareous inclusions										
10	U-5				4.0								
	U-6				4.5		22		59	23	36	95	
			- brown below 14 ft.										
15													
	U-7				3.0								
20	U-8		- iron staining below 20 ft.		2.5								
			444.1										
25	U-9		SANDY CLAY (CL), gray, w/yellowish brown, soft, very moist, calcareous, w/calcareous inclusions, iron stained										
	U-10		442.1										
			CLAYEY SAND (SC), gray & tan, wet (saturated at 28.5 ft.), highly iron stained, fine grained, well graded, w/decrease in clay below 31 ft.										
30	U-11								21	18	3	39	
	U-12												
	U-13		434.1										
35			GRAVELLY SAND (SW), wet, coarse-grained sand, w/fine gravel										
40	S-14		- coarse gravel below 41 ft.										
45	S-15												
	S-16												
50													

Completion Depth: 58.5 ft.
Date Boring Started: 3/10/93
Date Boring Completed: 3/11/93
Engineer/Geologist: DDM
Project No.: 1019-002-002

Remarks: Borehole sampled to 57.5 ft.; monitoring well installed to 58.5 ft.
Water level measured at 27.8 ft. after well development.

Continued Next Page

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF MONITOR WELL NO. MW- 6

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 2879.4 N -4792.3
Surface El.: 469.1' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Monitor Well Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
55	S-17												
	S-18												
	S-19		- brown below 55 ft., dense, w/abundant fine-grained sand										
	S-20												
			411.6										
			SHALE, dark gray & fissile										
			410.6										
60													
65													
70													
75													
80													
85													
90													
95													
100													

Completion Depth:	58.5 ft.
Date Boring Started:	3/10/93
Date Boring Completed:	3/11/93
Engineer/Geologist:	DDM
Project No.:	1019-002-002

Remarks: Borehole sampled to 57.5 ft.; monitoring well installed to 58.5 ft.
Water level measured at 27.8 ft. after well development.

TEMPLATE: ASHALGT

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF MONITOR WELL NO. MW- 7

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 2366.2 N -3966.5
Surface El.: 469.1' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Monitor Well Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0	S-1		CLAY (CL) w/sand, dark brown to brown, firm to stiff, dry, calcareous, w/disseminated fine gravel, some iron staining		1.5 2.0								
5	S-2		- some sand at 5.0 ft.		1.5 1.5 1.0		19	108	31	13	18	66	
10	S-3				1.5 1.5 1.5 2.0								
15	S-4		- blocky & iron stained, w/calcareous inclusions below 14.0 ft.		3.0 3.0 1.5 2.0								
			449.1		2.0 2.5								
20	S-5		SANDY CLAY (CL), gray, firm to stiff, dry, highly calcareous & iron stained		3.0 2.0		15		28	12	16	53	
			446.1										
25	S-6		SILTY CLAYEY SAND (SC-SM), light reddish brown, medium dense, slightly moist, fine-grained, calcareous & iron stained - wet below 27.0 ft.				39		26	13	13	50	
			439.6									53	
30	S-7		GRAVELLY SAND (SW-SM) w/silt, wet, fine to coarse gravel, w/fine to coarse-grained sand, well graded									15	
			433.6										
35	S-8		SHALE, dark gray to gray, wet, fissile										
			431.6										
40													
45													
50													

Completion Depth: 37.5 ft.
Date Boring Started: 3/9/93
Date Boring Completed: 3/9/93
Engineer/Geologist: DDM
Project No.: 1019-002-002

Remarks: Pilot boring drilled & sampled to a total depth of 37.5 ft. on 1-26-93 & pressure grouted upon completion. Monitoring well installed to 35.5 ft. on 3-9-93. Water level measured at 28.7 ft. after well development.

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF MONITOR WELL NO. MW- 8

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 1469.0 N -3894.4
Surface El.: 468.5' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Monitor Well Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
	U-1		FILL MATERIAL, shale, gray & sandy clay, reddish brown, stiff, dry, w/scattered gravel		2.5								
	U-2		466.5 SANDY CLAY (CL), dark brown to brown, firm, dry, calcareous, w/organic material - sandy clay at 3.5 ft.		2.0								
5	U-3		463.5 CLAY (CL), w/sand, dark brown, very stiff to hard, dry, calcareous, w/calcareous webbing & inclusions, scattered fine gravel		3.5								
	U-4		- highly calcareous & very hard below 8.5 ft.		4.5+		15	128	39	15	24	76	
10	U-5				4.5+								
	U-6				4.5+								
15													
	U-7		449.5		3.5								
20	U-8		SANDY CLAY (CL), light reddish brown to tan, firm, dry, iron stained, slightly calcareous		2.0				29	15	14	52	
	S-9		446.5 CLAYEY SAND (SC), tan & light reddish brown, loose, wet, iron stained										
25	S-10		445.0 SANDY GRAVEL, loose, wet, fine to coarse gravel, w/coarse-grained sand										
30			438.1 SHALE, dark gray, fissile. 437.5										
35													
40													
45													
50													

Completion Depth: 31.0 ft.
Date Boring Started: 3/15/93
Date Boring Completed: 3/17/93
Engineer/Geologist: DDM
Project No.: 1019-002-002

Remarks: Borehole sampled to 31 ft.; monitoring well installed to 31 ft. Water level measured at 22.4 ft. after well development.

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF MONITOR WELL NO. MW- 9

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 606.0 N -3483.2
Surface El.: 468.1' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Monitor Well Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve.	Unc. Compressive Strength, tsf
0			CLAY (CH), w/some sand, dark grayish brown, hard, dry to slightly moist, calcareous, w/calcareous webbing										
5	U-1				4.5+		15	134	51	18	33	82	
	U-2		- brown below 7 ft.		4.5+								
10			455.1										
	U-3		SANDY CLAY (CL), light gray & tan, stiff, moist, calcareous, w/calcareous inclusions, iron stained, w/fine sand partings		2.5		19		37	15	22	74	
15			453.1										
	U-4		CLAY (CL), w/some sand, gray & brown, very stiff, slightly moist, calcareous, w/calcareous inclusions & fine gravel, iron stained		3.5								
	U-5				4.0								
20			448.1										
	U-6		SANDY CLAY (CL), light gray & brown, stiff to soft, slightly moist, calcareous, iron stained, w/fine gravel		2.5		13		31	13	18	60	
	U-7		- wet w/coarse gravel below 22 ft.		2.1								
			444.1										
25	S-8		SHALE, dark gray, fissile, highly iron stained, w/ironstone										
			442.6										
30													
35													
40													
45													
50													

Completion Depth: 25.5 ft.
Date Boring Started: 4/2/93
Date Boring Completed: 4/2/93
Engineer/Geologist: DDM
Project No.: 1019-002-002

Remarks: Borehole sampled to 25.5 ft.; monitoring well installed to 24 ft. Water level measured at 14.0 ft. after well development.

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

TEMPLATE: PAXPALGT

LOG OF MONITOR WELL NO. MW-10

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E -315.6 N -3108.1
Surface El.: 467.1' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Elev.	Monitor Well Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
			FILL MATERIAL, shale & sandy clay, gray w/scattered gravel	464.6		0.5 1.0 1.5								
5	S-1		CLAY (CH), dark brown, soft to stiff, dry, calcareous, w/calcareous inclusions - hard below 5.0 ft.			2.0 3.0 4.5		24		52	18	34	97	
10	S-2					4.5 4.5 2.0 2.0								
	S-3		- increase in sand below 12.0 ft.	454.6		1.5 1.0								
15	S-4		CLAY (CL) w/sand, light brown, firm to soft, dry, calcareous, w/fine-grained sand - moist below 14.0 ft.					17		34	13	21	82	
20			- very moist below 18.0 ft.			1.0 0.5								
25	S-5			440.6		1.0 3.5 4.0								
	S-6		CLAY (CH), grayish brown, very stiff to hard, dry, blocky, calcareous, w/calcareous inclusion & very fine disseminated gravel, iron stained			4.5								
30						4.5		21		56	17	39	90	
	S-7					4.5 4.5								
35				429.6										
	S-8		SAND (SP-SM) w/silt, light gray, medium dense, wet, fine-grained, poorly graded	427.3									4	
40			SILTY SANDY CLAY (CL), gray, stiff, moist, w/sand seams & iron staining	425.1		3.0 2.0							65	
			GRAVELLY SAND (SW), light gray sand, fine-grained, medium dense, wet w/coarse gravel at base, well graded	421.6										
45			SHALE, dark gray, wet											
	S-9													
50														

Completion Depth: 51.5 ft.
Date Boring Started: 2/23/93
Date Boring Completed: 2/23/93
Engineer/Geologist: DDM
Project No.: 1019-002-002

Remarks: Pilot boring drilled & sampled to a total depth of 51.5 ft. on 1-26-93 & pressure grouted upon completion. Monitoring well installed to 45.5 ft. on 2-23-93. Water level measured at 16.2 ft. after well development.

Continued Next Page

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF MONITOR WELL NO. MW-10

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E -315.6 N -3108.1
Surface El.: 467.1' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Monitor Well Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
			415.6										

55 60 65 70 75 80 85 90 95 100

Completion Depth:	51.5 ft.
Date Boring Started:	2/23/93
Date Boring Completed:	2/23/93
Engineer/Geologist:	DDM
Project No.:	1019-002-002

Remarks: Pilot boring drilled & sampled to a total depth of 51.5 ft. on 1-26-93 & pressure grouted upon completion. Monitoring well installed to 45.5 ft. on 2-23-93. Water level measured at 16.2 ft. after well development.

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF PIEZOMETER NO. PMW-11

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 5094.3 N -202.2
Surface El.: 474.6' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			SAND, w/clay, reddish-brown, dry										
			471.6										
5			SANDY CLAY, reddish-brown & tan, dry, w/sand laminations - moist below 4.5 ft.										
			466.1										
10			CLAY, w/sand, grayish-brown, moist, w/ironstone seams.										
15			- reddish-brown, w/organic content below 14 ft.										
20			- wet below 17 ft. - w/gravel, tan below 18 ft.										
			451.4										
25			SAND, w/clay, tan, wet										
			447.6										
			SANDSTONE, tan & red tan, w/ironstone laminations										
			446.3										
30			SHALE, w/sand, gray, moist, w/sand laminations										
			445.1										
35													
40													
45													
50													

Completion Depth:	29.5 ft.
Date Boring Started:	1/10/94
Date Boring Completed:	1/10/94
Engineer/Geologist:	DDJ
Project No.:	1019-002-002

Remarks:

EMCON Baker-Shiflett, Inc.

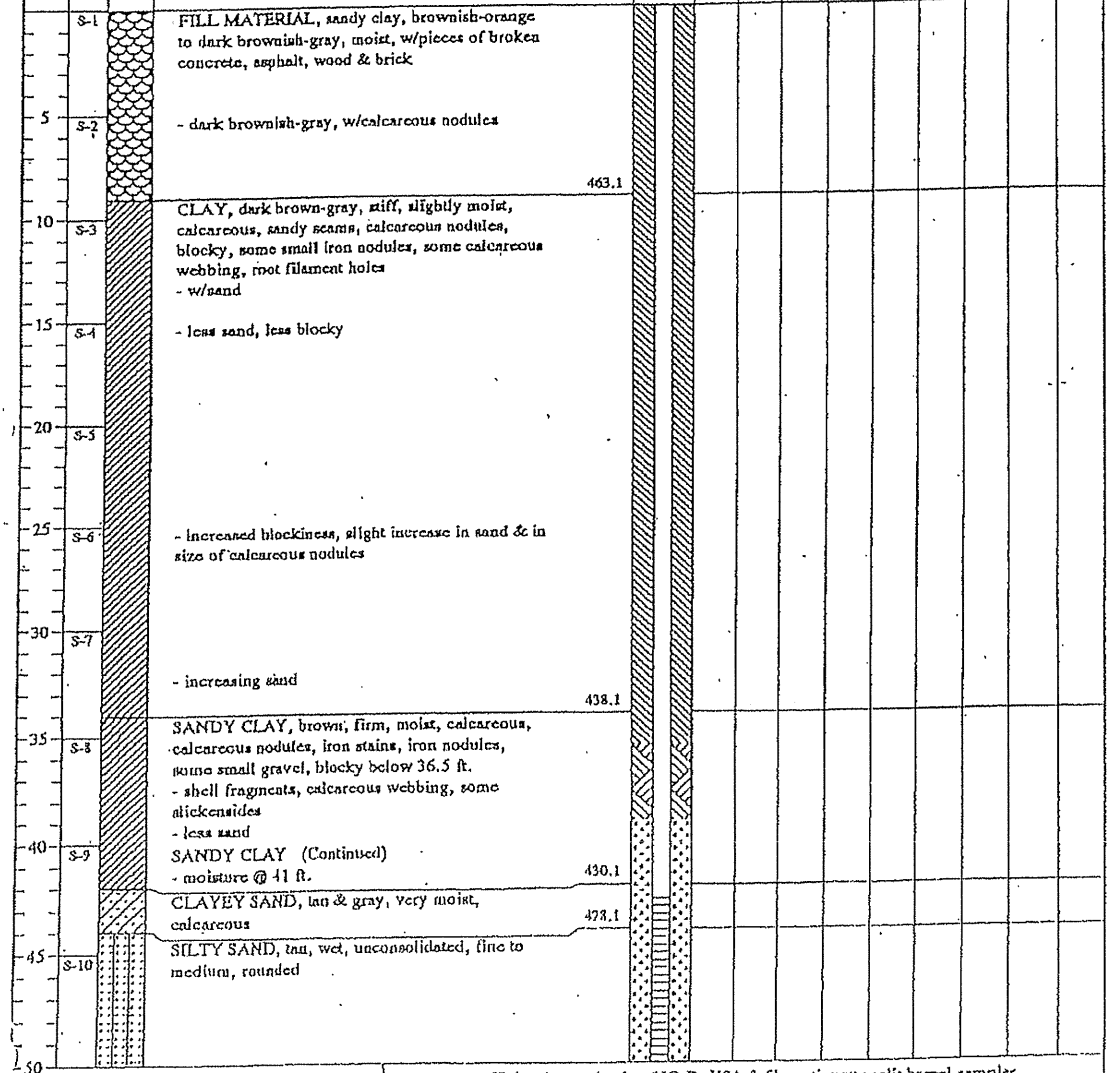
The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

Permit Issued: February 12, 2014

LOG OF MONITOR WELL NO. MW-12

Project Description: CITY OF ARLINGTON LANDFILL MONITOR WELL INSTALLATION
Arlington, Texas

Location: E 4225.3 N -3772.4
Surface El.: 472.1' MSL



Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Monitor Well Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0	S-1		FILL MATERIAL, sandy clay, brownish-orange to dark brownish-gray, moist, w/pieces of broken concrete, asphalt, wood & brick										
5	S-2		- dark brownish-gray, w/calcareous nodules										
			463.1										
10	S-3		CLAY, dark brown-gray, stiff, slightly moist, calcareous, sandy seams, calcareous nodules, blocky, some small iron nodules, some calcareous webbing, root filament holes - w/sand										
15	S-4		- less sand, less blocky										
20	S-5												
25	S-6		- increased blockiness, slight increase in sand & in size of calcareous nodules										
30	S-7		- increasing sand										
			438.1										
35	S-8		SANDY CLAY, brown, firm, moist, calcareous, calcareous nodules, iron stains, iron nodules, some small gravel, blocky below 36.5 ft. - shell fragments, calcareous webbing, some slickensides - less sand										
40	S-9		SANDY CLAY (Continued) - moisture @ 41 ft.										
			430.1										
			CLAYEY SAND, tan & gray, very moist, calcareous										
			423.1										
45	S-10		SILTY SAND, tan, wet, unconsolidated, fine to medium, rounded										
50													

Completion Depth: 60.0 ft.
Date Boring Started: 1/10/95
Date Boring Completed: 1/10/95
Engineer/Geologist: M. Brown
Project No.: 1000-004-075

Remarks: Hole advanced using 8"O.D. HSA & 5' continuous split barrel sampler. Borehole reamed w/11-1/4"O.D. HSA & 4" dia. PVC well w/15' screen set to 57'3" through the augers.

Continued Next Page

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF MONITOR WELL NO. MW-12

Project Description: CITY OF ARLINGTON LANDFILL MONITOR WELL INSTALLATION
Arlington, Texas

Location: E 4225.3 N -3772.4
Surface El.: 472.1' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Monitor Well Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
55	S-11		419.1										
	S-12		SAND w/gravel, tan, wet, unconsolidated, coarse, rounded										
			415.1										
60			SHALE, dark gray, hard, w/light gray sand partings										
			412.1										
65													
70													
75													
80													
85													
90													
95													
100													

Completion Depth: 60.0 ft.
Date Boring Started: 1/10/95
Date Boring Completed: 1/10/95
Engineer/Geologist: M. Brown
Project No.: 1000-004-075

Remarks: Hole advanced using 8"O.D. HSA & 5' continuous split barrel sampler. Borehole reamed w/11-1/4"O.D. HSA & 4" dia. PVC well w/15' screen set to 57.3' through the augers.

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF MONITOR WELL NO. MW-13

Project Description: CITY OF ARLINGTON LANDFILL MONITOR WELL INSTALLATION
Arlington, Texas

Location: E 3643.4 N 3602.8
Surface El.: 475.4' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Monitor Well Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0	S-1		FILL MATERIAL, sandy clay w/gravel, brown to brownish-gray, moist, w/pieces of broken concrete, asphalt, wood & brick										
5	S-2												
			465.4										
10	S-3		CLAY w/sand, dark gray to dark grayish-brown, stiff, slightly moist, calcareous, calcareous nodules, some fine gravel, small iron nodules		2.5								
15	S-4		- clayey sand layer @ 14.5 to 15.0 ft., slightly moist - less sand & gravel										
20	S-5				2.75								
25	S-6		- increasing small iron nodules, increasing large calcareous nodules, calcareous webbing										
30	S-7		- blocky, wet below 29.5 ft.										
			- increasing sand										
35	S-8		440.4 SANDY CLAY, gray-brown-orange, soft, very moist, calcareous										
40	S-9		SANDY CLAY (Continued) 434.4										
			CLAYEY SAND, gray-brown-orange, wet, iron stains, calcareous 432.9										
45	S-10		SILTY SAND, tan, wet, unconsolidated, fine to medium, rounded - gravel seam										
50													

Completion Depth: 54.5 ft.
Date Boring Started: 1/9/95
Date Boring Completed: 1/9/95
Engineer/Geologist: M. Brown
Project No.: 1000-004-075

Remarks: Hole advanced using 8"O.D. HSA & 5' continuous split barrel sampler. Borehole reamed w/11-1/4"O.D. HSA & 4" dia. PVC well w/20' screen set to 52.7' through the augers.

Continued Next Page

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

Permit Issued: February 12, 2014

LOG OF MONITOR WELL NO. MW-13

Project Description: CITY OF ARLINGTON LANDFILL MONITOR WELL INSTALLATION
Arlington, Texas

Location: E 3643.4 N -3602.8
Surface El.: 475.4' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Monitor Well Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0	S-11												
			423.4										
			GRAVELLY SAND, tan, wet, coarse, rounded										
			422.4										
			SHALE, dark gray, hard, w/light gray fine sand partings										
			420.9										
55													
60													
65													
70													
75													
80													
85													
90													
95													
100													

Completion Depth: 54.5 ft.
Date Boring Started: 1/9/95
Date Boring Completed: 1/9/95
Engineer/Geologist: M. Brown
Project No.: 1000-004-075

Remarks: Hole advanced using 8"O.D. HSA & 5' continuous split barrel sampler. Borehole reamed w/11-1/4"O.D. HSA & 4" dia. PVC well w/20' screen set to 52.7' through the augers.

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF MONITOR WELL NO. MW-14

Project Description: CITY OF ARLINGTON LANDFILL MONITOR WELL INSTALLATION
Arlington, Texas

Location: E 3063.7 N -3409.6
Surface El.: 474.4' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Monitor Well Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0	S-1		FILL MATERIAL, clay w/sand & gravel, brown to reddish brown, w/pieces of broken concrete, asphalt, wood, & brick										
5	S-2		464.9										
10	S-3		CLAY w/sand & gravel, dark gray to grayish-brown, stiff, moist, calcareous, fine gravel, calcareous nodules		3.0								
15	S-4		- shell fragments, less sand										
20	S-5		451.4										
25	S-6		SANDY CLAY, tan-orange, very moist, firm, calcareous, w/some gravel, calcareous nodules, some manganese dioxide stains, root filament holes		1.0								
30	S-7		446.4										
35	S-8		CLAYEY SAND, tan-orange, wet, w/sandy clay seams, some gravel, manganese oxide stains, slightly calcareous										
40			442.4										
45			GRAVELLY SAND, tan, wet, coarse sand & gravel										
50			437.9										
			SHALE, dark gray, hard, w/light gray sand partings										
			434.9										

Completion Depth: 39.5 ft.
Date Boring Started: 1/5/95
Date Boring Completed: 1/5/95
Engineer/Geologist: M. Brown
Project No.: 1000-004-075

Remarks: Hole advanced using 8"O.D. HSA & 5' continuous split barrel sampler. Borehole reamedw/11-1/4"O.D. HSA & 4' dia. PVC well w/15' screen set to 38.3' through the augers.

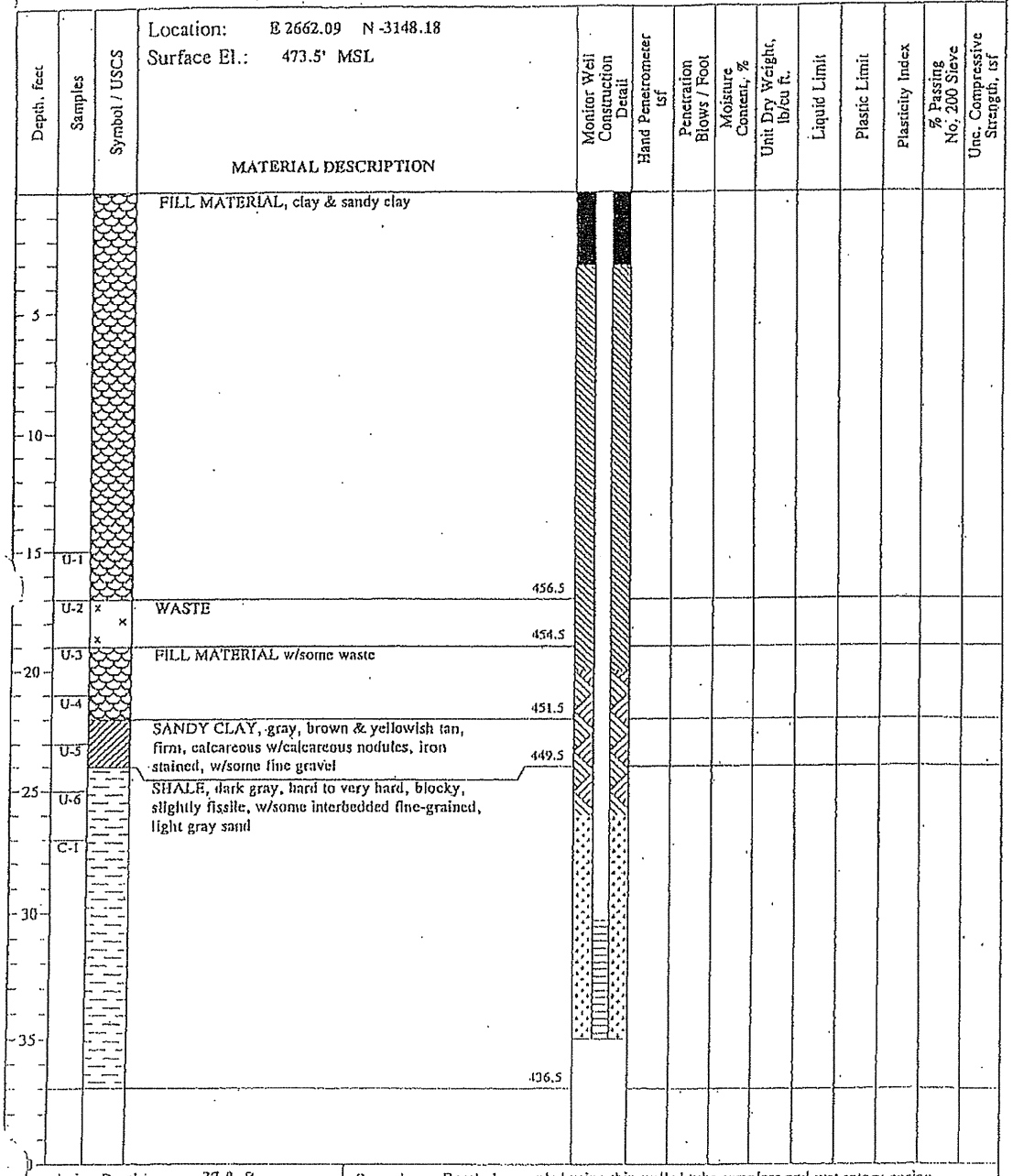
EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF MONITOR WELL NO. MW-15

Project Description: CITY OF ARLINGTON LANDFILL MONITOR WELL INSTALLATION
Arlington, Texas

Location: E 2662.09 N -3148.18
Surface El.: 473.5' MSL



Completion Depth:	37.0 ft.
Date Boring Started:	7/6/95
Date Boring Completed:	7/7/95
Engineer/Geologist:	DDH
Project No.:	1000-004-075

Remarks: Borehole sampled using thin-walled tube samplers and wet rotary coring techniques. Hole reamed w/9-7/8" fish-tail bit, flushed clean w/water, and 4" diameter PVC well set to 35'.

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The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

Permit Issued: February 12, 2014

LOG OF PIEZOMETER NO. S- 1

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 2363.1 N -3911.8
Surface El.: 469.3' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			SANDY CLAY, slightly calcareous, light brown to tan, w/organic material & fine scattered gravel										
5			- brown below 5 ft.										
10													
			456.3										
15			CLAY, w/sand, light brown										
20			447.8										
			SAND & GRAVEL, variegated										
25													
30													
35			- light gray clay below 35 ft.										
			433.8										
			SHALE, sandy, gray										
			432.8										
40													
45													
50													

Completion Depth: 36.5 ft.
Date Boring Started: 4/11/89
Date Boring Completed: 4/11/89
Engineer/Geologist: EBS
Project No.: 1019-002-002

Remarks: Groundwater elevation calculated @ 440.5 from measurement taken on 1/5/94.

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF PIEZOMETER NO. S- 2

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 2883.0 N -4749.1
Surface El.: 468.4' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			CLAYEY SAND, brown, w/sand partings										
			465.4										
5			SAND, tan, w/clay seams, slightly calcareous										
			461.4										
10			CLAYEY SAND, dark brown, w/calcareous nodules, organic material										
15			- brown below 14 ft.										
20													
25			- tan below 25 ft.										
			439.9										
30			SAND, tan, slightly clayey										
35			431.4										
40			SANDY GRAVEL, tan & brown										
45													
50			418.4										

Completion Depth: 63.0 ft.
Date Boring Started: 4/13/89
Date Boring Completed: 4/13/89
Engineer/Geologist: EBS
Project No.: 1019-002-002

Remarks: Piezometer plugged 7/8/93.

Continued Next Page.

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF PIEZOMETER NO. S- 2

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 2883.0 N -4749.1
Surface El.: 468.4' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
55			SANDY CLAY, tan & brown, w/scattered gravel										
			410.4										
60			SHALE, sandy, light gray										
			405.4										
65													
70													
75													
80													
85													
90													
95													
100													

Completion Depth: 63.0 ft.
Date Boring Started: 4/13/89
Date Boring Completed: 4/13/89
Engineer/Geologist: EBS
Project No.: 1019-002-002

Remarks: Piezometer plugged 7/8/93.

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF PIEZOMETER NO. S-3

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 4109.0 N -5156.6
Surface El.: 464.1' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			SANDY CLAY, brown, w/limestone fragments & sand seams (FILL)										
			462.1										
			SANDY CLAY, dark brown to brown, w/calcareous nodules & oxide stains										
5													
10													
15													
20			- light brown & gray below 19 ft.										
25													
			436.1										
30			CLAYEY SAND, light reddish-brown										
			429.6										
35			SAND, tan, slightly clayey										
40			422.6										
			SAND & GRAVEL, tan										
45													
50													

Completion Depth: 60.0 ft.
Date Boring Started: 4/12/89
Date Boring Completed: 4/12/89
Engineer/Geologist: EBS
Project No.: 1019-002-002

Remarks: Piezometer plugged 7/8/93.

Continued Next Page

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF PIEZOMETER NO. S- 3

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 4109.0 N -5156.6
Surface El.: 464.1' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
55			408.1										
			SHALE, sandy, gray										
60			404.1										
65													
70													
75													
80													
85													
90													
95													
100													

Completion Depth:	60.0 ft.
Date Boring Started:	4/12/89
Date Boring Completed:	4/12/89
Engineer/Geologist:	EBS
Project No.:	1019-002-002

Remarks: Piezometer plugged 7/8/93.

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

TEMPLATE: PAMPAL.GPJ

LOG OF PIEZOMETER NO. S- 4

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 1875.3 N -3725.7
Surface El.: 465.5' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			CLAY, dark brown, w/organic material, calcareous										
5			- brown, w/calcareous webbing & oxide stains below										
			- w/fine sand, tan below 6 ft.										
10			- w/scattered gravel, light gray/brown below 7-1/2										
15			- tan below 15 ft.										
20			444.5										
			SAND & GRAVEL, variegated										
25			437.5										
			SHALE, w/alternating sandstone & clay seams & partings, brown/gray & gray, w/lignite										
30			- w/slickensides @ 33 & 34 ft.										
			431.5										
35													
40													
45													
50													

TEMPLATE PALGT

Completion Depth:	34.0 ft.
Date Boring Started:	2/7/90
Date Boring Completed:	2/7/90
Engineer/Geologist:	EBS
Project No.:	1019-002-002

Remarks: Piezometer plugged 7/1/93.

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF PIEZOMETER NO. S- 5

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 681.3 N -3430.6
Surface El.: 467.3' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			SAND, w/clay, brown, calcareous										
			464.8										
5			CLAY, w/sand seams, brown, calcareous										
			- light brown, w/calcareous webbing below 5-1/2 ft.										
10													
15													
20			446.8										
			SAND, tan, calcareous										
			445.8										
			SAND & GRAVEL, variegated coarse										
			443.3										
25			CLAY, w/sand, dark gray										
30													
35			432.3										
			SHALE, w/alternating sand & clay seams, grny & dark gray, w/lignite seams & partings										
40			426.3										
45													
50													

Completion Depth: 41.0 ft.
Date Boring Started: 2/7/90
Date Boring Completed: 2/7/90
Engineer/Geologist: EBS
Project No.: 1019-002-002

Remarks: Piezometer plugged 7/7/93.

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

TEMPLATE: GAU.GT

LOG OF PIEZOMETER NO. S- 6

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E -579.6 N -2925.7
Surface El.: 467.2' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			CLAY, dark brown, calcareous										
5			- w/sand seams, brown below 4 ft.										
			- tan below 6-1/2 ft.										
10			- w/calcareous webbing below 10 ft.										
15													
20													
25			- tan & gray, mottled, w/oxide stains below 25-1.2 ft.										
30													
			- w/scattered gravel below 32 ft.										
35													
40													
45			- shaly below 44-1/2 ft.										
50													

Completion Depth:	54.5 ft.
Date Boring Started:	2/8/90
Date Boring Completed:	2/8/90
Engineer/Geologist:	EBS
Project No.:	1019-002-002

Remarks: Piezometer plugged 7/1/93.

Continued Next Page

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF PIEZOMETER NO. S- 6

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E -579.6 N -2925.7
Surface El.: 467.2' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
			416.2										
			SHALE, clayey, light blue-gray, w/slickensides										
			412.7										

55 60 65 70 75 80 85 90 95 100

Completion Depth: 54.5 ft.
Date Boring Started: 2/8/90
Date Boring Completed: 2/8/90
Engineer/Geologist: EBS
Project No.: 1019-002-002

Remarks: Piezometer plugged 7/1/93.

TEMPLATE: GAL.GT

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF PIEZOMETER NO. S- 7

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E -153.1 N -787.1
Surface El.: 473.4' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			CLAY, w/sand, brown, w/scattered gravel & iron stains										
5													
10			461.4'										
15			CLAY, silty, dark brown - dark gray below 15 ft.										
20			454.9 SAND, clayey, brown to gray, w/scattered gravel										
25			451.9 SANDY CLAY, brown, w/scattered gravel										
30			445.9 SAND, clayey, reddish-brown to brown, w/scattered gravel										
35			438.4 SANDY CLAY, brown, w/gravel										
40			436.4 SHALE, sandy, gray										
45			434.9										
50													

Completion Depth: 38.5 ft.
Date Boring Started: 2/26/91
Date Boring Completed: 2/27/91
Engineer/Geologist: EBS
Project No.: 1019-002-002

Remarks:

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF PIEZOMETER NO. S-10

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 2992.2 N -3340.8
Surface El.: 467.0' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			CLAY, w/sand, dark brown to brown, w/scattered gravel										
5			- w/dark gray below 3.5 ft.										
			460.0										
			SANDY CLAY, reddish brown & dark brown										
10			456.5										
			CLAY, w/sand, dark gray										
15			- dark brown below 13 ft.										
			449.0										
			SAND, clayey, brown & reddish brown, w/gravel & iron stains										
20													
25			440.5										
			CLAY, shaly, light gray to brown, w/gravel										
30			437.0										
35													
40													
45													
50													

Completion Depth: 30.0 ft.
Date Boring Started: 2/26/91
Date Boring Completed: 2/26/91
Engineer/Geologist: EBS
Project No.: 1019-002-002

Remarks: Piezometer plugged 7/1/93.

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF PIEZOMETER NO. S-11

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 4475.6 N -3876.4
Surface El.: 470.6' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
			SANDY CLAY, brown, w/iron stains										
			467.6										
5			CLAY, shaly, brown & light gray, w/iron stains										
10			- grayish brown below 11 ft.										
15													
20			- light brown to tan below 22 ft.										
25													
30													
35													
40													
45			- light brown, tan & gray below 43 ft.										
50													

Completion Depth: 75.0 ft.
Date Boring Started: 2/26/91
Date Boring Completed: 2/26/91
Engineer/Geologist: EBS
Project No.: 1019-002-002

Remarks: Piezometer plugged 6/30/93.

Continued Next Page.

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF PIEZOMETER NO. S-11

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 4475.6 N -3876.4
Surface El.: 470.6' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
55			- gray below 52 ft.										
60													
65													
70			400.1										
			SAND & GRAVEL, medium sand to fine gravel										
75			395.6										
80													
85													
90													
95													
100													

Completion Depth:	75.0 ft.
Date Boring Started:	2/26/91
Date Boring Completed:	2/26/91
Engineer/Geologist:	EBS
Project No.:	U019-002-002

Remarks: Piezometer plugged 6/30/93.

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF PIEZOMETER NO. S-12

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 4876.1 N -2676.7
Surface El.: 469.1' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			CLAY, w/sand, dark brown, w/fine gravel & iron stains										
			465.6										
5			SANDY CLAY, brown to dark brown										
10			458.1										
			CLAY, sandy, slightly silty, dark brown to gray, w/scattered gravel										
15													
20													
			- brown & dark brown below 22 ft.										
25													
30													
35			433.1										
			SAND, fine, brown, w/scattered gravel										
40													
			425.6										
45													
50													

TEMPLATE: ALGT

Completion Depth:	43.5 ft.
Date Boring Started:	2/27/91
Date Boring Completed:	2/27/91
Engineer/Geologist:	EBS
Project No.:	1019-002-002

Remarks: Piezometer plugged 6/30/93.

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF PIEZOMETER NO. S-13

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 2629.5 N -1598.6
Surface El.: 474.3' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			CLAY, w/sand, dark brown, w/iron stains										
5			466.3										
10			SANDY CLAY, silty, dark gray to brown										
15			- dark gray & brown, w/scattered gravel below 14.5 ft.										
20													
25			- dark gray below 27 ft.										
30			443.3										
35			SAND, clayey, brown										
40			431.8										
45			SHALE, gray, sandy 430.8										
50													

TEMPLATE PANPALGT

Completion Depth: 43.5 ft.
Date Boring Started: 2/26/91
Date Boring Completed: 2/26/91
Engineer/Geologist: EBS
Project No.: 1019-002-002

Remarks: Piezometer plugged 7/6/93.

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF PIEZOMETER NO. S-14

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 116.5 N 37.4
Surface El.: 478.8' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			SAND, reddish-brown to tan, w/clay partings & seams, iron stains & scattered gravel										
18.5			460.3										
18.5			SANDY CLAY, gray, w/iron stains & sand seams										
30.0			448.8										
30.0			SAND & GRAVEL, medium sand to fine gravel										
35.0			443.8										
35.0			SAND, lightly cemented, tan										
37.3			441.3										
37.3			SHALE, gray										
45.0			433.8										

Completion Depth: 45.0 ft.
Date Boring Started: 2/26/91
Date Boring Completed: 2/26/91
Engineer/Geologist: EBS
Project No.: 1019-002-002

Remarks: Piezometer plugged 7/9/93.

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF PIEZOMETER NO. S-15

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 1631.3 N -206.4
Surface El.: 488.9' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			FILL consistening of brown & tan sandy clay, w/iron stains — 488.4										
5			SAND, reddish-tan & tan, w/cemented seams, w/iron stains — 479.9										
10			SAND, light-brown to reddish-tan & tan, seams less cemented w/depth, w/iron stains — 471.4										
15			SAND, reddish-tan, w/iron stains — 464.9										
20			SAND, reddish-brown to gray, lightly to moderately cemented, w/dark gray shale partings & seams, w/iron stains — 454.9										
25			SAND, gray & tan, lightly to moderately cemented, w/shale partings & seams — 447.9										
30			SAND, gray, lightly cemented, w/shale seams — 438.9										
35													
40													
45													
50													

Completion Depth: 50.0 ft.
Date Boring Started: 9/16/88
Date Boring Completed: 9/16/88
Engineer/Geologist: EBS
Project No.: 1019-002-002

Remarks: Piezometer plugged 4/3/93.

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

TEMPLATE: L-PALGT

LOG OF PIEZOMETER NO. S-16

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 2247.6 N -116.6
Surface El.: 484.4' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			SANDY CLAY, reddish-brown, w/iron stains										
			479.9										
5			SAND, fine, tan & light tan, w/iron stains										
10			- w/cemented seams & layers below 11 ft.										
15			- light gray, tan & brown below 18.5 ft.										
20			459.4										
25			SANDY CLAY, gravelly, reddish-brown to brown										
			457.4										
			SAND, fine, reddish-tan										
30			451.4										
			SHALE, clayey, gray										
35			- sandy shale below 35 ft.										
			447.4										
40													
45													
50													

Completion Depth: 37.0 ft.
Date Boring Started: 2/25/91
Date Boring Completed: 2/25/91
Engineer/Geologist: EBS
Project No.: 1019-002-002

Remarks: Piezometer plugged 4/3/93.

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF PIEZOMETER NO. S-17

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 3637.3 N -148.7
Surface El.: 483.2' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			CLAY, w/sand, reddish-brown to dark brown										
5			- tan & gray below 4 ft. - shaly & sandy seams below 5 ft.										
			475.7										
			SANDY CLAY, light gray & tan										
			473.2										
10			SHALE, clayey, dark gray										
			467.7										
15			SANDY CLAY, light brown to light gray										
20			- w/fine scattered gravel & iron stains below 22 ft.										
			458.2										
25			SANDSTONE, gray, lightly cemented										
			449.2										
30			SHALE, sandy, gray										
			445.2										
35													
40													
45													
50													

Completion Depth:	38.0 ft.
Date Boring Started:	2/25/91
Date Boring Completed:	2/25/91
Engineer/Geologist:	EBS
Project No.:	1019-002-002

Remarks: Piezometer plugged 7/7/93.

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

TEMPLATE: EMPALOT

LOG OF PIEZOMETER NO. S-18

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 5245.2 N -228.9
Surface El.: 475.8' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			SAND, reddish-brown, slightly clayey, w/iron stains										
5													
10													
15													
20			- brown, w/scattered fine gravel & clay seams below 17 ft.										
			454.3										
25			SAND & GRAVEL, medium sand to fine gravel										
			448.3										
30			SAND, tan, very dense, lightly cemented										
			443.8										
35			SHALE, gray, w/sandstone seams										
			438.8										
40													
45													
50													

Completion Depth: 37.0 ft.
Date Boring Started: 2/25/91
Date Boring Completed: 2/25/91
Engineer/Geologist: EBS
Project No.: 1019-002-002

Remarks: Piezometer plugged 6/29/93.

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

TEMPLATE: TEMPLATE.GPJ

LOG OF PIEZOMETER NO. S-19

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 5530.8 N -511.2
Surface El.: 468.7' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			SANDY CLAY, gray, w/iron stains										
5													
10													
15													
20													
25			442.2										
			SAND, tan, w/lightly to moderately cemented layers										
30													
35			429.7										
40			SANDY CLAY to CLAYEY SAND, light brown, w/iron stains & sand seams										
45													
50													

Completion Depth: 79.0 ft.
Date Boring Started: 2/26/91
Date Boring Completed: 2/26/91
Engineer/Geologist: EBS
Project No.: 1019-002-002

Remarks: Piezometer plugged 6/29/93.

Continued Next Page

TEMPLATE: PANPAI.GT

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF PIEZOMETER NO. S-19

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 5530.8 N -511.2
Surface El.: 468.7' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
55			412.2										
			SAND, tan										
			- w/fine gravel below 58 ft.										
60													
65													
70													
			- sandy clay below 73 ft. 394.7										
75			SHALE, gray, fossiliferous 393.2										
			SANDSTONE, tan										
			389.7										
80													
85													
90													
95													
100													

Completion Depth: 79.0 ft.
Date Boring Started: 2/26/91
Date Boring Completed: 2/26/91
Engineer/Geologist: EBS
Project No.: 1019-002-002

Remarks: Piezometer plugged 6/29/93.

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF PIEZOMETER NO. WP- 2

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 3014.6 N -2128.1
Surface El.: 462.2' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			SANDY CLAY, brown, hard, dry, w/iron stains, w/roots										
			460.7										
			CLAYEY SAND, brown, dense, w/iron stains										
			459.7										
			SANDY CLAY, brown & tan, very stiff to hard, w/roots										
5			457.2										
			SANDY CLAY, brown, firm to hard, w/calcareous nodules & particles, w/iron stains										
			- grayish brown 7.5 ft. to 11.0 ft.										
10			- light brown & gray below 11 ft.										
			- seepage below 14 ft.										
15			444.7										
			CLAYEY SAND, tan & gray, very loose, w/sandy clay layers, w/iron stains										
			- gray & tan below 22 ft.										
20			436.2										
			SANDY CLAY, grayish-brown, firm, w/clayey sand seams, w/iron stains										
25			431.2										
			CLAYEY SAND, dark gray & brown to grayish-brown, loose, w/sandy clay seams, w/iron stains										
30			- tan & gray below 47 ft.										
35													
40													
45													
50													

Completion Depth: 58.5 ft.
Date Boring Started: 9/14/88
Date Boring Completed: 9/14/88
Engineer/Geologist: EBS
Project No.: 1019-002-002

Remarks:

Continued Next Page

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

TEMPLATE: PAMPAL.GDT

LOG OF PIEZOMETER NO. WP- 2

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 3014.6 N -2128.1
Surface El.: 462.2' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Piezometer Construction Detail	Hand Penetrometer tsf	Penetration Blows / Foot	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
			410.2										
55			SHALE, dark gray, sandy, w/gray limestone seams										
			405.7										
			SAND, gray, w/shale seams, w/hard gray siltstone seams (sand is lightly cemented) 403.7										
60													
65													
70													
75													
80													
85													
90													
95													
100													

Completion Depth: 58.5 ft.
Date Boring Started: 9/14/88
Date Boring Completed: 9/14/88
Engineer/Geologist: EBS
Project No.: 1019-002-002

Remarks:

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

TEMPLATE: PALGT

LOG OF BORING NO. 1

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 4417.2 N -1223.9
Surface El.: 463.8' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION		Hand Penetrometer, TSF	Penetration Blows / Foot	Recovery %	RQD	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
			CLAY, very stiff, slightly sandy, brown	462.3											
			SAND, fine, tan	460.8											
			CLAY, stiff, sandy, silty, tan & brown	459.3											
5			CLAY, medium stiff, brown	457.8											
			CLAY, medium stiff, sandy, dark gray	456.3											
			CLAY, stiff, sandy, brown												
10			- medium stiff	453.3											
			CLAY, very soft, sandy, tan & dark gray	451.8											
			GRAVEL												
15															
20				441.8											
			SHALE, firm, brown												
25			- very hard siltstone band	433.8											
30															
35															
40															
45															
50															

Completion Depth: 30.0 ft.
Date Boring Started: 5/10/84
Date Boring Completed: 5/10/84
Engineer/Geologist: Mason-Johnston
Project No.: 1019-002-002

Remarks:

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF BORING NO. 2

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 4292.7 N -1660.7
Surface El.: 464.1' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION		Hand Penetrometer, TSF	Penetration Blows / Foot	Recovery %	RQD	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
			CLAY, stiff, light brown	462.6											
			CLAY, very stiff, sandy, brown	459.6											
5			SAND, slightly clayey, tan	458.1											
			CLAY, stiff, dark brown	449.1											
15			CLAY, stiff, sandy, tan	444.1											
20			SAND & GRAVEL	442.1											
			SHALE, firm, w/occasional sandstone lenses, brown	437.1											
25															
30															
35															
40															
45															
50															

Completion Depth: 27.0 ft.
Date Boring Started: 5/11/84
Date Boring Completed: 5/11/84
Engineer/Geologist: Mason-Johnston
Project No.: 1019-002-002

Remarks:

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF BORING NO. 3

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 4197.5 N -1987.7
Surface El.: 465.5' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Hand Penetrometer, TSF	Penetration Blows / Foot	Recovery %	RQD	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			CLAY, very stiff, slightly sandy, w/limestone particles, brown — 464.0											
			CLAY, stiff, sandy, light brown — 462.5											
5			CLAY, very stiff, sandy brown — 458.0											
10			CLAY, very stiff, sandy, dark gray — 450.5											
15			CLAY, medium stiff, sandy, brown & tan — 449.0											
20			SAND, clayey, w/gravel, tan — 440.5											
25			GRAVEL — 437.5											
30			SHALE, soft, w/sandstone band, gray — 434.5											
35			SHALE, firm, brown — 426.5											
40														
45														
50														

Completion Depth: 39.0 ft.
Date Boring Started: 5/14/84
Date Boring Completed: 5/14/84
Engineer/Geologist: Mason-Johnston
Project No.: 1019-002-002

Remarks:

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF BORING NO. 4

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 3955.7 N -2305.0
Surface El.: 455.8' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Elevation	Hand Penetrometer, TSF	Penetration Blows / Foot	Recovery %	RQD	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			CLAY, stiff, sandy, dark brown	454.3											
			CLAY, stiff, slightly sandy, brown	449.8											
5			CLAY, stiff, sandy, w/limestone particles, tan	448.3											
			CLAY, soft, sandy, tan & brown	446.8											
			CLAY,stiff, brown	445.3											
10			CLAY, very sandy, tan	443.8											
			SAND, dense, w/gravel, tan	438.8											
15			GRAVEL												
20															
25															
			- very hard siltstone band	425.8											
30			SHALE, firm, brown												
35				418.8											
40															
45															
50															

Completion Depth:	37.0 ft.
Date Boring Started:	5/14/84
Date Boring Completed:	5/14/84
Engineer/Geologist:	Mason-Johnston
Project No.:	1019-002-002

Remarks:

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF BORING NO. 5

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 3809.3 N -2691.0
Surface El.: 460.3' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Hand Penetrometer, TSF	Penetration Blows / Foot	Recovery %	RQD	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			CLAY, very stiff, sandy, brown — 458.8											
			CLAY, very stiff, dark brown — 455.8											
5			CLAY, very stiff, sandy, brown											
			- stiff											
10			- stiff — 450.3											
			CLAY, medium stiff, tan — 443.3											
15														
			CLAY, very soft, sandy, brown & tan — 438.3											
20			CLAY, sandy, tan — 436.8											
			CLAY, sandy, w/gravel, tan — 426.3											
25														
			SANDSTONE, medium firm, tan — 424.3											
30			SHALE, medium firm, gray — 421.3											
			SANDSTONE, medium firm, shaly, light gray — 420.3											
35														
40														
45														
50														

Completion Depth: 40.0 ft.
Date Boring Started: 5/14/84
Date Boring Completed: 5/14/84
Engineer/Geologist: Mason-Johnston
Project No.: 1019-002-002

Remarks:

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

Permit Issued: February 12, 2014

LOG OF BORING NO. 6

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 3543.0 N -2854.1
Surface El.: 460.1' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Elevation	Hand Penetrometer, TSF	Penetration Blows / Foot	Recovery %	RQD	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
			CLAY, stiff, gray	458.6											
			CLAY, medium stiff, brown	457.1											
5			CLAY, stiff, sandy, tan (FILL)												
10															
15															
20															
			- very hard siltstone band	437.6											
			SHALE, firm, gray	435.1											
25			SILTSTONE	434.3											
30															
35															
40															
45															
50															

Completion Depth: 25.8 ft.
Date Boring Started: 5/22/84
Date Boring Completed: 5/22/84
Engineer/Geologist: Mason-Johnston
Project No.: 1019-002-002

Remarks:

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF BORING NO. 7

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 3091.5 N -2729.6
Surface El.: 461.1' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Hand Penetrometer, TSF	Penetration Blows / Foot	Recovery %	RQD	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
			CLAY, very stiff, sandy, brown - stiff											
			456.6											
5			CLAY, stiff, sandy, dark brown											
			455.1											
			CLAY, stiff, very sandy, tan											
			453.6											
			CLAY, stiff, sandy, brown & tan											
			452.1											
10			CLAY, stiff, sandy, tan											
15			442.1											
			SHALE, firm, brown											
20			436.1											
25														
30														
35														
40														
45														
50														

Completion Depth: 25.0 ft.
Date Boring Started: 5/15/84
Date Boring Completed: 5/15/84
Engineer/Geologist: Mason-Johnston
Project No.: 1019-002-002

Remarks:

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF BORING NO. 8

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 2661.8 N -2605.2
Surface El.: 459.2' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Hand Penetrometer, TSF	Penetration Blows / Foot	Recovery %	RQD	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			CLAY, very stiff, sandy, brown											
			456.2											
			CLAY, sandy, & wood											
			454.7											
5			CLAY, soft, sandy, gray											
10														
15			443.2											
			SHALE, firm, gray -sandstone											
			440.2											
20			SANDSTONE, medium firm, light gray											
			436.2											
25														
30														
35														
40														
45														
50														

Completion Depth: 23.0 ft.
Date Boring Started: 5/15/84
Date Boring Completed: 5/15/84
Engineer/Geologist: Mason-Johnston
Project No.: 1019-002-002

Remarks:

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF BORING NO. 9

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 2620.3 N -2212.3
Surface El.: 462.4' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Hand Penetrometer, TSF	Penetration Blows / Foot	Recovery %	RQD	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
			SAND, fine, brown — 460.9											
			SAND, fine, tan — 459.4											
			CLAY, very soft, light brown — 457.9											
5			CLAY, stiff, sandy, brown — 456.4											
			CLAY, stiff, sandy, tan — 453.4											
10			CLAY, medium stiff, sandy, tan & light gray — 447.4											
15			GRAVEL — 442.4											
20			SHALE, firm, brown — 435.4											
25			SANDSTONE, firm, light gray — 432.4											
30														
35														
40														
45														
50														

Completion Depth: 30.0 ft.
Date Boring Started: 5/16/84
Date Boring Completed: 5/16/84
Engineer/Geologist: Mason-Johnston
Project No.: 1019-002-002

Remarks:

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF BORING NO. 10

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 2700.8 N -1755.9
Surface El.: 464.3' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Hand Penetrometer, TSF	Penetration Blows / Foot	Recovery %	RQD	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			CLAY, very stiff, sandy, brown - sand layer - stiff											
			459.8											
5			CLAY, stiff, sandy, dark gray											
			456.8											
			CLAY, medium stiff, sandy, tan & light gray											
			455.3											
10			CLAY, sandy, w/gravel, tan											
			453.8											
			CLAY, medium stiff, sandy, tan & light gray											
15														
20														
25														
30														
			429.3											
35			CLAY, medium stiff, sandy, dark gray											
			424.3											
40			SAND, silty, light gray & light tan											
			419.3											
45			CLAY, very sandy, w/gravel, tan & light gray											
50														

Completion Depth: 55.0 ft.
Date Boring Started: 5/16/84
Date Boring Completed: 5/16/84
Engineer/Geologist: Mason-Johnston
Project No.: 1019-002-002

Remarks:

Continued Next Page

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF BORING NO. 10

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 2700.8 N -1755.9
Surface El.: 464.3' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Hand Penetrometer, TSF	Penetration Blows / Foot	Recovery %	RQD	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
55			SANDSTONE, moderately hard, light gray - very hard 413.3 409.3											

Completion Depth:	55.0 ft.
Date Boring Started:	5/16/84
Date Boring Completed:	5/16/84
Engineer/Geologist:	Mason-Johnston
Project No.:	1019-002-002

Remarks:

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF BORING NO. 11

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 2708.2 N -1382.5
Surface El.: 468.6' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Elevation	Hand Penetrometer, TSF	Penetration Blows / Foot	Recovery %	RQD	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			CLAY, very stiff, sandy, silty, brown	467.1											
			SAND, fine,tan	464.1											
5			CLAY, medium stiff, silty, sandy, dark gray	462.6											
			CLAY, stiff, sandy, brown	461.1											
10			SAND, clayey, tan												
15															
20															
25				443.6											
			CLAY, sandy, w/some gravel, tan												
30				433.6											
35			GRAVEL, w/some clay												
40															
				423.6											
45			SANDSTONE, hard, w/shale lenses	422.6											
			SHALE, firm, w/alternating lenses of sandstone, gray	420.6											
			SANDSTONE, moderately hard, light gray	418.6											
50															

Completion Depth: 53.0 ft.
Date Boring Started: 5/17/84
Date Boring Completed: 5/17/84
Engineer/Geologist: Mason-Johnston
Project No.: 1019-002-002

Remarks:

Continued Next Page

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF BORING NO. 11

Project Description: **Arlington Landfill**
Tarrant County, Texas

Location: E 2708.2 N -1382.5
Surface El.: 468.6' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Hand Penetrometer, TSF	Penetration Blows / Foot	Recovery %	RQD	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
			SHALE, firm, w/alternating shale lenses, gray											
			415.6											

55
60
65
70
75
80
85
90
95
100

Completion Depth:	53.0 ft.
Date Boring Started:	5/17/84
Date Boring Completed:	5/17/84
Engineer/Geologist:	Mason-Johnston
Project No.:	1019-002-002

Remarks:

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF BORING NO. 12

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 2661.8 N -943.2
Surface El.: 470.7' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Hand Penetrometer, TSF	Penetration Blows / Foot	Recovery %	RQD	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			SAND, fine, tan											
			467.7											
			CLAY, medium stiff, silty, sandy, tan											
			466.2											
5			SAND, fine, slightly clayey, brown											
			463.2											
			SAND, silty, brown											
			461.7											
10			CLAY, medium stiff, sandy, gray & tan											
15			- soft											
20														
25														
30			- soft											
			435.7											
35			CLAY, very sandy, w/gravel, tan & light gray											
40														
45														
50														

Completion Depth: 61.0 ft.
Date Boring Started: 5/18/84
Date Boring Completed: 5/18/84
Engineer/Geologist: Mason-Johnston
Project No.: 1019-002-002

Remarks:

Continued Next Page

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF BORING NO. 12

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 2661.8 N -943.2
Surface El.: 470.7' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Hand Penetrometer, TSF	Penetration Blows / Foot	Recovery %	RQD	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
			416.7											
55			SANDSTONE, w/shale lenses, moderately hard, light gray											
			409.7											
60														
65														
70														
75														
80														
85														
90														
95														
100														

Completion Depth: 61.0 ft.
Date Boring Started: 5/18/84
Date Boring Completed: 5/18/84
Engineer/Geologist: Mason-Johnston
Project No.: 1019-002-002

Remarks:

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF BORING NO. 13

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 2620.3 N -521.0
Surface El.: 474.6' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Hand Penetrometer, TSF	Penetration Blows / Foot	Recovery %	RQD	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			SAND, fine, brown (471.6)											
5			SAND, fine, tan (459.6)											
15			SAND, medium dense, w/gravel, tan (449.6)											
25			CLAY, sandy, tan (444.6)											
30			CLAY, sandy, w/gravel (434.6)											
40			CLAY, sandy, w/some gravel, gray (429.6)											
45			CLAY, sandy, w/gravel, tan & light gray (424.6)											
50														

Completion Depth: 66.0 ft.
Date Boring Started: 5/18/84
Date Boring Completed: 5/18/84
Engineer/Geologist: Mason-Johnston
Project No.: 1019-002-002

Remarks:

Continued Next Page

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF BORING NO. 13

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 2620.3 N -521.0
Surface El.: 474.6' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Hand Penetrometer, TSF	Penetration Blows / Foot	Recovery %	RQD	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
55			SAND, dense, tan — 419.6											
			SAND, very dense, w/gravel, light gray — 416.6											
			SANDSTONE, medium firm, w/alternating shale lenses, light gray — 415.1											
60			SHALE, firm, gray — 413.6											
			SANDSTONE, medium firm, gray — 408.6											
65														
70														
75														
80														
85														
90														
95														
100														

Completion Depth:	66.0 ft.
Date Boring Started:	5/18/84
Date Boring Completed:	5/18/84
Engineer/Geologist:	Mason-Johnston
Project No.:	1019-002-002

Remarks:

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF BORING NO. 14

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 2588.5 N -123.2
Surface El.: 476.5' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Hand Penetrometer, TSF	Penetration Blows / Foot	Recovery %	RQD	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
			SAND, fine, tan 475.0											
			SAND, fine, silty, brown 473.5											
			CLAY, stiff, very sandy, brown 472.0											
5			SAND, clayey, brown 469.0											
			SAND, fine, tan 467.5											
10			CLAY, stiff, sandy, light tan 461.5											
15			CLAY, very soft, very sandy, w/small gravel, tan 451.5											
20														
25			CLAY, sandy, tan 446.5											
30			CLAY, very sandy, tan 441.5											
35			CLAY, very sandy, light gray 436.5											
40			CLAY, very sandy, w/gravel, tan 426.5											
45														
50														

Completion Depth: 64.0 ft.
Date Boring Started: 5/21/84
Date Boring Completed: 5/21/84
Engineer/Geologist: Mason-Johnston
Project No.: 1019-002-002

Remarks:

Continued Next Page

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF BORING NO. 14

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 2588.5 N -123.2
Surface El.: 476.5' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Hand Penetrometer, TSF	Penetration Blows / Foot	Recovery %	RQD	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
55			GRAVEL — 421.5											
			SAND, medium dense, light gray — 417.5											
60			SANDSTONE, moderately hard, w/alternating shale lenses, light gray — 412.5											
65														
70														
75														
80														
85														
90														
95														
100														

Completion Depth: 64.0 ft.
Date Boring Started: 5/21/84
Date Boring Completed: 5/21/84
Engineer/Geologist: Mason-Johnston
Project No.: 1019-002-002

Remarks:

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF BORING NO. 15

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 3115.9 N -113.5
Surface El.: 484.4' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Hand Penetrometer, TSF	Penetration Blows / Foot	Recovery %	RQD	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			CLAY, stiff, light tan & light gray											
			481.4											
			CLAY, very stiff, w/calcite lenses, light gray & tan											
5			479.9											
			CLAY, very stiff, slightly sandy, tan											
			476.9											
			SANDSTONE, firm to moderately hard, tan											
10														
15			467.4											
20														
25														
30														
35														
40														
45														
50														

Completion Depth: 17.0 ft.
Date Boring Started: 5/21/84
Date Boring Completed: 5/21/84
Engineer/Geologist: Mason-Johnston
Project No.: 1019-002-002

Remarks:

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF BORING NO. 16

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 3565.1 N -98.8
Surface El.: 487.7' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Hand Penetrometer, TSF	Penetration Blows / Foot	Recovery %	RQD	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			SAND, very dense, tan											
			483.2											
5			SAND, very dense, light gray											
			478.7											
10			SHALE, medium firm, w/sandstone lenses, gray											
			473.7											
15														
20														
25														
30														
35														
40														
45														
50														

Completion Depth: 14.0 ft.
Date Boring Started: 5/22/84
Date Boring Completed: 5/22/84
Engineer/Geologist: Mason-Johnston
Project No.: 1019-002-002

Remarks:

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF BORING NO. 17

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 3950.9 N -94.0
Surface El.: 483.4' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Hand Penetrometer, TSF	Penetration Blows / Foot	Recovery %	RQD	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
			SAND, slightly clayey, w/gravel, tan & light gray — 481.9											
			SAND, fine, reddish tan — 480.4											
5			SHALE, severely weathered, w/sandstone bands, reddish tan & light gray — 476.9											
10			SHALE, weathered, medium firm, light gray & light tan — 469.9											
15			SHALE, firm, brown — 464.9											
20			SANDSTONE, firm to moderately hard, light gray — 447.9											
25														
30														
35														
40														
45														
50														

Completion Depth: 35.5 ft.
Date Boring Started: 5/9/84
Date Boring Completed: 5/9/84
Engineer/Geologist: Mason-Johnston
Project No.: 1019-002-002

Remarks:

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF BORING NO. 18

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 4268.3 N -374.6
Surface El.: 467.0' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Elevation	Hand Penetrometer, TSF	Penetration Blows / Foot	Recovery %	RQD	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
0			SAND, fine, w/gravel, tan	465.5											
			SAND, fine, reddish tan	464.0											
5			CLAY, very stiff, very sandy, reddish tan	461.0											
			CLAY, very stiff, very sandy, tan	459.5											
			SAND, fine, w/some gravel, tan	458.0											
10			CLAY, soft, very sandy, tan	452.0											
15			CLAY, stiff, light gray	442.0											
20															
25			SHALE, firm, gray	435.0											
30			SANDSTONE, firm, tan	432.0											
35															
40															
45															
50															

Completion Depth: 35.0 ft.
Date Boring Started: 5/22/84
Date Boring Completed: 5/22/84
Engineer/Geologist: Mason-Johnston
Project No.: 1019-002-002

Remarks:

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF BORING NO. 19

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 4544.1 N -752.9
Surface El.: 463.6' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Hand Penetrometer, TSF	Penetration Blows / Foot	Recovery %	RQD	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
			CLAY, very stiff, sandy, gray											
			460.6											
			CLAY, stiff, sandy, brown											
			459.1											
5			CLAY, very stiff, sandy, reddish tan											
			- very soft											
			-stiff											
			454.6											
10			CLAY, medium stiff, sandy, tan											
			448.6											
15			SAND, medium dense, tan											
			443.6											
20			GRAVEL											
			441.6											
			SHALE, firm, gray											
			438.6											
25			SANDSTONE, moderately hard, light gray											
			431.1											
30			SHALE, firm, gray											
			427.6											
35			SANDSTONE, moderately hard, light gray											
			424.6											
			SHALE, firm, gray											
40			417.6											
			SANDSTONE, moderately hard, light gray 416.6											
45			SHALE, firm, gray											
			414.6											
			SANDSTONE, moderately hard, light gray											
50														

Completion Depth: 77.3 ft.
Date Boring Started: 5/8/84
Date Boring Completed: 5/8/84
Engineer/Geologist: Mason-Johnston
Project No.: 1019-002-002

Remarks:

Continued Next Page

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

LOG OF BORING NO. 19

Project Description: Arlington Landfill
Tarrant County, Texas

Location: E 4544.1 N -752.9
Surface El.: 463.6' MSL

Depth, feet	Samples	Symbol / USCS	MATERIAL DESCRIPTION	Hand Penetrometer, TSF	Penetration Blows / Foot	Recovery %	RQD	Moisture Content, %	Unit Dry Weight, lb/cu ft.	Liquid Limit	Plastic Limit	Plasticity Index	% Passing No. 200 Sieve	Unc. Compressive Strength, tsf
			409.6											
55			SILTSTONE, shaly, moderately hard, w/trace of lignite, light gray											
			405.6											
60			SANDSTONE, moderately hard, light gray											
65														
70														
75			386.6											
80														
85														
90														
95														
100														

Completion Depth: 77.3 ft.
Date Boring Started: 5/8/84
Date Boring Completed: 5/8/84
Engineer/Geologist: Mason-Johnston
Project No.: 1019-002-002

Remarks:

EMCON Baker-Shiflett, Inc.

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

2008-2009 GOLDER ASSOCIATES BORING LOGS

RECORD OF BOREHOLE EXP-1

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 29-Dec-2008 DRILLING EQUIPMENT: MOBILE B-57
BORING FINISHED: 31-Dec-2008 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,977,351.21
EASTING (ft): 2,390,533.19
ELEVATION (ft): 481.50

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ○ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 / WATER CONTENT PERCENT PL ⊖W LL 10 20 30 40	ADDITIONAL LAB TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		GROUND SURFACE		481.5								
		Very stiff, brown, sandy CLAY, moist			1	SS	2 3 16	100				
		reddish brown at 1'		479.5			N19					
		Very dense, light gray, fine, SAND, some silt, moist		2.0	2	SS	16 42 50/5"	100				
		yellowish brown seam at 2.5'					N>92					
5		mottled, yellowish brown and light gray at 4'			3	SS	17 23 40	100				
		gray at 4.5'		475.5			N63					
		Hard, gray, shaley CLAY		6.0	4	SS	11 21 40	100				
							N61					
					5	SS	22 36 50/3.5"	88				
10				472.0			N>86					
		Moderately hard, gray, SHALE, unweathered, sandy, with occasional fossils		9.5	6	CORE		86				
15												
		seam of possible limestone at 17'			7	CORE		62				
20												
					8	CORE		100				
		seam of possible limestone at 23.75'		457.8 24.0								
25				455.8								
		seam of possible limestone at 25.7'		25.8	9	CORE		38				
30					10	CORE		100				
				447.5								
		Soft, dark brown, SANDSTONE, weakly cemented, silty		34.0								
35		brown at 35'			11	CORE		96				
				443.5								
		Moderately hard, gray, SHALE, sandy, fissile, some blueish gray coloring between 38 and 40'		38.0								
40					12	CORE		94				
45					13	CORE		96				
50				431.9	14			89				
		-- CONTINUED NEXT PAGE --										

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

RECORD OF BOREHOLE EXP-1

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 29-Dec-2008 DRILLING EQUIPMENT: MOBILE B-57
BORING FINISHED: 31-Dec-2008 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,977,351.21
EASTING (ft): 2,390,533.19
ELEVATION (ft): 481.50

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ○ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 WATER CONTENT PERCENT PL ⊖W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
50		--- CONTINUED FROM PREVIOUS PAGE ---										
		Limestone seam at 49.6'		49.6								
				50.0								
		Limestone seam at 51.5'		51.5	14	CORE		88				
				52.2								
		Limestone seam at 53.0'		53.0								
				53.5								
55					15	CORE		78				
60					16	CORE		74				
		with interbedded seams of limestone between 64' and 69'										
65					17	CORE		94				
70					18	CORE		82				
75					19	CORE		96				
80					20	CORE		65				
					21	CORE		86				
85					22	CORE		92				
90				391.5								
		BORING TERMINATED AT 90'		90.0								
95												
100												

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

HOU_SOIL&ROCK 2010 94077GINT MERGED.GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE EXP-2

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 23-Dec-2008 DRILLING EQUIPMENT: MOBILE B-57
BORING FINISHED: 23-Dec-2008 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,976,555.43
EASTING (ft): 2,390,417.93
ELEVATION (ft): 467.50

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (ROD) % ★ 20 40 60 80 WATER CONTENT PERCENT PL W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		GROUND SURFACE		467.5								
		Firm to very stiff, brown, CLAY, with sand, possible occasional iron stains, damp			1	SS	2 2 5 N7	100				CONCRETE
					2	SS	3 5 6 N11	100				GROUT
5					3	SH		85				BENTONITE SEAL
				461.5								SAND
		Compact, brown and reddish brown, fine, SAND, damp		6.0	4	SS	5 6 7 N13	100				
		light brown with light gray at 8'			5	SS	5 6 6 N12	100				
10		Seepage at 9'										SCREEN Initial 01/09/09 24hr 01/09/09
15					6	SS	25 50/3" N>50	50				
		very dense, medium to fine, weakly cemented, light gray at 15.9 moderately cemented at 16.5'			7	CORE		94				After boring 01/17/09
		light gray, weakly cemented at 18'		447.5								
20		Hard, bluish gray, shaley CLAY to clayey shale, slightly to moderately weathered		20.0	8	CORE		96				
				442.5								
25		Hard, gray, SHALE, unweathered, occasional fossils, sandy		25.0	9	CORE		95				
30					10	CORE		89				
35		possible limestone seam at 37'			11	CORE		95				
40		possible limestone seam at 39.75'			12	CORE		86				
45		possible limestone seam at 46.5'			13	CORE		88				
		possible limestone seam at 47.5'										
50				417.5								
		--- CONTINUED NEXT PAGE ---										

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

HCU_SOIL&ROCK_2010_54077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

RECORD OF BOREHOLE EXP-2

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 23-Dec-2008 DRILLING EQUIPMENT: MOBILE B-57
BORING FINISHED: 23-Dec-2008 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,976,555.43
EASTING (ft): 2,390,417.93
ELEVATION (ft): 467.50

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (ROD) % ★ 20 40 60 80 WATER CONTENT PERCENT PL ⊖W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
50		--- CONTINUED FROM PREVIOUS PAGE ---		50.0								
55					14	CORE		100				
60					15	CORE		100				
65					16	CORE		99				
		BORING TERMINATED AT 65'		402.5 / 65.0								
70												
75												
80												
85												
90												
95												
100												

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

FCU_SOIL&ROCK_2010 94377GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE EXP-3

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 07-Jan-2009 DRILLING EQUIPMENT: MOBILE B-57
BORING FINISHED: 08-Jan-2009 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,976,562.95
EASTING (ft): 2,392,079.93
ELEVATION (ft): 458.60

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. (ft) / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ○ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 WATER CONTENT PERCENT PL ⊖W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		GROUND SURFACE		458.6								
		Soft to stiff, brown and reddish brown, sandy CLAY			1	SS	2 2 N4	100				
					2	SS	3 4 5 N9	100				
5					3	SH		75				
				452.6								
		Very loose to loose, coarse to fine, SAND, with coarse to fine gravel Seepage at 6'		6.0	4	SS	3 2 2 N4	33				
				450.6								
		Soft to moderately hard, gray, shaley CLAY, with occasional fossils		8.0	5	SS	8 12 20 N30	100				
10												
				443.6								
15		Moderately hard, light brown, moderately cemented, SANDSTONE, and bluish gray, shale		15.0	6	SS	35 50/4" N>50	100				
					7	CORE		22				
20					8	CORE		86				
25		possible limestone at 27'			9	CORE		88				
				428.6								
30		Moderately hard, bluish gray, SHALE, with occasional fossils		30.0	10	CORE		95				
		gray at 32.5'										
35					11	CORE		100				
40					12	CORE		100				
45					13	CORE		74				
50				408.6								
		-- CONTINUED NEXT PAGE --										

HCU_SOIL&ROCK_2010_54077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SDK

Permit Issued: February 12, 2014

RECORD OF BOREHOLE EXP-3

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 07-Jan-2009 DRILLING EQUIPMENT: MOBILE B-57
BORING FINISHED: 08-Jan-2009 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,976,562.95
EASTING (ft): 2,392,079.93
ELEVATION (ft): 458.60

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL ⊖W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
50		-- CONTINUED FROM PREVIOUS PAGE --		50.0								
55					14	CORE		98				
60					15	CORE		100				
65					16	CORE		100				
70					17	CORE		100				
75					18	CORE		100				
80					19	CORE		100				
85					20	CORE		99				
90		BORING TERMINATED AT 90'		368.6 90.0	21	CORE		100				
95												
100												

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

HOU_SOIL&ROCK_2010_54077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

RECORD OF BOREHOLE EXP-4

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 08-Jan-2009
BORING FINISHED:

DRILLING EQUIPMENT: MOBILE B-57
DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,977,417.43
EASTING (ft): 2,391,627.69
ELEVATION (ft): 477.00

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 / WATER CONTENT PERCENT PL W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		GROUND SURFACE		477.0								
		Loose, reddish brown, medium to fine, clayey SAND, damp		475.0	1	SS	2 2 1 N3	100				
		Loose, brown, fine, SAND Seepage at 2' coarse to medium, with medium to fine gravel at 3.25'		2.0	2	SS	1 2 2 N4	87				
5		very dense, gray, fine, with fine shale partings at 4' compact, light gray at 6'			3	SH		85				
					4	SS	12 14 15 N29	100				
				469.0								
		Soft to moderately hard, gray, shaley CLAY, with light gray sand partings		8.0	5	SS	50/4" N>50	7				
10												
15					6	SS	14 20 32 N52	100				
				460.0								
		Moderately hard, gray, SHALE, sandy		17.0	7	CORE		23				
20					8	CORE		100				
25					9	CORE		100				
				447.0								
30		Moderately hard, gray and dark brown, fine, SANDSTONE, moderately cemented, with occasional highly cemented seams		30.0	10	CORE		54				
35					11	CORE		92				
40					12	CORE		100				
				432.0								
45		Moderately hard, gray, SHALE, unweathered		45.0	13	CORE		96				
50				427.0								
		-- CONTINUED NEXT PAGE --										

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

HOU_SOIL&ROCK_2013 9407GINT_MERGED.GPJ GLDR_HOU.GDT 2/7/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE EXP-4

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 08-Jan-2009 DRILLING EQUIPMENT: MOBILE B-57
BORING FINISHED: DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,977,417.43
EASTING (ft): 2,391,627.69
ELEVATION (ft): 477.00

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ○ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 WATER CONTENT PERCENT PL ⊖W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		— CONTINUED FROM PREVIOUS PAGE —										
50				50.0								
55					14	CORE		98				
60		with occasional seams of possible limestone at 60'			15	CORE		96				
65					16	CORE		96				
70					17	CORE		100				
75					18	CORE		78				
80					19	CORE		90				
85		BORING TERMINATED AT 85'		392.0 85.0	20	CORE		100				
90												
95												
100												

HOU_SOIL&ROCK_2010_94077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

DEPTH SCALE
1 inch to 0.4 feet

Golder Associates

LOGGED: CS
CHECKED: SDK

Permit Issued: February 12, 2014

RECORD OF BOREHOLE EXP-5

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 02-Jan-2009 DRILLING EQUIPMENT: MOBILE B-57
BORING FINISHED: 03-Jan-2009 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,977,893.18
EASTING (ft): 2,392,496.60
ELEVATION (ft): 468.30

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. DEPTH (ft)	SAMPLES NUMBER	TYPE	BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✿ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 WATER CONTENT PERCENT PL ⊖ W ⊖ LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		GROUND SURFACE		468.3								CONCRETE
		Soft, dark brown, CLAY, damp		0.5	1	SS	3 2 7 N9	87				
		Loose, brown to reddish brown, fine, SAND, damp		465.8								GROUT
		Compact, brown with mottled yellowish brown, fine, clayey SAND, damp		2.5 464.8	2	SS	6 6 6 N12	100				
5		Firm, brown with mottled yellowish brown, sandy CLAY, damp		3.5 462.3	3	SH		88				BENTONITE SEAL
		Stiff, brown with mottled yellowish brown and light gray, CLAY, with sand, moist		6.0	4	SS	4 6 8 N14	100				SAND
				458.8	5	SS	2 4 5 N9	80				
10		Loose, light brown, fine, SAND, wet		9.5								
												24hr 01/09/09 Initial 01/09/09
15					6	SS	1 1 2 N3	73				SCREEN
		Seepage at 16.5'										
		coarse to medium, with coarse to fine gravel at 19'										After Backfill 01/11/09
20					7	SS		100				
		Hard, gray, shaley CLAY, occasional seams of weak to moderate cementation		446.3 22.0								
25					8	SS	17 25 36 N61	100				
		Moderately hard, gray with occasional mottled brown, medium to fine, SANDSTONE		441.8 26.5	9	CORE		68				
30					10	CORE		92				
35		with interbedded shale seams at 35'		431.8								
		Moderately hard, bluish gray, SHALE, with sand, with occasional fossils		36.5	11	CORE		88				
40		gray at 40'			12	CORE		80				
45					13	CORE		0				
50				418.3								
		-- CONTINUED NEXT PAGE --										

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SDK

HOU_SOIL&ROCK_2010_94077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE EXP-5

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 02-Jan-2009 DRILLING EQUIPMENT: MOBILE B-57
BORING FINISHED: 03-Jan-2009 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,977,893.18
EASTING (ft): 2,392,496.60
ELEVATION (ft): 468.30

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✿ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 / WATER CONTENT PERCENT PL ⊖ W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
50		--- CONTINUED FROM PREVIOUS PAGE ---		50.0								
55		with interbedded seams of limestone at 55'			14	CORE		80				
					15	CORE		98				
60					16	CORE		100				
65					17	CORE		80				
70					18	CORE		98				
75					19	CORE		99				
80					20	CORE		60				
85					21	CORE		94				
90					22	CORE		100				
95					23	CORE		100				
100		BORING TERMINATED AT 98'		370.3 98.0								

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SJK

GDC_SOILAROCK_2010_S4077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

RECORD OF BOREHOLE EXP-6

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 07-Jan-2009 DRILLING EQUIPMENT: MOBILE B-57
BORING FINISHED: 07-Jan-2009 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,976,838.93
EASTING (ft): 2,393,331.17
ELEVATION (ft): 459.20

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✿ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL ⊖W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		GROUND SURFACE		459.2								
		Debris (existing landfill) Note: looks like sandy clay was used in the cover			1	SS	4 1 2 N3	33				
					2	SH		0				
5					3	SS	4 3 3 N6	47				
					4	SS	9 6 8 N14	0				
					5	SS	4 4 3 N7	27				
10		Seepage at 11'										
				444.2								
15		Stiff, dark brown, sandy CLAY, damp		15.0	6	SS	2 3 7 N10	100				
		seam of coarse to fine sand and gravel at 16.25'		442.2								
		Soft to moderately hard, gray, sandy, shaley CLAY		17.0								
20					7	SS	11 25 32 N57					
				437.2								
		Moderately hard, gray, SANDSTONE, weakly to moderately cemented, with occasional seams of gray sand		22.0	8	CORE		68				
25					9	CORE		26				
30					10	CORE		94				
35					11	CORE		100				
40					12	CORE		98				
				414.2								
45		Moderately hard, bluish gray, SHALE		45.0	13	CORE		100				
				409.2								
50		-- CONTINUED NEXT PAGE --										

HOU_SOIL&ROCK_2010_S4677GINT_MERGED.GPJ_GLDR_HOU.GDT_2/17/12

DEPTH SCALE
1 inch to 5.4 feet

Golder Associates

LOGGED CS
CHECKED SBK

Permit Issued: February 12, 2014

RECORD OF BOREHOLE EXP-6

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 07-Jan-2009 DRILLING EQUIPMENT: MOBILE B-57
BORING FINISHED: 07-Jan-2009 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,978,838.93
EASTING (ft): 2,393,331.17
ELEVATION (ft): 459.20

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 / WATER CONTENT PERCENT PL ⊖W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
50		--- CONTINUED FROM PREVIOUS PAGE ---										
		gray, sandy at 50'		50.0	14	CORE		72				
55					15	CORE		98				
60				399.2								
		BORING TERMINATED AT 60'		60.0								
65												
70												
75												
80												
85												
90												
95												
100												

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

HOU_SOIL&ROCK_2010_94077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE EXP-7

SHEET 1 OF 1
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 24-Dec-2008 DRILLING EQUIPMENT: MOBILE B-57
BORING FINISHED: 28-Dec-2008 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,975,960.63
EASTING (ft): 2,392,257.12
ELEVATION (ft): 466.80

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	TYPE	BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ○ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		GROUND SURFACE		466.8								CONCRETE
		Brown and reddish brown, medium to fine, SAND, with clay, with occasional seams of dark brown clay, damp			1	SS	2 3 5 N8	100				
					2	SS	1 2 8 N10	87				GROUT
				462.8								
5		Very dense, reddish brown, medium to fine, clayey SAND, damp		4.0	3	SH		90				
				460.8								BENTONITE SEAL
		Reddish brown, coarse to fine, SAND, with silt, with occasional fine gravel		6.0	4	SS	2 3 4 N7	100				
					5	SS	2 2 2 N4	100				SAND
10				457.3								
		Soft, dark brown, CLAY		9.5								
				451.8								
15		Coarse to fine, SAND, with coarse to fine, gravel Seepage at 15'		15.0	6	SS	8 6 2 N8	53				SCREEN 24hr 01/08/09 Initial 01/08/09
20				445.8	7	SS	3 8 10 N18	80				After backing 01/17/09
		Moderately hard, gray, sandy, shaley CLAY		21.0								
25					8	SS	20 25 39 N64	100				
				439.8								
		Moderately hard, gray, sandy, SHALE, unweathered		27.0	9	CORE		100				
30					10	CORE		66				
35					11	CORE		98				
40		bluish gray at 40'			12	CORE		64				
45				421.8								
		BORING TERMINATED AT 45'		45.0								
50												

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

=C:_SOIL&ROCK 2010 94077\GINT MERGED.GPJ GLDR_HOUGDT 2/17/12

2010 SHAW ENVIRONMENTAL BORING LOGS

Drilling Log

Monitoring Well **MW-16**

Page: 1 of 1

Project: Arlington Landfill — Owner: City of Arlington Landfill

Location: 800 Mosier Valley Road, Euless, TX — Proj. No.: 139987

Surface Elev.: NA 461.9 — Total Hole Depth: 58.0 ft. — North: — East:

Top of Casing: NA — Water Level Initial: ▽ 25.0 ft. — Static: NA — Diameter: 11 in.

Screen: Dia: 4 in. — Length: 15 ft. — Type/Size: Sch 40 PVC/0.010 in.

Casing: Dia: 4 in. — Length: 40 ft. — Type: Sch 40 PVC

Fill Material: 20/40 Silica Sand — Rig/Core: CME 75

Drill Co.: Sunbelt — Method: HSA

Driller: Robert Flair — Log By: Holly Fleherly — Date: 8/17/10 — Permit #: TX2948

Checked By: David Friels, P.E. — License No.: 51700

COMMENTS
Hand auger to 5 feet to clear potential underground utilities.

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic Descriptions are Based on the USCS.
0							
5							Clay: dark gray to grayish brown, stiff, calcareous inclusions, fine grained sand (15%), trace fine gravel, slightly moist.
10						CL	
15							
20							Sandy Clay: grayish brown, medium stiff, sand (25%), moist.
25 ▽						CL	- Wet at 26 ft.
30							
35							Sandy Clay: light gray to tan, soft, fine grained sand (40%), wet.
40							
45						CL	
50							
55							Shale: dark gray.
60							End of boring at 58 ft.

STATE OF TEXAS — DAVID R. FRIELS — 51700 — REGISTERED PROFESSIONAL ENGINEER — 11/22/10

DRILLING LOG Rev. 4/4/03 126074 INSTALL GP-SA.GPJ SHAW IT.GDT 11/22/10

Drilling Log

Monitoring Well MW-17

Page: 1 of 1

Project Arlington Landfill — Owner City of Arlington Landfill

Location 800 Mosier Valley Road, Euless, TX — Proj. No. 139987

Surface Elev. NA 463.6 — Total Hole Depth 58.0 ft. — North ____ East ____

Top of Casing NA — Water Level Initial NA — Static NA — Diameter 11 in.

Screen: Dia 4 in. — Length 30 ft. — Type/Size Sch 40 PVC/0.010 in.

Casing: Dia 4 in. — Length 22.5 ft. — Type Sch 40 PVC

Fill Material 20/40 Silica Sand — Rig/Core CME 75

Drill Co. Sunbelt — Method HSA

Driller Robert Flair — Log By Holly Flaherty — Date 8/19/10 — Permit # TX2948

Checked By David Friels, P.E. — License No. 51700

COMMENTS
Hand auger to 5 feet to clear potential underground utilities.

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS.
0							
5						CL	Clay: gray to grayish brown, stiff, with calcareous inclusions, fine grained sand (15%), fine gravel, moist.
10							
15							
20							
25						CL	Sandy Clay: grayish brown, medium stiff, fine grained sand (25%), moist.
30							
35							
40							
45						CL	Clay: light gray, stiff, fine grained sand (15%), moist.
50							
55							Shale: dark gray.
60							End of boring at 58 ft.

STATE OF TEXAS — DAVID R. FRIELS — 51700 — REGISTERED PROFESSIONAL ENGINEER — 8/22/10

DRILLING LOG Rev. 4/4/05 125074 INSTALL GP-SA-GP-; SHAW IT.GDT 11/22/10

Permit Issued: February 12, 2014

Drilling Log

Monitoring Well **MW-18**

Page: 1 of 1

Project: Arlington Landfill — Owner: City of Arlington Landfill

Location: 800 Mosier Valley Road, Euless, TX — Proj. No.: 139987

Surface Elev.: NA 460.7 — Total Hole Depth: 30.0 ft. — North: — East:

Top of Casing: NA — Water Level Initial: ▽ 18.0 ft. — Static: NA — Diameter: 11 in.

Screen: Dia: 4 in. — Length: 15 ft. — Type/Size: Sch 40 PVC/0.010 in.

Casing: Dia: 4 in. — Length: 15 ft. — Type: Sch 40 PVC

Fill Material: 20/40 Silica Sand — Rig/Core: CME 75

Drill Co.: Sunbelt — Method: HSA

Driller: Robert Flair — Log By: Holly Flaherty — Date: 8/23/10 — Permit #: TX2948

Checked By: David Friels, P.E. — License No.: 51700

COMMENTS

Hand auger to 5 feet to clear potential underground utilities.

Depth (ft)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic Descriptions are Based on the USCS.
0						CL	Clay: dark brown, firm, with calcareous inclusions, fine grained sand (15%), dry.
5						CL	Clay: brown, calcareous inclusions, fine grained sand (20%), fine gravel, dry.
10						CL	Sandy Clay: light reddish brown to tan, firm, slightly calcareous, fine grained sand (30%), iron stains, dry.
15						SC	Clayey Sand: tan to light reddish brown, loose, iron stains, wet.
▽							- Wet at 18 ft.
20						GP	Sandy Gravel: tan to light reddish brown, fine to coarse gravel, coarse grained sand, loose, wet.
25							
30							Shale: dark gray.
							End of boring at 30 ft.
35							
40							

DRILLING LOG Rev: 4/4/03 135074 INSTALL GP-SA.GPJ SHAW IT.GDT 11/2/10

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11/22/10

56.50

Permit Issued: February 12, 2014

Drilling Log

Monitoring Well **MW-19**

Page: 1 of 1

Project: Arlington Landfill — Owner: City of Arlington Landfill
Location: 800 Mosier Valley Road, Euless, TX — Proj. No.: 139987
Surface Elev.: NA 461.8 — Total Hole Depth: 30.0 ft. — North: — East:
Top of Casing: NA — Water Level Initial: ▽ 16.0 ft. — Static: NA — Diameter: 11 in.
Screen: Dia 4 in. — Length: 15 ft. — Type/Size: Sch 40 PVC/0.010 in.
Casing: Dia 4 in. — Length: 15 ft. — Type: Sch 40 PVC
Fill Material: 20/40 Silica Sand — Rig/Core: CME 75
Drill Co.: Sunbelt — Method: HSA
Driller: Robert Flait — Log By: Holly Flaherty — Date: 8/23/10 — Permit #: TX2948
Checked By: David Friels, P.E. — License No.: 51700

COMMENTS
Hand auger to 6 feet to clear potential underground utilities.

Depth (ft.)	Well Completion	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic Descriptions are Based on the USCS.
0							
						CL	Clay: brown, firm, with calcareous inclusions, fine grained sand (15%), dry.
5							
						CL	Clay: brown, calcareous inclusions, fine grained sand (20%), gravel, dry.
10							
						CL	Sandy Clay: light reddish brown to tan, firm, slightly calcareous, fine grained sand (30%), moist.
15	▽						
						CL	Sandy Clay: tan to light gray, fine grained sand (40%), wet. -Wet at 16 ft.
20							
25							
27							Shale: dark gray.
30							End of boring at 30 ft.
35							
40							

STATE OF TEXAS — DAVID R. FRIELS — 51700 — REGISTERED PROFESSIONAL ENGINEER — 11/22/10

DRILLING LOG Rev. 4/4/03 136274 INSTALL GP-SA.GPJ SHAWIT.GDT 11/2/10

Permit Issued: February 12, 2014

Drilling Log

Monitoring Well **MW-20**

Project: Arlington Landfill — Owner: City of Arlington Landfill
Location: 800 Mosier Valley Road, Euless, TX — Proj. No.: 139987
Surface Elev.: NA 468.1 — Total Hole Depth: 30.0 ft. — North: — East:
Top of Casing: NA — Water Level Initial: ▽ 19.0 ft. — Static: NA — Diameter: 11 in.
Screen: Dia 4 in. — Length: 15 ft. — Type/Size: Sch 40 PVC/0.010 in.
Casing: Dia 4 in. — Length: 15 ft. — Type: Sch 40 PVC
Fill Material: 20/40 Silica Sand — Rig/Core: CME 75
Drill Co.: Sunbelt — Method: HSA
Driller: Robert Flair — Log By: Holly Flaherty — Date: 8/24/10 — Permit #: TX2948
Checked By: David Friels, P.E. — License No.: 51700

COMMENTS
Hand auger to 5 feet to clear potential underground utilities.

Depth (ft)	Well Completion	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic Descriptions are Based on the USCS.
0							
						CL	Clay: brown, firm, calcareous inclusions, fine grained sand (15%), dry.
5						CL	Sandy Clay: brown, calcareous inclusions, fine grained sand (25%), gravel, dry.
10							
						CL	Sandy Clay: light reddish brown to tan, firm, slightly calcareous, fine grained sand (30%), moist.
15							
20	▽						- Wet at 19 ft.
						CL	Sandy Clay: tan, fine grained sand (40%), wet.
25							
30							Shale: dark gray.
							End of boring at 30 ft.
35							
40							

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11/22/10

F-5650

DRILLING LOG Rev. 4/4/03 125075 INSTALL GP-SA.GPJ SHAW.IT.GDT 11/2/10

Permit Issued: February 12, 2014

Drilling Log

Monitoring Well MW-21

Page: 1 of 1

Project: Arlington Landfill — Owner: City of Arlington Landfill

Location: 800 Mosier Valley Road, Euless, TX — Proj. No.: 139987

Surface Elev.: NA 416.64 — Total Hole Depth: 56.5 ft. — North: — East:

Top of Casing: NA — Water Level Initial: NA — Static: NA — Diameter: 11 in.

Screen: Dia: 4 in. — Length: 15 ft. — Type/Size: Sch 40 PVC/0.010 in.

Casing: Dia: 4 in. — Length: 40 ft. — Type: Sch 40 PVC

Fill Material: 20/40 Silica Sand — Rig/Core: CME 75

Drill Co.: Sunbelt — Method: HSA

Driller: Robert Flair — Log By: Holly Flaherty — Date: 8/24/10 — Permit #: TX2948

Checked By: David Friels, P.E. — License No.: 51700

COMMENTS
Hand auger to 5 feet to clear potential underground utilities.

Depth (ft.)	Well Completion	PID (ppm)	Sample ID % Recovery	Blow Count Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Geologic Descriptions are Based on the USCS.
0							
5						CL	Clay: brown, firm, calcareous inclusions, fine grained sand (15%), dry.
10							
15						CL	Sandy Clay: brown, firm, calcareous inclusions, fine grained sand (30%), dry.
20							
25						CL	Clay: grayish brown, subangular gravel (10%), iron staining, dry.
30							
35						CL	Sandy Clay: light gray, fine grained sand (40%), wet. - Wet at 34 ft.
40							
45							
50							
55							Shale: dark gray, wet.
60							End of boring at 56.5 ft.

STATE OF TEXAS — DAVID R. FRIELS — 51700 — REGISTERED PROFESSIONAL ENGINEER — 11/22/10

DRILLING_LOG Rev. 44/03 126074 INSTALL GP-5A.GPJ SHAW.IT.GDT 11/22/10

Permit Issued: February 12, 2014

Drilling Log

Monitoring Well **MW-22**

Project: Arlington Landfill — Owner: City of Arlington Landfill
Location: 800 Mosier Valley Road, Euless, TX — Proj. No.: 130987
Surface Elev.: NA 4103-8 — Total Hole Depth: 30.0 ft. — North: — East:
Top of Casing: NA — Water Level Initial: ▽ 23.0 ft. — Static: NA — Diameter: 11 in.
Screen: Dia: 4 in. — Length: 15 ft. — Type/Size: Sch 40 PVC/0.010 in.
Casing: Dia: 4 in. — Length: 15 ft. — Type: Sch 40 PVC
Fill Material: 20/40 Silica Sand — Rig/Core: CME 75
Drill Co.: Sunbelt — Method: HSA
Driller: Robert Flair — Log By: Holly Flaherty — Date: 8/23/10 — Permit #: TX2948
Checked By: David Friels, P.E. — License No.: 51700

COMMENTS
Hand auger to 5 feet to clear potential underground utilities.

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic Descriptions are Based on the USCS.
0						CL	Clay: dark gray to grayish brown, stiff, calcareous inclusions, fine grained sand (15%), dry.
							Fill material with some waste.
5						CL	Sandy Clay: brown, firm, fine grained sand (30%), dry.
10						CL	Clay: light reddish brown to tan, firm, iron staining, calcareous inclusions, fine grained sand, moist.
15							
20							
▽ 23						SC	Clayey Sand: tan to light brown, loose, iron staining, wet.
25							Shale: dark gray.
30							End of boring at 30 ft.
35							
40							

DRILLING LOG Rev: 4/4/03 126874 INSTALL GP-5A.GPJ SHAW.TT.GDT 11/2/10

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11/22/10

F-5650

Permit Issued: February 12, 2014

Drilling Log

Monitoring Well **MW-23**

Page: 1 of 1

Project: Arlington Landfill — Owner: City of Arlington Landfill

Location: 800 Mosier Valley Road, Euless, TX — Proj. No.: 139987

Surface Elev.: NA 464.2 — Total Hole Depth: 59.0 ft. — North: — East:

Top of Casing: NA — Water Level Initial: ▽ 25.0 ft. — Static: NA — Diameter: 11 in.

Screen: Dia: 4 in. — Length: 15 ft. — Type/Size: Sch 40 PVC/0.010 in.

Casing: Dia: 4 in. — Length: 43 ft. — Type: Sch 40 PVC

Fill Material: 20/40 Silica Sand — Rig/Core: CME 75

Drill Co.: Sunbelt — Method: HSA

Driller: Robert Flair — Log By: Holly Flaherty — Date: 8/18/10 — Permit #: TX2948

Checked By: David Friels, P.E. — License No.: 51700

COMMENTS: Hand auger to 5 feet to clear potential underground utilities.

Depth (ft)	Well Completion	PID (ppm)	Sample ID / % Recovery	Blow Count / Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) — Geologic Descriptions are Based on the USCS.
0						CL	Fill material
5						CL	Clay: dark gray to grayish brown, stiff, calcareous, fine grained sand (15%), fine gravel, slightly moist. Iron staining at 12 ft.
10							
15							
20						CL	Sandy Clay: grayish brown, medium stiff, fine grained sand (25%), moist.
25 ▽							Sandy Clay: tan, soft, fine grained sand (40%), wet. Wet at 25 ft.
30							
35							
40						CL	
45							
50							
55							Shale: dark gray.
60							End of boring at 59 ft.

STATE OF TEXAS — DAVID R. FRIELS — 51700 — REGISTERED PROFESSIONAL ENGINEER — 11/22/10

DRILLING LOG Rev. 44403 125274 INSTALL GP-5A.GPJ SHAW IT.GDT 11/22/10

Permit Issued: February 12, 2014

2010 GOLDER ASSOCIATES BORING LOGS

Unified Soil Classification System

Criteria for Assigning Group Symbols and Names			Soil Classification Group	Generalized Group Descriptions
COARSE-GRAINED SOILS More than 50% retained on No. 200 sieve	GRAVELS More than 50% of coarse fraction retained on No. 4 Sieve	CLEAN GRAVELS Less than 5% fines	GW	Well-graded Gravels
			GP	Poorly-graded gravels
		GRAVELS WITH FINES More than 12% fines	GM	Gravel and Silt Mixtures
			GC	Gravel and Clay Mixtures
	SANDS 50% or more of coarse fraction passes No. 4 Sieve	CLEAN SANDS Less than 5% fines	SW	Well-graded Sands
			SP	Poorly-graded Sands
		SANDS WITH FINES More than 12% fines	SM	Sand and Silt Mixtures
			SC	Sand and Clay Mixtures
FINE-GRAINED SOILS 50% or more passes the No. 200 sieve	SILTS AND CLAYS Liquid limit less than 50	INORGANIC	CL	Low-plasticity Clays
			ML	Non-plastic and Low-Plasticity Silts
		ORGANIC	OL	Non-plastic and Low-Plasticity Organic Clays Non-plastic and Low-Plasticity Organic Silts
	SILTS AND CLAYS Liquid limit greater than 50	INORGANIC	CH	High-plasticity Clays
			MH	High-plasticity Silts
		ORGANIC	OH	High-plasticity Organic Clays High-plasticity Organic Silts
HIGHLY ORGANIC SOILS	Primarily organic matter, dark in color, and organic odor		PT	Peat

Component Definitions by Gradation

Component	Size Range
Boulders	Above 12 in.
Cobbles	3 in. to 12 in.
Gravel	3 in. to No. 4 (4.76mm)
Coarse gravel	3 in. to 3/4 in.
Fine gravel	3/4 in. to No. 4 (4.76mm)
Sand	No. 4 (4.76mm) to No. 200 (0.074mm)
Coarse sand	No. 4 (4.76mm) to No. 10 (2.0mm)
Medium sand	No. 10 (2.0mm) to No. 40 (0.42mm)
Fine sand	No. 40 (0.42mm) to No. 200 (0.074mm)
Silt and Clay	Smaller than No. 200 (0.074mm)

Samples

SS	SPT Sampler (2.0" OD)
HO	Heavy Duty Split Spoon
ST	Shelby Tube
P	Pitcher Sampler
B	Bulk
C	Cored

Unless otherwise noted, drive samples advanced with 140 lb. hammer with 30 in. drop.

Relative Density or Consistency Utilizing Standard Penetration Test Values

Cohesionless Soils (a)			Cohesive Soils (b)			
Density (c)	N, blows/ft. (c)	Relative Density (%)	Consistency	N, blows/ft. (c)	Undrained Shear Strength (d) (psf)	Pocket Pen (tsf)
Very loose	0 to 4	0 - 15	Very soft	0 to 2	<250	0-0.25
Loose	4 to 10	15 - 35	Soft	2 to 4	250-500	0.25-0.5
Compact	10 to 30	35 - 65	Firm	4 to 8	500-1000	0.5-1
Dense	30 to 50	65 - 85	Stiff	8 to 15	1000-2000	1-2
Very Dense	over 50	>85	Very Stiff	15 to 30	2000-4000	2-4
			Hard	over 30	>4000	>4

(a) Soils consisting of gravel, sand, and silt, either separately or in combination, possessing no characteristics of plasticity, and exhibiting drained behavior.

(b) Soils possessing the characteristics of plasticity, and exhibiting undrained behavior.

(c) Refer to text of ASTM D 1586-84 for a definition of N_2 in normally consolidated cohesionless soils. Relative Density terms are based on N values corrected for overburden pressures.

(d) Undrained shear strength = 1/2 unconfined compression strength.

Laboratory Tests

Test	Designation
Moisture	(1)
Density	D
Grain Size	G
Hydrometer	H
Atterberg Limits	(1)
Consolidation	C
Unconfined	U
UU Triax	UU
CU Triax	CU
CD Triax	CD
Permeability	P

(1) Moisture and Atterberg Limits plotted on log.

Descriptive Terminology Denoting Component Proportions

Descriptive Terms	Range of Proportion
Trace	0-5%
Little	5-12%
Some or Adjective (a)	12-30%
And	30-50%

(a) Use Gravelly, Sandy or Silty as appropriate.

Silt and Clay Descriptions

Description	Typical USCS Designation
Silt	ML (non-plastic)
Clayey Silt	CL-ML (low plasticity)
Silty Clay	CL
Clay	CH
Elastic Silt	MH
Organic Soils	OL, OH, PT

REPUBLIC WASTE SERVICES OF TEXAS, LTD.

Golder Associates
213 N. Oak St.
Roanoke, Texas 76262
Tel: (817) 490-8720
Texas Registration Number F-2578

TITLE: SOIL CLASSIFICATION KEY

PROJECT: CITY OF ARLINGTON LANDFILL
ARLINGTON, TEXAS

DRAWN	RF	DATE	OCTOBER 2010
CHECKED	ML	SCALE	AS SHOWN
REVIEWED	-	JOB NO.	073-94077-11
FILE NO.		DWG NO.	07394077A004

FIGURE NUMBER

Drawing File: J:\073-94077 - Arlington_A - City Of Arlington Landfill Expansion\073940774A004.dwg | Layout: — | Modified: 11/19/2013 11:58:23 AM | RFuessler | Plotted: Friday, November 19, 2010 12:31:04 PM | RFuessler

Permit Issued: February 12, 2014

LEGEND


Sandy Silt


Sandy Fat Clay


Elastic Silt


Sandy Elastic Silt


Clay


Limestone


Siltstone


Sandstone


Shale


Clayey Sand


USCS High Plasticity Clay


USCS Low Plasticity Clay


USCS Low Plasticity Sandy Clay


Concrete


Fill (made ground)


USCS Poorly-graded Gravel


USCS Well-graded Gravel


USCS Well-graded Gravel with Clay


Limestone


USCS Elastic Silt


Sandstone


Sandstone and Shale


USCS Clayey Sand


Shale

Golder Associates

SOIL LEGEND CHART

LEGEND KS #4475GINT.GPJ GLDR_LDN.GDT 2/10/11

RECORD OF BOREHOLE B-101

SHEET 1 OF 3
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 16-Jun-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 22-Jun-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,977,413.00
EASTING (ft): 2,389,488.00
ELEVATION (ft): 496.98

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● PP. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 WATER CONTENT PERCENT PL ⊖W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		GROUND SURFACE		496.0								
		Stiff to very hard, brown to reddish brown, sandy lean CLAY (CL)			1	SS	13 9 8 N15	100				
				494.0								
		Compact, brown, poorly-graded SAND with clay (SP-SC)		2.0	2	SS	5 14 15 N29	100				
				492.0								
5		Hard, sandy lean CLAY (CL), moist		4.0	3	SS	5 9 24 N36	73				
					4	SS	14 29 42 N71	87				
					5	SH		35				
10				486.0								
		Hard, light gray, fat CLAY with sand (CH), shaley		10.0								
					6	SS	32 50/4" N>50	57				
15												
					7	SS	35 50/5" N>50	57				
20												
				473.0								
		Gray, weak, weathered, SANDSTONE and SHALE, interbedded and laminated		23.0	8	SS	50/6" N>50	30	✳			
25					9	CORE		52				
30					10	CORE		0				
35					11	CORE		6				
40					11	CORE		0				
45					12	SS	50/4" N>50	20				
					13	CORE		0				
50				446.0								
		--- CONTINUED NEXT PAGE ---										

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

HOU_SOIL&ROCK_2010_94077GINT_MERGED.GPJ GLOR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-101

SHEET 2 OF 3
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 18-Jun-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 22-Jun-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,977,413.00
EASTING (ft): 2,389,488.00
ELEVATION (ft): 495.98

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✿ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 WATER CONTENT PERCENT PL ⊖W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
50		--- CONTINUED FROM PREVIOUS PAGE ---		50.0								
					14	CORE		0				
				441.0								
55		Dark gray, weak, SHALE, slightly weathered		55.0	15	SS	50/4" N>50	17				
					16	CORE		10				
60					17	CORE		26				
65		medium strong, unweathered at 65.0'			18	CORE		86				
		limestone seam at 67.75' and 68.5'										
70					19	CORE		100				
75		interbedded with seams of limestone between 75.0' and 80.0'			20	CORE		90				
80					21	CORE		95				
85					22	CORE		100				
90					23	CORE		86				
95		weak at 96.0'			24	CORE		10	✳			
100				396.0								
		--- CONTINUED NEXT PAGE ---										

HOU_SOIL&ROCK_2010_64077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

RECORD OF BOREHOLE B-101

SHEET 3 OF 3
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 16-Jun-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 22-Jun-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,977,413.00
EASTING (ft): 2,389,488.00
ELEVATION (ft): 495.98

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL ⊖ W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
100		--- CONTINUED FROM PREVIOUS PAGE ---		100.0								
					25	CORE		22				
105												
					26	CORE		68				
110				386.0								
		BORING TERMINATED AT 110.0'		110.0								
115												
120												
125												
130												
135												
140												
145												
150												

HOU_SOILSROCK_2010 9-4077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

DEPTH SCALE
1 inch to 8 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-102

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 26-Apr-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 27-Apr-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,976,827.00
EASTING (ft): 2,389,537.00
ELEVATION (ft): 472.89

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ○ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		Dry with moderate vegetation		472.9								
		Loose, reddish brown, medium to fine, well-graded SAND (SW), slightly moist		0.5	1	SS	3 3 5 N8	90				
		Very stiff, reddish brown, sandy lean CLAY (CL), slightly moist			2	SH		95				
5		with occasional iron stone at 4.0'			3	SH		65				
				466.9					3521			
		Very stiff, brown, lean CLAY with sand (CL), slightly moist		6.0	4	SH		88				
				464.9								
		Very stiff to hard, gray with occasional reddish brown and light brown, elastic SILT (MH), slightly moist		8.0	5	SH		89				
10				462.9								
		Very stiff, reddish brown with mottled gray and yellowish brown, fat CLAY (CH), slightly moist		10.0								
				458.9								
		Very dense, brown with occasional gray, fine, poorly-graded SAND (SP), wet		14.0	6	SS	25 27 41 N68	100				▼ 14.0'
15												
				452.9								
20		Very dense, light brown, fine, clayey SAND (SC), wet		20.0	7	SS	32 50/4" N>50	100				
					8	SS	26 50/4.5" N>50	100				
25												
				442.4								
30		Hard, dark gray, fat CLAY (CH), shaley		30.5	9	SS	50/4" N>50	37				
					10	CORE		28				
				437.9								
35		Medium strong, unweathered, gray and dark gray, SHALE		35.0								
		with occasional seams of limestone between 35.0' and 40.0'			11	CORE		90				
40					12	CORE		98				
45					13	CORE		100				
50				422.9								
		--- CONTINUED NEXT PAGE ---										

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

HOU_SOIL&ROCK_2010 54077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-102

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 26-Apr-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 27-Apr-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,976,827.00
EASTING (ft): 2,389,537.00
ELEVATION (ft): 472.89

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ◇ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		— CONTINUED FROM PREVIOUS PAGE —		50.0								
50		with occasional seams of limestone between 50.0' and 55.0'			14	CORE		98				
55					15	CORE		63				
60					16	CORE		90				
				408.9								
64		BORING TERMINATED AT 64.0'		64.0								
65												
70												
75												
80												
85												
90												
95												
100												

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SJK

HOU_SOIL&ROCK_2010 54077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-103

SHEET 1 OF 3
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 18-Jun-2010 DRILLING EQUIPMENT: CME-55
BORING FINISHED: 22-Jun-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,977,102.00
EASTING (ft): 2,390,224.00
ELEVATION (ft): 485.67

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL ⊙W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		GROUND SURFACE		485.7								
		Compact, reddish and light brown, fine, poorly-graded SAND with clay (SP-SC), dry		483.7	1	SS	5 6 6 N12	100				
		Compact, reddish and light brown, fine, poorly-graded SAND (SP), slightly moist		2.0	2	SS	5 8 8 N14	100				
5					3	SS	4 8 8 N14	100				
				478.7	4	SS	7 7 10 N17	100				
		Very stiff to hard, gray with brown, fat CLAY with sand (CH), shaley		7.0	5	SH		25				
10		gray at 10.0'										
				470.7	6	SH		25				
15		Dark gray, weak to medium strong, SHALE, slightly weathered interbedded with weathered sandstone between 15.0' and 40.0'		15.0	7	CORE		46				
20					8	CORE		14				
25					9	CORE		22				
30					10	CORE		28				
35					11	CORE		26				
40					12	CORE		65				
45		strong at 45.0'			13	CORE		90	✳			
50				435.7								
		--- CONTINUED NEXT PAGE ---										

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

HOU_SOIL&ROCK_2010_94077GINT_MERGED.GPJ_GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-103

SHEET 2 OF 3
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 18-Jun-2010 DRILLING EQUIPMENT: CME-55
BORING FINISHED: 22-Jun-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,977,102.00
EASTING (ft): 2,390,224.00
ELEVATION (ft): 485.67

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 WATER CONTENT PERCENT PL ⊖W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
50		-- CONTINUED FROM PREVIOUS PAGE --		50.0								
					14	CORE		98				
55		limestone seam at 57.5'			15	CORE		83				
60					16	CORE		97				
65					17	CORE		97	✳			
70		interbedded with seams of limestone between 70.0' and 75.0'			18	CORE		98				
75		high angle fracture at 77.3'			19	CORE		93				
80					20	CORE		82				
85		high angle fracture at 89.5'			21	CORE		100				
90					22	CORE		100				
95					23	CORE		92				
100		-- CONTINUED NEXT PAGE --		385.7								

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-103

SHEET 3 OF 3
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 18-Jun-2010 DRILLING EQUIPMENT: CME-55
BORING FINISHED: 22-Jun-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,977,102.00
EASTING (ft): 2,390,224.00
ELEVATION (ft): 485.67

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ◇ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 / WATER CONTENT PERCENT PL ⊖W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
100		--- CONTINUED FROM PREVIOUS PAGE ---										
				100.0	24	CORE		100				
				383.7								
		BORING TERMINATED AT 102.0'		102.0								
105												
110												
115												
120												
125												
130												
135												
140												
145												
150												

HOU_SOIL&ROCK_2010 94077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-104

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 16-Jun-2010 DRILLING EQUIPMENT: CME-55
BORING FINISHED: 18-Jun-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,976,080.00
EASTING (ft): 2,390,374.00
ELEVATION (ft): 466.51

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL ⊖W LL 10 20 30 40	ADDITIONAL LAB TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS PZ-104
0		GROUND SURFACE		466.5								
		Firm to very stiff, brown, fat CLAY (CH)			1	SS	4 3 4 N7					concrete seal
					2	SH		70				
5					3	SH		65				
		hard at 6.0'			4	SH		75				
					5	SS	8 15 16 N31	93				
10												
					6	SS	11 15 18 N33	80				
15												bentonite/cement casing seal
		very stiff at 18.5'			7	SS	6 9 11 N17	100				
20												
				443.5								
		Soft to firm, brown, lean CLAY (CL)		23.0	8	SH		88				
25												25.0'
		firm to stiff at 28.5'			9	SS	3 4 4 N8	100				
30												bentonite seal
				433.5								
		Soft to firm, brown, sandy lean CLAY (CL), wet		33.0	10	SS	1 2 2 N4	60				20/40 graded sand
35												
					11	SS	1 1 1 N2	53				sch 40 PVC screen
40												
				422.5								
		Loose, brown, clayey SAND (SC), wet		44.0	12	SS	2 3 6 N9	0				
45												
		very dense at 48.5'			13	SS	28 48 50/4"	93				
50				416.5								
		--- CONTINUED NEXT PAGE ---										

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED CS
CHECKED: SBK

HOU_SOIL&ROCK_2010 S4677GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-104

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 16-Jun-2010 DRILLING EQUIPMENT: CME-55
BORING FINISHED: 18-Jun-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,976,080.00
EASTING (ft): 2,390,374.00
ELEVATION (ft): 466.51

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ◇ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 / WATER CONTENT PERCENT PL W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		--- CONTINUED FROM PREVIOUS PAGE ---										
50		Hard, dark gray, fat CLAY (CH), shaley		50.0			N>50					
		occasional seams of limestone between 50.0' and 55.0'			14	CORE		35				
				411.5								
55		Medium strong, dark gray, SHALE, unweathered		55.0								
					15	CORE		84				
60		strong at 60.0'										
					16	CORE		67				
65												
					17	CORE		98				
70												
					18	CORE		97				
75		high angle fractures at 76.0' and 77.5'										
					19	CORE		100				
80				385.5	20	CORE		100				
		BORING TERMINATED AT 81.0'		81.0								
		Boring B-104 was converted into piezometer PZ-104.										PZ-104
85												
90												
95												
100												

HOU_SOIL&ROCK_2010 94077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SDK

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-105

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 30-Apr-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 04-May-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,977,406.00
EASTING (ft): 2,390,956.00
ELEVATION (ft): 479.94

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ❖ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL ⊖ W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		Wet with vegetation		479.9								
		Hard, brown and yellowish brown, elastic SILT (MH), trace sand, moist			1	SH		73				
					2	SS	21 50/2.25" N>50	53				
				475.9								
		Hard, dark brown, fat CLAY (CH), shaly, slightly moist		4.0	3	SS	16 19 25 N44	100				
5					4	SS	17 25 45 N70	100				
					5	SS	50/2" N>50	0				
10					6	CORE		100				
15					7	CORE		98				
20				457.4	8	CORE		100				
		Medium strong, gray, fine grained, SANDSTONE and SHALE, interbedded and laminated		22.5								
25					9	CORE		16				
30		highly weathered at 30.0'										
				447.4	10	CORE		80				
		Medium strong, bluish gray, weathered, SHALE		32.5								
35				442.9								
		Medium strong, bluish gray, unweathered, SHALE		37.0	11	CORE		100				
40		dark gray at 42.0'			12	CORE		99				
45					13	CORE		91				
50				429.9								
		-- CONTINUED NEXT PAGE --										

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

HOU_SOIL&ROCK_2010_S4077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

RECORD OF BOREHOLE B-105

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 30-Apr-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 04-May-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,977,406.00
EASTING (ft): 2,390,956.00
ELEVATION (ft): 479.94

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ◆ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		-- CONTINUED FROM PREVIOUS PAGE --		50.0								
50					14	CORE		88				
		limestone seam at 54.0'										
55					15	CORE		100				
60					16	CORE		98				
65		limestone seam at 66.0'			17	CORE		100				
70					18	CORE		95				
75					19	CORE		80				
80		soft zone between 80.0' and 85.0'			20	CORE		54				
85					21	CORE		62				
90					22	CORE		84				
				385.0								
95		BORING TERMINATED AT 94.0'		94.0								
100												

DEPTH SCALE
1 inch to 8.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

FCU_SOIL&ROCK_2010_94077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

RECORD OF BOREHOLE B-106

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 29-Apr-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 30-Apr-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,977,075.00
EASTING (ft): 2,390,898.00
ELEVATION (ft): 467.74

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	TYPE	BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 WATER CONTENT PERCENT PL ⊙W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		Dry with vegetation		467.7								
		Stiff, brown, sandy lean CLAY (CL), moist			1	SS	4 6 8 N12	67				
		with occasional dark brown, light brown, and reddish brown at 2.0'			2	SH		65				
				463.7								
5		Stiff, light brown and reddish brown, sandy elastic SILT (MH), moist		4.0	3	SH		75				
					4	SH		100				
				460.7								
		Hard, dark gray, elastic SILT (MH), shaly, with occasional light brown sand partings, slightly moist		7.0	5	SS	22 14 18 N32	40				
10					6	SS	27 40 50/4.25" N>50	100				
				452.7								
15		Strong, gray, SANDSTONE, unweathered		15.0	7	SS	50/2.5" N>50	0				
				451.2								
		Medium strong, gray, highly weathered, SILTSTONE, interbedded with shale, with shell fragments and iron concretions		16.5	8	CORE		30				
20					9	CORE		100				
				442.7								
25		Medium strong, gray, sandy, SHALE, unweathered		25.0	10	CORE		100				
30					11	CORE		100				
35					12	CORE		89				
40		seams of limestone between 42.5' and 45.0'			13	CORE		100				
45		occasional seams of limestone between 45.0' and 50.0'			14	CORE		66				
50				417.7								
		--- CONTINUED NEXT PAGE ---										

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

HOU_SOIL&ROCK_2010_54077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-106

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 29-Apr-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 30-Apr-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,977,075.00
EASTING (ft): 2,390,898.00
ELEVATION (ft): 467.74

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✿ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (ROD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL — W — LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
50		-- CONTINUED FROM PREVIOUS PAGE --		50.0								
					15	CORE		100				
55					16	CORE		100				
				410.7								
		BORING TERMINATED AT 57.0'		57.0								
60												
65												
70												
75												
80												
85												
90												
95												
100												

HOU_SOIL&ROCK_2010 94077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED CS
CHECKED SBK

RECORD OF BOREHOLE B-107

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 18-May-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 25-May-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,977,261.00
EASTING (ft): 2,391,447.00
ELEVATION (ft): 472.95

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	TYPE	BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL ⊖ W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		Flat, dry, with vegetation		473.0								
		Compact, reddish brown and light brown, poorly-graded SAND with CLAY (SP-SC), moist		471.0	1	SS	7 11 18 N29	83				
		Hard, gray, lean CLAY (CL), shaly, with light brown sand partings, moist		2.0	2	SS	50/4.75" N>50	20				
5					3	SS	33 48 50/3.25" N>50	87				
					4	SS	28 40 50 N90	100				
					5	SS	31 41 50/5" N>50	93				
10												
				458.0								
15		Hard, dark gray, sandy fat CLAY (CH), shaley		15.0 456.0	6	SS	33 38 50/4.5" N>50	90				
		Strong, dark gray, unweathered, SHALE		17.0	7	CORE		60				
20												
				448.0					✳			
25		Medium strong, dark gray, highly weathered, SILTSTONE		25.0								
		gray, unweathered at 30.0'			8	CORE		54				
30												
				438.0								
35		Weak, gray, unweathered, SHALE		35.0	9	CORE		48				
					10	CORE		45				
40												
		medium strong at 45.0'			11	CORE		90				
45												
				423.0								
50		-- CONTINUED NEXT PAGE --										

DEPTH SCALE
1 inch to 8.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

HOU_SOIL&ROCK_2010_54077GINT_MERGED.GPJ GLOR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-107

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 18-May-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 25-May-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,977,261.00
EASTING (ft): 2,391,447.00
ELEVATION (ft): 472.95

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL ⊖W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		--- CONTINUED FROM PREVIOUS PAGE ---										
50		Medium strong, gray, unweathered, SHALE		50.0								
55					11	CORE		90				
60					12	CORE		97				
65				408.0					✳			
		Strong, light gray, unweathered, LIMESTONE, with occasional seams of shale		65.0								
70					13	CORE		94				
				399.0								
75		Medium strong, dark gray, SHALE, unweathered		74.0	14	CORE		82				
80					15	CORE		97				
85				387.0								
		BORING TERMINATED AT 86.0'		86.0								
90												
95												
100												

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

HOU_SOIL&ROCK_2010 94077GINT_MERGED.GPJ GLOR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-108

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 02-Jun-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 07-Jun-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,976,511.00
EASTING (ft): 2,393,602.00
ELEVATION (ft): 468.12

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 WATER CONTENT PERCENT PL ⊖W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		GROUND SURFACE		468.1								
		Stiff to very stiff, brown, sandy lean CLAY (CL), moist			1	SS	7 9 9 N18	67				
		with layers of degraded trash at 2.0'			2	SS	7 6 7 N13	10				
5		soft at 4.0'			3	SS	3 1 1 N2	40				
					4	SS	1 1 1 N2	37				
					5	SS	1 1 1 N2	73				
10												
15		very stiff at 15.0'			6	SS	7 9 7 N16	90				
				446.1								
20		Hard, dark gray, fat CLAY (CH), shaly, moist		20.0	7	SS	30 50/5" N>50	67				
25					8	SS	21 50/5" N>50	53				
30					9	SS	14 16 20 N36	57				
35		Weak, brown, SANDSTONE, weathered		431.1 35.0	10	SS	50/4" N>50	0				
					11	CORE		15				
40				423.6	12	CORE		30				
		Hard, dark gray, fat CLAY (CH), shaly		42.5								
45					13	CORE		30				
50				418.1								
		--- CONTINUED NEXT PAGE ---										

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

HOU_SOIL&ROCK 2010 54077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-108

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 02-Jun-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 07-Jun-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,975,511.00
EASTING (ft): 2,393,802.00
ELEVATION (ft): 466.12

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV (ft) / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf)	ROCK QUALITY DESIGNATION (RQD) %	WATER CONTENT PERCENT	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		--- CONTINUED FROM PREVIOUS PAGE ---							CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ◇ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	★ 20 40 60 80	PL ⊢ ⊖ W ⊣ LL 10 20 30 40		
50		Strong, gray, shale, unweathered		50.0	14	CORE		21					
55					15	CORE		11					
60					16	CORE		55					
65					17	CORE		74					
70		limestone seam at 72.5'			18	CORE		89					
75		weathered zone of clayey shale at 74.5' limestone seam at 75.25'											
		limestone seam at 77.0'			19	CORE		82					
80				385.1	20	CORE		100					
		BORING TERMINATED AT 81.0'		81.0									
85													
90													
95													
100													

HOU_SOIL&ROCK_2010 $407?GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-109

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 25-May-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 27-May-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,975,761.00
EASTING (ft): 2,391,370.00
ELEVATION (ft): 464.25

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ◇ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 WATER CONTENT PERCENT PL W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		GROUND SURFACE		464.3								
		Very stiff, brown, fat CLAY with sand (CH), slightly moist sea shell at 0.5' iron stone at 1.5'			1	SS	7 8 10 N18	73				
					2	SH		50				
5					3	SH		45				
					4	SH		60				
					5	SH		80				
10				454.3								▼ 11.0'
		Hard, reddish brown, sandy fat CLAY (CH), shaley		10.0								
					6	SS	50/4" N>50	17				
15					7	CORE		4				
				444.3								
20		Reddish brown, SILTSTONE, highly weathered		20.0								
					8	CORE		17				
25												
					9	CORE		67				
				434.3								
30		Medium strong, blue gray, SHALE, unweathered, with seams of cemented sand		30.0								
					10	CORE		87				
35		gray at 35.0'										
					11	CORE		96				
40		limestone seams between 41.0' and 42.0'										
					12	CORE		100				
45												
					13	CORE		98				
50		limestone seam at 49.0'										
		--- CONTINUED NEXT PAGE ---										

HOU_SOIL&ROCK_2010_S4077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-109

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 25-May-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 27-May-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,975,761.00
EASTING (ft): 2,391,370.00
ELEVATION (ft): 464.25

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf)	ROCK QUALITY DESIGNATION (RQD) % / WATER CONTENT PERCENT	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
50		— CONTINUED FROM PREVIOUS PAGE —							CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	RQD % 20 40 60 80 ★ WATER CONTENT PERCENT PL ⊖W LL 10 20 30 40		
		Medium strong, blue gray, SHALE, unweathered, with seams of cemented sand			14	CORE		90				
55					15	CORE		88				
60					16	CORE		90				
65		weak at 65.0'			17	CORE		15				
70					18	CORE		94				
75		high angle fracture at 75.0'			19	CORE		94				
80		BORING TERMINATED AT 80.0'		384.3 / 80.0								
85												
90												
95												
100												

DEPTH SCALE
1 inch to 64 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

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RECORD OF BOREHOLE B-110

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 09-Jun-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 11-Jun-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,977,524.00
EASTING (ft): 2,391,558.00
ELEVATION (ft): 483.00

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ○ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 WATER CONTENT PERCENT PL W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		GROUND SURFACE		483.0								
		Compact, reddish brown, clayey SAND (SC), slightly moist			1	SS	22 7 9 N16	87				bentonite seal
				480.0	2	SS	12 4 12 N16	87				
		Very stiff to hard, reddish brown, sandy fat CLAY (CH), moist		3.0 478.5								
5		Dense, reddish brown, fine to coarse, clayey SAND with gravel (SC), wet		4.5 477.0	3	SS	8 10 31	67				
		Very stiff, dark gray, fat CLAY (CH), shaley, with occasional sand partings, moist		6.0 475.0	4	SS	N41 9 10 19	100				sch 40 PVC screen
		Hard, light gray, lean CLAY with sand (CL), moist		8.0 471.0	5	SS	N29 33 50/4" N>50	33				
10		Strong, yellowish brown, SANDSTONE		12.0 467.0	6	SS	50/1.25" N>50	3				
15		Hard, dark gray, fat CLAY with sand (CH), shaley, moist		16.0								
					7	SS	28 44 50/5" N>50	100				
20					8	SS	18 40 50/5.5" N>50	100				
				458.0								
25		Weak to medium strong, dark gray, SHALE, unweathered		25.0	9	CORE		66				
30					10	CORE		100				
35		with seams of sandstone between 35.0' and 40.0'			11	CORE		25				
40					12	CORE		60				
45		strong at 45.0'			13	CORE		78				
50				433.0								
		--- CONTINUED NEXT PAGE ---										

DEPTH SCALE
1 inch to 8.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

HOU_SOIL&ROCK_2010_94077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

RECORD OF BOREHOLE B-110

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 09-Jun-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 11-Jun-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,977,524.00
EASTING (ft): 2,391,558.00
ELEVATION (ft): 483.00

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✿ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL ⊖W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		--- CONTINUED FROM PREVIOUS PAGE ---										
50		Strong, dark gray, SHALE, unweathered		50.0								
					14	CORE		99				
55												
					15	CORE		95				
60		limestone seam at 60.0'										
					16	CORE		84				
65		limestone seam at 66.0'										
					17	CORE		100				
		limestone seam at 68.0'										
70					18	CORE		98				
75		limestone seam at 75.5'										
					19	CORE		97				
80												
					20	CORE		100				
85												
					21	CORE		68				
90												
		weak zone and high angle fractures between 92.3' and 95.0'			22	CORE		100				
95		strong at 95.0'										
					23	CORE		100				
				386.0								
		BORING TERMINATED AT 97.0'		97.0								
100		Boring B-110 was converted into piezometer PZ-110										

HCU_SOILSROCK_2010 94077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

RECORD OF BOREHOLE B-111

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 11-May-2010 DRILLING EQUIPMENT: MOBILE B-57
BORING FINISHED: 13-May-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,977,079.00
EASTING (ft): 2,391,798.00
ELEVATION (ft): 464.49

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✿ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 * WATER CONTENT PERCENT PL ⊖ W ⊖ LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		Flat, dry, with vegetation		464.5								
		Compact, light brown, clayey SAND (SC), dry		463.0	1	SS	10 10 7 N17	100				
		Stiff, brown, lean CLAY with sand (CL), moist		1.5	2	SH		88				
5				458.5	3	SH		100				
		Firm, light brown, sandy lean CLAY (CL), moist		6.0	4	SS	4 4 4 N8	67				
		reddish brown at 8.0'		456.0	5	SS	4 4 2 N6	20				▼ 9.5'
10		Loose, brown, poorly-graded SAND (SP), wet		9.5								
15				449.0								
		Very stiff, gray, fat CLAY (CH), shaly, moist		15.5	6	SS	5 10 6 N16	100				
		Strong, light gray, fine, SANDSTONE, highly weathered		446.5 18.0	7	SS	50/2" N=50	0				
20		Hard, gray, fat CLAY (CH), shaly		444.5 20.0	8	CORE		89				
		Strong, light gray, SILTSTONE		441.5 23.0	9	CORE		95				
25				435.0								
30		Medium strong, gray, sandy SHALE, unweathered		29.5	10	CORE		42				
35												
40					11	CORE		53				
		possible sea shells and gypsum crystals at 43.0'										
45		limestone seam at 45.5'			12	CORE		94				
					13	CORE		100				
50		--- CONTINUED NEXT PAGE ---										

DEPTH SCALE
1 inch to 8.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

4B-162
IIIG-B-153

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-111

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 11-May-2010 DRILLING EQUIPMENT: MOBILE B-57
BORING FINISHED: 13-May-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,977,079.00
EASTING (ft): 2,391,796.00
ELEVATION (ft): 464.49

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL ⊢—○W—⊣ LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		--- CONTINUED FROM PREVIOUS PAGE ---										
50		Medium strong, gray, sandy SHALE, unweathered			13	CORE		100				
55												
60		limestone seam at 59.0'			14	CORE		82				
		limestone seam at 63.0'										
65												
70					15	CORE		15				
75												
				385.5	16	CORE		0				
80		BORING TERMINATED AT 79.0'		79.0								
85												
90												
95												
100												

HOU_SOIL&ROCK 2010 5427GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

RECORD OF BOREHOLE B-112R

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 24-May-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 25-May-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,976,119.00
EASTING (ft): 2,392,250.00
ELEVATION (ft): 460.02

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ◇ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL ⊖W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		Flat and dry, with vegetation		460.0								
		Stiff, brown, lean CLAY with sand (CL), moist			1	SS	4 5 8 N13	53				concrete seal
					2	SH		50				bentonite/cement casing seal
5		soft to firm at 5.0'			3	SH		63				
		reddish and dark brown at 6.0'			4	SH		50				bentonite seal 6.0'
				452.0								
		Reddish and dark brown, fat CLAY with sand (CH), moist		8.0 / 450.0	5	SH		85				20/40 graded sand
10		Brown, medium to fine, poorly-graded SAND (SP), wet		10.0								sch 40 PVC screen
				445.0								
15		Hard, gray, sandy, elastic SILT (MH), shaly, slightly moist		15.0	6	SS	32 34 42 N76	100				
				442.0								
		Strong, brown, SILTSTONE		18.0	7	CORE SS	50/0.25" N>50	0				
20		interbedded with shale between 20.0' to 30.0'			8			13				
					9	CORE		20				
25					10	CORE		75				
30		Weak, gray, sandy SHALE, unweathered		30.0	11	CORE		75				
35					12	CORE		100				
40		medium strong at 40.0'			13	CORE		0				
45		with limestone seams between 45.0' and 60.0'			14	CORE		80				
50		--- CONTINUED NEXT PAGE ---							✳			

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

HCU_SOIL&ROCK_2010_94077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-112R

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 24-May-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 25-May-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,976,119.00
EASTING (ft): 2,392,250.00
ELEVATION (ft): 460.02

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 / WATER CONTENT PERCENT PL ⊖ W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		--- CONTINUED FROM PREVIOUS PAGE ---										
50		Weak, gray, sandy SHALE, unweathered strong at 50.0'			15	CORE		93				
55		medium strong at 55.0'			16	CORE		97				
60					17	CORE		82				
65					18	CORE		90				
70					19	CORE		100				
75		BORING TERMINATED AT 75.0'		385.0 / 75.0								
		Boring B-112R was converted into piezometer PZ-112R.										
80												
85												
90												
95												
100												

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED CS
CHECKED: SBK

HOU_SOIL&ROCK 2010 94077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

RECORD OF BOREHOLE B-113R

SHEET 1 OF 1
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 28-Apr-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 29-Apr-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,976,787.00
EASTING (ft): 2,390,608.00
ELEVATION (ft): 459.72

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 WATER CONTENT PERCENT PL ⊙W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		Wet with vegetation		459.7								
		Dark brown, clayey SAND (SC), moist		458.5	1	SH		63				▼ 1.25'
		Dense, reddish brown and dark brown, medium, poorly-graded SAND (SP), wet		1.3	2	SS	9 15 26	100				
		Hard, dark brown, elastic SILT with sand (MH), shaley, with occasional light brown sand partings, slightly moist		2.0	3	SS	N41 8	67				
5				454.7			50/4.5" N>50					
		Weak, dark gray, sandy SHALE, moderately weathered		5.0	4	SS	50/2.5" N>50	0				
					5	CORE		30				
10				449.7								
		Medium strong, gray, SILTSTONE		10.0	6	CORE		70				
		brown at 11.0'										
15				443.7								
		Medium strong, gray, SHALE, unweathered		16.0	7	CORE		95				
20					8	CORE		95				
25					9	CORE		88				
30		limestone seam at 32.5'			10	CORE		95				
35					11	CORE		60				
		limestone seams between 35.0' and 40.0'										
40					12	CORE		94				
45		limestone seams between at 44.5' and 47.0'			13	CORE		100				
		BORING TERMINATED AT 47.0'		412.7 47.0								
50												

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

HOU_SOIL&ROCK_2010_S4077GINT_MERGED.GPJ_GLDR_HOU.GDT_2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-114

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 25-May-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 28-May-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,975,753.00
EASTING (ft): 2,392,150.00
ELEVATION (ft): 461.71

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✿ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		GROUND SURFACE		461.7								
		Stiff, reddish brown, sandy lean CLAY (CL), moist			1	SS	5 5 5 N10	50				concrete seal
		soft at 2.0'			2	SS	4 1 2 N3	67				bentonite/cement casing seal
				457.7								
5		Stiff, dark brown, fat CLAY with sand (CH), moist		4.0	3	SS	2 3 8 N11	53				bentonite seal
					4	SH		50				
				453.7								20/40 graded sand
		Loose, reddish brown, fine to medium, poorly-graded SAND (SP)		8.0	5	SS	2 2 5 N7	0				
10												sch 40 PVC screen
				446.7								
15		Hard, dark gray, fat CLAY (CH), shaly, moist		15.0	6	SS	17 23 30 N59	93				
20					7	SS	32 50/0.5" N>50	0				
25					8	CORE		52				
30												
35					9	CORE		97				
				425.7								
		Strong, gray, SILTSTONE and SANDSTONE, highly laminated		36.0 424.7								
		Strong, dark gray, SHALE, unweathered, trace fossils		37.0								
40					10	CORE		76				
45		medium strong with weak zones at 45.0' limestone seam at 45.5'										
		limestone seam at 47.0'			11	CORE		40				
50		--- CONTINUED NEXT PAGE ---										

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

HOU_SOIL&ROCK_2010 9407GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

RECORD OF BOREHOLE B-114

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 25-May-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 28-May-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,975,753.00
EASTING (ft): 2,392,150.00
ELEVATION (ft): 461.71

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✿ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL ⊖W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		--- CONTINUED FROM PREVIOUS PAGE ---										
50		Strong, dark gray, SHALE, unweathered, trace fossils limestone seams between 50.0' and 51.0'			12	CORE		80				
55					13	CORE		65				
60		with interbedded limestone seams between 60.0' and 65.0'			14	CORE		66				
65		strong, limestone seam at 65.0'			15	CORE		95				
70					16	CORE		96				
75					17	CORE		0				
				384.7								
		BORING TERMINATED AT 77.0'		77.0								
80		Boring B-114 was converted into piezometer PZ-114.										
85												
90												
95												
100												

HOU_SOIL&ROCK_2010_94077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-115

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 06-May-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 08-May-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,977,539.00
EASTING (ft): 2,392,239.00
ELEVATION (ft): 463.06

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ○ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 * WATER CONTENT PERCENT PL W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		Dry with vegetation		463.1								
		Compact, light brown, fine, clayey SAND (SC), moist			1	SS	7 9 6 N15	100				
		reddish brown at 2.0'			2	SS	5 5 5 N10	93				
5				458.1	3	SS	1 1 3 N4	80				
		Soft to firm, light reddish brown, sandy CLAY, very moist		5.0 457.1								
		Loose, light reddish brown, clayey SAND (SC), wet		6.0 455.1	4	SS	1 4 5 N9	73				6.0'
		Very loose, brown, medium to fine, poorly-graded SAND (SP), wet		8.0	5	SS	1 1 2 N3	47				
15				447.1	6	SS	19 26 40 N66	100				
		Hard, gray, fat CLAY (CH), shaly, moist		16.0 443.1								
20		Medium strong, light brown, moderately weathered, SILTSTONE		20.0	7	SS	50/3" N>50	17				
					8	CORE		98				
25					9	CORE		93				
30		interbedded with shale at 30.0'		430.6	10	CORE		94				
		Medium strong, gray, SHALE		32.5								
35					11	CORE		97				
40		limestone seams between 40.0' and 45.0'										
		limestone layer between 42.0' and 43.0'			12	CORE		86				
45									✳			
					13	CORE		95				
50		-- CONTINUED NEXT PAGE --										

HOU_SOIL&ROCK_2010_S4077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SMK

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-115

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 08-May-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 08-May-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,977,539.00
EASTING (ft): 2,392,239.00
ELEVATION (ft): 463.06

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ○ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 WATER CONTENT PERCENT PL ⊙W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
50		*--- CONTINUED FROM PREVIOUS PAGE ---*										
		Medium strong, gray, SHALE										
		limestone layer between 52.0' and 53.0'			14	CORE		74				
55		strong at 55.0'										
		seam of limestone at 57.5'			15	CORE		94				
60		with interbedded layers of limestone between 60.0' and 65.0'			16	CORE		100				
65					17	CORE		80				
70					18	CORE		100				
75					19	CORE		100				
				386.1								
		BORING TERMINATED AT 77.0'		77.0								
80												
85												
90												
95												
100												

HOU_SOIL&ROCK_2010 64077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

RECORD OF BOREHOLE B-116

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 04-May-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 06-May-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,977,088.00
EASTING (ft): 2,392,282.00
ELEVATION (ft): 465.44

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 / WATER CONTENT PERCENT PL ⊖W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		Dry with vegetation		465.4								
		Loose, reddish brown, medium to fine, poorly-graded SAND (SP), with clay, moist			1	SS	2 4 4 N8	87				
		light brown at 2.0'			2	SS	3 4 3 N7	87				
5				460.4	3	SS	3 2 2 N4	90				
		Soft to firm, reddish brown, lean CLAY with sand (CL), moist		5.0	4	SH		70				
		firm to stiff, brown at 8.0'			5	SH		88				
10				455.4								▼ 10'
		Firm, reddish brown, sandy lean CLAY (CL)		10.0								
15		dark brown at 15.5'			6	SS	3 3 4 N7	87				
				448.4								
		Hard, gray, fat CLAY (CH), shaley, with sand		17.0								
20					7	SS	50/5" N>50	40				
				441.4								
		Medium strong, gray, unweathered, SHALE, with seams of sandstone		24.0	8	CORE SS	50/2.75" N>50	1				
25					9			20				
					10	CORE		39				
				435.4								
30		Medium strong, unweathered, SILTSTONE		30.0								
					11	CORE		79				
				430.4								
35		Medium Strong, unweathered, gray, SHALE		35.0								
		seams of limestone at 37.8'			12	CORE		100				
40					13	CORE		99				
45									✳			
					14	CORE		97				
50				415.4								
		--- CONTINUED NEXT PAGE ---										

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-116

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 04-May-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 06-May-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,977,088.00
EASTING (ft): 2,392,282.00
ELEVATION (ft): 465.44

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ◇ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 / WATER CONTENT PERCENT PL ⊖W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
50		*-- CONTINUED FROM PREVIOUS PAGE --*										
		seams of limestone between 50.0' and 55.0'		50.0	15	CORE		97				
55												
					16	CORE		100				
60												
					17	CORE		72				
		seam of limestone at 63.0'							✳			
65					18	CORE		71				
70					19	CORE		98				
									✳			
75		layer of hard limestone between 76.0' and 77.0'										
					20	CORE		98				
80												
					21	CORE		76				
85												
					22	CORE		58				
				378.4								
		BORING TERMINATED AT 87.0'		87.0								
90												
95												
100												

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

HCU_SOIL&ROCK_2010_94077GINT_MERGED.GPJ GLDR_HCU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-117R

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 09-Jun-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 11-Jun-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,976,828.00
EASTING (ft): 2,391,998.00
ELEVATION (ft): 459.63

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✿ TORV. ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL ⊖W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		GROUND SURFACE		459.6								
		Compact, reddish brown, clayey SAND (SC), moist		458.6	1	SS	7 6 6	97				concrete seal
		Stiff, reddish brown, sandy lean CLAY (CL), moist		1.0			N12					
				456.6	2	SS	4 6 5	73				bentonite/cement casing seal
		Compact, reddish brown, fine to coarse, clayey SAND with gravel (SC)		3.0 455.6			N11					3.0'
		Very loose, reddish brown, fine to coarse, well-graded SAND with clay (SW-SC), wet		4.0	3	SS	0 0 1	40				bentonite seal
5					4	SS	N1 1 1 1	0				20/40 graded sand
		loose at 8.0'			5	SS	N2 2 2 4	50				
10							N6					sch 40 PVC screen
				446.6								
		Hard, dark gray, fat CLAY (CH), shaley, moist		13.0								
15					6	SS	50/5" N>50	10				
20				439.1								
		Weak to medium strong, light brown, SILTSTONE, moderately weathered		20.5	7	SS	50/4" N>50	7				
					8	CORE		0				
25					9	CORE		76				
				429.6								
30		Weak, gray, SHALE, unweathered		30.0								
					10	CORE		92				
35		dark gray, strong at 35.0'			11	CORE		84				
40		medium strong at 40.0'			12	CORE		87				
		limestone seam at 43.5'										
45		weak at 45.0'			13	CORE		78				
50		--- CONTINUED NEXT PAGE ---										

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

HOU_SOIL&ROCK_2010_94077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-117R

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 09-Jun-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 11-Jun-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,976,828.00
EASTING (ft): 2,391,998.00
ELEVATION (ft): 459.63

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✿ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL ⊖W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		-- CONTINUED FROM PREVIOUS PAGE --										
50		Weak, gray, SHALE, unweathered										
		limestone seam at 52.0'			14	CORE		56				
55		medium strong at 55.0'										
		limestone seam at 56.5'			15	CORE		74				
		limestone seam at 57.5'										
60		weak at 60.0'			16	CORE		26				
65					17	CORE		34				
70					18	CORE		22				
				387.6								
		BORING TERMINATED AT 72.0'		72.0								
75		Boring B-117R was converted into piezometer PZ-117R.										
80												
85												
90												
95												
100												

HOU_SOIL&ROCK_2010_9407GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

DEPTH SCALE
1 inch to 64 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-118R

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 15-Jun-2010 DRILLING EQUIPMENT: CME-55
BORING FINISHED: 16-Jun-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,975,902.00
EASTING (ft): 2,393,341.00
ELEVATION (ft): 464.34

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 WATER CONTENT PERCENT PL ⊙W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		GROUND SURFACE		464.3								
		Soft to firm, reddish brown, sandy lean CLAY (CL), slightly moist		0.5	1	SS	4 3 1 N4	40				concrete seal
		TRASH, with layers of sandy lean clay			2	SS	4 4 4 N8	67				
5				459.3	3	SS	4 2 2 N4	40				bentonite/cement casing seal
		Very soft to firm, reddish brown, sandy lean CLAY (CL), moist		5.0	4	SS	1 1 1 N2	100				
		trash at 8.0'			5	SS	2 3 3 N6	17				
10				451.3								bentonite seal
		Stiff, dark brown, lean CLAY with sand (CL), shaley, moist		13.0	6	SS	1 2 12 N14	100				20/40 graded sand
				449.3								15.0'
15		Compact, brown, well-graded SAND with gravel (SW), wet		15.0								sch 40 PVC screen
				445.3	7	SS	50/5" N>50	53				
20		Weak, gray, SANDSTONE and SHALE, weathered, interbedded and highly lamininated		19.0								
					8	SS	50/6" N>50	17				
25												
					9	SS	50/4" N>50	23				
30									✳			
					10	CORE		94				
35				429.3								
		Medium strong, gray, SHALE, sandy, unweathered		35.0								
				427.3								
		Weak, gray, SANDSTONE and SHALE, weathered, interbedded and highly lamininated		37.0	11	CORE		76				
40				424.3								
		Medium strong, gray, SHALE, sandy, unweathered		40.0								
					12	CORE		100				
45												
					13	CORE		46				
50		--- CONTINUED NEXT PAGE ---										

RCU_SOIL&ROCK_2010_94077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

4B-175
IIIG-B-166

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-118R

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 15-Jun-2010 DRILLING EQUIPMENT: CME-55
BORING FINISHED: 16-Jun-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,975,902.00
EASTING (ft): 2,393,341.00
ELEVATION (ft): 464.34

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 / WATER CONTENT PERCENT PL ⊖W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		--- CONTINUED FROM PREVIOUS PAGE ---										
50		Medium strong, gray, SHALE, sandy, unweathered			14	CORE		82				
55					15	CORE		90				
60		very strong at 60.0'			16	CORE		100	✳			
65		limestone seams between 65.0' and 70.0'			17	CORE		100				
70					18	CORE		82				
75					19	CORE		100				
				386.3 / 78.0								
		BORING TERMINATED AT 78.0'										
80		Boring B-118R was converted into piezometer PZ-118R										
85												
90												
95												
100												

HOU_SOIL&ROCK_2010_94077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

DEPTH SCALE
1 inch to 6 4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-119R

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 10-May-2010 DRILLING EQUIPMENT: MOBILE B-57
BORING FINISHED: 11-May-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,977,761.00
EASTING (ft): 2,392,690.00
ELEVATION (ft): 464.85

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 * WATER CONTENT PERCENT PL ⊖W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		Dry and level		464.9								
		Soft to firm, dark brown, lean CLAY with sand (CL), slightly moist			1	SS	1 2 2 N4	100				
		very stiff at 2.0'			2	SH		100				
5					3	SH		90				
		stiff, reddish brown at 6.0'			4	SH		95				
				456.9								
		Loose, reddish brown, medium to fine, poorly-graded SAND with silt (SP-SM), moist		8.0	5	SH		100	3341			
10												
15		with gravel, coarse to fine at 15.0'			6	SS	1 1 10 N11	80				15.0'
				448.4								
		Compact, brown, fine, well-graded GRAVEL with clay and sand (GW-GC), wet		16.5								
20					7	SS	2 4 9 N13	43				
				443.9								
		Hard, gray, fat CLAY (CH), shaly, moist		21.0								
25												
				439.4								
		Medium strong, gray, highly weathered SILTSTONE		25.5	8	SS	17 50/1.25" N>50	30				
30					9	CORE		59				
				431.9								
		Strong, gray, sandy SHALE, unweathered		33.0								
35												
					10	CORE		60				
40												
45					11	CORE		93				
50		limestone seam at 49.5'										
		--- CONTINUED NEXT PAGE ---										

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

HOU_SOILSROCK_2010_S4077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-119R

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 10-May-2010 DRILLING EQUIPMENT: MOBILE B-57
BORING FINISHED: 11-May-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,977,761.00
EASTING (ft): 2,392,690.00
ELEVATION (ft): 464.85

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ○ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL ⊖W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		--- CONTINUED FROM PREVIOUS PAGE ---										
50		Strong, gray, sandy SHALE, unweathered			11	CORE		93				
55		occasional seams of limestone between 53.0' and 63.0'			12	CORE		18				
60												
65					13	CORE		88	✳			
70												
75					14	CORE		14				
				388.9								
		BORING TERMINATED AT 78.0'		78.0								
80												
85												
90												
95												
100												

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

HOU_SOIL&ROCK_2010_S4077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-120R

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 14-May-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 18-May-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,978,020.00
EASTING (ft): 2,392,969.00
ELEVATION (ft): 466.36

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	TYPE	BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✿ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 / WATER CONTENT PERCENT PL ⊖ W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		GROUND SURFACE		466.4								
		Firm, brown and yellowish brown, lean CLAY with sand (CL), slightly moist			1	SS	4 3 2 N5	83				
		hard at 2.0'			2	SH		55				
				462.4								
5		Firm, brown, sandy lean CLAY (CL), slightly moist		4.0	3	SS	4 3 5 N8	90				
		very stiff at 5.5'			4	SH		85				
		mottled yellowish brown, reddish brown, and brown at 8.0'			5	SH		70				
10												▼ 12.0'
15		firm to stiff at 15.0'			6	SS	2 3 5 N8	67				
20				445.9			24					
		Hard, gray, fat CLAY (CH), shaly, moist		20.5	7	SS	50/5" N>50	60				
				441.4			45					
25		Very dense, light brown, fine, poorly-graded SAND (SP), moist		25.0	8	SS	49 50/2" N>50	100				
				436.4								
30		Weak, gray, weathered, sandy SHALE		30.0	9	SS	50/3.5" N>50	17				
					10	CORE		34				
				428.4								
		Medium strong, brown, SILTSTONE		38.0					✳			
40					11	CORE		86				
45		occassional sand seams at 45.0'										
		gray at 46.0'			12	CORE		56				
				418.4								
		Medium strong, gray, sandy SHALE, unweathered, occasional seams of sandstone		48.0								
50												
		--- CONTINUED NEXT PAGE ---										

DEPTH SCALE
1 inch to 8.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

HOU_SOIL&ROCK_2010 9-4077GINT_MERGED.GPJ GLOR_HOU.GDT 2/17/12

RECORD OF BOREHOLE B-120R

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 14-May-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 18-May-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,978,020.00
EASTING (ft): 2,392,969.00
ELEVATION (ft): 466.36

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL ⊢—○W—⊣ LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		--- CONTINUED FROM PREVIOUS PAGE ---										
50		Medium strong, gray, sandy SHALE, unweathered, occasional seams of sandstone			12	CORE		56	✳			
55					13	CORE		97				
60		with limestone seams between 60.0' and 79.0'			14	CORE		100				
65												
70					15	CORE		79				
75												
				387.4								
80		BORING TERMINATED AT 79.0'		79.0								
85												
90												
95												
100												

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

H:\Cu SOIL&ROCK 2010 94077GINT MERGED.GPJ GLDR_HOU.GDT 2/17/12

48-180
IIIG-B-171

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-121R

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 22-Jun-2010 DRILLING EQUIPMENT: CME-75
BORING FINISHED: 22-Jun-2010 DRILLING OPERATOR: WEST DRILLING

NORTHING (ft): 6,977,764.00
EASTING (ft): 2,393,126.00
ELEVATION (ft): 464.37

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ○ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		GROUND SURFACE		464.4								
		Firm to stiff, brown, lean CLAY with sand (CL), moist			1	SS	3 4 4 N8	67				
					2	SS	4 5 5 N10	77				
5		very stiff at 4.0'			3	SH		50				
					4	SH		70	2943			
				456.4								
		Firm to stiff, brown, sandy lean CLAY, moist		8.0	5	SS	3 3 5 N8	100				
10												
				450.9								
		Compact, coarse to fine, poorly-graded SAND with clay (SP-SC), wet		13.5	6	SS	2 3 8 N11	40				13.5'
15												
				445.9								
		Hard, gray, fat CLAY (CH), shaley, moist		18.5	7	SS	50/5" N>50	27				
20												
				440.9								
		Very dense, gray, fine, poorly-graded SAND (SP), moist		23.5	8	SS	50 41/4" N>50	23				
25												
				435.9								
		Hard, dark gray, sandy fat CLAY (CH), shaley		28.5	9	SS	17 33 50/5.75" N>50	100				
30												
					10	SS	13 50/3.5" N>50	57				
35												
					11	SS	20 50/6" N>50	73				
40												
					12	SS	50/3" N>50	17				
45				419.4								
		Dark gray, medium strong, unweathered, SHALE		45.0	13	CORE		78				
50				414.4								
		--- CONTINUED NEXT PAGE ---										

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

HOU_SOIL&ROCK_2010_S4977GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-121R

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 22-Jun-2010 DRILLING EQUIPMENT: CME-75
BORING FINISHED: 22-Jun-2010 DRILLING OPERATOR: WEST DRILLING

NORTHING (ft): 6,977,764.00
EASTING (ft): 2,393,126.00
ELEVATION (ft): 464.37

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL ⊖W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		-- CONTINUED FROM PREVIOUS PAGE --										
50				50.0	14	CORE		90				
55		limestone seams between 57.5' and 60.3'			15	CORE		98	✳			
60					16	CORE		95				
65					17	CORE		99				
70					18	CORE		98				
75					19	CORE		70				
				387.4								
		BORING TERMINATED AT 77.0'		77.0								
80												
85												
90												
95												
100												

HOU_SOIL&ROCK_2010 9-07.GINT MERGED.GPJ GLDR_HOU.GDT 2/17/12

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED CS
CHECKED: SJK

4B-182
IIIG-B-173

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-122

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 23-Jun-2010 DRILLING EQUIPMENT: CME-55
BORING FINISHED: 25-Jun-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,977,880.00
EASTING (ft): 2,393,323.00
ELEVATION (ft): 461.94

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU · ● P.P. · ⊕ Field Vane Shear ■ UU · ✿ TORV. · ▲ UCS · ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL ⊖W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		GROUND SURFACE		461.9								
		Firm to very stiff, brown, sandy lean CLAY (CL), moist			1	SS	3 2 3 N5					concrete seal
					2	SH		85				bentonite/cement casing seal
				457.9								
5		Stiff to very stiff, brown, lean CLAY with sand (CL)		4.0	3	SH		55				bentonite seal
				455.9								
		Stiff, brown, sandy lean clay (CL), moist		6.0	4	SS	3 4 6 N10	100				20/40 graded sand
				453.9								▼ 8.0'
		Dense, brown, coarse to fine, well-graded SAND with clay and gravel (SW-SC)		8.0	5	SS	2 8 24 N32	60				
10												
		compact at 13.5'			6	SS	9 15 12 N27	53				sch 40 PVC screen
15				443.4								
		Hard, dark gray, sandy fat CLAY (CH), shaley		18.5	7	SS	10 23 39 N62	83				
20				438.4								
		Very dense, gray, poorly-graded SAND (SP), with seams of sandstone		23.5	8	SS	50/6" N>50	33				
25												
					9	SS	50/1" N>50	0				
30				428.4								
		Hard, gray, sandy fat CLAY (CH), shaley		33.5	10	SS	50/3" N>50	13				
35				422.4								
		Strong, gray, unweathered, clayey SILTSTONE		39.5	11	SS	50/1" N>50	0				
					12	CORE		7				
45				416.9								
		Strong, dark gray, unweathered, SHALE with shells between 45.0' and 50.0'		45.0	13	CORE		94				
50				411.9								
		--- CONTINUED NEXT PAGE ---										

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

HOU_SOIL&ROCK_2010 94077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

RECORD OF BOREHOLE B-122

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 23-Jun-2010 DRILLING EQUIPMENT: CME-55
BORING FINISHED: 25-Jun-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,977,880.00
EASTING (ft): 2,393,323.00
ELEVATION (ft): 461.94

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 / WATER CONTENT PERCENT PL ⊖ W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		-- CONTINUED FROM PREVIOUS PAGE --										
50				50.0								
					14	CORE		100				
55		interbedded with limestone seams between 55.0' and 60.0'			15	CORE		94				
60					16	CORE		94				
65					17	CORE		100				
70					18	CORE		96				
75				386.9								
		BORING TERMINATED AT 75.0'		75.0								
		Boring B-122 was converted into piezometer PZ-122.										
80												
85												
90												
95												
100												

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

HOU_SOIL&ROCK 2010 94077GINT MERGED.GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-123R

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 25-Jun-2010 DRILLING EQUIPMENT: CME-75
BORING FINISHED: 25-Jun-2010 DRILLING OPERATOR: WEST DRILLING

NORTHING (ft): 6,977,173.00
EASTING (ft): 2,393,415.00
ELEVATION (ft): 472.68

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ○ TORV. ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 WATER CONTENT PERCENT PL W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		GROUND SURFACE		472.7								
		Stiff, dark brown, fat CLAY with sand (CH), moist			1	SS	6 6 6 N12	73				
				470.7								
		Stiff, brown, fat CLAY (CH), moist		2.0	2	SS	4 4 6 N10	73				
				468.7								
5		Stiff, brown, sandy fat CLAY (CH), moist		4.0	3	SS	3 4 6 N10	13				
					4	SS	3 3 6 N11	10				
					5	SS	2 4 4 N8	87				
10												
		with layers of trash between 13.0' and 15.0'			6	SS	4 3 14 N17	40				
15		very stiff at 13.5'										
		firm at 18.5'			7	SS	1 2 3 N5	0				
20												
				449.2								
		Compact, brown, coarse to fine, well-graded SAND with gravel (SW)		23.5	8	SS	8 8 9 N17	47				▼ 23.5'
25												
				444.2								
		Hard, gray, fat CLAY (CH), shaley, moist		28.5	9	SS	40 50/4.75" N>50	60				
30												
				439.2								
		Very dense, gray, fine, poorly-graded SAND (SP)		33.5	10	SS	50/4" N>50	20				
35												
				434.2								
		Weak, gray, weathered, SHALE, with siltstone and sand laminations		38.5	11	SS	50/4" N>50	0				
40					12	CORE		44				
45					13	CORE		40				
50				422.7								
		--- CONTINUED NEXT PAGE ---										

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

HOU_SOIL&ROCK_2010 9-077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-123R

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 25-Jun-2010 DRILLING EQUIPMENT: CME-75
BORING FINISHED: 25-Jun-2010 DRILLING OPERATOR: WEST DRILLING

NORTHING (ft): 6,977,173.00
EASTING (ft): 2,393,415.00
ELEVATION (ft): 472.68

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✿ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 * WATER CONTENT PERCENT PL ⊖ W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		-- CONTINUED FROM PREVIOUS PAGE --										
50		Weak, gray, weathered, SILTSTONE		50.0	14	CORE		94				
				417.7								
55		Medium strong to strong, gray, unweathered, SHALE		55.0	15	CORE		88				
60					16	CORE		89				
65		limestone seam at 65.0'			17	CORE		91				
70					18	CORE		91				
75					19	CORE		80				
80					20	CORE		100	✳			
		limestone seam between 83.0' and 84.0'										
85					21	CORE		93				
		BORING TERMINATED AT 86.0'		386.7 86.0								
90												
95												
100												

HOU_SOIL&ROCK_2010_54077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED CS
CHECKED SBK

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-124

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 02-Jun-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 03-Jun-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,976,332.00
EASTING (ft): 2,393,449.00
ELEVATION (ft): 462.49

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 WATER CONTENT PERCENT PL ⊙W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		GROUND SURFACE		462.5								
		Stiff, brown, sandy lean CLAY (CL), dry			1	SS	3 4 7 N11	80				concrete seal
				460.5								
		TRASH		2.0	2	SS	10 6 3 N9	47				
5		with sandy clay at 4.0'			3	SS	5 4 2 N6	53				bentonite/cement casing seal
					4	SS	1 2 3 N5	17				
				454.5								
		Firm, light and dark brown, lean CLAY with sand (CL), moist		8.0	5	SS	6 3 3 N6	73				bentonite seal
10												20/40 graded sand
				448.5								
		Compact, brown, fine grained, poorly-graded GRAVEL (GP)		14.0								
15					6	SS	10 8 8 N16	87				sch 40 PVC screen
				446.5								
		Very stiff, brown, lean CLAY with sand (CL), moist		16.0								
		Hard, gray to dark gray, fat CLAY (CH), shaly, moist		16.5								
20					7	SS	50/4" N>50	20				
25		light brown, fine grained sand partings at 25.0'			8	SS	50/4" N>50	50				
30					9	SS	50/5.5" N>50	30				
				427.5								
35		Medium strong, brown, SILTSTONE, weathered, with occasional shale seams		35.0	10	SS	50/2" N>50	0				
					11	CORE		15				
				422.5								
40		Medium strong, brown, SILTSTONE and SHALE, interbedded, weathered		40.0	12	CORE		100				
45					13	CORE		87				
50				412.5								
		--- CONTINUED NEXT PAGE ---										

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

HOU_SOIL&ROCK_2010_94077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-124

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 02-Jun-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 03-Jun-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,976,332.00
EASTING (ft): 2,393,449.00
ELEVATION (ft): 462.49

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 / WATER CONTENT PERCENT PL ⊖W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		--- CONTINUED FROM PREVIOUS PAGE ---										
50		Medium strong, gray, SHALE, unweathered		50.0								
		high angle fracture at 52.0'			14	CORE		98				
		high angle fracture at 54.0'										
55		high angle fracture at 54.75'										
					15	CORE		84				
60												
		limestone seam at 62.5'			16	CORE		96				
65		limestone seam at 65.0'										
					17	CORE		24				
70												
					18	CORE		96				
75												
					19	CORE		88				
		shells at 79.75'		382.5								
80		BORING TERMINATED AT 80.0'		80.0								
		Boring B-124 was converted into piezometer PZ-124.										
85												
90												
95												
100												

HOU_SOIL&ROCK_2010_94077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-125

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 15-Jun-2010 DRILLING EQUIPMENT: CME-55
BORING FINISHED: 16-Jun-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,975,546.00
EASTING (ft): 2,393,459.00
ELEVATION (ft): 464.92

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		GROUND SURFACE		464.9								
		Very stiff, brown, lean CLAY with sand (CL), moist			1	SS	6 9 11 N20	100				
				462.9								
		TRASH, with layers of brown sandy lean clay		2.0	2	SS	3 2 2 N4	50				
5					3	SS	1 4 2 N6	43				
					4	SS	4 4 4 N8	17				
				456.4								
		Firm, brown, fat CLAY (CH), trace sand, moist		8.5	5	SS	2 2 4 N6	53				
10				451.9					✪			
		Firm to stiff, brown, lean CLAY (CL), trace sand, moist fine gravel at 14.5'		13.0	6	SH		75				15.0' ▼
15				448.9								
		Hard, gray, fat CLAY (CH), shaley, moist		16.0	7	SS	50/3" N>50	0				
20												
				439.9	8	SS	50/4" N>50	0				
25		Weathered, gray, SANDSTONE and SHALE, interbedded		25.0	9	CORE		83				
30					10	CORE		1				
35					11	CORE		56				
40					12	CORE		11				
				419.9								
45		Weathered, gray, SILTSTONE		45.0	13	CORE		50				
50		--- CONTINUED NEXT PAGE ---										

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

HOU_SOIL&ROCK_2010 94077GINT_MERGED.GPJ GLOR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-125

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 15-Jun-2010 DRILLING EQUIPMENT: CME-55
BORING FINISHED: 16-Jun-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,975,546.00
EASTING (ft): 2,393,459.00
ELEVATION (ft): 464.92

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ○ TORV. ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 WATER CONTENT PERCENT PL ⊖W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		-- CONTINUED FROM PREVIOUS PAGE --										
50		Weathered, gray, SILTSTONE		413.9								
		Medium strong, blueish gray, SHALE, unweathered		51.0	14	CORE		91				
55		limestone seam at 55.0'			15	CORE		76				
60		strong at 60.0'			16	CORE		100				
65					17	CORE		80				
70					18	CORE		30				
75		very strong at 75.0'			19	CORE		85				
80				383.9	20	CORE		100				
		BORING TERMINATED AT 81.0'		81.0								
85												
90												
95												
100												

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED CS
CHECKED: SBK

ROU_SOIL&ROCK_2010_94077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-126

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 27-May-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 01-Jun-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,976,098.00
EASTING (ft): 2,393,942.00
ELEVATION (ft): 465.31

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL ⊖W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		Dry, level, with vegetation		465.3								
		Compact, dark and reddish brown, clayey SAND (SC), slightly moist			1	SS	5 6 8 N14	47				
					2	SS	18 8 5 N13	87				
		broken glass at 3.0'		461.3								
5		Degraded TRASH with occasional layers of clay		4.0	3	SS	3 3 5 N8	10				
					4	SS	1 1 1 N2	10				
						SS	0 1 1 N2					
10												
		with clayey sand at 14.0'			5	SS	0 1 1 N2	17				
				446.3								
20		Hard, dark gray, elastic SILT (MH), shaly, moist		19.0	6	SS	10 20 30 N50	100				
					7	SS	32 50/5" N>50	53				
25												
					8	SS	33 50/5" N>50	60				
30												
				432.3								
		Hard, dark gray, lean CLAY (CL), with sand partings		33.0	9	SS	50/5" N>50	33				
35												
				426.3								
		Medium strong to strong, light brown, SILTSTONE, slightly weathered, laminated with shale		39.0	10	SS	50/1" N>50	0				
40					11	CORE		6				
				420.3								
45		Strong, dark brown, SHALE, slightly weathered		45.0	12	CORE		11				
50												
		--- CONTINUED NEXT PAGE ---										

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

HOU_SOIL&ROCK_2010_94077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-126

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 27-May-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 01-Jun-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,976,098.00
EASTING (ft): 2,393,942.00
ELEVATION (ft): 465.31

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 / WATER CONTENT PERCENT PL ⊖W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		--- CONTINUED FROM PREVIOUS PAGE ---										
50		Strong, dark brown, SHALE, slightly weathered			13	CORE		89				
				410.3								
55		Medium strong, gray, SHALE, unweathered		55.0	14	CORE		94				
60		occasional sandstone seams at 60.0'			15	CORE		65				
65					16	CORE		22				
70					17	CORE		19				
75		seams of limestone between 75.0' and 80.0'			18	CORE		26				
				385.3								
80		BORING TERMINATED AT 80.0'		80.0								
		Boring B-126 was converted into piezometer PZ-126.										
85												
90												
95												
100												

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SDK

HOU_SOIL&ROCK_2010_94077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-127

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 14-Jun-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 16-Jun-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,975,423.00
EASTING (ft): 2,394,235.00
ELEVATION (ft): 466.23

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ◇ TORV. - ▲ UCS - ✳ (500 1000 1500 2000)	ROCK QUALITY DESIGNATION (RQD) % (20 40 60 80) ★ WATER CONTENT PERCENT PL — W — LL (10 20 30 40)	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		GROUND SURFACE		466.2								
		Stiff to very stiff, brown, lean CLAY with sand (CL), slightly moist			1	SS	8 6 5 N11	47				
					2	SS	10 12 15 N27	63				
5					3	SS	5 8 8 N14	83				
		hard at 6.0'			4	SS	8 15 17 N32	100				
					4	SH		60				
				456.2								
10		Soft to firm, reddish brown, sandy lean CLAY (CL), moist		10.0								
					5	SS	2 2 2 N4	30				
15												
				447.2								
		Hard, dark brown, fat CLAY (CH), shaley, moist		19.0	6	SS	20 17 20 N37	50				
					7	SS	50/2.5" N>50	0				
25												
					8	SS	50/2" N>50	0				
				436.2								
30		Medium strong, dark gray, SILTSTONE, with seams of shale		30.0	9	CORE		4				
35					10	CORE		80				
				426.2								
40		Weak, gray, SHALE, sandy, slightly weathered		40.0	11	CORE		68				
		sandstone seam at 45.0'										
45					12	CORE		29				
50		--- CONTINUED NEXT PAGE ---										

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

HCU_SOIL&ROCK_2010_54077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

4B-193
IIIG-B-184

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-127

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 14-Jun-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 16-Jun-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,975,423.00
EASTING (ft): 2,394,235.00
ELEVATION (ft): 466.23

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✿ TORV. ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL ⊖W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		--- CONTINUED FROM PREVIOUS PAGE ---										
50		Weak, gray, SHALE, sandy, slightly weathered			13	CORE		78				
55		medium strong at 55.0' weathered sandstone layers from 55.0' to 57.0'			14	CORE		83				
60		limestone seam at 61.0'			15	CORE		100				
65					16	CORE		100				
70					17	CORE		93				
75					18	CORE		100				
80		BORING TERMINATED AT 80.0'		386.2 80.0								
85												
90												
95												
100												

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

HOU_SOIL&ROCK 2010 94077GINT MERGED GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-128

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 01-Jun-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 02-Jun-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,975,893.00
EASTING (ft): 2,394,763.00
ELEVATION (ft): 463.79

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 WATER CONTENT PERCENT PL W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		GROUND SURFACE		463.8								
		Very stiff to firm, reddish and light brown, lean sandy CLAY (CL), slightly moist			1	SS	6 8 16 N24	67				
		trash at 3.0'			2	SS	5 2 5 N7	13				
5				457.8	3	SS	6 4 6 N10	0				
		Very loose to loose, reddish brown, clayey SAND (SC), wet		6.0	4	SS	3 3 3 N6	87				6.0'
		Soft, brown, sandy lean CLAY (CL), moist		455.8 8.0	5	SS	1 1 1 N2	20				
10		dark brown at 9.0'										
15					6	SS	1 1 1 N2	73				
		hard at 19.0'			7	SS	13 21 41 N62	17				
20		limestone fragments at 20.0'		439.8								
		Hard, dark brown, fat CLAY (CH), shaly, moist		24.0	8	SS	40 50/4" N>50	53				
25												
30					9	SS	50/3" N>50	17				
		Medium strong, dark gray, SILTSTONE		430.8 33.0	10	CORE		28				
35		Medium strong, light brown, fine grained, SANDSTONE, highly weathered		428.8 35.0								
		Hard, dark gray, fat CLAY (CH), shaly		426.8 37.0	11	CORE		0				
40												
		Weak, gray, SITALE, slightly weathered		421.8 42.0	12	CORE		36				
45		sandstone seam at 45.0'										
					13	CORE		32				
50		-- CONTINUED NEXT PAGE --										

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SDK

HOU_SOIL&ROCK_2010_9407GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-128

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 01-Jun-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 02-Jun-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,975,893.00
EASTING (ft): 2,394,763.00
ELEVATION (ft): 463.79

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ○ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 WATER CONTENT PERCENT PL W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		--- CONTINUED FROM PREVIOUS PAGE ---										
50		Weak, gray, SHALE, slightly weathered										
				410.8	14	CORE		38				
		Strong, light gray, LIMESTONE, unweathered		53.0								
55				408.8								
		BORING TERMINATED AT 55.0'		55.0								
60												
65												
70												
75												
80												
85												
90												
95												
100												

HOU_SOIL&ROCK_2010 G4077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-129

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 11-Jun-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 14-Jun-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,975,329.00
EASTING (ft): 2,395,285.00
ELEVATION (ft): 464.21

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL ⊖ W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		GROUND SURFACE		464.2								
		Hard, light brown, lean sandy CLAY (CL)		0.5	1	SS	50/2" N>50	13				
		CONCRETE		462.2			20					
		Very stiff, reddish and yellowish brown, sandy lean CLAY (CL), with trash, slighly moist		2.0	2	SS	9 9 10 N19	100				
				460.2			6					
		TRASH		4.0	3	SS	5 27 N32	0				
5					4	SS	4 3 3 N6	0				
					5	SS	2 2 3 N5	0				
10				451.2								
		Soft to firm, dark brown, lean CLAY with sand (CL), moist		13.0	6	SH		45				
15				445.2			3 7 9 N16					▼ 19.0'
		Compact, clayey SAND with gravel (SC)		19.0 444.2	7	SS		100				
20		Hard, dark gray, fat CLAY (CH), shaley		20.0								
					8	SS	16 23 29 N52	100				
25												
				434.2	9	SS	50/2" N>50	10				
30		Medium strong, gray, SILTSTONE, with seams of sandy shale		30.0								
					10	CORE		34				
35												
					11	CORE		69				
40									✳			
					12	CORE		51				
45				419.2								
		Medium strong, gray, SANDSTONE, highly weathered, laminated		45.0	13	CORE		70				
50				414.2								
		--- CONTINUED NEXT PAGE ---										

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

HOU_SOIL&ROCK_2010_94077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-129

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 11-Jun-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 14-Jun-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,975,329.00
EASTING (ft): 2,395,285.00
ELEVATION (ft): 464.21

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✿ TORV. -▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL ⊖W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		--- CONTINUED FROM PREVIOUS PAGE ---										
50		Weak, gray, SHALE and SANDSTONE, interbedded, weathered		50.0	14	CORE		81				
55					15	CORE		18				
60					16	CORE		100				
				400.7								
65		Weak to moderate strong, dark gray, SHALE, slightly weathered		63.5	17	CORE		93				
70		strong at 70.0'			18	CORE		97				
75					19	CORE		95				
				384.2								
80		BORING TERMINATED AT 80.0'		80.0								
85												
90												
95												
100												

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

HOU_SOIL&ROCK_2010 54077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-130

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 04-Jun-2010 DRILLING EQUIPMENT: CME-55
BORING FINISHED: 08-Jun-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,975,810.00
EASTING (ft): 2,395,631.00
ELEVATION (ft): 464.61

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV / DEPTH (ft)	SAMPLES NUMBER	TYPE	BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✿ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL ⊖W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		GROUND SURFACE		464.6								
		Stiff, brown, lean CLAY with sand (CL)			1	SS	3 4 9 N13	57				concrete seal
					2	SS	3 4 6 N10	77				
				460.6								
5		TRASH, with occasional layers of sandy clay, degraded		4.0	3	SS	3 4 5 N9	10				
					4	SS	6 5 3 N8					bentonite/cement casing seal
					5	SS	3 3 2 N5	0				
10												
												bentonite seal
15				448.6	6	SS	1 2 1 N3	30				
		Soft, brown, sandy fat CLAY (CH), moist		16.0								20/40 graded sand
				444.6								
20		Dense, brown, fine, well-graded GRAVEL (GW)		20.0 443.6	7	SS	9 13 31 N44	77				sch 40 PVC screen
		Hard, light brown, lean clay with sand (CL)		21.0 21.5								
		Hard, dark gray, fat CLAY (CH), shaley			8	CORE		84				
25				439.6								
		Weak, light brown, SANDSTONE, with clay, slightly weathered		25.0								
				437.1	9	CORE		30				
		Weak, dark gray, SHALE, slightly weathered, with occasional sandstone seams		27.5								
30												
					10	CORE		46				
35												
					11	CORE		11				
40												
					12	CORE		9				
45		sandstone seams between 45.0' and 50.0'										
					13	CORE		11				
50				414.6								
		--- CONTINUED NEXT PAGE ---										

DEPTH SCALE
1 inch to 6 4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

HOU_SOIL&ROCK_2010_94077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-130

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 04-Jun-2010 DRILLING EQUIPMENT: CME-55
BORING FINISHED: 08-Jun-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,975,810.00
EASTING (ft): 2,395,631.00
ELEVATION (ft): 464.61

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ○ TORV. ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 / WATER CONTENT PERCENT PL ⊖ W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
50		--- CONTINUED FROM PREVIOUS PAGE ---										
		Strong, light gray, SANDSTONE		50.0								
				412.6								
		Moderately strong, dark gray, SHALE, sandy, unweathered		52.0	14	CORE		72				
55		lignite between 54.5' and 55.0'										
		blueish gray, limestone seam at 55.0'			15	CORE		50				
60		strong, interbedded sandstone between 60.0' and 65.0'			16	CORE		94				
65					17	CORE		92				
70					18	CORE		90				
75		dark gray at 75.0'			19	CORE		86				
				384.6								
80		BORING TERMINATED AT 80.0'		80.0								
		Boring B-130 was converted into piezometer PZ-130.										
85												
90												
95												
100												

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

HOU_SOIL&ROCK_2010 9-077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-131

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 11-Jun-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 14-Jun-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,975,485.00
EASTING (ft): 2,396,017.00
ELEVATION (ft): 465.42

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ◆ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 * WATER CONTENT PERCENT PL W LL 10 20 30 40	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		GROUND SURFACE		465.4								
		Hard, light brown, sandy fat CLAY (CH), slightly moist			1	SS	19 18 14 N32	67				
				463.4								
		TRASH, with layers of brown sandy fat clay		2.0	2	SH		55				
5					3	SS	3 3 3 N6	73				
				459.4								
		Firm, brown, sandy lean CLAY (CL), moist		6.0	4	SS	4 4 4 N8	43				
					5	SS	4 3 2 N5	73				
10												
15					6	SS	2 3 2 N5	57				
		soft at 19.0'			7	SH		45				
20				444.4								
		Hard, dark gray, fat CLAY (CH), shaley, moist		21.0								
25					8	SS	50/5" N>50	30				
					9	SS	18 32 39 N71	97				
30												
					10	SS	31 50/4" N>50	43				
35												
					11	SS	46 50/2" N>50	43				
40					12	CORE		2				
				420.4								
45		Weak, gray, SILTSTONE, weathered		45.0	13	CORE		51				
50				415.4								
		--- CONTINUED NEXT PAGE ---										

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

HOU_SOIL&ROCK_2010 S-4077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

RECORD OF BOREHOLE B-131

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: CITY OF ARLINGTON LANDFILL
LOCATION: Arlington, Texas

BORING STARTED: 11-Jun-2010 DRILLING EQUIPMENT: MOBILE B-59
BORING FINISHED: 14-Jun-2010 DRILLING OPERATOR: TOTAL SUPPORT SERVICES

NORTHING (ft): 6,975,485.00
EASTING (ft): 2,396,017.00
ELEVATION (ft): 465.42

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf)	ROCK QUALITY DESIGNATION (RQD) % / WATER CONTENT PERCENT	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
50		-- CONTINUED FROM PREVIOUS PAGE --							CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROD 20 40 60 80 ★ PL ⊢—○W—⊣ LL 10 20 30 40		
		Weak, gray, SHALE, slightly weathered		50.0	14	CORE		76				
55		with occasional seams of sandstone at 53.0'			15	CORE		0				
60					16	CORE		0				
					17	CORE		13				
65		BORING TERMINATED AT 65.0'		400.4 65.0								
70												
75												
80												
85												
90												
95												
100												

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: CS
CHECKED: SBK

HOU_SOIL&ROCK_2010 94077GINT_MERGED.GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE H-1

SHEET 1 OF 3
DATUM: GEODETIC

PROJECT: REPUBLIC / HURRICANE CREEK STABILIZATION / TX
LOCATION: Arlington, Texas
BORING STARTED: 22-Jul-2010
BORING FINISHED: 22-Jul-2010
DRILLING EQUIPMENT: CME-75
DRILLING OPERATOR: West
NORTHING (ft): 6,978,229.37
EASTING (ft): 2,395,708.74
ELEVATION (ft):

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	TYPE	BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 WATER CONTENT PERCENT PL W LL 20 40 60 80	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		GROUND SURFACE		471.1								
		Loose to compact, light brown, fine, SAND (SP-SM), with silt, with coarse gravel, angled			1	SS	13 15 12 N27	67				
2					2	SS	3 5 3 N8	73				
4		Soft to stiff, brown, sandy CLAY, slightly silty, moist (CH)		4.0	3	SS	3 2 2 N4	83				
6					4	SS	3 4 4 N8	90				
8		Stiff, brown, CLAY, with sand, silty, moist (CH)		8.0	5	SS	4 5 6 N11	100				
10					6	SS	4 4 5 N9	77				
12		Firm to stiff, brown, sandy CLAY, moist (CH)		12.0	7	SS	2 3 5 N8	100				
14					8	SS	2 2 3 N5	100				Post Drilling ▼
16		reddish brown at 16.0'			9	SS	3 5 7 N12	100				
18					10	SS	3 3 3 N6	77				
20		Compact to very dense, brown to reddish brown, medium to coarse, SAND (SW), with coarse to fine gravel, wet		20.0	11	SS	2 4 15 N19	100				Seepage ▼
22					12	SS	6 17 19 N36	100				
24					13	SS	4 8 11 N19	100				
		--- CONTINUED NEXT PAGE ---										

HOU_SOIL&ROCK_2010_945552GINT.GPJ GLDR_HOU.GDT 2/17/12

DEPTH SCALE
1 inch to 3.2 feet

Golder Associates

LOGGED: CS/OL
CHECKED:

Permit Issued: February 12, 2014

RECORD OF BOREHOLE H-1

SHEET 2 OF 3
DATUM: GEODETIC

PROJECT: REPUBLIC / HURRICANE CREEK STABILIZATION / TX
LOCATION: Arlington, Texas
BORING STARTED: 22-Jul-2010
BORING FINISHED: 22-Jul-2010
DRILLING EQUIPMENT: CME-75
DRILLING OPERATOR: West
NORTHING (ft): 6,978,229.37
EASTING (ft): 2,395,706.74
ELEVATION (ft):

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	TYPE	BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 WATER CONTENT PERCENT PL ⊙W LL 20 40 60 80	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		--- CONTINUED FROM PREVIOUS PAGE ---										
				25.0	13	SS		100				
26					14	SS	8 16 20 N36	100				
28					15	SS	11 30 50/5.5" N>50	93				
		seam of silty sand at 29.0'										
30		Hard, dark gray, shaley CLAY, with sand, with occasional light gray sand partings, weathered		30.0	16	SS	11 26 32 N58	100				
32					17	SS	29 50/4.5" N>50	67				
34					18	SS	46 50/3.5" N>50	60				
36					19	SS	11 18 28 N46	93				
38					20	SS	13 19 29 N48	100				
40					21	SS	16 23 34 N57	100				
42					22	SS	14 17 20 N37	73				
44		Weak, dark gray, weathered, SHALE, moist		44.0	23	SS	17 30 36 N66	100				
46					24	SS	19 30 42 N72	100				
48					25	SS	18 33 42 N75	100				
50		--- CONTINUED NEXT PAGE ---										

HOU_SOILSROCK_2010_9455526INT.GPJ_GLDR_HOU.GDT 2/17/12

DEPTH SCALE
1 inch to 3.2 feet

Golder Associates

LOGGED: CS/DL
CHECKED:

RECORD OF BOREHOLE H-1

SHEET 3 OF 3
DATUM: GEODETIC

PROJECT: REPUBLIC / HURRICANE CREEK STABILIZATION / TX
LOCATION: Arlington, Texas

BORING STARTED: 22-Jul-2010
BORING FINISHED: 22-Jul-2010

DRILLING EQUIPMENT: CME-75
DRILLING OPERATOR: West

NORTHING (ft): 6,978,229.37
EASTING (ft): 2,395,708.74
ELEVATION (ft):

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL ⊖W LL 20 40 60 80	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
50		— CONTINUED FROM PREVIOUS PAGE —										
				50.0	26	SS	20 32 40 N72	100				
52					27	SS	15 30 59 N89	100				
54		BORING TERMINATED AT 54.0'		54.0	28	SS	50/4" N>50	27				
56												
58												
60												
62												
64												
66												
68												
70												
72												
74												

DEPTH SCALE
1 inch to 3.2 feet

Golder Associates

LOGGED: CS/DL
CHECKED:

HOU_SOIL&ROCK_2010 9-55523GINT.GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE H-2

SHEET 1 OF 2
DATUM: GEODETIC

PROJECT: REPUBLIC / HURRICANE CREEK STABILIZATION / TX
LOCATION: Arlington, Texas

BORING STARTED: 22-Jul-2010
BORING FINISHED: 23-Jul-2010
DRILLING EQUIPMENT: CME-75
DRILLING OPERATOR: West

NORTHING (ft): 6,978,168.51
EASTING (ft): 2,395,718.91
ELEVATION (ft):

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 / WATER CONTENT PERCENT PL ⊖W LL 20 40 60 80	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		GROUND SURFACE		470.8								
		Very stiff, brown, sandy CLAY (CH), slightly moist			1	SS	7 10 8 N18	67				
2		Compact, reddish brown, SAND (SP), slightly moist		2.0	2	SS	8 10 8 N18	87				
4		Soft to stiff, brown, CLAY (CH), with sand, moist		4.5	3	SS	3 1 2 N3	90				
					4	SS	2 2 5 N7	87				
8		with coarse sand and fine, rounded gravel at 8.0'			5	SS	3 5 5 N10	80				
10		Firm to stiff, brown, sandy CLAY (CH)		10.0	6	SS	2 3 3 N6	83				
12					7	SS	2 2 4 N6	100				
14					8	SS	1 2 3 N5	57				
16		brown, reddish brown, and light gray at 16.0'			9	SS	1 2 3 N5	75				Post Drilling ▼
18					10	SS	3 5 9 N14	75				
20		with coarse sand and fine, rounded gravel at 20.0'			11	SS	2 5 7 N12	100				
22		Compact to dense, brown, medium to coarse, SAND (SW), with fine gravel		22.0	12	SS	8 20 20 N40	57				Seepage ▼
24					13	SS	7 12 11 N23	100				
		--- CONTINUED NEXT PAGE ---										

HOU_SOIL&ROCK_2010 945552GINT.GPJ GLDR_HOU.GDT 2/17/12

DEPTH SCALE
1 inch to 3.2 feet

Golder Associates

LOGGED: CS/DL
CHECKED:

RECORD OF BOREHOLE H-2

SHEET 2 OF 2
DATUM: GEODETIC

PROJECT: REPUBLIC / HURRICANE CREEK STABILIZATION / TX
LOCATION: Arlington, Texas

BORING STARTED: 22-Jul-2010
BORING FINISHED: 23-Jul-2010

DRILLING EQUIPMENT: CME-75
DRILLING OPERATOR: West

NORTHING (ft): 6,978,168.51
EASTING (ft): 2,395,718.91
ELEVATION (ft):

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf)	ROCK QUALITY DESIGNATION (RQD) % / WATER CONTENT PERCENT	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		--- CONTINUED FROM PREVIOUS PAGE ---		25.0	13	SS		100				
26					14	SS	11 14 15 N29	87				
28					15	SS	4 10 11 N21	87				
30					16	SS	4 11 21 N32	80				
		Hard, dark gray, shaley CLAY, with sand, moist		31.0								
32		Weak, dark gray, weathered, SHALE, moist		32.0	17	SS	19 41 50/5" N>50	100				
34					18	SS	27 50/5.5" N>50	87				
36					19	SS	11 16 30 N46	100				
38					20	SS	17 29 41 N70	100				
40		BORING TERMINATED AT 39.5'		39.5								
42												
44												
46												
48												
50												

UNDRAINED SHEAR STRENGTH Cu (psf)
CU - ● P.P. - ⊕ Field Vane Shear ■
UU - ✪ TORV. - ▲ UCS - ✳
500 1000 1500 2000

ROCK QUALITY DESIGNATION (RQD) % ★
20 40 60 80
WATER CONTENT PERCENT
PL ⊢—○W—⊣ LL
20 40 60 80

ADDITIONAL LAB. TESTING

INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS

DEPTH SCALE
1 inch to 3.2 feet

Golder Associates

LOGGED CS/DL
CHECKED:

HOU_SOIL&ROCK_2010_945552GINT.GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE H-3

SHEET 1 OF 2
DATUM: GEODETIC

PROJECT: REPUBLIC / HURRICANE CREEK STABILIZATION / TX
LOCATION: Arlington, Texas

BORING STARTED: 23-Jul-2010
BORING FINISHED: 23-Jul-2010
DRILLING EQUIPMENT: CME-75
DRILLING OPERATOR: West

NORTHING (ft): 6,977,971.32
EASTING (ft): 2,395,785.59
ELEVATION (ft):

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ◇ TORV. - ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 WATER CONTENT PERCENT PL ⊙W LL 20 40 60 80	ADDITIONAL LAB TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		GROUND SURFACE		467.5								
		Stiff to very stiff, brown, sandy CLAY (CH), with occasional fine, angular gravel between 0.0' and 2.5'			1	SS	7 6 7 N13	93				
2		seam of silty sand at 3.0'			2	SS	5 5 10 N15	100				
4		Firm to stiff, brown and gray, CLAY with sand (CH)		4.0	3	SS	6 5 5 N10	53				
6					4	SS	2 4 4 N8	90				
8					5	SS	1 2 4 N6	100				
10					6	SS	3 5 7 N12	27				
12		reddish brown at 12.0'			7	SS	3 4 5 N9	87				Seepage and Post Drilling
14		Loose to dense, reddish brown, fine, SAND (SP), wet		14.0	8	SS	1 3 3 N6	87				
16		medium at 16.0'			9	SS	0 11 29 N40	100				
		Dense to very dense, reddish brown, medium to coarse, SAND (SW), with coarse to fine gravel, wet		17.0								
18					10	SS	14 22 34 N56	100				
20					11	SS	5 20 26 N46	100				
22					12	SS	3 16 27 N43	80				
24					13	SS	4 19 33 N52	93				
		-- CONTINUED NEXT PAGE --										

DEPTH SCALE
1 inch to 3.2 feet

Golder Associates

LOGGED: CS/DL
CHECKED:

H:\U_SOIL&ROCK_2010_945552\GINT_GPJ_GLOR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE H-3

SHEET 2 OF 2
DATUM: GEODETIC

PROJECT: REPUBLIC / HURRICANE CREEK STABILIZATION / TX
LOCATION: Arlington, Texas

BORING STARTED: 23-Jul-2010
BORING FINISHED: 23-Jul-2010

DRILLING EQUIPMENT: CME-75
DRILLING OPERATOR: West

NORTHING (ft): 6,977,971.32
EASTING (ft): 2,395,765.59
ELEVATION (ft):

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf)	ROCK QUALITY DESIGNATION (RQD) % / WATER CONTENT PERCENT	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		— CONTINUED FROM PREVIOUS PAGE —										
		Very dense, light gray, clayey SAND (SC), with silt reddish brown at 25.3'		25.0	13	SS		93				
26		Dark gray, weak, silty, shaley CLAY, weathered shale, moist		26.0	14	SS	15 28 50/5.5" N>50	100				
28					15	SS	43 50/4.5" N>50	67				
30					16	SS	41 50/3.5" N>50	80				
32		BORING TERMINATED AT 31.0'		31.0								
34												
36												
38												
40												
42												
44												
46												
48												
50												

UNDRAINED SHEAR STRENGTH Cu (psf)
CU - ● P.P. - ⊕ Field Vane Shear ■
UU - ✪ TORV. - ▲ UCS - ✳
500 1000 1500 2000

ROCK QUALITY DESIGNATION (RQD) % ★
20 40 60 80
WATER CONTENT PERCENT
PL ⊢—⊙W—⊣ LL
20 40 60 80

DEPTH SCALE
1 inch to 3.2 feet

Golder Associates

LOGGED: CS/DL
CHECKED:

HOU_SOILSROCK_2010_545552GINT.GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE H-4

SHEET 1 OF 2
DATUM: GEODETIC

PROJECT: REPUBLIC / HURRICANE CREEK STABILIZATION / TX
LOCATION: Arlington, Texas
BORING STARTED: 27-Jul-2010
BORING FINISHED: 27-Jul-2010
DRILLING EQUIPMENT: CME-75
DRILLING OPERATOR: West
NORTHING (ft): 6,978,257.83
EASTING (ft): 2,395,846.36
ELEVATION (ft):

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✿ TORV. ▲ UCS - ✳ 500 1000 1500 2000	ROCK QUALITY DESIGNATION (ROD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL ⊖ W LL 20 40 60 80	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		GROUND SURFACE		470.5								
		Loose to compact, reddish brown, fine, SAND with silt (SP-SM), slight moist with coarse to fine angular gravel at between 0.0' and 0.5'			1	SS	6 10 10 N20	100				
2					2	SS	5 5 5 N10	87				
4					3	SS	4 3 2 N5	80				
6					4	SS	4 5 5 N10	90				
		Soft to stiff, reddish brown, sandy CLAY (CH), moist		7.0								
8					5	SS	3 4 5 N9	73				
10					6	SS	3 3 3 N6	63				
12					7	SS	3 5 5 N10	67				
14					8	SS	1 2 2 N4	97				
16					9	SS	2 4 6 N10	100				Post Drilling ▼
18					10	SS	2 2 2 N4	83				
		Very loose to loose, yellowish brown, fine, clayey SAND (SC)		18.0								
20		Compact to very dense, brown to reddish brown, coarse to fine, SAND (SW), with coarse to fine, gravel, rounded, wet		20.0	11	SS	1 6 7 N13	53				Seepage ▼
22					12	SS	8 14 16 N30	100				
24					13	SS	7 14 25 N39	100				
		--- CONTINUED NEXT PAGE ---										

DEPTH SCALE
1 inch to 3.2 feet

Golder Associates

LOGGED: CS
CHECKED:

Permit Issued: February 12, 2014

RECORD OF BOREHOLE H-4

SHEET 2 OF 2
DATUM: GEODETIC

PROJECT: REPUBLIC / HURRICANE CREEK STABILIZATION / TX
LOCATION: Arlington, Texas
BORING STARTED: 27-Jul-2010
BORING FINISHED: 27-Jul-2010
DRILLING EQUIPMENT: CME-75
DRILLING OPERATOR: West
NORTHING (ft): 6,978,257.83
EASTING (ft): 2,395,846.36
ELEVATION (ft):

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf)	ROCK QUALITY DESIGNATION (RQD) % / WATER CONTENT PERCENT	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		-- CONTINUED FROM PREVIOUS PAGE --										
26				25.0	13	SS		100				
					14	SS	5 10 11 N21	100				
28												
		Hard, dark gray, shaley CLAY, weathered shale		28.5	15	SS	8 22 36 N58	100				
30					16	SS	33 50/3.5" N>50	50				
32					17	SS	20 27 28 N55	100				
34					18	SS	20 25 38 N63	100				
36					19	SS	29 45 50/4" N>50	93				
38		BORING TERMINATED AT 37.5'		37.5								
40												
42												
44												
46												
48												
50												

UNDRAINED SHEAR STRENGTH Cu (psf): CU - ● P.P. - ⊕ Field Vane Shear ■; UU - ✪ TORV. - ▲ UCS - ✳; 500 1000 1500 2000

ROCK QUALITY DESIGNATION (RQD) % ✳: 20 40 60 80

WATER CONTENT PERCENT: PL ⊖ W ⊖ LL; 20 40 60 80

ADDITIONAL LAB. TESTING

INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS

DEPTH SCALE
1 inch to 3.2 feet

Golder Associates

LOGGED. CS
CHECKED.

HOU_SOILSROCK_2010_94-5552GINT.GPJ_GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

2011 GOLDER ASSOCIATES BORING LOGS

RECORD OF BOREHOLE B-11.1

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: Republic / Arlington Landfill Permit Amendment / TX
LOCATION: Arlington, Texas

BORING STARTED: 25-May-2011 DRILLING EQUIPMENT: CME 75
BORING FINISHED: 25-May-2011 DRILLING OPERATOR: West Drilling

NORTHING (ft): 6,979,315.22
EASTING (ft): 2,396,879.73
ELEVATION (ft): 483.48

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✿ TORV. - ▲ UCS - ✳ 1000 2000 3000 4000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 WATER CONTENT PERCENT PL ⊖W LL 20 40 60 80	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		Gravel/sandy silty gravel		483.5								
		GRAVEL/road base material										
		Very stiff, brown, CLAY, and light brown, loose SAND		0.5		SS	4 8 9 N17	78				
5		gray and red, with loose to compact clayey sand at 4.0'				SS	3 5 5 N10	58				
				474.5								
10		Dense, brown and gray, silty SAND and sandy silt, with clay, dry		9.0		SS	12 20 17 N37	78				15.00 05/25/11
				470.5								
		Very stiff, gray, SHALE, slightly moist		13.0		SS	9 13 15 N28	83				
20		some gray fine sand, wet at 19.0'				SS	16 50/3" N>50	61				
		sandy at 20.0'				CORE		58		★		
25						CORE		95			★	
30						CORE		63		★		
35						CORE		92			★	
40		dark gray at 40.0'				CORE		75		★		
45		gray and dark gray, with fine sand lenses and clayey sand at 45.0'				CORE		78			★	
50				433.5								
		--- CONTINUED NEXT PAGE ---										

DEPTH SCALE
1 inch to 8.4 feet

Golder Associates

LOGGED: RW
CHECKED: JAW

HOU_SOIL&ROCK_2010_9407711GINT.GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-11.1

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: Republic / Arlington Landfill Permit Amendment / TX
LOCATION: Arlington, Texas

BORING STARTED: 25-May-2011 DRILLING EQUIPMENT: CME 75
BORING FINISHED: 25-May-2011 DRILLING OPERATOR: West Drilling

NORTHING (ft): 6,979,315.22
EASTING (ft): 2,396,879.73
ELEVATION (ft): 483.48

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ◇ TORV. - ▲ UCS - ✳ 1000 2000 3000 4000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 WATER CONTENT PERCENT PL ⊖W LL 20 40 60 80	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
50		--- *CONTINUED FROM PREVIOUS PAGE* ---										
		unweathered, gray and dark gray at 50.0'		50.0		CORE		97		○ ★		
55												
						CORE		93		★		
60				423.5								
		BORING TERMINATED AT 60.0'		60.0								
65												
70												
75												
80												
85												
90												
95												
100												

HOU SOIL&ROCK 2010 9407711.GINT GPJ GLDR_HOU.GDT 2/17/12

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: RW
CHECKED: JAW

RECORD OF BOREHOLE B-11.2

SHEET 1 OF 1
DATUM: LOCAL

PROJECT: Republic / Arlington Landfill Permit Amendment / TX
LOCATION: Arlington, Texas

BORING STARTED: 24-May-2011 DRILLING EQUIPMENT: CME 75
BORING FINISHED: 24-May-2011 DRILLING OPERATOR: West Drilling

NORTHING (ft): 6,979,592.65
EASTING (ft): 2,397,859.06
ELEVATION (ft): 491.72

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ◇ TORV. - ▲ UCS - ✳ 1000 2000 3000 4000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 * WATER CONTENT PERCENT PL W LL 20 40 60 80	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		Grass with gravel		491.7								
		Parking lot GRAVEL				SS	4 6 5 N11	94				
		Stiff, dark gray, CLAY		0.8								
		Red and brown, sandy, silty, CLAY, moist		489.7 2.0								
		Compact, orange and brown, clayey fine SAND, with some gray mottled, dry				SS	7 11 12 N23	44				
5												
				482.2								
		Very dense, orange and brown, sandy SILT, dry		9.5		SS	11 20 27 N47	72				
10				480.2								
		Very hard, yellow and brown, SAND, some silt, wet		11.5								05/24/2011
						SS	48 50/4" N>50	56				
15												
				473.2								
		Very stiff to hard, light gray, CLAY, moist		18.5		SS	22 50/3.5" N>50	44				
20				471.7								
		Dense, gray, silty SAND, moist		20.0								
						SS	31 50/4" N>50	78				
25												
				465.2								
		Hard, gray and light brown, SHALE		26.5		CORE		60		*		
		light gray at 28.5'										
30												
						CORE		75		*		
		dark gray at 33.75'										
35		light gray at 35.0'										
		slickensided at 36.0'				CORE		80		*		
		with small fine sand lense at 38.25'										
40		hard, dark gray, some coarse sand at 40.0'				CORE		98			*	
45		unweathered at 45.0'								O		
						CORE		100			*	
		BORING TERMINATED AT 50.0'		441.7								
50		--- CONTINUED NEXT PAGE ---										

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: SW
CHECKED: JAW

HOU_SOIL&ROCK_2010_9407711GINT.GPJ GLDR_HOU.GDT 2/17/12

RECORD OF BOREHOLE B-11.2

SHEET 2 OF 1
DATUM: LOCAL

PROJECT: Republic / Arlington Landfill Permit Amendment / TX
LOCATION: Arlington, Texas

BORING STARTED: 24-May-2011 DRILLING EQUIPMENT: CME 75
BORING FINISHED: 24-May-2011 DRILLING OPERATOR: West Drilling

NORTHING (ft): 6,979,592.65
EASTING (ft): 2,397,859.06
ELEVATION (ft): 491.72

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 1000 2000 3000 4000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 WATER CONTENT PERCENT PL ⊖ W LL 20 40 60 80	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
50		*--- CONTINUED FROM PREVIOUS PAGE ---*		50.0								
55												
60												
65												
70												
75												
80												
85												
90												
95												
100												

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: SW
CHECKED: JAW

HOU_SOIL&ROCK_2010 5-07-11.GINT GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-11.3

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: Republic / Arlington Landfill Permit Amendment / TX
LOCATION: Arlington, Texas

BORING STARTED: 26-May-2011 DRILLING EQUIPMENT: CME 75
BORING FINISHED: 27-May-2011 DRILLING OPERATOR: West Drilling

NORTHING (ft): 6,979,020.06
EASTING (ft): 2,398,560.29
ELEVATION (ft): 473.35

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 1000 2000 3000 4000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL W LL 20 40 60 80	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		Gravel road base		473.3								
		Brown and light brown, silty SAND, with gravel, dry		0.5		SS	6 4 4 N8	39				
		Firm to stiff, brown, CLAY		469.3								
5		Loose, SAND, and gray clay, moist		4.0		SH		46				
				464.3								
10		Stiff, brown and light brown, CLAY, trace silt, moist		9.0		SH		67				
				459.3								
15		Stiff, gray and light gray, sandy CLAY, moist		14.0		SH		54				05/26/2011
20		very stiff, trace fine sand and silt at 19.0'				SH		58				
25		stiff, gray and dark gray at 24.0'				SH		79				
30						SH		79				
35		gray and brown at 34.0'		438.3		SH		50				
		Very loose, orangish brown, SAND, wet		35.0								
				434.3								
40		Very loose, clayey SAND, wet		39.0		SS	1 1 2 N3	89				
				429.3								
45		Very loose, gray, clayey silty SAND, wet		44.0		SS	0 1 0 N1	100				
				424.3								
50				49.0 423.3		SS	3	0				
		--- CONTINUED NEXT PAGE ---										

DEPTH SCALE
1 inch to 8.4 feet

Golder Associates

LOGGED: RW
CHECKED: JAW

HOU_SOIL&ROCK_2010_9-07-11.GINT GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-11.3

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: Republic / Arlington Landfill Permit Amendment / TX
LOCATION: Arlington, Texas

BORING STARTED: 26-May-2011 DRILLING EQUIPMENT: CME 75
BORING FINISHED: 27-May-2011 DRILLING OPERATOR: West Drilling

NORTHING (ft): 6,979,020.06
EASTING (ft): 2,398,560.29
ELEVATION (ft): 473.35

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✿ TORV. - ▲ UCS - ✳ 1000 2000 3000 4000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL ⊖W LL 20 40 60 80	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
50		--- CONTINUED FROM PREVIOUS PAGE ---										
		Stiff, gray and brown, CLAY, with sand and silt, wet		50.0			6 9 1 N10					
		No recovery		50.5		CORE		0				
55						CORE		0				
				413.3								
60		Very loose, brown, fine SAND, wet		60.0		SS	3 5 5 N6	100				
65		dense at 65.0'				SS	13 17 20 N37	100				
70		loose at 70.0'				SS	4 5 4 N9	67				
				400.8								
		Brown, cemented, SANDSTONE		72.5		CORE		47		★		
75												
				393.3								
80		Gray, SHALE, with small lenses of fine sand		80.0		CORE		85		★		
		trace fine sand at 82.5'										
85		unweathered at 85.0'				CORE		98		★		
90						CORE		100		○ ★		
				378.3								
95		BORING TERMINATED AT 95.0'		95.0								
100												

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: RW
CHECKED: JAW

HOU_SOIL&ROCK_2010_9407711GINT.GPJ GLOR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-11.4

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: Republic / Arlington Landfill Permit Amendment / TX
LOCATION: Arlington, Texas

BORING STARTED: 13-Jun-2011
BORING FINISHED: 15-Jun-2011

DRILLING EQUIPMENT: CME 75
DRILLING OPERATOR: West Drilling

NORTHING (ft): 6,977,655.85
EASTING (ft): 2,398,576.55
ELEVATION (ft): 472.81

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✿ TORV. - ▲ UCS - ✳ 1000 2000 3000 4000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 * WATER CONTENT PERCENT PL W LL 20 40 60 80	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		Sandy silty gravel road		472.8								
		Compact, light brown and gray, clayey SAND, with silt and gravel				SS	6 9 7 N16					
5				463.8								
10		Stiff, gray, CLAY, moist		9.0		SH		100	⊕			
15						SH		72	⊕			
20						SH		100	⊕			
25						SH		100	⊕			
30						SH		100	⊕			
35						SH		100	⊕			
40		light brown at 39.0'				SH		89	⊕			
				428.8								
45		Light brown, clayey SAND/sandy clay		44.0		SH		100				
				423.8								
50		Light brown, SAND, some clay, wet		49.0 422.8		SH		67				
		--- CONTINUED NEXT PAGE ---										

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED RW
CHECKED: JAW

HOU_SOIL&ROCK_2010 9467711GINT.GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-11.4

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: Republic / Arlington Landfill Permit Amendment / TX
LOCATION: Arlington, Texas

BORING STARTED: 13-Jun-2011
BORING FINISHED: 15-Jun-2011
DRILLING EQUIPMENT: CME 75
DRILLING OPERATOR: West Drilling

NORTHING (ft): 6,977,655.85
EASTING (ft): 2,398,576.55
ELEVATION (ft): 472.81

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 1000 2000 3000 4000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 WATER CONTENT PERCENT PL ⊖ W ⊖ LL 20 40 60 80	ADDITIONAL LAB TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
50		-- CONTINUED FROM PREVIOUS PAGE --		50.0								
55		very loose at 54.0'				SS	1 1 1 N2	100				
60		compact at 59.0'				SS	4 6 10 N16	100				
65		3" gravel seam at bottom at 64.0'		407.8		SS						
		Hard, gray, CLAY		65.0 406.8								
		Hard, gray and light gray, SHALE		66.0								
70						SS	40/2" N>40	100				
						RC		75		★		
75		with fine sandy lenses at 75.0'				RC		97		★		
80				392.8								
		Light brown, SANDSTONE		80.0 390.8								
		Gray and light gray, SHALE, with few cemented layers (2" to 4" thick)		82.0		RC		80		★		
85		gray, unweathered at 85.0'				RC		97			★	
90						RC		90			★	
95				377.8								
		BORING TERMINATED AT 95.0'		95.0								
100												

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: RW
CHECKED: JAW

HOU_SOILAROCK_2010 9407711GINT.GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-11.5

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: Republic / Arlington Landfill Permit Amendment / TX
LOCATION: Arlington, Texas

BORING STARTED: 31-May-2011 DRILLING EQUIPMENT: CME 75
BORING FINISHED: 01-Jun-2011 DRILLING OPERATOR: West Drilling

NORTHING (ft): 6,975,944.59
EASTING (ft): 2,398,559.32
ELEVATION (ft): 473.82

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 1000 2000 3000 4000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 * WATER CONTENT PERCENT PL W LL 20 40 60 80	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		Gravel road		473.8								
		Brown, SAND, with silt and gravel (roadbase)		471.3		SS	2 13 7 N20	89				
		Stiff, gray, CLAY		2.5								
5		stiff, brown and gray, moist at 4.0'				SH		58	⊕			
10						SH		63	⊕			
15		gray and dark gray, mottled, trace fine sand and silt at 14.0'				SH		58	⊕			
20						SH		50	⊕			
25						SH		54	⊕			
30		very stiff at 29.0'				SH		67	⊕			
35						SH		67	⊕			
40						SH		63	⊕			
45						SH		63	⊕			
50		Firm, wet at 49.0'		423.8		SH		92	⊕			
		--- CONTINUED NEXT PAGE ---										

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: RW
CHECKED: JAW

HOU_SOIL&ROCK_2010 §407711GINT.GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-11.5

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: Republic / Arlington Landfill Permit Amendment / TX
LOCATION: Arlington, Texas

BORING STARTED: 31-May-2011 DRILLING EQUIPMENT: CME 75
BORING FINISHED: 01-Jun-2011 DRILLING OPERATOR: West Drilling

NORTHING (ft): 6,975,944.59
EASTING (ft): 2,398,559.32
ELEVATION (ft): 473.82

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ✱ UU - ❖ TORV. ▲ UCS - ✳ 1000 2000 3000 4000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 ✱ WATER CONTENT PERCENT PL ⊖ W LL 20 40 60 80	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
50		--- CONTINUED FROM PREVIOUS PAGE ---										
				50.0		SH		92				
55		stiff, dark gray at 54.0'				SH		75	⊕			
60						SH		75	⊕			
				409.8								
65		Very loose, gray, sandy CLAY, to clayey sand, wet		64.0		SS	1 1 2 N3	100				
				404.8								
70		Loose, gray, silty SAND, with gravel, wet		69.0		SS	3 3 4 N7	100				
75		compact at 74.0'				SS	4 4 13 N17	67				
				394.8								
		Fine, gray, SAND, wet		79.0								
80				393.8		SS	50/3" N>50	17				
		Light brown, cemented, SANDSTONE		80.0		CORE		42				
				388.0								
85		Gray and dark gray, unweathered, SHALE		85.0		CORE		70		✱		
90						CORE		90		✱		
95		trace fine sand lenses at 95.0'				CORE		100		○		
100		BORING TERMINATED AT 100.0'		373.8								
		--- CONTINUED NEXT PAGE ---										

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: RW
CHECKED: JAW

HOU_SOIL&ROCK_2010_9407714GINT.GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-11.5

PROJECT: Republic / Arlington Landfill Permit Amendment / TX
LOCATION: Arlington, Texas

BORING STARTED: 31-May-2011
BORING FINISHED: 01-Jun-2011

DRILLING EQUIPMENT: CME 75
DRILLING OPERATOR: West Drilling

DATUM: LOCAL
NORTHING (ft): 6,975,944.59
EASTING (ft): 2,398,559.32
ELEVATION (ft): 473.82

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ◇ TORV. - ▲ UCS - ✳ 1000 2000 3000 4000	ROCK QUALITY DESIGNATION (RQD) % * 20 40 60 80 / WATER CONTENT PERCENT PL — W — LL 20 40 60 80	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
100		*--- CONTINUED FROM PREVIOUS PAGE ---*		100.0								
105												
110												
115												
120												
125												
130												
135												
140												
145												
150												

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: RW
CHECKED: JAW

HOU SOILSROCK 2010 9-07711GINT.GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-11.6

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: Republic / Arlington Landfill Permit Amendment / TX
LOCATION: Arlington, Texas

BORING STARTED: 19-May-2011 DRILLING EQUIPMENT: CME 75
BORING FINISHED: 19-May-2011 DRILLING OPERATOR: West Drilling

NORTHING (ft): 6,975,938.12
EASTING (ft): 2,397,352.74
ELEVATION (ft): 463.47

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✱ 1000 2000 3000 4000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL W LL 20 40 60 80	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		Bare ground - soil		463.5								
		Firm, brown and gray, sandy CLAY, dry		462.5		SS	2 2 4	50	⊕			
		Stiff, gray, silty CLAY, moist		1.0			N6					
5		very stiff at 5.0'				SH		42	⊕			
		brown, with calcareous deposits and nodules at 7.0'										
10						SH		67	⊕			
15						SH		83	⊕			
				446.0								
		Stiff, reddish brown and gray, mottled, sandy CLAY, with iron staining and calcareous deposits, moist		17.5		SH		79	⊕			
20				440.5								
		Loose, grayish brown and gray, mottled, clayey SAND, with calcareous nodules		23.0		SC		70	⊕			
25				438.0								
		Dense, light brown and brown, coarse to fine, SAND, wet		27.5		SS	11 23 27	70				
30		with sand and gravel at 30.0'					N50					
				431.0								
		Hard, light gray and gray, silty CLAY, with very fine sand		32.5		SS	12 22 35	100	⊕			
35							N57					
				424.5								
		Dense, light gray, clayey very fine SAND, moist		39.0 423.5		SS	37 50/3"	72				
40		Light gray, very fine SANDSTONE		40.0			N>50					
						CORE		48		★		
45												
						CORE		97		★		
50				413.5								
		--- CONTINUED NEXT PAGE ---										

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED SW
CHECKED: JAW

HOU_SOILSROCK_2010 9407711GINT.GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-11.6

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: Republic / Arlington Landfill Permit Amendment / TX
LOCATION: Arlington, Texas

BORING STARTED: 19-May-2011
BORING FINISHED: 19-May-2011

DRILLING EQUIPMENT: CME 75
DRILLING OPERATOR: West Drilling

NORTHING (ft): 6,975,838.12
EASTING (ft): 2,397,352.74
ELEVATION (ft): 463.47

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ❖ TORV. - ▲ UCS - ✳ 1000 2000 3000 4000	ROCK QUALITY DESIGNATION (ROD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL ⊢—○W—⊣ LL 20 40 60 80	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
50		*--- CONTINUED FROM PREVIOUS PAGE ---*										
		Black, SHALE		50.0		CORE		93		★		
		dark gray at 51.5'										
		gray at 52.0'		410.0								
		SHALEY CLAY		53.5								
55				408.5								
		Hard, gray to dark gray, SHALE		55.0		CORE		100		★		
		light gray, with some interbedded sandy shale at 57.0'										
60		some very fine sand at 60.0'										
						CORE		75		★		
		gray at 63.3'										
65												
						CORE		97		★		
70		unweathered, some fine sandy shale seams at 70.0'										
						CORE		97		★		
75												
						CORE		100		★		
80				383.5								
		BORING TERMINATED AT 80.0'		80.0								
85												
90												
95												
100												

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: SW
CHECKED: JAW

HOU_SOILSROCK_2010 9407711GINT.GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-11.7

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: Republic / Arlington Landfill Permit Amendment / TX
LOCATION: Arlington, Texas

BORING STARTED: 18-May-2011 DRILLING EQUIPMENT: CME 75
BORING FINISHED: 18-May-2011 DRILLING OPERATOR: West Drilling

NORTHING (ft): 6,976,056.62
EASTING (ft): 2,396,090.65
ELEVATION (ft): 463.57

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 1000 2000 3000 4000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 / WATER CONTENT PERCENT PL ⊢—○W—⊣ LL 20 40 60 80	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		Natural surface (grass)		463.6								
		Brown, fine sandy CLAY to clayey SAND, damp = fill		462.6		SH		75				
		Gray and brown, mottled, fine, silty SAND, damp = fill		1.0								
				459.1								
5		Dense, brown and gray, clayey SAND, some clay, reworked with wood = fill		4.5		SH		50				
10		wet at 11.0'				SH		50				
15		Compact, brown and reddish brown, fine, with seams of silty sandy clay at 14.0'				SH		100				
				444.6								
20		Dense, brown, coarse SAND, wet		19.0		SS	9 27 24	67				
		Red, fine, clayey SAND, moist		19.5								
				443.1			N51					
		Hard, mottled, light gray and dark gray, sandy CLAY, moist		20.5								
				439.6								
		Hard, light gray, CLAY, damp		24.0		SS	11 18 27	67				
25				438.6								
		Hard, dark gray, shaley CLAY, dry		25.0			N45					
				433.0		SS	41 50/2.5"	44				
30		Hard, dark gray, SHALE		30.0			N>50					
						CORE		72				
				428.6								
35		Gray, SANDSTONE		35.0								
				426.1		CORE		53				
		Black, shaley CLAY		37.5								
				423.0								
40		Gray and light gray, mottled, sandy SHALE		40.0		CORE		100				
45												
						CORE		83				
				414.1								
50		Gray, SANDSTONE		49.5								
		--- CONTINUED NEXT PAGE ---										

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: SW
CHECKED: JAW

HOU_SOIL&ROCK_2010 9407711GINT.GPJ GLDR_HOU.GDT 2/7/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-11.7

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: Republic / Arlington Landfill Permit Amendment / TX
LOCATION: Arlington, Texas

BORING STARTED: 18-May-2011 DRILLING EQUIPMENT: CME 75
BORING FINISHED: 18-May-2011 DRILLING OPERATOR: West Drilling

NORTHING (ft): 6,976,056.62
EASTING (ft): 2,396,090.65
ELEVATION (ft): 463.57

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ◇ TORV. - ▲ UCS - ✳ 1000 2000 3000 4000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 WATER CONTENT PERCENT PL ⊖ W LL 20 40 60 80	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		--- CONTINUED FROM PREVIOUS PAGE ---										
50		Dark gray and gray, sandy SHALE		50.0		CORE		53		★		
				410.6								
		Gray, fine SANDSTONE		53.0								
		Gray, shaley CLAY		53.8								
				408.6								
55		Gray and light gray, SHALE, with some fine sand		55.0		CORE		100				
60												
						CORE		87		★		
65												
						CORE		13		★		
70				393.6								
		SANDSTONE		70.0								
		Unweathered, gray, SHALE		70.5		CORE		72		★		
75												
						CORE		80		★		
				384.8								
80		BORING TERMINATED AT 79.0'		79.0								
85												
90												
95												
100												

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: SW
CHECKED: JAW

HOU_SOIL&ROCK_2010_9407711GINT.GPJ GLDR_HOU.GDT 2/17/12

RECORD OF BOREHOLE B-11.8

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: Republic / Arlington Landfill Permit Amendment / TX
LOCATION: Arlington, Texas

BORING STARTED: 01-Jun-2011
BORING FINISHED: 01-Jun-2011

DRILLING EQUIPMENT: CME 75
DRILLING OPERATOR: West Drilling

NORTHING (ft): 6,977,607.99
EASTING (ft): 2,395,798.31
ELEVATION (ft): 470.08

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✿ TORV. - ▲ UCS - ✳ 1000 2000 3000 4000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL ⊢—⊖W—⊣ LL 20 40 60 80	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		Grass		470.1								
		Brown and light brown, clayey SAND, with gravel, moist		466.1		SH		100				
5		Brown, sandy CLAY, with gravel and lignite fragments		4.0 460.1		SH		50				
10		Loose, light gray and gray, fine silty SAND, trace large gravel, very moist		10.0		SH		67				
15						SH		30				
20		loose, gray and dark gray, wet at 19.0'				SS	2 3 4 N7	50				
25		dense at 24.0'		441.1		SS	15 16 18 N32	100				
30		Hard, dark gray, SHALE		29.0		SS	29 31 32 N63	100				
						CORE		0				
35		No recovery		435.1 35.0		CORE		30				
		Gray, SHALE, with sand and clay lenses		432.6 37.5								
		Gray, SANDSTONE		431.1 38.0								
40		Hard, gray, SHALE, with 6" lignite seams		439.1 40.0		CORE		97		★		
45						CORE						
		Gray, SANDSTONE		423.1 47.0		CORE		67		✳		
		Gray to dark gray, SHALE, with lignite fragments from 49-50'		422.1 48.0								
50				420.1								
		--- CONTINUED NEXT PAGE ---										

DEPTH SCALE
1 inch to 8.4 feet

Golder Associates

LOGGED: RW
CHECKED: JAW

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-11.8

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: Republic / Arlington Landfill Permit Amendment / TX
LOCATION: Arlington, Texas

BORING STARTED: 01-Jun-2011
BORING FINISHED: 01-Jun-2011

DRILLING EQUIPMENT: CME 75
DRILLING OPERATOR: West Drilling

NORTHING (ft): 6,977,607.99
EASTING (ft): 2,395,798.31
ELEVATION (ft): 470.08

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf)	ROCK QUALITY DESIGNATION (RQD) % / WATER CONTENT PERCENT	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
		--- CONTINUED FROM PREVIOUS PAGE ---										
50				50.0		CORE		77		*		
				415.6								
55		Gray, SANDSTONE		54.5								
				413.5								
		Unweathered, gray, SHALE		56.6		CORE		95		*		
60												
						CORE		100		*		
65		with reddish brown mottling at 65.0'										
						CORE		100		*		
				402.6								
		BOIRNG TERMINATED AT 67.5'		67.5								
70												
75												
80												
85												
90												
95												
100												

UNDRAINED SHEAR STRENGTH Cu (psf): CU - ● P.P. - ⊕ Field Vane Shear ■ ; UU - ✪ TORV. ▲ UCS - ✳ ; 1000 2000 3000 4000

ROCK QUALITY DESIGNATION (RQD) % * : 20 40 60 80

WATER CONTENT PERCENT: PL — W — LL ; 20 40 60 80

HCU_SOIL&ROCK_2010_5407711GINT.GPJ GLDR_HCU.GDT 2/17/12

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: RW
CHECKED: JAW

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-11.9

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: Republic / Arlington Landfill Permit Amendment / TX
LOCATION: Arlington, Texas

BORING STARTED: 13-Jun-2011
BORING FINISHED: 13-Jun-2011
DRILLING EQUIPMENT: CME 75
DRILLING OPERATOR: West Drilling

NORTHING (ft): 6,978,947.04
EASTING (ft): 2,395,522.14
ELEVATION (ft): 475.55

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✿ TORV. - ▲ UCS - ✳ 1000 2000 3000 4000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL ⊖W LL 20 40 60 80	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		Grass		475.6								
		Loose, light brown, fine, SAND, dry				SS	2 2 3 N5	89				
5						SS	2 2 2 N4	83				
10		trace gray and light brown clay, moist at 9.0'				SS		100				
				461.6								
15		Firm, gray and light brown, sandy CLAY, moist		14.0		SS	2 3 3 N6	89				
				456.6								
20		Very loose, light brown, medium to fine, SAND, with gravel, wet		19.0		SS	1 2 1 N3	100				
25		with clay at 24.0'				SS	0 1 1 N2	100				
30		loose at 29.0'				SS	0 0 8 N8	100				
35		very loose at 34.0'				SS	0 1 1 N2	100				
40						SS	1 2 1 N3	100				
45		compact at 44.0'				SS	0 2 2 N4	89				
50				425.6		SS		89				
		--- CONTINUED NEXT PAGE ---										

DEPTH SCALE
1 inch to 8.4 feet

Golder Associates

LOGGED: RW
CHECKED: JAW

HOU_SOIL&ROCK_2010_94077-1GINT.GPJ GLDR_HOU.GDT 2/17/12

RECORD OF BOREHOLE B-11.9

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: Republic / Arlington Landfill Permit Amendment / TX
LOCATION: Arlington, Texas

BORING STARTED: 13-Jun-2011
BORING FINISHED: 13-Jun-2011

DRILLING EQUIPMENT: CME 75
DRILLING OPERATOR: West Drilling

NORTHING (ft): 6,978,947.04
EASTING (ft): 2,395,522.14
ELEVATION (ft): 475.55

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ◇ TORV. - ▲ UCS - ✳ 1000 2000 3000 4000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL ⊖ W LL 20 40 60 80	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
50		--- CONTINUED FROM PREVIOUS PAGE ---		50.0			2 5 19 N24					
55		Dense, brown and gray, cemented SANDSTONE		421.6 54.0		SS	50/2" N>50					
60		Gray, SHALE, with gravel and clay lenses, cemented sand at bottom unweathered at 65.0'		415.6 60.0		RC		60 45 85 98		★ ★ ★ ★		
75		BORING TERMINATED AT 75.0'		400.6 75.0								
80												
85												
90												
95												
100												

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: RW
CHECKED: JAW

HOU_SOIL&ROCK_2010 9407711GINT.GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-11.10

SHEET 1 OF 2
DATUM: LOCAL

PROJECT: Republic / Arlington Landfill Permit Amendment / TX
LOCATION Arlington, Texas

BORING STARTED: 23-May-2011 DRILLING EQUIPMENT: CME 75
BORING FINISHED: 23-May-2011 DRILLING OPERATOR: West Drilling

NORTHING (ft): 6,978,727.16
EASTING (ft): 2,394,691.48
ELEVATION (ft): 522.20

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU - ● P.P. - ⊕ Field Vane Shear ■ UU - ✪ TORV. - ▲ UCS - ✳ 1000 2000 3000 4000	ROCK QUALITY DESIGNATION (RQD) % 20 40 60 80 ★ WATER CONTENT PERCENT PL ⊖W LL 20 40 60 80	ADDITIONAL LAB. TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
0		GROUND SURFACE		522.2								
		Brown, clayey SAND/sandy clay, moist		0.5		SH		100	⊕			
		Very stiff, orangish brown, silty CLAY, with gravel, dry										
5						SH		58	⊕			
				512.7		SH	15	100	⊕			
10		Compact, reddish brown, fine, silty SAND		9.5		SS	12 6 N18	89				05/23/2011
				507.7			3					
15		Stiff, olive brown and orange brown, mottled, CLAY		14.5 15.0		SS	4 6 N10	67				
		Stiff, orangish brown, silty CLAY										
				503.2			17					
20		Very dense, light gray, orangish brown, and light brown, fine silty SAND, moist		19.0		SS	45/5" N>50	92				
25						SS	20/5" N>50	83				
				493.2			13					
30		Hard, gray, SHALE, moist		29.0		SS	23 24 N57	89				
						RC		56		★		
35												
						RC		90			★	
40		some iron staining at 40.0'										
		light gray, very fine SAND seam at 42.5'				RC		85			★	
45												
		Light brown and brown, SANDSTONE		476.2 46.0							★	
50		iron staining at 49.5'										
		--- CONTINUED NEXT PAGE ---										

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED SW
CHECKED JAW

HOU_SOIL&ROCK_2010 946711GINT.GPJ GLDR_HOU.GDT 2/17/12

Permit Issued: February 12, 2014

RECORD OF BOREHOLE B-11.10

SHEET 2 OF 2
DATUM: LOCAL

PROJECT: Republic / Arlington Landfill Permit Amendment / TX
LOCATION: Arlington, Texas

BORING STARTED: 23-May-2011 DRILLING EQUIPMENT: CME 75
BORING FINISHED: 23-May-2011 DRILLING OPERATOR: West Drilling

NORTHING (ft): 6,978,727.16
EASTING (ft): 2,394,691.48
ELEVATION (ft): 522.20

DEPTH SCALE FEET	BORING METHOD	SOIL PROFILE DESCRIPTION	STRATA PLOT	ELEV. / DEPTH (ft)	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES BLOWS/0.5 FT	RECOVERY %	UNDRAINED SHEAR STRENGTH Cu (psf) CU · ● P.P. · ⊕ Field Vane Shear ■ UU · ✿ TORV. · ▲ UCS · ✳ 1000 2000 3000 4000	ROCK QUALITY DESIGNATION (RQD) % ★ 20 40 60 80 WATER CONTENT PERCENT PL ⊖W LL 20 40 60 80	ADDITIONAL LAB TESTING	INSTALLATION NOTES AND GROUNDWATER OBSERVATIONS
50		--- CONTINUED FROM PREVIOUS PAGE ---										
		Light brown and brown, SANDSTONE				RC		93		★		
55		light brown and gray at 52.0'										
						RC		38		★		
60		reddish brown at 58.0'										
						RC		63		★		
65		brown at 63.75'										
				454.4		RC		95		★		
70		Very hard, gray, unweathered, SHALE, with shaly sandstone		67.8		RC		37		★		
75												
						RC		73		★		
80				442.2 80.0								
85												
90												
95												
100												

DEPTH SCALE
1 inch to 6.4 feet

Golder Associates

LOGGED: SW
CHECKED: JAW

HOU_SOIL&ROCK_2010_3407711GINT.GPJ GLDR_HOU.GDT 2/17/12

2014 THE CAREL CORPORATION BORING LOGS

LOG OF MONITOR WELL NO. MW-25

Project Description: Well Installations

CAREL

Location: City of Arlington Landfill
Top of PVC El.: 467.02 feet MSL
Surface El.: 464.07 feet MSL
Completion Depth: 23 feet
Date Boring Started: 9/8/2014
Date Boring Completed: 9/9/2014

Northing: 6976653.25
Easting: 2396292.59

Depth, feet	Samples	Symbol/USCS	MATERIAL DESCRIPTION	Monitor Well Construction Details	Monitor Well Description
			SANDY CLAY, dark gray to dark brown, dry to slightly moist		Concrete from surface to 3' bgs
5			some white gravel		Cement-Bentonite grout from 3' to 10.5' bgs
10			slightly moist to moist		
			CLAYEY/SILTY SAND, medium brown some gray, moist to wet		Bentonite seal from 10.5' to 15.5' bgs
15			CLAY, dark gray some brown, moist		20/40 Silica sand from 15.5' to 23.0' bgs
			GRAVELLY SAND, medium brown, poorly sorted, wet		
20			SHALE, dark gray, slightly moist to dry		0.01" Slotted screen from 17.5' to 22.5' bgs

STATE OF TEXAS
KEVIN T. CAREL
GEOLOGY
#960
LICENSED
PROFESSIONAL GEOSCIENTIST
11-18-14

Drilling Contractor: Roddy Qualls Env. Drilling
Drilling Method: HSA
Sampling Method: Continuous
Geologist: Steven J. Wimmer
Project No.: 14-05-24

Groundwater Observations	
Date	Depth to Water (ft)
9/8/14	13.25
9/9/14	12.9

Remarks: Drilled with Diedrich D-50 Turbo Rig and 10.25" diameter hollow stem augers. Four (4) inch diameter casing and screen.

GROUNDWATER WELL - B&W ARLINGTON.GPJ CAREL2.GDT 10/29/14

LOG OF MONITOR WELL NO. MW-25
PAGE 1 of 1

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

Water level at time of drilling.
Water level at end of drilling.
Water level after drilling.

LOG OF MONITOR WELL NO. MW-26

Project Description: Well Installations

Location: City of Arlington Landfill
Top of PVC El.: 484.99 feet MSL
Surface El.: 481.56 feet MSL
Completion Depth: 44.2 feet
Date Boring Started: 8/28/2014
Date Boring Completed: 9/9/2014

Northing: 6977227.48
Easting: 2396273.70

Depth, feet	Samples	Symbol/USCS	MATERIAL DESCRIPTION	Monitor Well Construction Details	Monitor Well Description
0			SANDY CLAY, medium brown, dry, topsoil fill		Concrete from surface to 3' bgs
10			CLAY, some sand, dark brown to dark gray, slightly moist, firm		
15			SANDY CLAY, dark brown to dark gray, slightly moist, soft		Cement-Bentonite grout from 3' to 26' bgs
25			SANDY CLAY, medium brown some gray, moist		
			very moist		Bentonite seal from 26' to 31' bgs
30			GRAVELLY SAND, medium brown, poorly sorted, wet		20/40 Silica sand from 31' to 44.2' bgs
			SANDY/SILTY CLAY, some gravel, medium brown, wet		
35			increasing gravel		0.01" Slotted screen from 33.7' to 43.7' bgs
40			SHALE, dark gray, slightly moist, hard		

STATE OF TEXAS
KEVIN T. CAREL
GEOLOGY
#960
LICENSED
PROFESSIONAL GEOSCIENTIST
11-18-14

Drilling Contractor:	Roddy Qualls Env. Drilling
Drilling Method:	HSA
Sampling Method:	Continuous
Geologist:	Steven J. Wimmer
Project No.:	14-05-24

Groundwater Observations	
Date	Depth to Water (ft)
9/2/14	28.29
9/8/14	28.42

Remarks: Drilled with Diedrich D-50 Turbo Rig and 10.25" diameter hollow stem augers. Four (4) inch diameter casing and screen.

GROUNDWATER WELL - B&W ARLINGTON.GPJ CAREL2.GDT 10/28/14

LOG OF MONITOR WELL NO. MW-26
PAGE 1 of 1

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

▽ Water level at time of drilling.
▼ Water level at end of drilling.
▽ Water level after drilling.

LOG OF MONITOR WELL NO. MW-27

Project Description: Well Installations

CAREL

Location: City of Arlington Landfill
Top of PVC El.: 470.14 feet MSL
Surface El.: 466.68 feet MSL
Completion Depth: 25 feet
Date Boring Started: 8/26/2014
Date Boring Completed: 9/9/2014

Northing: 6977776.70
Easting: 2396121.57

Depth, feet	Samples	Symbol/USCS	MATERIAL DESCRIPTION	Monitor Well Construction Details	Monitor Well Description
0			SILTY CLAY, medium brown to dark brown, dry		Concrete from surface to 3' bgs
5			slightly moist		Cement-Bentonite grout from 3' to 12.5' bgs
			some very fine grained sand		
10			slightly moist to moist		
			2-inch gravel seam at 13' bgs		
15			some gravel, moist		Bentonite seal from 12.5' to 17.5' bgs
					20/40 Silica sand from 17.5' to 25' bgs
20			GRAVELLY SAND, medium brown, poorly sorted, subrounded, wet		0.01" Slotted screen from 19.5' to 24.5' bgs
25			SHALE, dark gray, dry, hard		

STATE OF TEXAS
KEVIN T. CAREL
GEOLOGY
#960
LICENSED
PROFESSIONAL GEOSCIENTIST
11-18-14

GROUNDWATER WELL - B&W ARLINGTON.GPJ CAREL2.GDT 10/28/14

Drilling Contractor: Roddy Qualls Env. Drilling
Drilling Method: HSA
Sampling Method: Continuous
Geologist: Steven J. Wimmer
Project No.: 14-05-24

Groundwater Observations	
Date	Depth to Water (ft)
8/28/14	13.07

Remarks: Drilled with Diedrich D-50 Turbo Rig and 10.25" diameter hollow stem augers. Four (4) inch diameter casing and screen.

LOG OF MONITOR WELL NO. MW-27
PAGE 1 of 1

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

▽ Water level at time of drilling.
▼ Water level at end of drilling.
▽ Water level after drilling.

LOG OF MONITOR WELL NO. MW-42

Project Description: Well Installations

Location: City of Arlington Landfill
Top of PVC El.: 467.5 feet MSL
Surface El.: 464.18 feet MSL
Completion Depth: 50 feet
Date Boring Started: 9/5/2014
Date Boring Completed: 9/9/2014

Northing: 6975799.69
Easting: 2398504.95

Depth, feet	Samples	Symbol/USCS	MATERIAL DESCRIPTION	Monitor Well Construction Details	Monitor Well Description
0			SANDY CLAY, medium brown, dry to slightly moist, topsoil fill		Concrete from surface to 3' bgs
10			CLAY, dark gray to dark brown, slightly moist, firm, calcareous		
15			mostly dark gray		Cement-Bentonite grout from 3' to 31.5' bgs
20			dark gray to dark brown		
30			SANDY/SILTY CLAY, medium brown some gray, well sorted, rounded, very fine grained, slightly moist, soft		Bentonite seal from 31.5' to 36.5' bgs
35			CLAYEY/SILTY SAND, medium brown, well sorted, rounded, very fine grained, moist to wet, some minor coarse grained sand and gravel		20/40 Silica sand from 36.5' to 50' bgs
40			less clay with depth		
45			GRAVELLY SAND, medium brown, poorly sorted, subrounded, wet		0.01" Slotted screen from 38.5' to 48.5' bgs
50			SHALE, dark gray, dry, hard		

STATE OF TEXAS
KEVIN T. CAREL
GEOLOGY
#960
LICENSED
PROFESSIONAL GEOSCIENTIST
11-18-14

Drilling Contractor: Roddy Qualls Env. Drilling
Drilling Method: HSA
Sampling Method: Continuous
Geologist: Steven J. Wimmer
Project No.: 14-05-24

Groundwater Observations	
Date	Depth to Water (ft)
9/8/14	22.64

Remarks: Drilled with Diedrich D-50 Turbo Rig and 10.25" diameter hollow stem augers. Four (4) inch diameter casing and screen.

GROUNDWATER WELL - B&W ARLINGTON.GPJ CAREL2.GDT 10/28/14

LOG OF MONITOR WELL NO. MW-42
PAGE 1 of 1

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

▽ Water level at time of drilling.
▼ Water level at end of drilling.
▽ Water level after drilling.

LOG OF MONITOR WELL NO. MW-43

Project Description: Well Installations

Location: City of Arlington Landfill
Top of PVC El.: 466.72 feet MSL
Surface El.: 462.96 feet MSL
Completion Depth: 45 feet
Date Boring Started: 8/27/2014
Date Boring Completed: 9/9/2014

Northing: 6975815.93
Easting: 2397973.48

Depth, feet	Samples	Symbol/USCS	MATERIAL DESCRIPTION	Monitor Well Construction Details	Monitor Well Description
0			SANDY CLAY, dark gray to dark brown, dry, stiff, calcareous		Concrete from surface to 3' bgs
5			slightly moist		
			less sand		
10					
15			CLAY, minor sand, dark gray to dark brown, slightly moist to moist, calcareous		Cement-Bentonite grout from 3' to 27.5' bgs
20					
			SANDY/SILTY CLAY, orangeish brown to gray, moist		
25					
30			SAND, medium brown, subrounded, fine to coarse grained, wet		Bentonite seal from 27.5' to 32.5' bgs
			some silt and clay		20/40 Silica sand from 32.5' to 45' bgs
35			GRAVELLY SAND, medium brown, poorly sorted, subrounded, medium to coarse grained, wet		
40					0.01" Slotted screen from 34.5' to 44.5' bgs
45			SHALE, dark gray, dry, hard		

STATE OF TEXAS
KEVIN T. CAREL
GEOLOGY
#960
LICENSED
PROFESSIONAL GEOSCIENTIST
11-18-14

Drilling Contractor: Roddy Qualls Env. Drilling	
Drilling Method: HSA	
Sampling Method: Continuous	
Geologist: Steven J. Wimmer	
Project No.: 14-05-24	

Groundwater Observations	
Date	Depth to Water (ft)
8/28/14	20.85

Remarks: Drilled with Diedrich D-50 Turbo Rig and 10.25" diameter hollow stem augers. Four (4) inch diameter casing and screen.

LOG OF MONITOR WELL NO. MW-43
PAGE 1 of 1

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

▽ Water level at time of drilling.
▼ Water level at end of drilling.
▽ Water level after drilling.

GROUNDWATER WELL - B&W ARLINGTON.GPJ CAREL2.GDT 10/28/14

LOG OF MONITOR WELL NO. MW-44

Project Description: Well Installations

Location: City of Arlington Landfill
Top of PVC El.: 466.42 feet MSL
Surface El.: 463.41 feet MSL
Completion Depth: 37 feet
Date Boring Started: 8/27/2014
Date Boring Completed: 9/9/2014

Northing: 6975834.92
Easting: 2397440.88

Depth, feet	Samples	Symbol/USCS	MATERIAL DESCRIPTION	Monitor Well Construction Details	Monitor Well Description
0			SANDY CLAY, minor gravel, some roots, dark gray to dark brown, dry, stiff		Concrete from surface to 3' bgs
5			slightly moist		
10			small iron nodules		Cement-Bentonite grout from 3' to 19' bgs
15			SANDY/SILTY CLAY, some gravel, medium brown, slightly moist to moist, calcareous		
20			SANDY CLAY, orangeish brown, very moist, soft, calcareous		Bentonite seal from 19' to 23' bgs
25			CLAYEY SAND, orangeish brown to gray, very moist to wet, calcareous and iron staining		20/40 Silica sand from 23' to 36' bgs
30			SILTY SAND, some gravel, medium brown some gray, poorly sorted, fine to coarse grained, wet		0.01" Slotted screen from 25.5' to 35.5' bgs
			flowing sands		
35			GRAVELLY SAND, medium brown, poorly sorted, rounded, wet		Boring cave-in due to flowing sands
			SHALE, dark gray, dry, hard		

STATE OF TEXAS
KEVIN T. CAREL
GEOLOGY
#960
LICENSED
PROFESSIONAL GEOSCIENTIST
11-18-14

Drilling Contractor: Roddy Qualls Env. Drilling
Drilling Method: HSA
Sampling Method: Continuous
Geologist: Steven J. Wimmer
Project No.: 14-05-24

Groundwater Observations	
Date	Depth to Water (ft)
8/28/14	22.51

Remarks: Drilled with Diedrich D-50 Turbo Rig and 10.25" diameter hollow stem augers. Four (4) inch diameter casing and screen.

GROUNDWATER WELL - B&W ARLINGTON.GPJ CAREL2.GDT 10/29/14

LOG OF MONITOR WELL NO. MW-44
PAGE 1 of 1

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

▽ Water level at time of drilling.
▼ Water level at end of drilling.
▼ Water level after drilling.

LOG OF MONITOR WELL NO. MW-45

Project Description: Well Installations

Location: City of Arlington Landfill
Top of PVC El.: 466.47 feet MSL
Surface El.: 463.31 feet MSL
Completion Depth: 26 feet
Date Boring Started: 8/26/2014
Date Boring Completed: 9/9/2014

Northing: 6975879.16
Easting: 2396907.27

Depth, feet	Samples	Symbol/USCS	MATERIAL DESCRIPTION	Monitor Well Construction Details	Monitor Well Description
0			SANDY CLAY, some gravel, medium brown to dark brown, dry, stiff		Concrete from surface to 3' bgs
5					Cement-Bentonite grout from 3' to 13' bgs
			slightly moist, less gravel		
10					
			SANDY/SILTY CLAY, medium brown and orange, slightly moist, firm		
15					Bentonite seal from 13' to 18.5' bgs
			moist, some gravel		
					20/40 Silica sand from 18.5' to 26' bgs
20			CLAYEY/SILTY SAND, medium brown, well sorted, well rounded, very fine grained, moist		
			GRAVELLY SAND, medium brown, poorly sorted, subrounded, wet		0.01" Slotted screen from 20.5' to 25.5' bgs
25			SHALE, dark gray, dry, hard		

STATE OF TEXAS
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GEOLOGY
#960
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PROFESSIONAL GEOSCIENTIST
11-18-14

Drilling Contractor: Roddy Qualls Env. Drilling
Drilling Method: HSA
Sampling Method: Continuous
Geologist: Steven J. Wimmer
Project No.: 14-05-24

Groundwater Observations	
Date	Depth to Water (ft)
8/27/14	18

Remarks: Drilled with Diedrich D-50 Turbo Rig and 10.25" diameter hollow stem augers. Four (4) inch diameter casing and screen.

GROUNDWATER WELL - B&W ARLINGTON.GPJ CAREL2.GDT 10/29/14

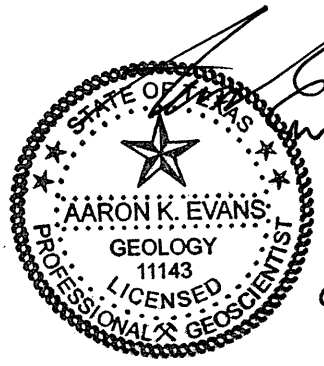
LOG OF MONITOR WELL NO. MW-45
PAGE 1 of 1

The stratification lines represent approximate strata boundaries. In situ, the transition may be gradual.

▽ Water level at time of drilling.
▼ Water level at end of drilling.
▽ Water level after drilling.

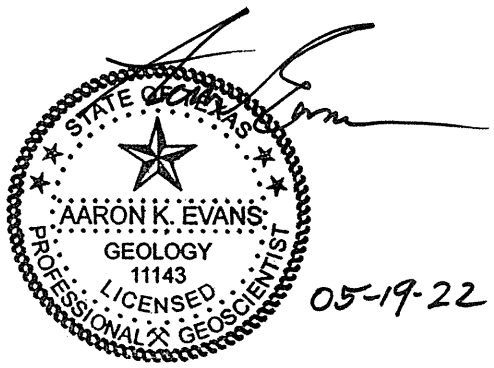
APPENDIX IIIG-C

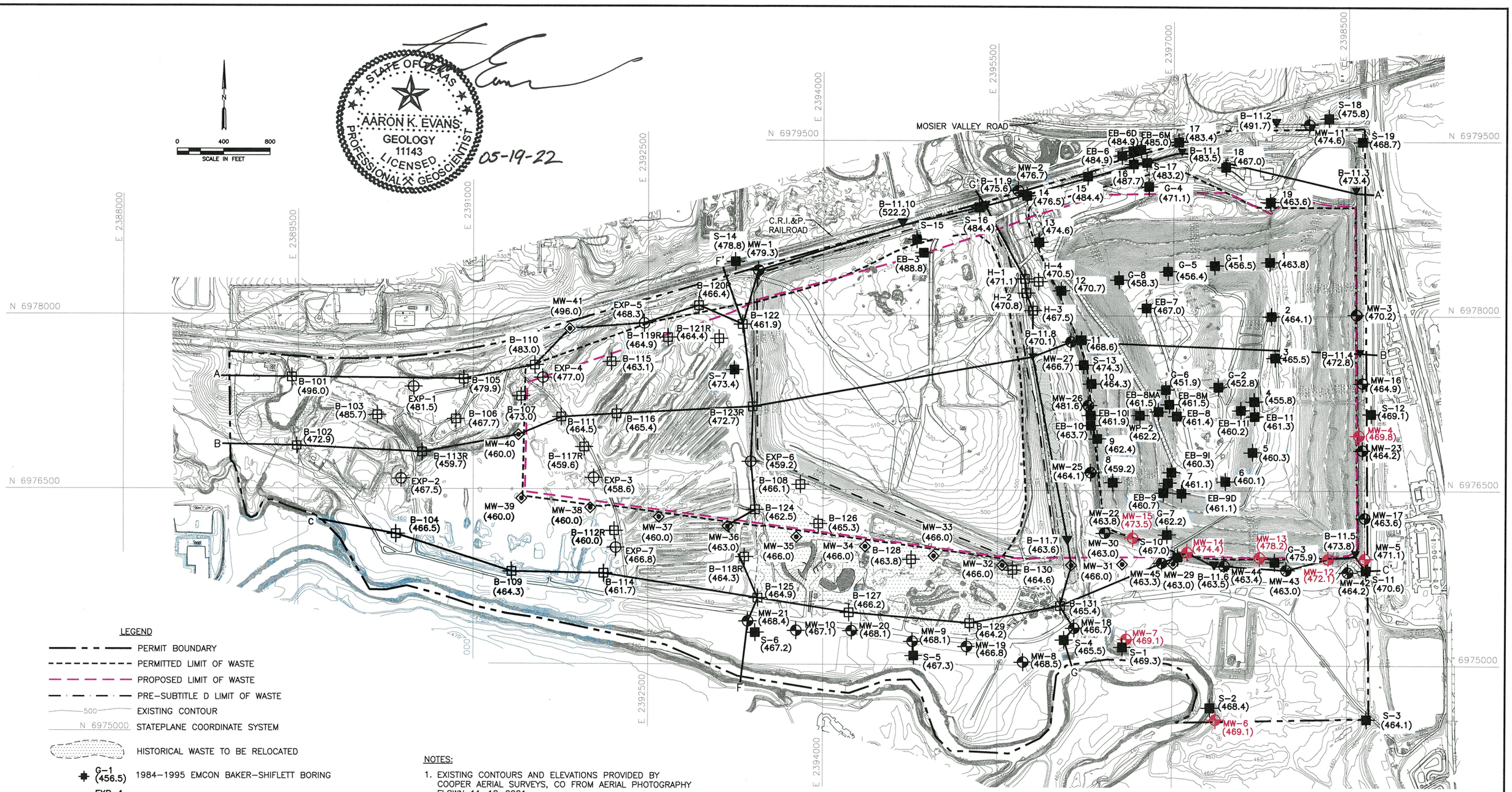
SITE GEOLOGIC DATA



05-19-22

CONTENTS





LEGEND

- PERMIT BOUNDARY
- PERMITTED LIMIT OF WASTE
- PROPOSED LIMIT OF WASTE
- PRE–SUBTITLE D LIMIT OF WASTE
- 500 EXISTING CONTOUR
- N 6975000 STATEPLANE COORDINATE SYSTEM
- HISTORICAL WASTE TO BE RELOCATED
- G–1 (456.5) 1984–1995 EMCON BAKER–SHIFLETT BORING
- EXP–1 (481.5) 2008/2009 GOLDER ASSOCIATES BORING
- B–101 (496.0) 2010 GOLDER ASSOCIATES BORING
- B–11.1 (483.5) 2011 GOLDER ASSOCIATES BORING
- MW–1 (479.3) EXISTING GROUNDWATER MONITOR WELL
- MW–14 (674.4) FORMER GROUNDWATER MONITOR WELL
- MW–30 FUTURE GROUNDWATER MONITOR WELL
- A——A' GEOLOGIC CROSS SECTION LOCATION

NOTES:

1. EXISTING CONTOURS AND ELEVATIONS PROVIDED BY COOPER AERIAL SURVEYS, CO FROM AERIAL PHOTOGRAPHY FLOWN 11–18–2021.
2. BOREHOLE AND MONITOR WELL LOCATION COORDINATES AND SURFACE ELEVATIONS OBTAINED FROM PREVIOUS SUBSURFACE EXPLORATION LITHOLOGIC LOGS AND REPORTS.
3. GROUND SURFACE ELEVATIONS AT THE TIME OF DRILLING FOR PREVIOUSLY COMPLETED BORINGS, OBTAINED FROM PREVIOUS SUBSURFACE INVESTIGATION LITHOLOGIC LOGS AND REPORTS, ARE POSTED AT EACH BOREHOLE LOCATION IN FT–MSL.
4. GROUND SURFACE ELEVATIONS FOR FUTURE MONITOR WELL LOCATIONS BASED ON EXISTING AERIAL PHOTOGRAPHY.
5. CROSS SECTION LOCATIONS REPRODUCED FROM THOSE DEPICTED BY GOLDER ASSOCIATES IN PERMIT MSW–358B (FOR SECTIONS A–A', B–B', C–C', F–F', AND G–G') AND MODIFIED TO REFLECT CURRENT SITE CONDITIONS AND PROPOSED RECONFIGURATION DETAILS.

P:\Groundwater\Republic\Arlington\2021 MPA\SD\PUI\GI\Appendix IIIG-C\FIG IIIG-C-1-CROSS SECTION INDEX MAP.dwg

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DESIGN BY: AKE
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MAJOR PERMIT AMMENDMENT
GEOLOGIC CROSS SECTION INDEX MAP

CITY OF ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS

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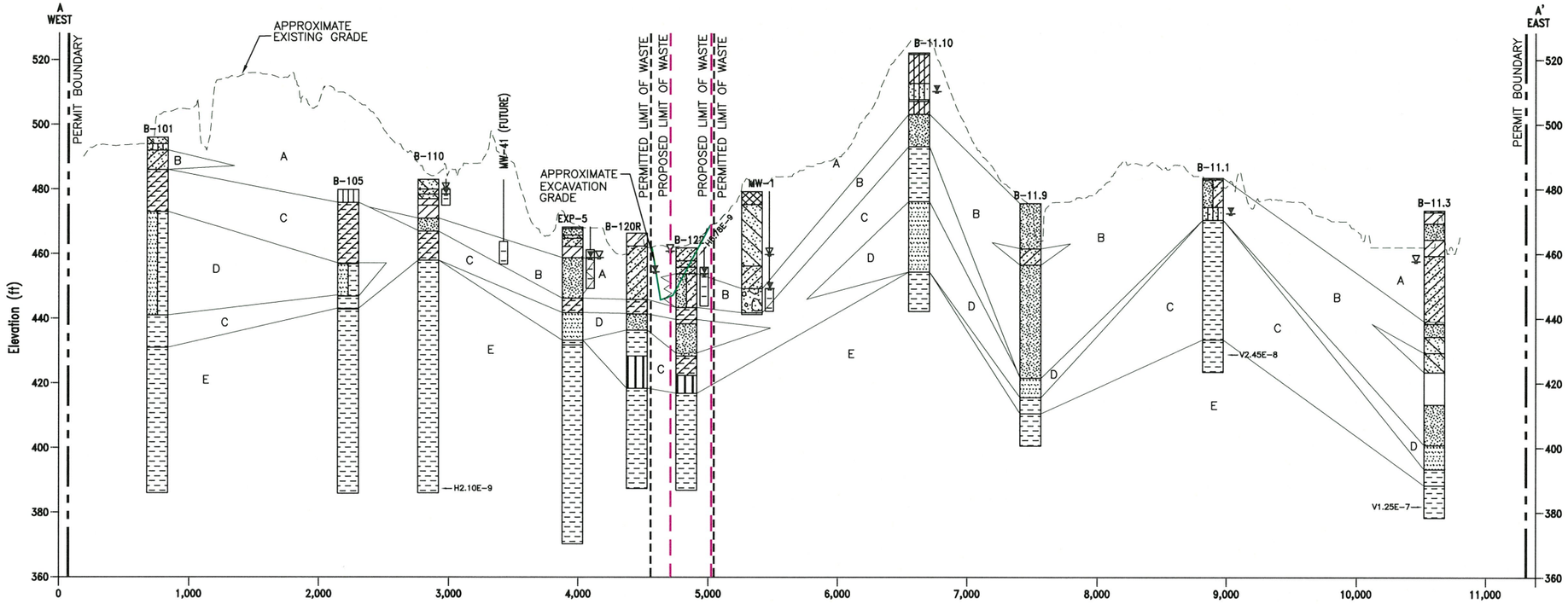
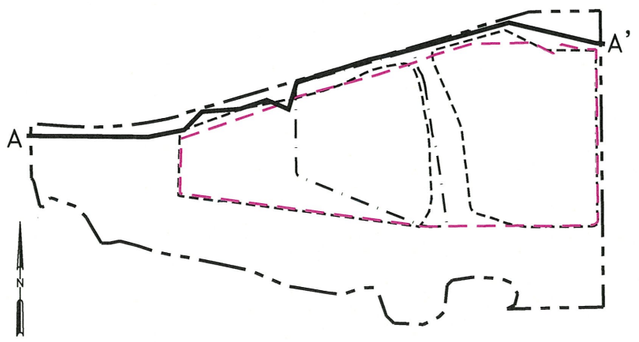
FIGURE IIIG–C–1





KEY MAP

LEGEND

- PERMIT BOUNDARY
- PERMITTED LIMIT OF WASTE
- PROPOSED LIMIT OF WASTE
- PRE-SUBTITLE D LIMIT OF WASTE

- Clayey Sand
- Silty Sand
- Sandy Clay
- Sand with Clay
- Silty Clay
- Clay
- Shaley Clay
- Sandstone and Shale
- Shale
- Sand
- Sandstone
- No Recovery
- Fill
- Silt
- Sandy Silt
- Siltstone
- Gravel
- Sandstone and Siltstone
- Siltstone and Shale
- Sand with Silt

- MONITOR WELL OR PIEZOMETER WITH RISER (TOP) AND FILTERPACK/SCREENED INTERVAL (BOTTOM)
- STATIC GROUNDWATER ELEVATION
- GROUNDWATER ELEVATION AT TIME OF DRILLING
- V1.46E-8 LABORATORY VERTICAL PERMEABILITY (cm/sec)
- H1.46E-8 LABORATORY HORIZONTAL PERMEABILITY (cm/sec)
- A, B, C, D, or E INDICATES SITE SPECIFIC LITHOLOGIC UNIT

NOTES:

1. EXISTING GRADE BASED ON COOPER AERIAL SURVEYS, CO FROM AERIAL PHOTOGRAPHY FLOWN 11-18-2021.
2. CROSS SECTION LITHOLOGIC DEPICTIONS, STRATIGRAPHIC UNIT CORRELATIONS, AND PERMEABILITY LABELS, REPRODUCED FROM 2014 GEOLOGIC CROSS SECTION BY GOLDER ASSOCIATES AND MODIFIED TO ACCOMMODATE EXISTING SITE CONDITIONS AND PROPOSED FACILITY RECONFIGURATION.
3. STATIC GROUNDWATER ELEVATIONS OBTAINED FROM FACILITY SUBTITLE D GROUNDWATER DATABASE AND PREVIOUS SUBSURFACE INVESTIGATION DATA SUMMARY TABLES.
4. WELL SCREEN INFORMATION FOR FUTURE MONITOR WELL LOCATIONS ESTIMATED FROM EXISTING AERIAL PHOTOGRAPHY AND SUBSURFACE INFORMATION.
5. CROSS SECTION CORRELATIONS ARE INTERPOLATED BETWEEN BORINGS. ACTUAL CONDITIONS MAY VARY FROM THOSE DEPICTED.
6. BOREHOLE GRAPHICS ARE HORIZONTALLY EXAGGERATED FOR ILLUSTRATION PURPOSES AND MAY BE OFFSET FROM ONE ANOTHER TO PREVENT OVERLAP IN SECTION SPACE.

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GEOLOGIC CROSS SECTION A-A'

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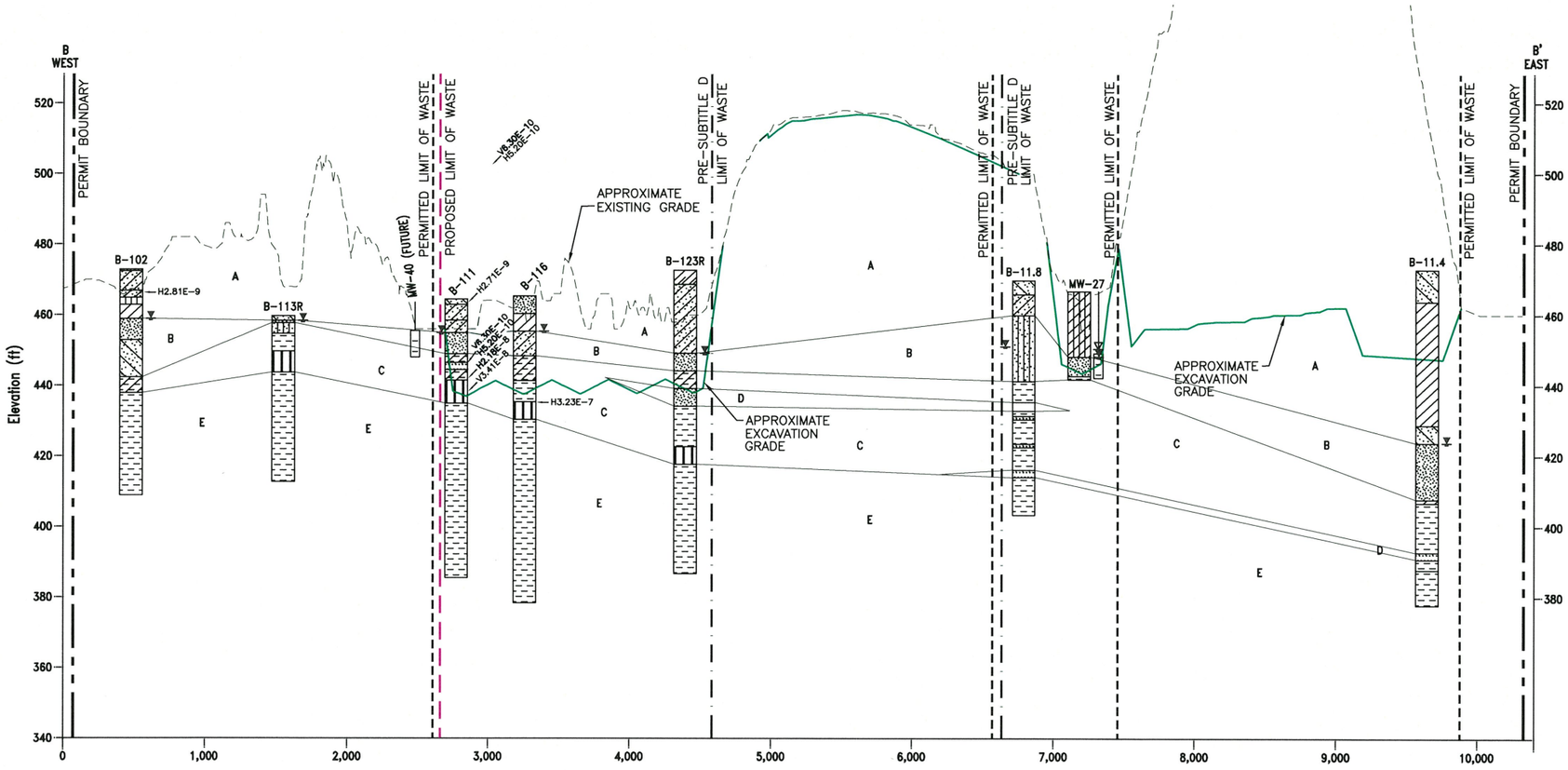
FIGURE IIIG-C-2

P:\Groundwater\Republic\Arlington\2021 MPA\SD\PI\IIIG\Appendix IIIG-C\FIG IIIG-C-2_6-CROSS SECTIONS A-G.dwg

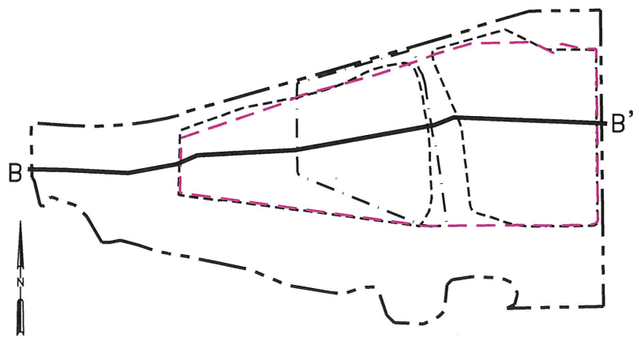


LEGEND

- PERMIT BOUNDARY
- PERMITTED LIMIT OF WASTE
- PROPOSED LIMIT OF WASTE
- PRE-SUBTITLE D LIMIT OF WASTE

- Clayey Sand
- Silty Sand
- Sandy Clay
- Sand with Clay
- Silty Clay
- Clay
- Shaley Clay
- Sandstone and Shale
- Shale
- Sand
- Sandstone
- No Recovery
- Fill
- Silt
- Sandy Silt
- Siltstone
- Gravel
- Sandstone and Siltstone
- Siltstone and Shale
- Sand with Silt

- MONITOR WELL OR PIEZOMETER WITH RISER (TOP) AND FILTERPACK/SCREENED INTERVAL (BOTTOM)
- STATIC GROUNDWATER ELEVATION
- GROUNDWATER ELEVATION AT TIME OF DRILLING
- V1.46E-8 LABORATORY VERTICAL PERMEABILITY (cm/sec)
- H1.46E-8 LABORATORY HORIZONTAL PERMEABILITY (cm/sec)
- A, B, C, D, or E INDICATES SITE SPECIFIC LITHOLOGIC UNIT



KEY MAP

NOTES:

1. EXISTING GRADE BASED ON COOPER AERIAL SURVEYS, CO FROM AERIAL PHOTOGRAPHY FLOWN 11-18-2021.
2. CROSS SECTION LITHOLOGIC DEPICTIONS, STRATIGRAPHIC UNIT CORRELATIONS, AND PERMEABILITY LABELS, REPRODUCED FROM 2014 GEOLOGIC CROSS SECTION BY GOLDER ASSOCIATES AND MODIFIED TO ACCOMMODATE EXISTING SITE CONDITIONS AND PROPOSED FACILITY RECONFIGURATION.
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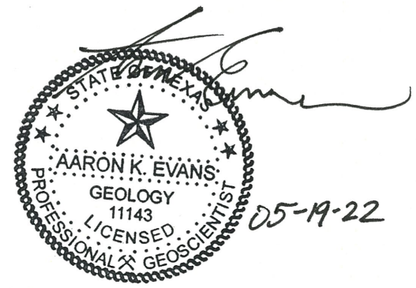

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GEOLOGIC CROSS SECTION B-B'

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FIGURE IIIG-C-3

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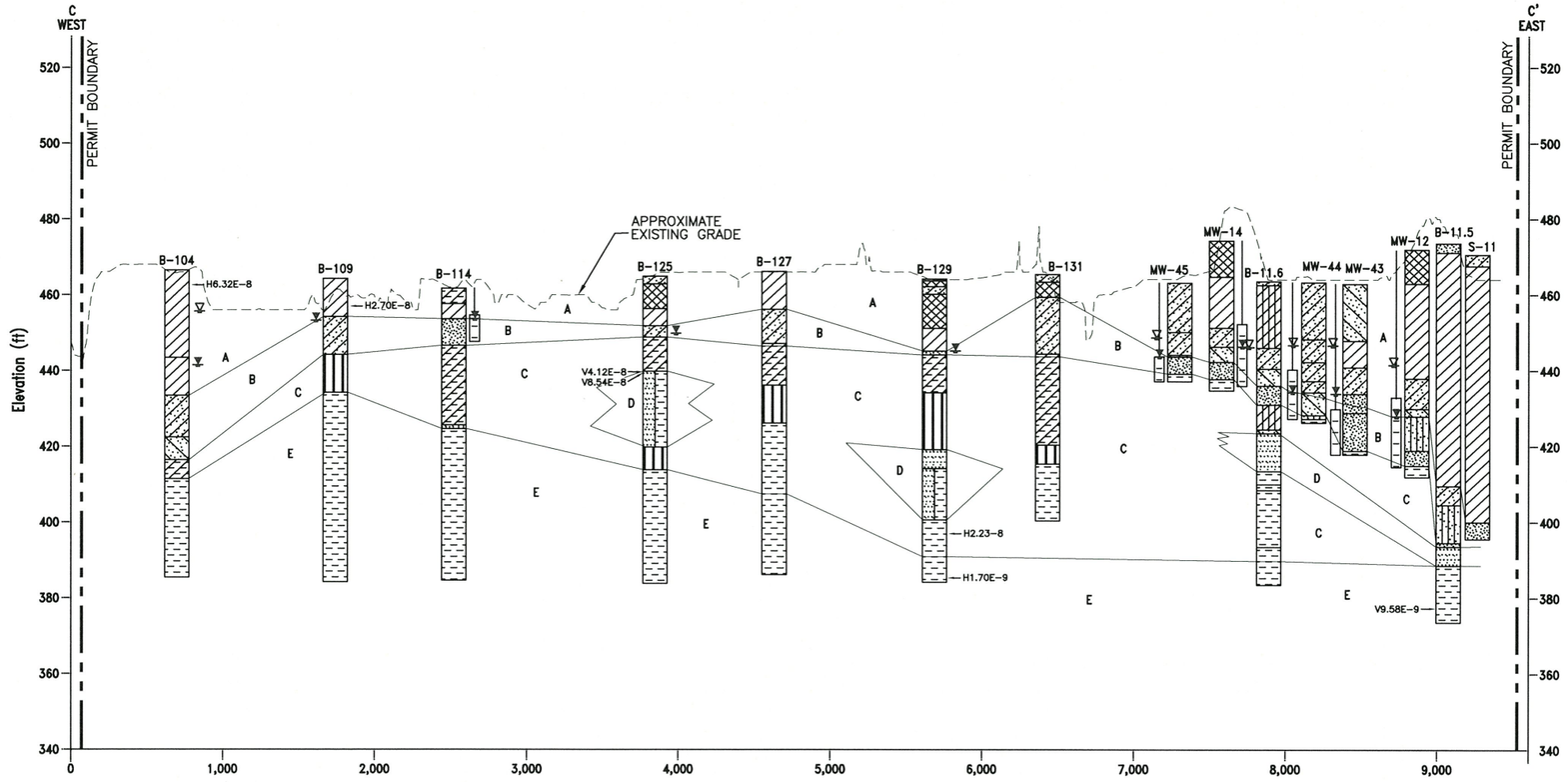

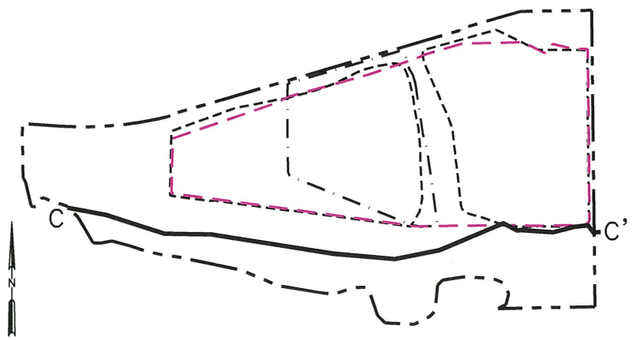

KEY MAP

NOTES:

1. EXISTING GRADE BASED ON COOPER AERIAL SURVEYS, CO FROM AERIAL PHOTOGRAPHY FLOWN 11–18–2021.
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6. BOREHOLE GRAPHICS ARE HORIZONTALLY EXAGGERATED FOR ILLUSTRATION PURPOSES AND MAY BE OFFSET FROM ONE ANOTHER TO PREVENT OVERLAP IN SECTION SPACE.

LEGEND

- PERMIT BOUNDARY
- PERMITTED LIMIT OF WASTE
- PROPOSED LIMIT OF WASTE
- PRE–SUBTITLE D LIMIT OF WASTE

- Clayey Sand
- Silty Sand
- Sandy Clay
- Sand with Clay
- Silty Clay
- Clay
- Shaley Clay
- Sandstone and Shale
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- Sandstone
- No Recovery
- Fill
- Silt
- Sandy Silt
- Siltstone
- Gravel
- Sandstone and Siltstone
- Siltstone and Shale
- Sand with Silt

MONITOR WELL OR PIEZOMETER WITH RISER (TOP) AND FILTERPACK/SCREENED INTERVAL (BOTTOM)

STATIC GROUNDWATER ELEVATION

GROUNDWATER ELEVATION AT TIME OF DRILLING

V1.46E–8 LABORATORY VERTICAL PERMEABILITY (cm/sec)

H1.46E–8 LABORATORY HORIZONTAL PERMEABILITY (cm/sec)

A, B, C, D, or E INDICATES SITE SPECIFIC LITHOLOGIC UNIT

STATE OF TEXAS
AARON K. EVANS
GEOLOGY
11143
LICENSED
PROFESSIONAL GEOSCIENTIST
05-19-22

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REVIEWED BY: AKE

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FIGURE IIIG–C–4

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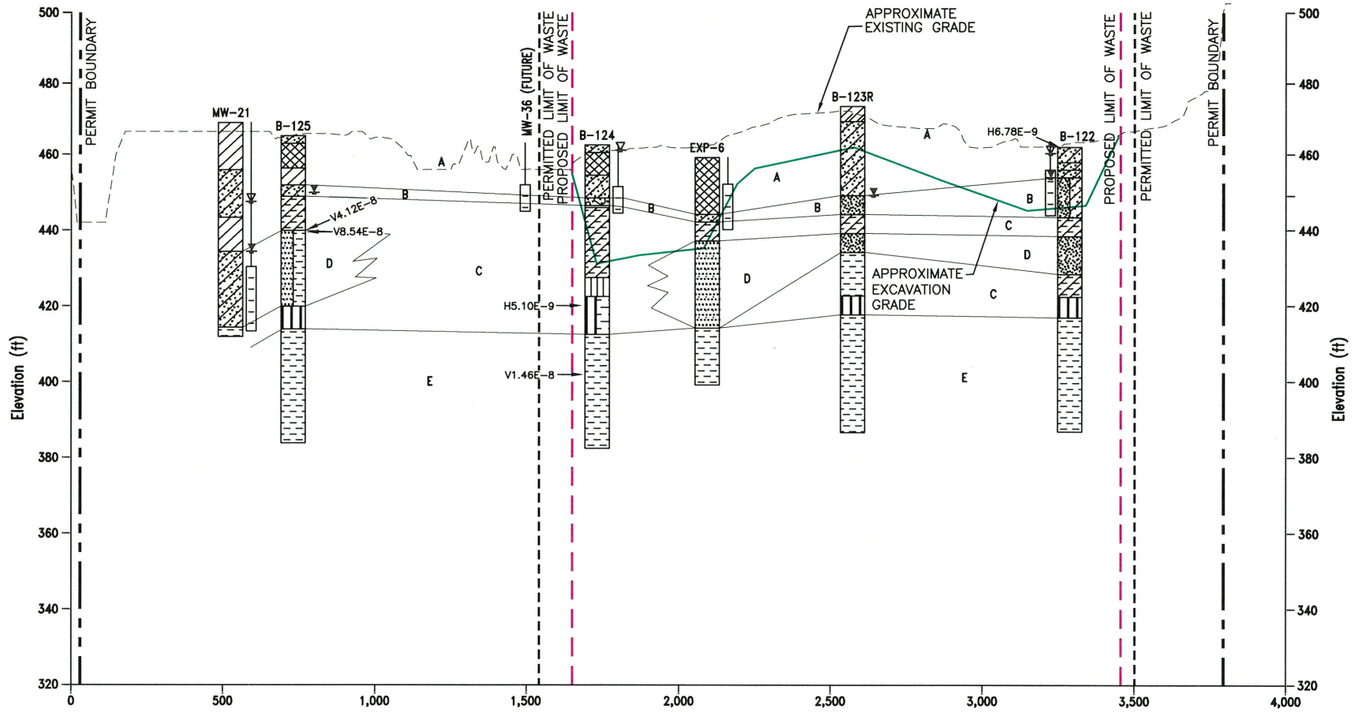
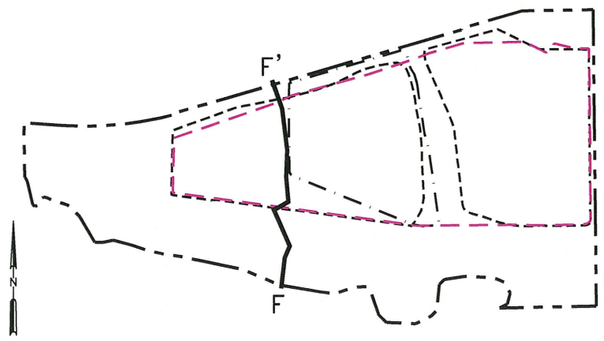
F
SOUTH

F'
NORTH



0 250 500
HORIZONTAL SCALE IN FEET

0 20 40
VERTICAL SCALE IN FEET



KEY MAP

NOTES:

1. EXISTING GRADE BASED ON COOPER AERIAL SURVEYS, CO FROM AERIAL PHOTOGRAPHY FLOWN 11-18-2021.
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6. BOREHOLE GRAPHICS ARE HORIZONTALLY EXAGGERATED FOR ILLUSTRATION PURPOSES AND MAY BE OFFSET FROM ONE ANOTHER TO PREVENT OVERLAP IN SECTION SPACE.

LEGEND

- PERMIT BOUNDARY
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- PROPOSED LIMIT OF WASTE
- PRE-SUBTITLE D LIMIT OF WASTE

- Clayey Sand
- Silty Sand
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- Sand with Clay
- Silty Clay
- Clay
- Shaley Clay
- Sandstone and Shale
- Shale
- Sand
- Sandstone
- No Recovery
- Fill
- Silt
- Sandy Silt
- Siltstone
- Gravel
- Sandstone and Siltstone
- Siltstone and Shale
- Sand with Silt

- MONITOR WELL OR PIEZOMETER WITH RISER (TOP) AND FILTERPACK/SCREENED INTERVAL (BOTTOM)
- STATIC GROUNDWATER ELEVATION
- GROUNDWATER ELEVATION AT TIME OF DRILLING
- V1.46E-8 LABORATORY VERTICAL PERMEABILITY (cm/sec)
- H1.46E-8 LABORATORY HORIZONTAL PERMEABILITY (cm/sec)
- A, B, C, D, or E INDICATES SITE SPECIFIC LITHOLOGIC UNIT

STATE OF TEXAS
AARON K. EVANS
GEOLOGY
11143
LICENSED
PROFESSIONAL GEOSCIENTIST
05-19-22

- [ ] DRAFT
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CAD: FIG IIIG-C-5-CROSS SECTION F.DWG
DRAWN BY: SRF
DESIGN BY: AKE
REVIEWED BY: AKE

Weaver Consultants Group
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GEOLOGIC CROSS SECTION F-F'

CITY OF ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS

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FIGURE IIIG-C-5

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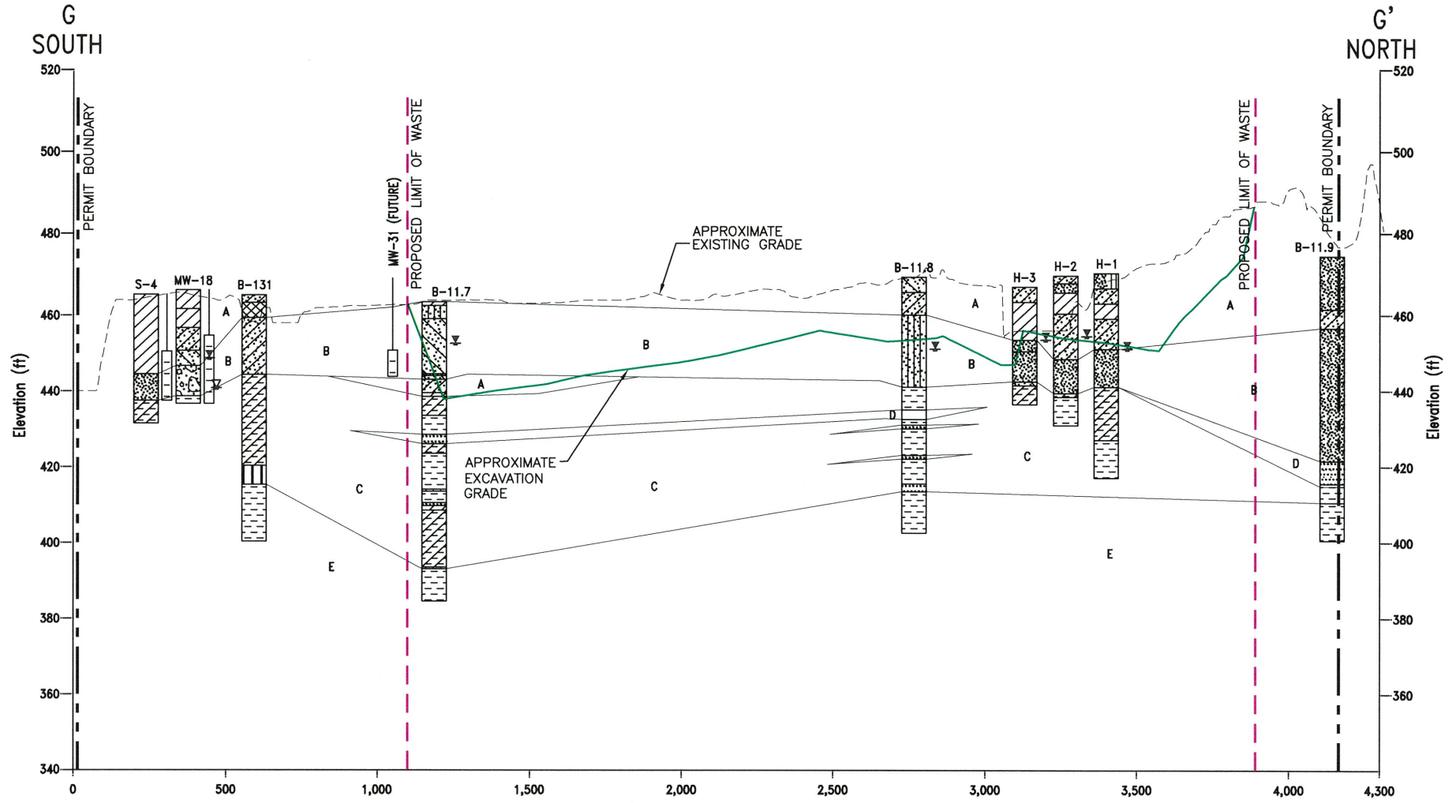
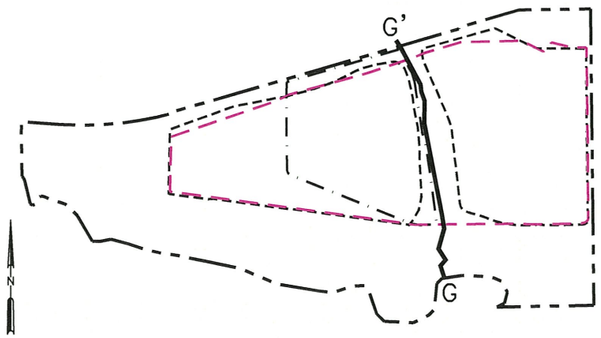


0 250 500
HORIZONTAL SCALE IN FEET

0 20 40
VERTICAL SCALE IN FEET



KEY MAP

NOTES:

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2. CROSS SECTION LITHOLOGIC DEPICTIONS, STRATIGRAPHIC UNIT CORRELATIONS, AND PERMEABILITY LABELS, REPRODUCED FROM 2014 GEOLOGIC CROSS SECTION BY GOLDER ASSOCIATES AND MODIFIED TO ACCOMMODATE EXISTING SITE CONDITIONS AND PROPOSED FACILITY RECONFIGURATION.
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4. WELL SCREEN INFORMATION FOR FUTURE MONITOR WELL LOCATIONS ESTIMATED FROM EXISTING AERIAL PHOTOGRAPHY AND SUBSURFACE INFORMATION.
5. CROSS SECTION CORRELATIONS ARE INTERPOLATED BETWEEN BORINGS. ACTUAL CONDITIONS MAY VARY FROM THOSE DEPICTED.
6. BOREHOLE GRAPHICS ARE HORIZONTALLY EXAGGERATED FOR ILLUSTRATION PURPOSES AND MAY BE OFFSET FROM ONE ANOTHER TO PREVENT OVERLAP IN SECTION SPACE.

LEGEND

- PERMIT BOUNDARY
- PERMITTED LIMIT OF WASTE
- PROPOSED LIMIT OF WASTE
- PRE-SUBTITLE D LIMIT OF WASTE

- Clayey Sand
- Silty Sand
- Sandy Clay
- Sand with Clay
- Silty Clay
- Clay
- Shaley Clay
- Sandstone and Shale
- Shale
- Sand
- Sandstone
- No Recovery
- Fill
- Silt
- Sandy Silt
- Siltstone
- Gravel
- Sandstone and Siltstone
- Siltstone and Shale
- Sand with Silt

- MONITOR WELL OR PIEZOMETER WITH RISER (TOP) AND FILTERPACK/SCREENED INTERVAL (BOTTOM)
- STATIC GROUNDWATER ELEVATION
- GROUNDWATER ELEVATION AT TIME OF DRILLING
- V1.46E-8 LABORATORY VERTICAL PERMEABILITY (cm/sec)
- H1.46E-8 LABORATORY HORIZONTAL PERMEABILITY (cm/sec)
- A, B, C, D, or E INDICATES SITE SPECIFIC LITHOLOGIC UNIT

STATE OF TEXAS
AARON K. EVANS
GEOLOGY
11143
LICENSED
PROFESSIONAL GEOSCIENTIST
05-19-22

- [ ] DRAFT
- [x] FOR PERMITTING PURPOSES ONLY
- [ ] ISSUED FOR CONSTRUCTION

DATE: 05/2022
FILE: 0023-404-11
CAD: FIG IIIG-C-6-CROSS SECTION G.DWG
DRAWN BY: SRF
DESIGN BY: AKE
REVIEWED BY: AKE

Weaver Consultants Group
TBPE REGISTRATION NO. F-3727

PREPARED FOR
CITY OF ARLINGTON
AND
REPUBLIC WASTE SERVICES OF TEXAS, LTD

REVISIONS		
NO.	DATE	DESCRIPTION
1	05/2022	NEW FIGURE ADDED

MAJOR PERMIT AMMENDMENT
GEOLOGIC CROSS SECTION G-G'

CITY OF ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS

WWW.WCGRP.COM

FIGURE IIIG-C-6

P:\Groundwater\Republic\Arlington\2021 MPA\SDP\IIIG\Appendix IIIG-C\FIG IIIG-C-2, 6-CROSS SECTIONS A-G.dwg

GEOLOGIC CROSS SECTIONS BY GOLDER ASSOCIATES

EXPANDED WEST DISPOSAL AREA

EAST DISPOSAL AREA

LEGEND

- PERMIT BOUNDARY
- LIMITS OF WASTE
- CROSS-SECTION TRAVERSE
- POINT OF COMPLIANCE
- TOPOGRAPHIC CONTOUR (2 FT INTERVAL)
- B-17 — BORING LOCATION
- MW-11 — MONITORING WELL LOCATION
- MW-25 — PROPOSED MONITORING WELL LOCATION

NOTES

1. EXISTING TOPOGRAPHY IS A COMPILATION OF THE FOLLOWING AERIAL SURVEYS: JUNE 6, 2010, DALLAS AERIAL SURVEY; MAY 13, 2007, DALLAS AERIAL SURVEY; MAY 14, 2005, METROPOLITAN AERIAL SURVEYS.

800 0 800
SCALE FEET

STATE OF TEXAS
JAY A. WINTERS
GEOLOGY
1292
LICENSED
PROFESSIONAL GEOSCIENTIST

PERMIT ISSUED

GOLDER ASSOCIATES INC.
Geoscience Firm Registration
Certificate Number 50369

REV.	DATE	DESCRIPTION	DR. BY	APP. BY

Golder Associates
213 N. Oak St.
Roanoke, Texas 76262
Tel: (817) 490-6770
Texas Registration Number: F-2578

CITY OF ARLINGTON, TEXAS

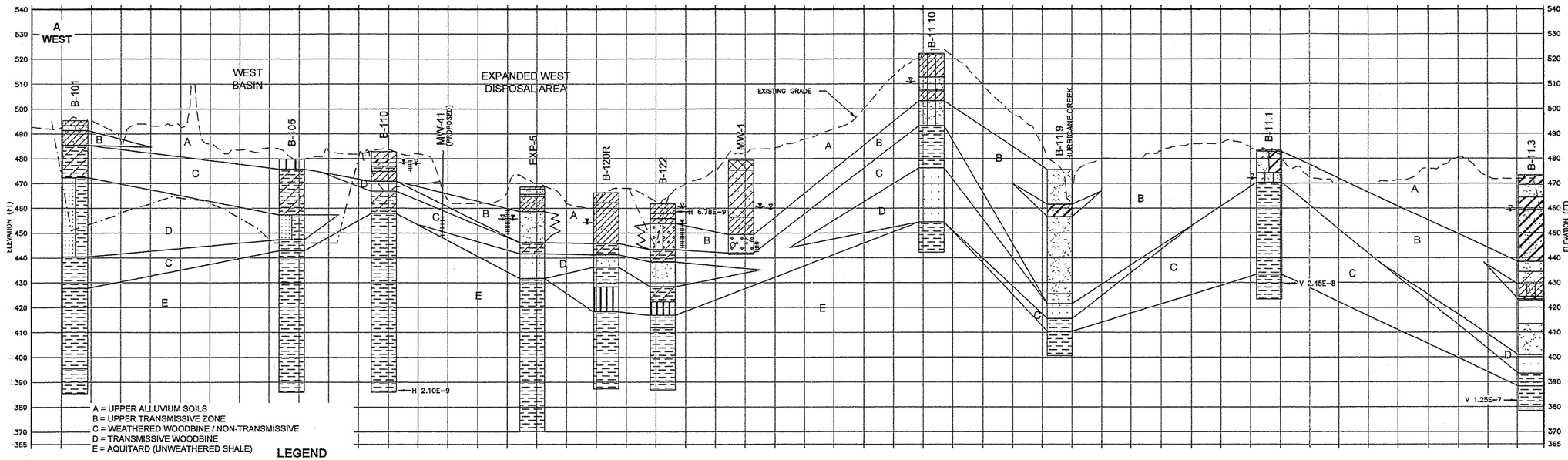
REPUBLIC WASTE SERVICES OF TEXAS, LTD.

PROJECT: CITY OF ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS
MSW PERMIT NO. 358B

TITLE: BORING LOCATION MAP

DRAWN	RWH
REVIEWED	SJK
CHECKED	RWH/CMT
APPROVED	JW
DATE	FEBRUARY 2014
SCALE	AS SHOWN
JOB NO.	073-9407711
DWG. NO.	073940774008A.dwg

FIGURE NUMBER
PART III, ATT. 4
4-11

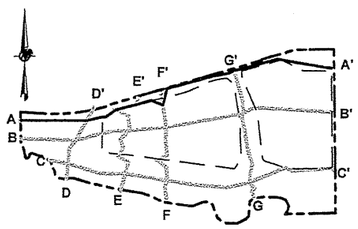


LEGEND

- SANDY SILT
- SANDY FAT CLAY
- SANDY ELASTIC SILT
- SHALEY FAT CLAY
- SILTSTONE
- SAND
- WELL GRADED SAND
- SILTSTONE AND SHALE INTERBEDDED
- USCS LOW PLASTICITY SANDY CLAY
- CONCRETE
- FILL (MADE GROUND)
- USCS POORLY-GRADED GRAVEL
- USCS WELL-GRADED GRAVEL
- USCS WELL-GRADED GRAVEL WITH CLAY
- USCS ELASTIC SILT
- SANDSTONE AND SILTSTONE INTERBEDDED
- CLAYEY SAND
- USCS HIGH PLASTICITY CLAY
- USCS LOW PLASTICITY CLAY
- SANDSTONE
- SANDSTONE AND SHALE
- WELL GRADED SAND WITH CLAY
- SHALE
- SHALEY ELASTIC SILT
- POORLY GRADED SAND WITH SILT
- NO RECOVERY
- STATIC WATER LEVEL (SEE NOTE 1)
- GROUNDWATER LEVEL AT TIME OF DRILLING (SEE NOTE 1)
- SCREENED INTERVAL EXISTING MONITORING WELL
- SCREENED INTERVAL PROPOSED MONITORING WELL
- INFERRED CORRELATIONS
- EXISTING GRADE
- PROPOSED EXCAVATION / LEVEE GRADE
- V 3.41E-8 PERMEABILITY RESULTS

KEY MAP

NOT TO SCALE



WEA SECT A-A' PROFILE

NOTES

1. FOR BORINGS WITHOUT STATIC AND/OR INITIAL WATER LEVELS, NO WATER LEVEL OBSERVATIONS WERE MADE AT THE TIME OF THE INVESTIGATIONS.
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4. SCREENED INTERVALS FOR EXISTING WELLS AND PIEZOMETERS ARE BASED ON AS-BUILT MONITORING WELL AND PIEZOMETER SURVEY DATA. SCREENED INTERVALS FOR THE PROPOSED MONITORING WELLS ARE ESTIMATED BASED ON THE ANTICIPATED DEPTH OF THE UPPER TRANSMISSIVE ZONE, TRANSMISSIVE WOODBINE, OR WEATHERED WOODBINE.

500 0 500
HORIZONTAL SCALE FEET

30 0 30
VERTICAL SCALE FEET

STATE OF TEXAL
JAY A. WINTERS
GEOLOGY
1292
LICENSED
PROFESSIONAL GEOSCIENTIST

PERMIT ISSUED

GOLDER ASSOCIATES INC.
Geoscience Firm Registration
Certificate Number 50369

REV.	DATE	DESCRIPTION	DR. BY	APP. BY

Golder Associates
213 N. Oak St.
Roanoke, TX 76262
Tel: (817) 491-2770
Texas Registration Number: F-2578

CITY OF ARLINGTON, TEXAS
REPUBLIC WASTE SERVICES OF TEXAS, LTD.

PROJECT: CITY OF ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS
MSW PERMIT NO. 388B

TITLE: INTERPRETIVE GEOLOGIC CROSS-SECTION A-A'

DESIGN	RICHARD SAK
DRAFT/CHK	TWM / DM
APPROVED	JW
DATE	FEBRUARY 2014
SCALE	AS SHOWN
1628 NO.	073-9407711
DWG. NO.	073-9407711-D-01182.dwg
FIGURE NUMBER	

PART III, ATT. 4
4-12

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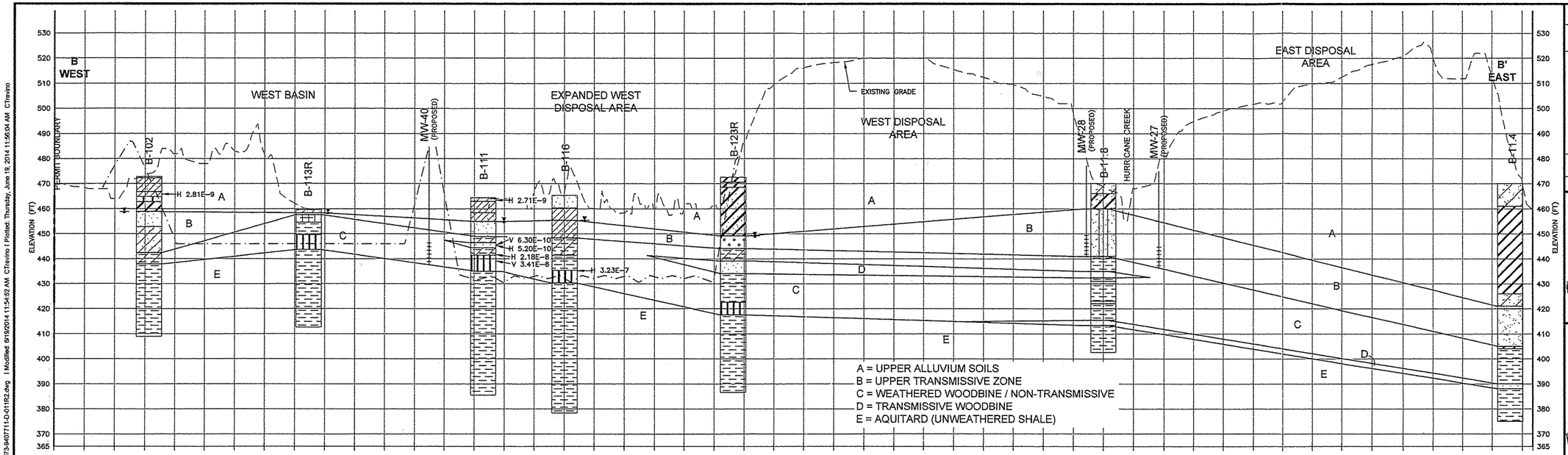
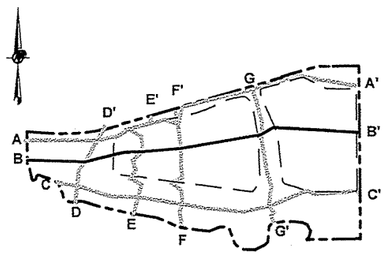


KEY MAP

NOT TO SCALE



LEGEND

- SANDY SILT
- SANDY FAT CLAY
- SANDY ELASTIC SILT
- SHALEY FAT CLAY
- SILTSTONE
- SAND
- WELL GRADED SAND
- SILTSTONE AND SHALE INTERBEDDED
- USCS LOW PLASTICITY SANDY CLAY
- CONCRETE
- FILL (MADE GROUND)
- USCS POORLY-GRADED GRAVEL
- USCS WELL-GRADED GRAVEL
- USCS WELL-GRADED GRAVEL WITH CLAY
- USCS ELASTIC SILT
- SANDSTONE AND SILTSTONE INTERBEDDED
- CLAYEY SAND
- USCS HIGH PLASTICITY CLAY
- USCS LOW PLASTICITY CLAY
- SANDSTONE
- SANDSTONE AND SHALE
- WELL GRADED SAND WITH CLAY
- SHALE
- SHALEY ELASTIC SILT
- POORLY GRADED SAND WITH SILT
- STATIC WATER LEVEL (SEE NOTE 1)
- GROUNDWATER LEVEL AT TIME OF DRILLING (SEE NOTE 1)
- SCREENED INTERVAL EXISTING MONITORING WELL
- SCREENED INTERVAL PROPOSED MONITORING WELL
- INFERRED CORRELATIONS
- EXISTING GRADE
- PROPOSED EXCAVATION / LEVEE GRADE
- V 3.41E-8 PERMEABILITY RESULTS

WEA SECT B-B' PROFILE

NOTES

1. FOR BORINGS WITHOUT STATIC AND/OR INITIAL WATER LEVELS, NO WATER LEVEL OBSERVATIONS WERE MADE AT THE TIME OF THE INVESTIGATIONS.
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500 0 500
HORIZONTAL SCALE FEET

30 0 30
VERTICAL SCALE FEET

STATE OF TEXAS
JAY A. WINTERS
GEOLOGY
1282
LICENSED
PROFESSIONAL GEOSCIENTIST

PERMIT ISSUED

GOLDER ASSOCIATES INC.
Geoscience Firm Registration Certificate Number 50389

REV.	DATE	DESCRIPTION	DR. BY	APP. BY

Golder Associates
213 N. Oak St. 76262
Roanoke, Texas
Tel: (817) 491-2378
Fax: (817) 491-6750
Texas Registration Number: F-2578

CITY OF ARLINGTON, TEXAS
REPUBLIC WASTE SERVICES OF TEXAS, LTD.

PROJECT: CITY OF ARLINGTON LANDFILL TARRANT COUNTY, TEXAS MSW PERMIT NO. 386B

TITLE: INTERPRETIVE GEOLOGIC CROSS-SECTION B-B'

DESIGN	TWV
DRAWN	BJK
CHECKED	BA/DMT
APPROVED	JW
DATE	FEBRUARY 2014
SCALE	AS SHOWN
JOB NO.	073-9407711
DWG. NO.	073-9407711-D-011R2.dwg
FIGURE NUMBER	

PART III, ATT. 4
4-13

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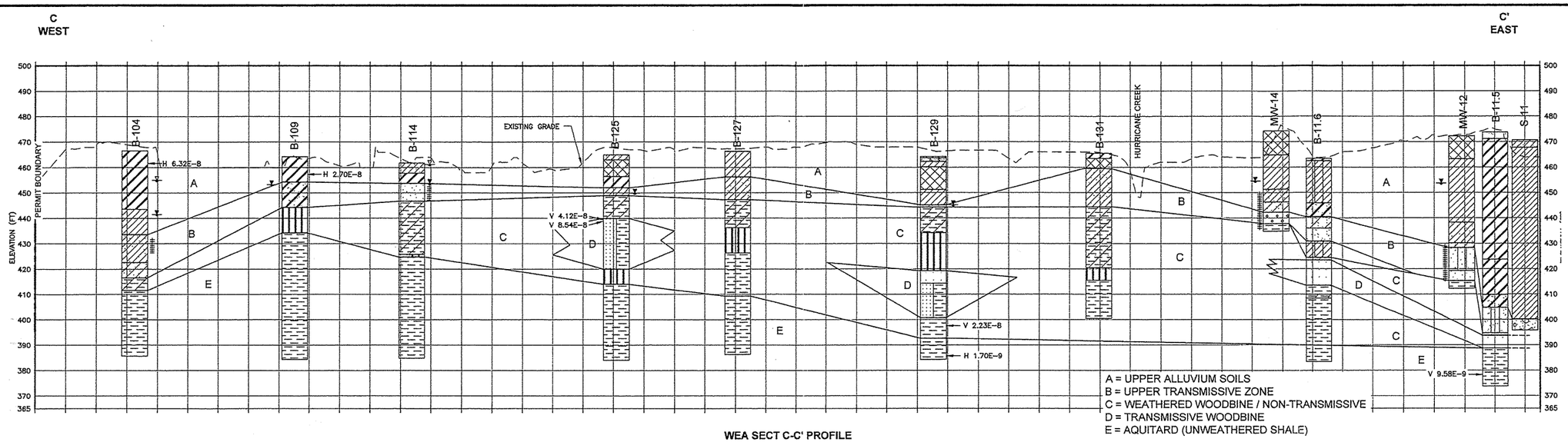
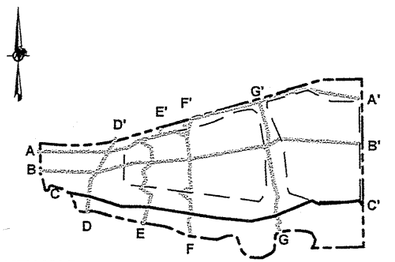


WEA SECT C-C' PROFILE



KEY MAP

NOT TO SCALE

LEGEND

- SANDY SILT
- SANDY FAT CLAY
- SANDY ELASTIC SILT
- SHALEY FAT CLAY
- SILTSTONE
- SAND
- WELL GRADED SAND
- SILTSTONE AND SHALE INTERBEDDED
- USCS LOW PLASTICITY SANDY CLAY
- CONCRETE
- FILL (MADE GROUND)
- USCS POORLY-GRADED GRAVEL
- USCS WELL-GRADED GRAVEL
- USCS WELL-GRADED GRAVEL WITH CLAY
- USCS ELASTIC SILT
- SANDSTONE AND SILTSTONE INTERBEDDED
- CLAYEY SAND
- USCS HIGH PLASTICITY CLAY
- USCS LOW PLASTICITY CLAY
- SANDSTONE
- SANDSTONE AND SHALE
- WELL GRADED SAND WITH CLAY
- SHALE
- SHALEY ELASTIC SILT
- POORLY GRADED SAND WITH SILT
- STATIC WATER LEVEL (SEE NOTE 1)
- GROUNDWATER LEVEL AT TIME OF DRILLING (SEE NOTE 1)
- SCREENED INTERVAL EXISTING MONITORING WELL
- SCREENED INTERVAL PROPOSED MONITORING WELL
- INFERRED CORRELATIONS
- EXISTING GRADE
- PROPOSED EXCAVATION / LEVEE GRADE
- V 3.41E-8 PERMEABILITY RESULTS

NOTES

1. FOR BORINGS WITHOUT STATIC AND/OR INITIAL WATER LEVELS, NO WATER LEVEL OBSERVATIONS WERE MADE AT THE TIME OF THE INVESTIGATIONS.
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500 0 500
HORIZONTAL SCALE FEET

30 0 30
VERTICAL SCALE FEET

STATE OF TEXAS
JAY A. WATERS
GEOLOGY
1282
LICENSED
PROFESSIONAL GEOSCIENTIST

GOLDER ASSOCIATES INC.
Geoscience Firm Registration
Certificate Number 50389

PERMIT ISSUED

REV.	DATE	DESCRIPTION	DR. BY	APP. BY

Golder Associates
213 N. Oak St.
Roanoke, TX 76262
Tel: (817) 491-9770
Texas Registration Number F-2578

CITY OF ARLINGTON, TEXAS
REPUBLIC WASTE SERVICES OF TEXAS, LTD.

PROJECT: CITY OF ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS
MSW PERMIT NO. 358B

TITLE: INTERPRETIVE GEOLOGIC CROSS-SECTION C-C'

DESIGN	TWH
DRAWN	SAK
CHECKED	SAK/CWT
APPROVED	JW
DATE	FEBRUARY 2014
SCALE	AS SHOWN
JOB NO.	073-6407711
DWG. NO.	073-6407711-D-011R2.dwg
FIGURE NUMBER	

PART III, ATT. 4
4-14

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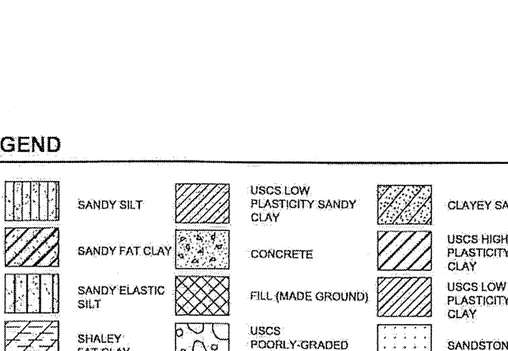
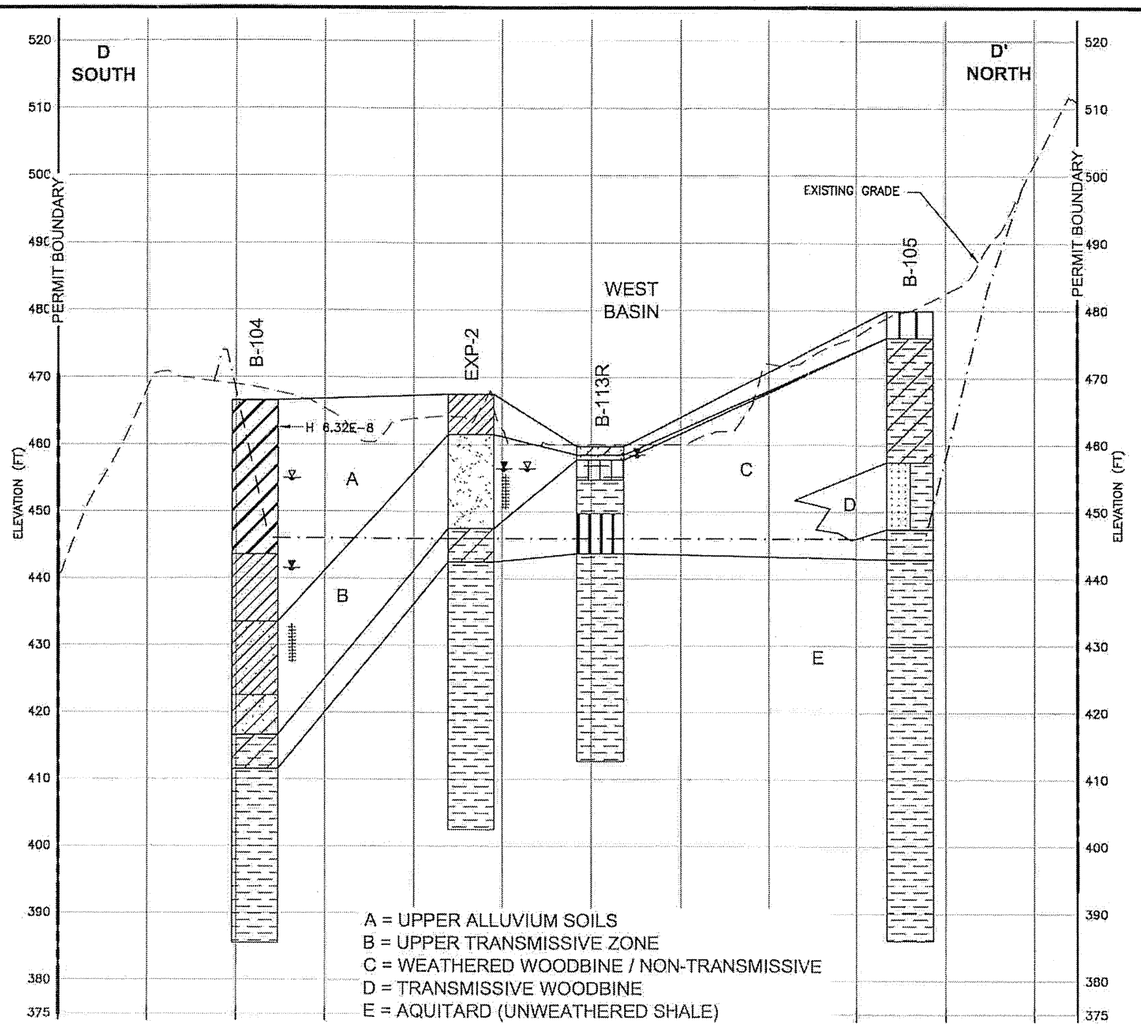
LEGEND

- SANDY SILT
- SANDY FAT CLAY
- SANDY ELASTIC SILT
- SHALEY FAT CLAY
- SILTSTONE
- SAND
- WELL GRADED SAND
- SILTSTONE AND SHALE INTERBEDDED
- USCS LOW PLASTICITY SANDY CLAY
- CONCRETE
- FILL (MADE GROUND)
- USCS POORLY-GRADED GRAVEL
- USCS WELL-GRADED GRAVEL
- USCS WELL-GRADED GRAVEL WITH CLAY
- USCS ELASTIC SILT
- SANDSTONE AND SILTSTONE INTERBEDDED
- CLAYEY SAND
- USCS HIGH PLASTICITY CLAY
- USCS LOW PLASTICITY CLAY
- SANDSTONE
- SANDSTONE AND SHALE
- WELL GRADED SAND WITH CLAY
- SHALE
- SHALEY ELASTIC SILT
- POORLY GRADED SAND WITH SILT
- STATIC WATER LEVEL (SEE NOTE 1)
- GROUNDWATER LEVEL AT TIME OF DRILLING (SEE NOTE 1)
- SCREENED INTERVAL EXISTING MONITORING WELL
- SCREENED INTERVAL PROPOSED MONITORING WELL
- INFERRED CORRELATIONS
- EXISTING GRADE
- PROPOSED EXCAVATION / LEVEE GRADE
- V 3.41E-8 PERMEABILITY RESULTS



KEY MAP

NOT TO SCALE



A = UPPER ALLUVIUM SOILS
B = UPPER TRANSMISSIVE ZONE
C = WEATHERED WOODBINE / NON-TRANSMISSIVE
D = TRANSMISSIVE WOODBINE
E = AQUITARD (UNWEATHERED SHALE)

NOTES

1. FOR BORINGS WITHOUT STATIC AND/OR INITIAL WATER LEVELS, NO WATER LEVEL OBSERVATIONS WERE MADE AT THE TIME OF THE INVESTIGATIONS.
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WEA SECT D-D' PROFILE

300 0 300
HORIZONTAL SCALE FEET

20 0 20
VERTICAL SCALE FEET

STATE OF TEXAS
JAY A. WINTERS
GEOLOGY
1292
LICENSED
PROFESSIONAL GEOSCIENTIST

GOLDER ASSOCIATES INC.
Geoscience Firm Registration Certificate Number 50369

PERMIT ISSUED

REV.	DATE	DESCRIPTION	DR. BY	APP. BY

Golder Associates
2121 N. Oak St.
Roanoke, Texas 76262
Tel: (817) 490-8770
Texas Registration Number: F-2578

CITY OF ARLINGTON, TEXAS
REPUBLIC WASTE SERVICES OF TEXAS, LTD.

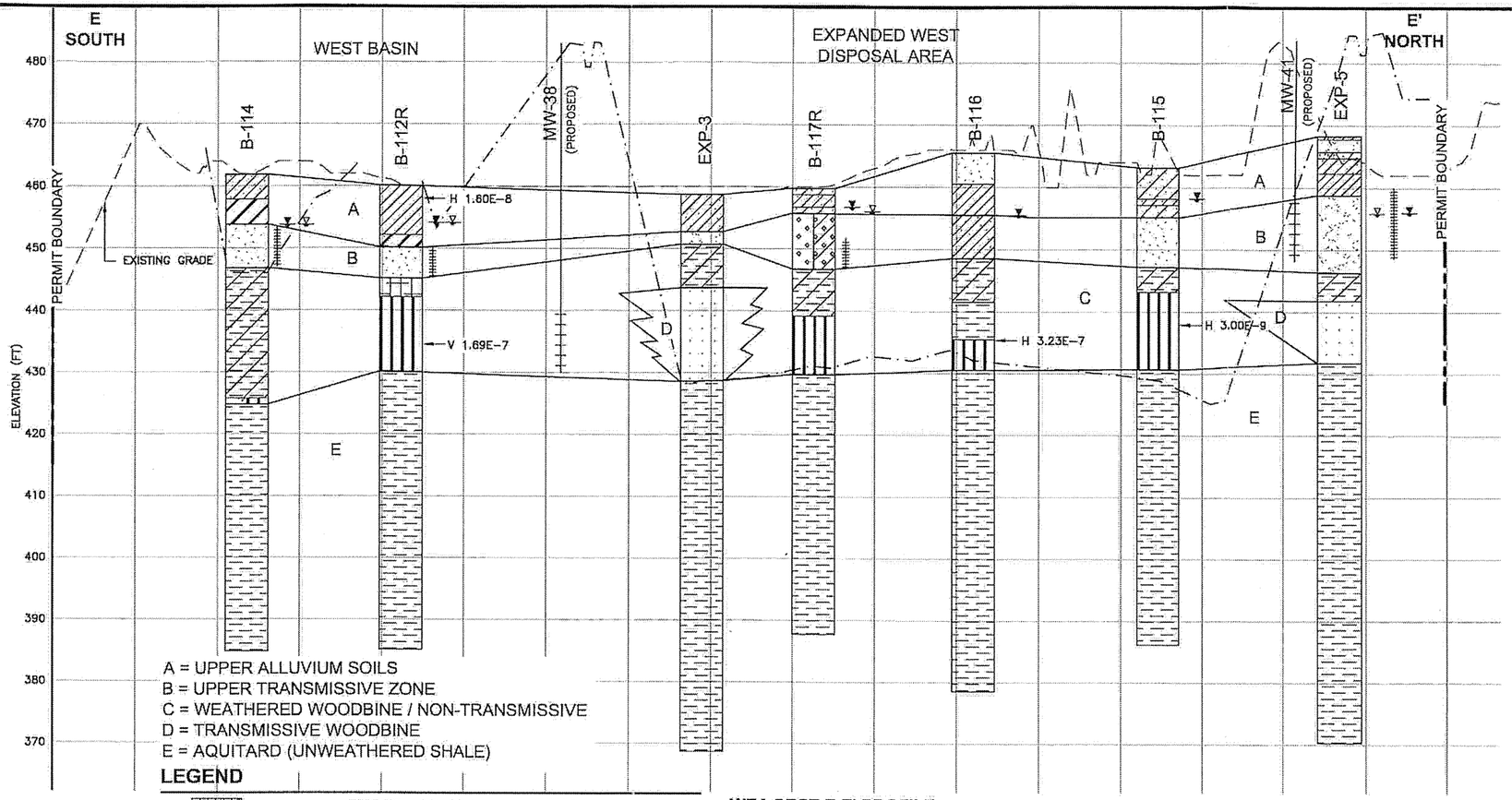
PROJECT: CITY OF ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS
MSW PERMIT NO. 358B

TITLE: INTERPRETIVE GEOLOGIC CROSS-SECTION D-D'

DRAWN	TWH
REVIEWED	SJK
CHECKED	CML/CMT
APPROVED	JW
DATE	FEBRUARY 2014
SCALE	AS SHOWN
JOB NO.	073-9407711
DWG. NO.	073-9407711-D-011R2.dwg
FIGURE NUMBER	

PART III, ATT. 4

4 of 15



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B = UPPER TRANSMISSIVE ZONE
C = WEATHERED WOODBINE / NON-TRANSMISSIVE
D = TRANSMISSIVE WOODBINE
E = AQUITARD (UNWEATHERED SHALE)

LEGEND

- SANDY SILT
- SANDY FAT CLAY
- SANDY ELASTIC SILT
- SHALEY FAT CLAY
- SILTSTONE
- SAND
- WELL GRADED SAND
- SILTSTONE AND SHALE INTERBEDDED
- USCS LOW PLASTICITY SANDY CLAY
- CONCRETE
- FILL (MADE GROUND)
- USCS POORLY-GRADED GRAVEL
- USCS WELL-GRADED GRAVEL
- USCS WELL-GRADED GRAVEL WITH CLAY
- USCS ELASTIC SILT
- SANDSTONE AND SILTSTONE INTERBEDDED
- CLAYEY SAND
- USCS HIGH PLASTICITY CLAY
- USCS LOW PLASTICITY CLAY
- SANDSTONE
- SANDSTONE AND SHALE
- WELL GRADED SAND WITH CLAY
- SHALE
- SHALEY ELASTIC SILT
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- STATIC WATER LEVEL (SEE NOTE 1)
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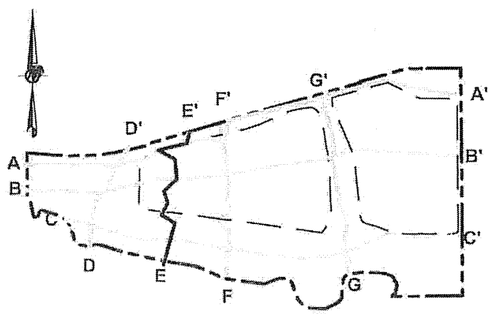
- SCREENED INTERVAL PROPOSED MONITORING WELL
- INFERRED CORRELATIONS
- EXISTING GRADE
- PROPOSED EXCAVATION / LEVEE GRADE
- V 3.41E-8 PERMEABILITY RESULTS

WEA SECT E-E' PROFILE



KEY MAP

NOT TO SCALE

NOTES

1. FOR BORINGS WITHOUT STATIC AND/OR INITIAL WATER LEVELS, NO WATER LEVEL OBSERVATIONS WERE MADE AT THE TIME OF THE INVESTIGATIONS.
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300 0 300
HORIZONTAL SCALE FEET

20 0 20
VERTICAL SCALE FEET

STATE OF TEXAS
JAY A. WINTERS
GEOLOGY
1292
LICENSED
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GOLDER ASSOCIATES INC.
Geoscience Firm Registration Certificate Number 50369

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Golder Associates
213 N. Oak St.
Roanoke, Texas 76262
Tel: (817) 491-8770
Texas Registration Number: F-2578

CITY OF ARLINGTON, TEXAS
REPUBLIC WASTE SERVICES OF TEXAS, LTD.

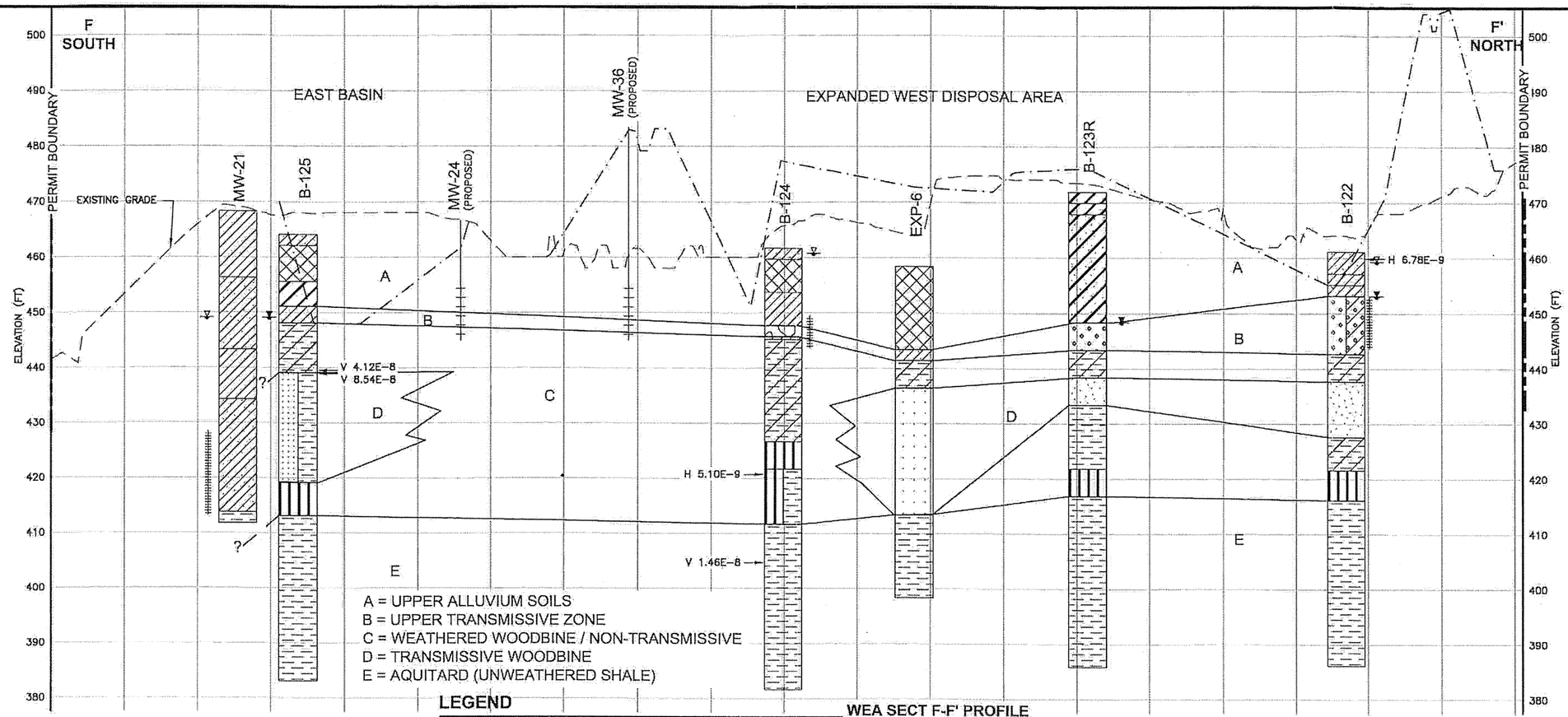
PROJECT: CITY OF ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS
MSW PERMIT NO. 358B

TITLE: INTERPRETIVE GEOLOGIC CROSS-SECTION E-E'

DRAWN	TWH
REVIEWED	SJK
CHECKED	DHL/CHT
APPROVED	JW
DATE	FEBRUARY 2014
SCALE	AS SHOWN
JOB NO.	073-9407711
DWG. NO.	073-9407711-D-011R2.dwg
FIGURE NUMBER	

PART III, ATT. 4

4-16



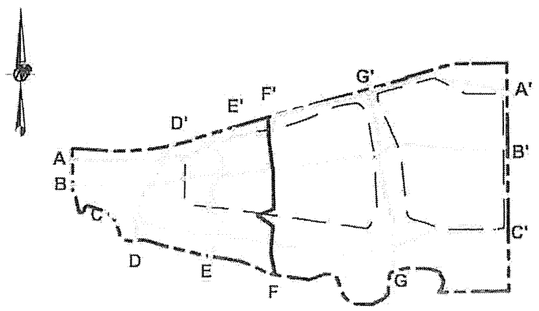
LEGEND

SANDY SILT
SANDY FAT CLAY
SANDY ELASTIC SILT
SHALEY FAT CLAY
SILTSTONE
SAND
WELL GRADED SAND
SILTSTONE AND SHALE INTERBEDDED
USCS LOW PLASTICITY SANDY CLAY
CONCRETE
FILL (MADE GROUND)
USCS POORLY-GRADED GRAVEL
USCS WELL-GRADED GRAVEL
USCS WELL-GRADED GRAVEL WITH CLAY
USCS ELASTIC SILT
SANDSTONE AND SILTSTONE INTERBEDDED
CLAYEY SAND
USCS HIGH PLASTICITY CLAY
USCS LOW PLASTICITY CLAY
SANDSTONE
SANDSTONE AND SHALE
WELL GRADED SAND WITH CLAY
SHALE
SHALEY ELASTIC SILT
POORLY GRADED SAND WITH SILT
STATIC WATER LEVEL (SEE NOTE 1)
GROUNDWATER LEVEL AT TIME OF DRILLING (SEE NOTE 1)
SCREENED INTERVAL EXISTING MONITORING WELL
SCREENED INTERVAL PROPOSED MONITORING WELL
INFERRED CORRELATIONS
EXISTING GRADE
PROPOSED EXCAVATION / LEVEE GRADE
V 3.41E-8 PERMEABILITY RESULTS

WEA SECT F-F' PROFILE

300 0 300
HORIZONTAL SCALE FEET

20 0 20
VERTICAL SCALE FEET



KEY MAP
NOT TO SCALE

NOTES

1. FOR BORINGS WITHOUT STATIC AND/OR INITIAL WATER LEVELS, NO WATER LEVEL OBSERVATIONS WERE MADE AT THE TIME OF THE INVESTIGATIONS.
2. EXISTING TOPOGRAPHY IS A COMPILATION OF THE FOLLOWING AERIAL SURVEYS: JUNE 6, 2010, DALLAS AERIAL SURVEY; MAY 13, 2007, DALLAS AERIAL SURVEY; MAY 14, 2005, METROPOLITAN AERIAL SURVEYS.
3. PERMEABILITY RESULTS NOTED WITH "H": TESTING WAS RUN ALONG HORIZONTAL AXIS. PERMEABILITY RESULTS NOTED WITH "V": TESTING WAS RUN ALONG VERTICAL AXIS. UNITS ARE CM/SEC.
4. SCREENED INTERVALS FOR EXISTING WELLS AND PIEZOMETERS ARE BASED ON AS-BUILT MONITORING WELL AND PIEZOMETER SURVEY DATA. SCREENED INTERVALS FOR THE PROPOSED MONITORING WELLS ARE ESTIMATED BASED ON THE ANTICIPATED DEPTH OF THE UPPER TRANSMISSIVE ZONE, TRANSMISSIVE WOODBINE, OR WEATHERED WOODBINE.

STATE OF TEXAS
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GEOLOGY
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Golder Associates
215 N. Oak St. 76262
Roanoke, Texas
(817) 491-8770
Texas Registration Number: F-2578

CITY OF ARLINGTON, TEXAS
REPUBLIC WASTE SERVICES OF TEXAS, LTD.

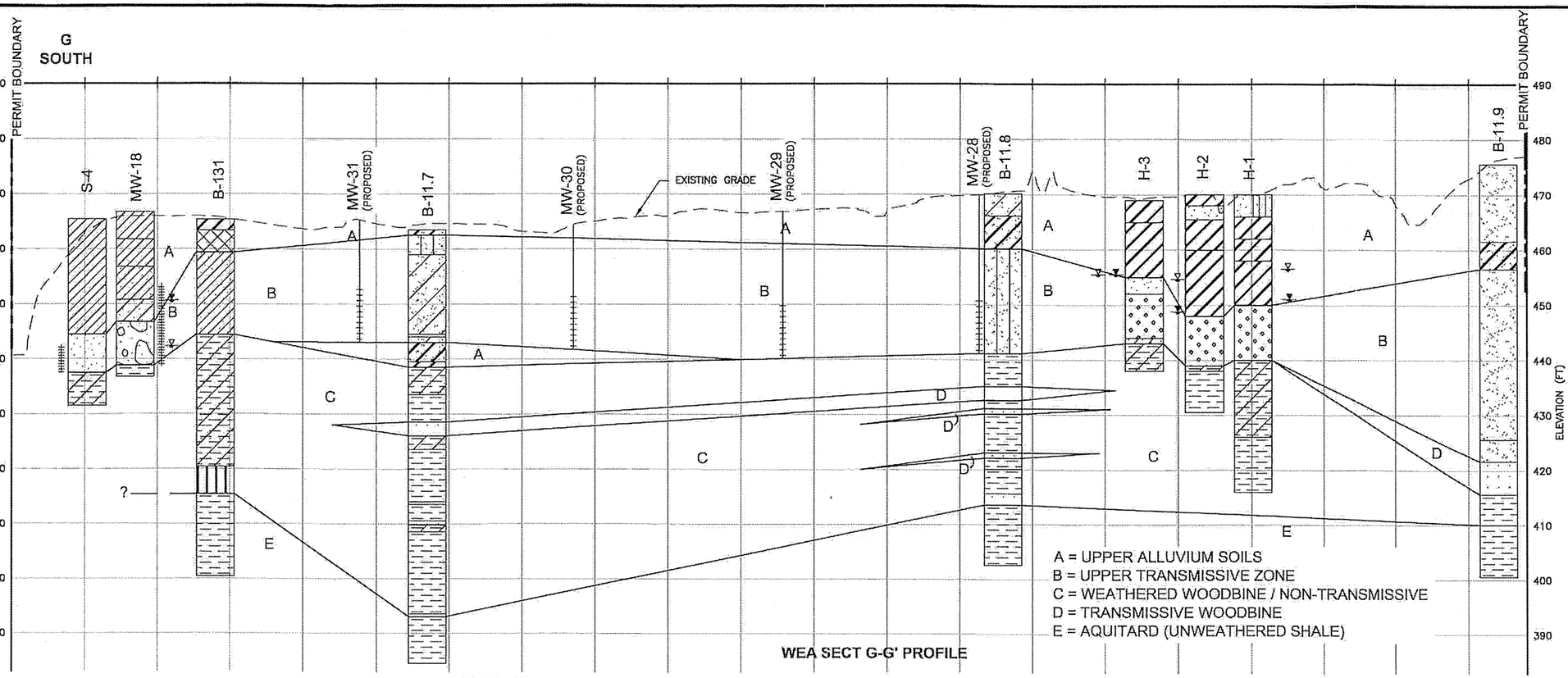
PROJECT: CITY OF ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS
MSW PERMIT NO. 358B

TITLE: INTERPRETIVE GEOLOGIC CROSS-SECTION F-F'

DRAWN	TWI	REVIEWED	SJK
CHECKED	CML/CMT	APPROVED	JW
DATE	FEBRUARY 2014		
SCALE	AS SHOWN		
JOB NO.	073-9407711		
DWG. NO.	073-9407711-D-011R2.dwg		

FIGURE NUMBER
PART III, ATT. 4
4-17

Drawing File: J:_2007\073-9407711 Rep Arl Expan Permit_FINAL PERMIT ISSUED DRAWINGS\DWG\Attachment 4\073-9407711-D-011R2.dwg | Modified: 6/19/2014 1:34:07 PM CTrevino | Plotted: Thursday, June 19, 2014 1:52:20 PM CTrevino



WEA SECT G-G' PROFILE

300 0 300
HORIZONTAL SCALE FEET

20 0 20
VERTICAL SCALE FEET

LEGEND

- SANDY SILT
- SANDY FAT CLAY
- SANDY ELASTIC SILT
- SHALEY FAT CLAY
- SILTSTONE
- SAND
- WELL GRADED SAND
- SILTSTONE AND SHALE INTERBEDDED
- USCS LOW PLASTICITY SANDY CLAY
- CONCRETE
- FILL (MADE GROUND)
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- USCS WELL-GRADED GRAVEL
- USCS WELL-GRADED GRAVEL WITH CLAY
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- SANDSTONE AND SILTSTONE INTERBEDDED
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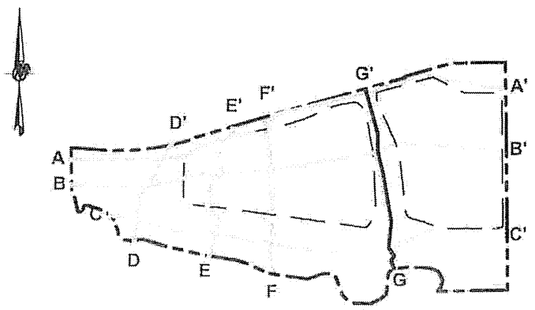
- USCS HIGH PLASTICITY CLAY
- USCS LOW PLASTICITY CLAY
- SANDSTONE
- SANDSTONE AND SHALE
- WELL GRADED SAND WITH CLAY
- SHALE
- SHALEY ELASTIC SILT
- POORLY GRADED SAND WITH SILT
- STATIC WATER LEVEL (SEE NOTE 1)
- GROUNDWATER LEVEL AT TIME OF DRILLING (SEE NOTE 1)
- SCREENED INTERVAL EXISTING MONITORING WELL
- SCREENED INTERVAL PROPOSED MONITORING WELL
- INFERRED CORRELATIONS
- EXISTING GRADE
- PROPOSED EXCAVATION / LEVEE GRADE
- V 3.41E-8 PERMEABILITY RESULTS



KEY MAP
NOT TO SCALE

NOTES

1. FOR BORINGS WITHOUT STATIC AND/OR INITIAL WATER LEVELS, NO WATER LEVEL OBSERVATIONS WERE MADE AT THE TIME OF THE INVESTIGATIONS.
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STATE OF TEXAS
JAY A. WINTERS
GEOLOGY
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6-20-14

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REV.	DATE	DESCRIPTION	DR. BY	APP. BY

Golder Associates
213 N. Oak St.
Roanoke, Texas 76262
Tel: (817) 491-6770
Texas Registration Number: F-2578

CITY OF ARLINGTON, TEXAS
REPUBLIC WASTE SERVICES OF TEXAS, LTD.

PROJECT: CITY OF ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS
MSW PERMIT NO. 358B

TITLE: INTERPRETIVE GEOLOGIC CROSS-SECTION G-G'

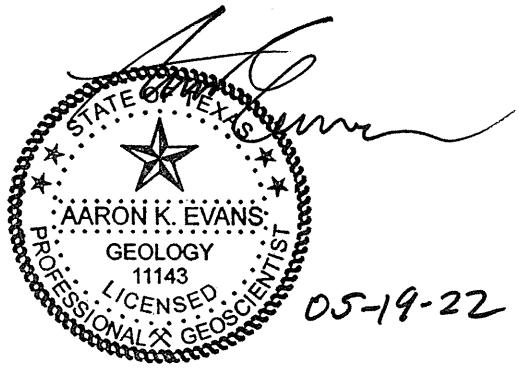
DRAWN	TWJ
REVIEWED	SJK
CHECKED	GOLDCMT
APPROVED	JW
DATE	FEBRUARY 2014
SCALE	AS SHOWN
JOB NO.	073-9407711
DWG. NO.	073-9407711-D-011R2.dwg

FIGURE NUMBER
PART III, ATT. 4
4-18

Drawing File: J:_2007\073-9407711 Rep Arl Expan Permit__FINAL PERMIT ISSUED DRAWINGS\DWG\Attachment 4\073-9407711-D-011R2.dwg | Modified: 6/19/2014 12:22:06 PM CTrevino | Plotted: Thursday, June 19, 2014 12:22:31 PM CTrevino

APPENDIX IIIG-D

SITE HYDROGEOLOGIC DATA



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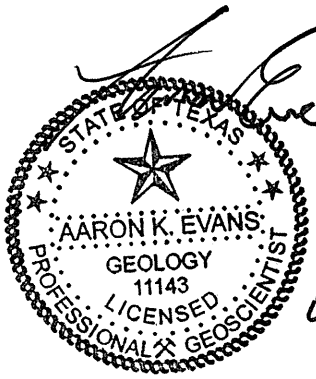
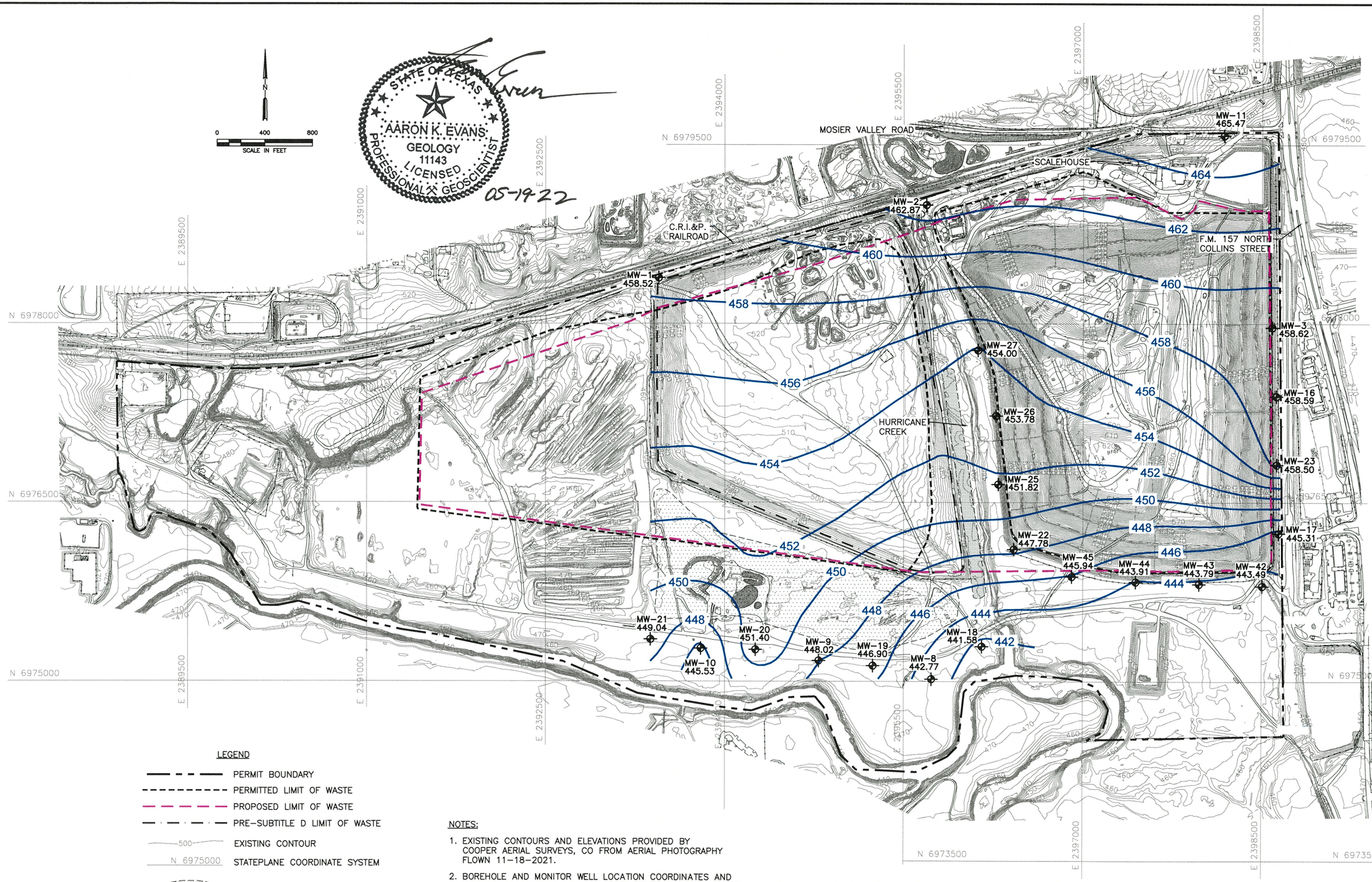


05-19-22



LEGEND

- PERMIT BOUNDARY
- PERMITTED LIMIT OF WASTE
- PROPOSED LIMIT OF WASTE
- PRE-SUBTITLE D LIMIT OF WASTE
- 500 — EXISTING CONTOUR
- N 6975000 — STATEPLANE COORDINATE SYSTEM
- HISTORICAL WASTE TO BE RELOCATED
- 464 — GROUNDWATER SURFACE ELEVATION IN FT-MSL
- MW-1 — EXISTING GROUNDWATER MONITOR WELL

NOTES:

1. EXISTING CONTOURS AND ELEVATIONS PROVIDED BY COOPER AERIAL SURVEYS, CO FROM AERIAL PHOTOGRAPHY FLOWN 11-18-2021.
2. BOREHOLE AND MONITOR WELL LOCATION COORDINATES AND SURFACE ELEVATIONS OBTAINED FROM PREVIOUS SUBSURFACE EXPLORATION LITHOLOGIC LOGS AND REPORTS.
3. GROUNDWATER ELEVATIONS GAUGED BY THE CAREL CORPORATION DURING THE MARCH 2021 SEMIANNUAL GROUNDWATER MONITORING EVENT AND POSTED IN FT-MSL BY EACH MONITOR WELL LOCATION.

- [ ] DRAFT
- [x] FOR PERMITTING PURPOSES ONLY
- [ ] ISSUED FOR CONSTRUCTION

DATE: 05/2022
FILE: 0023-404-11
CAD: IIIG-D-1-MAR 2021 GW MAP.DWG

DRAWN BY: CRA
DESIGN BY: CRA
REVIEWED BY: AKE

Weaver Consultants Group
TBPE REGISTRATION NO. F-3727

PREPARED FOR
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NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT
MARCH 2021
GROUNDWATER CONTOUR MAP

CITY OF ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS

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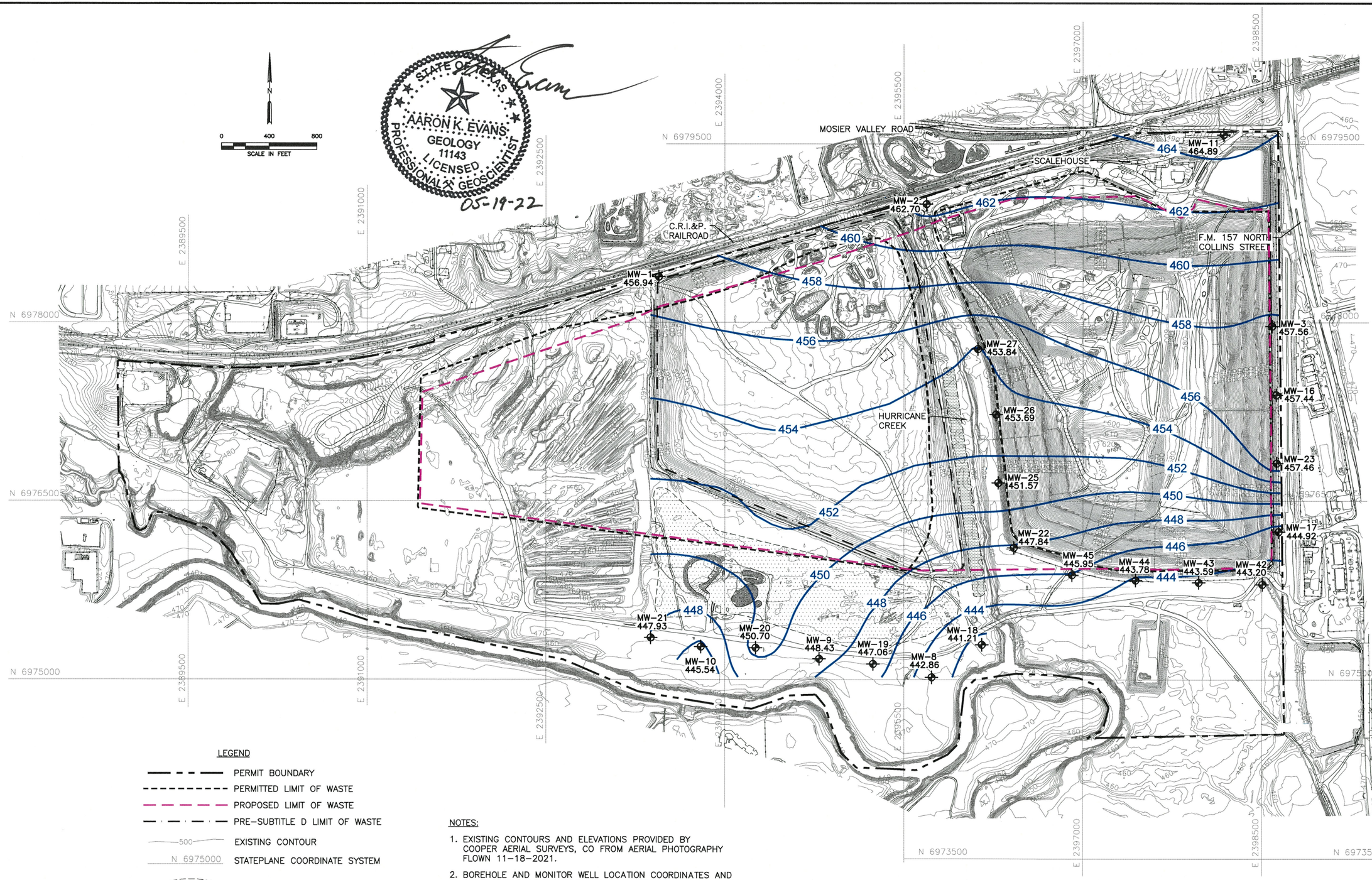
FIGURE IIIG-D-1

O:\0023\404\EXPANSION 2021\PART III\IIIG\FIG IIIG-D-1-MARCH 2021 GW CONTOUR MAP.dwg



LEGEND

- PERMIT BOUNDARY
- PERMITTED LIMIT OF WASTE
- PROPOSED LIMIT OF WASTE
- PRE-SUBTITLE D LIMIT OF WASTE
- 500 EXISTING CONTOUR
- N 6975000 STATEPLANE COORDINATE SYSTEM
- HISTORICAL WASTE TO BE RELOCATED
- 464 GROUNDWATER SURFACE ELEVATION IN FT-MSL
- MW-1 EXISTING GROUNDWATER MONITOR WELL

NOTES:

1. EXISTING CONTOURS AND ELEVATIONS PROVIDED BY COOPER AERIAL SURVEYS, CO FROM AERIAL PHOTOGRAPHY FLOWN 11-18-2021.
2. BOREHOLE AND MONITOR WELL LOCATION COORDINATES AND SURFACE ELEVATIONS OBTAINED FROM PREVIOUS SUBSURFACE EXPLORATION LITHOLOGIC LOGS AND REPORTS.
3. GROUNDWATER ELEVATIONS GAUGED BY THE CAREL CORPORATION DURING THE SEPTEMBER 2021 SEMIANNUAL GROUNDWATER MONITORING EVENT AND POSTED IN FT-MSL BY EACH MONITOR WELL LOCATION.

- [ ] DRAFT
- [x] FOR PERMITTING PURPOSES ONLY
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DATE: 05/2022
FILE: 0023-404-11
CAD: IIIG-D-2-SEPT 2021 GW MAP.DWG
DRAWN BY: CRA
DESIGN BY: CRA
REVIEWED BY: AKE

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NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT SEPTEMBER 2021 GROUNDWATER CONTOUR MAP

CITY OF ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS

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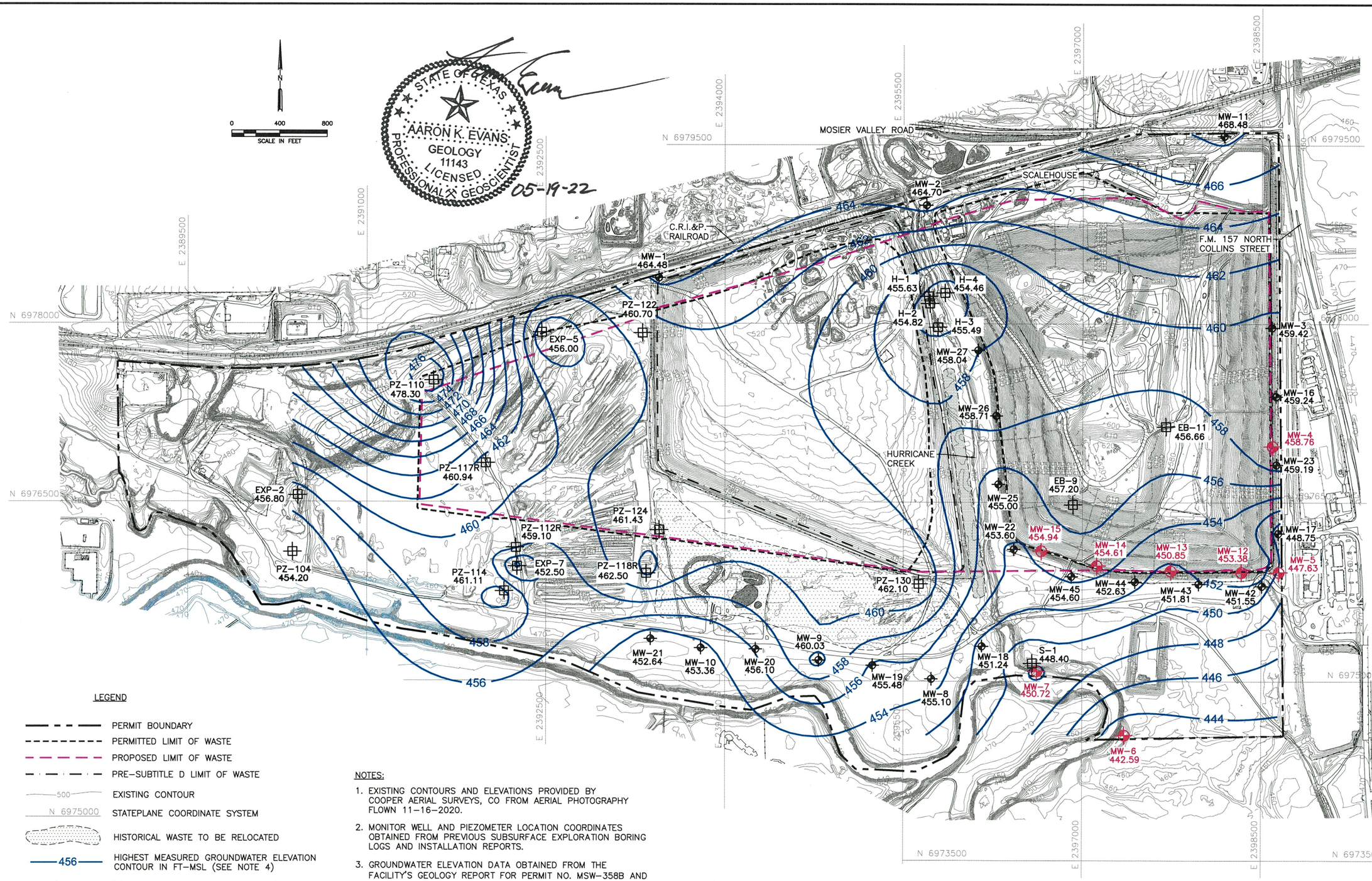
FIGURE IIIG-D-2

O:\0023\404\EXPANSION 2021\PART III\IIIG\FIG IIIG-D-2-SEPTEMBER 2021 GW CONTOUR MAP.dwg



LEGEND

- PERMIT BOUNDARY
- PERMITTED LIMIT OF WASTE
- PROPOSED LIMIT OF WASTE
- PRE-SUBTITLE D LIMIT OF WASTE
- 500 EXISTING CONTOUR
- N 6975000 STATEPLANE COORDINATE SYSTEM
- HISTORICAL WASTE TO BE RELOCATED
- 456 HIGHEST MEASURED GROUNDWATER ELEVATION CONTOUR IN FT-MSL (SEE NOTE 4)
- MW-1 EXISTING GROUNDWATER MONITOR WELL
- MW-6 FORMER GROUNDWATER MONITOR WELL
- PZ-101 FORMER GROUNDWATER PIEZOMETER

NOTES:

1. EXISTING CONTOURS AND ELEVATIONS PROVIDED BY COOPER AERIAL SURVEYS, CO FROM AERIAL PHOTOGRAPHY FLOWN 11-16-2020.
2. MONITOR WELL AND PIEZOMETER LOCATION COORDINATES OBTAINED FROM PREVIOUS SUBSURFACE EXPLORATION BORING LOGS AND INSTALLATION REPORTS.
3. GROUNDWATER ELEVATION DATA OBTAINED FROM THE FACILITY'S GEOLOGY REPORT FOR PERMIT NO. MSW-358B AND THE FACILITY'S SUBTITLE D GROUNDWATER MONITORING DATABASE PROVIDED BY THE CAREL CORPORATION.
4. GROUNDWATER CONTOURS WERE PRODUCED USING THE HIGHEST RECORDED GROUNDWATER ELEVATIONS GAUGED IN EXISTING MONITOR WELLS AND FORMER MONITOR WELLS AND PIEZOMETERS AND DO NOT REPRESENT A SINGLE GROUNDWATER MONITORING EVENT OR ACTUAL GROUNDWATER FLOW.

O:\00233\404\EXPANSION 2021\PART III\IIIG\FIG IIIG-D-3-HIGHEST GW CONTOUR MAP.dwg

- [ ] DRAFT
- [X] FOR PERMITTING PURPOSES ONLY
- [ ] ISSUED FOR CONSTRUCTION

DATE: 05/2022
FILE: 0023-404-11
CAD: FIG IIIG-D-3-HMGW MAP.DWG
DRAWN BY: CRA
DESIGN BY: ADL
REVIEWED BY: AKE

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REPUBLIC WASTE SERVICES OF TEXAS, LTD

REVISIONS

NO.	DATE	DESCRIPTION

MAJOR PERMIT AMENDMENT
HIGHEST MEASURED GROUNDWATER ELEVATION CONTOUR MAP

CITY OF ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS

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FIGURE IIIG-D-3

GOLDER AQUIFER SLUG TESTING RESULTS SUMMARY

head methods. During the falling head method, the water levels were displaced by introducing a "slug" into the water column. During the rising head method, the water levels were displaced by removing a "slug" from the water column. The drop or rise in water level was then monitored with respect to time to determine hydraulic conductivity. Three additional slug tests were performed by Golder during the 2010 investigation to measure the horizontal hydraulic conductivity of Stratum B in the area of the expansion. These tests were also conducted using the falling and rising head methods and were calculated using the Hvorslev methodology, which are appropriate methods for investigating confined aquifers. From the results of all twelve slug tests, Golder calculated the geometric mean and the arithmetic mean hydraulic conductivities, which are shown in Table 4.12.

Table 4.12. Summary of Aquifer Slug Tests

Piezometer or Well Designation	Portion of the Site	Stratum Tested	Hydraulic Conductivity (cm/sec)	
			Falling Head	Rising Head
MW-6	Eastern	B	2.44×10^{-2}	1.93×10^{-2}
MW-11	Eastern	B	5.84×10^{-2}	6.23×10^{-2}
MW-1	Western	B	5.23×10^{-2}	4.13×10^{-2}
PZ-104	Western	B	3.89×10^{-3}	3.77×10^{-3}
PZ-122	Western	B	1.38×10^{-3}	1.55×10^{-3}
PZ-130	Western	B	3.54×10^{-3}	4.14×10^{-3}
Eastern Portion of the Facility				
Geometric Mean Hydraulic Conductivity = 3.62×10^{-2} cm/sec				
Arithmetic Mean Hydraulic Conductivity = 4.11×10^{-2} cm/sec				
Western Portion of the Facility				
Geometric Mean Hydraulic Conductivity = 5.62×10^{-3} cm/sec				
Arithmetic Mean Hydraulic Conductivity = 1.40×10^{-2} cm/sec				

Notes:

1. Slug Tests for Monitoring Wells MW-1, MW-6 and MW-11 were performed by EMCON in 1994.
2. Slug tests for Piezometers PZ-104, PZ-122, and PZ-130 were performed by Golder in 2010.
3. The geometric and arithmetic means include the results of both the falling and rising head slug tests.

The permeable sands and sandstones and interbedded sands and shales of Stratum D represent the lower portion of the uppermost aquifer below the landfill. Sandstone core samples obtained from Stratum D during the field investigation were tested in the laboratory to quantify its vertical and horizontal permeability. From the results of the laboratory permeability testing, Golder calculated the geometric mean and arithmetic mean hydraulic conductivities that were summarized in Table 4.10.

FORMER WELL AND PIEZOMETER
GROUNDWATER ELEVATION DATA SUMMARIES

Table 4.11. Summary of Initial and Static Water Level Data

Boring/Well Number	Initial Water Level (ft-msl)	Static Water Level (ft-msl)	Date of Static Water Level Reading
EXP-2	456.8	451.5	1/17/09
EXP-5	456.0	449.3	1/17/09
EXP-7	452.5	447.8	1/17/09
MW-1	NR	465.72	4/28/93
MW-2	NR	460.09	5/4/93
MW-3	NR	454.64	4/23/93
MW-4	NR	450.24	4/27/93
MW-5	NR	445.9	NR
MW-6	NR	441.3	NR
MW-7	NR	442.29	4/20/93
MW-8	NR	448.07	4/19/93
MW-9	NR	455.01	4/23/93
MW-10	NR	453.36	4/23/93
MW-11	NR	467.39	2/15/94
MW-12	NR	450.44	1/17/95
MW-13	NR	450.75	1/20/95
MW-14	NR	451.93	1/24/95
MW-15	NR	450.63	7/17, 18, & 19/95
MW-16	439.9	456.9	11/26/10
MW-17	NR	446.6	11/26/10
MW-18	448.7	442.5	11/26/10
MW-19	450.8	448.2	11/26/10
MW-20	449.1	453.6	11/26/10
MW-21	NR	450.5	11/26/10
MW-22	440.8	453.2	11/26/10
MW-23	439.2	458.5	11/26/10
EB-9	NR	453.3	1/5/94
EB-9I	NR	451.0	1/5/94
EB-11	NR	455.1	1/5/94
EB-11I	NR	451.0	1/5/94
S-1	NR	440.5	1/5/94
WP-2	448.2	NR	-
B-102	458.89	BG	-
B-104	441.51	453.7	7/29/10
B-109	453.25	BG	-
B-110	478.5	480	7/29/10
B-111	454.99	BG	-
B-112R	454.02	457.3	7/29/10
B-113R	458.47	BG	-
B-114	453.71	458.2	7/29/10
B-115	457.06	BG	-
B-116	455.44	BG	-
B-117R	456.63	459.9	7/29/10
B-118R	449.34	459.7	7/29/10
B-119R	449.85	BG	-

Boring/Well Number	Initial Water Level (ft-msl)	Static Water Level (ft-msl)	Date of Static Water Level Reading
B-120R	454.36	BG	-
B-121R	450.87	BG	-
B-122	453.94	460.1	7/29/10
B-123R	449.18	BG	-
B-124	NR	460.1	7/29/10
B-125	449.92	BG	-
B-128	457.79	BG	-
B-129	445.21	BG	-
B-130	444.61	456.0	7/29/10
H-1	451.13	455.63	7/22/10
H-2	448.82	454.82	7/23/10
H-3	455.49	455.49	7/23/10
H-4	450.46	454.46	7/27/10
B-11.1	468.48	NR	-
B-11.2	479.72	NR	-
B-11.3	459.35	NR	-
B-11.10	510.70	NR	-

Notes:

BG = Borehole Grouted Upon Completion.
NR = Groundwater depth was not recorded.

1. Water level information shown in this table is taken from the actual boring logs or installation reports unless otherwise noted.
2. Piezometer PZ-104 was constructed inside boring B-104.
3. Piezometer PZ-110 was constructed inside boring B-110.
4. Piezometer PZ-112R was constructed inside boring B-112R.
5. Piezometer PZ-114 was constructed inside boring B-114.
6. Piezometer PZ-117R was constructed inside boring B-117R.
7. Piezometer PZ-118R was constructed inside boring B-118R.
8. Piezometer PZ-122 was constructed inside boring B-122.
9. Piezometer PZ-124 was constructed inside boring B-124.
10. Piezometer PZ-130 was constructed inside boring B-130.

Water level data, collected from 120 borings, 9 piezometers, and 23 wells from March 1989 to January 2011, are provided in Appendix 4-E. Tabulated historical groundwater quality results from the ongoing monitoring program(s) are shown in Appendix 4-F. This appendix presents the results of all semiannual and applicable quarterly groundwater monitoring events since 1994. Verification resamples, if collected as part of the statistical analysis, are also included in the appendix. Using data from the current potentiometric maps, the groundwater flow system was determined and is included as Figures 4-19A through 4-19G.

The permeable coarse-grained materials of Stratum B represent the upper portion of the uppermost aquifer below the landfill. During the investigation described in the EMCON (1994) report, slug tests were performed in two monitoring wells and one piezometer to determine the hydraulic properties of Stratum B. These tests were performed using both the falling and rising

ARLINGTON LANDFILL

Tarrant County, Texas

Monitoring Well Groundwater Elevation Summary-Arlington Landfill

	MW-1	MW-2	MW-3	MW-4	MW-7	MW-8	MW-9	MW-10	MW-11	MW-12	MW-13	MW-14	MW-15
Jan-94	463.45	462.03	456.7	456.25	441.78	445.39	452.46	450.83					
Dec-94	463.61	462.1	457.69	457.25	442.09	447.72	455.3	451.51	467.39				
Mar-95	464.48	462.83	458.18	457.87	444.09	448.84	455.63	451.27	468.28	450.44	450.75	451.93	
Jul-95	462.75	462.31	456.72	456.4	440.81	444.8	454.42	450.12	466.58	447.94	448.68	450.74	450.68
Sep-95	460.43	461.8	455.74	455.52	440.94	443.69	451.27	447.5	464.77	445.84	448.57	448.03	448.59
Jan-96	459.73	461.68	455.34	454.97	440.59	442.71	450.06	445.61	464.94	443.42	443.77	445.66	446.95
Mar-96	459.99	461.66	454.97	454.53	440.54	445.42	449.66	439.62	465.79	442.38	442.75	444.78	446.36
Sep-96	456.93	461.92	454.1	453.97	440.98	442.51	449.24	444.76	463.13	441.66	442.3	444.02	446.46
Mar-97	462.36	462.32	457.64	457.38	443.79	449.61	456.61	448.19	467.62	448.3	448.76	449.33	449.62
Sep-97	459.17	461.82	457.86	456.86	441.28	444.15	451.08	447.07	464.22	442.42	439.99	444.8	445.74
Mar-98	463.94	463.48	458.3	458.1	450.72	455.1	460.03	450.87	468.48	453.38	450.85	454.61	454.94
Oct-98	458.23	452.57	452.93	451.7	439.27			444.44	461.22	441.71	442.68	443.26	444.21
Apr-99	459.73	462.43	456.35	456.01	441.35	444.44	448.34	444.89	467.51	442.39	442.62	444.55	445.64
Sep-99	455.16	462.72	453.29	452.99	441.39	442.92	447.44	443.54	463.86	441.13	441.44	443.6	445.18
Mar-00	455.56	462.12	455.28	454.87	441.37	442.97	447.11	442.88	466.65	441.76	442.05	443.88	445.17
Sep-00	453.36	461.94	452.93	452.69	440.71	442.16	446.77	442.13	462.63	440.65	441.04	443.49	445.22
Mar-01	455.27	463.00	457.47	457.13	445.08	449.01	450.37	444.56	467.86	448.97	449.29	450.00	450.50
Sep-01	455.27	462.32	455.76	455.54	440.65	443.33	447.73	444.07	464.26	443.73	444.11	445.95	447.13
Mar-02	462.04	462.81	458.24	457.96	444.38	451.96	454.30	445.43	468.35	449.06	449.56	450.91	452.56
Sep-02	455.79	461.62	456.04	455.86	440.45	443.50	448.17	445.30	464.90	442.94	443.31	445.50	447.09
Mar-03	459.04	462.11	457.66	457.40	441.14	444.45	448.42	443.87	468.18	445.20	445.65	447.48	452.56

Note: 1. MW - 12, 13, 14, 15 measured in June 1996; all others September 1996 for elevations shown
2. No measurements taken for October 1998 for MW-8 and MW-9.

IIIG-D-9

Plate 35, App. 4D

City of Arlington Water Level Data

Borehole Designation	SampleDate	GW Elevation	Comments
EB-11	01/05/94	455.11	Static Water Level
11	01/26/94	456.32	Static Water Level
EB-11	02/04/94	455.78	Static Water Level
EB-11	02/14/94	455.24	Static Water Level
EB-11	03/02/94	456.66	Static Water Level
EB-11	03/06/91	453.00	Static Water Level
EB-11	03/26/91	452.30	Static Water Level
EB-11	04/11/91	452.40	Static Water Level
EB-11	04/29/91	452.80	Static Water Level
EB-11	05/09/91	453.50	Static Water Level
EB-11	05/24/91	452.80	Static Water Level
EB-11	05/28/91	453.40	Static Water Level
EB-11	06/11/91	452.80	Static Water Level
EB-11	06/27/91	452.40	Static Water Level
EB-11	07/15/91	451.30	Static Water Level
EB-11	08/02/91	450.60	Static Water Level
-11	08/20/91	451.00	Static Water Level
EB-11	08/27/91	450.70	Static Water Level
EB-11	09/06/91	452.00	Static Water Level
EB-11	09/23/91	452.30	Static Water Level
EB-11	09/30/91	451.90	Static Water Level
EB-11	10/04/91	452.00	Static Water Level
EB-11	10/10/91	451.70	Static Water Level
EB-11	10/17/91	451.60	Static Water Level
EB-11	10/24/91	451.40	Static Water Level
EB-11	11/08/91	452.90	Static Water Level
EB-11	11/26/91	452.60	Static Water Level
EB-1II	01/05/94	450.95	Static Water Level
EB-1II	01/26/94	451.63	Static Water Level
EB-1II	02/04/94	451.13	Static Water Level
EB-1II	02/14/94	450.73	Static Water Level
EB-1II	03/02/94	452.81	Static Water Level
-1II	03/06/91	455.00	Static Water Level
EB-1II	03/26/91	454.80	Static Water Level

Borehole Designation	SampleDate	GW Elevation	Comments
EB-11I	04/11/91	453.50	Static Water Level
EB-11I	04/29/91	453.80	Static Water Level
-11I	05/09/91	453.80	Static Water Level
EB-11I	05/24/91	454.00	Static Water Level
EB-11I	05/28/91	453.80	Static Water Level
EB-11I	06/11/91	453.90	Static Water Level
EB-11I	06/27/91	453.50	Static Water Level
EB-11I	07/15/91	453.10	Static Water Level
EB-11I	08/02/91	453.10	Static Water Level
EB-11I	08/20/91	453.50	Static Water Level
EB-11I	08/27/91	453.30	Static Water Level
EB-11I	09/06/91	453.40	Static Water Level
EB-11I	09/23/91	452.10	Static Water Level
EB-11I	09/30/91	451.70	Static Water Level
EB-11I	10/04/91	451.70	Static Water Level
EB-11I	10/10/91	451.70	Static Water Level
EB-11I	10/17/91	451.20	Static Water Level
EB-11I	10/24/91	450.80	Static Water Level
-11I	11/08/91	453.90	Static Water Level
EB-11I	11/26/91	451.70	Static Water Level
EB-9	01/05/94	453.31	Static Water Level
EB-9	01/26/94	453.26	Static Water Level
EB-9	02/04/94	452.80	Static Water Level
EB-9	02/14/94	452.38	Static Water Level
EB-9	03/02/94	453.78	Static Water Level
EB-9	03/06/91	452.30	Static Water Level
EB-9	03/26/91	451.40	Static Water Level
EB-9	03/27/89	452.10	Static Water Level
EB-9	03/29/89	457.20	Static Water Level
EB-9	04/11/91	451.10	Static Water Level
EB-9	04/29/91	452.90	Static Water Level
EB-9	05/09/91	453.30	Static Water Level
EB-9	05/24/91	453.00	Static Water Level
-9	05/28/91	453.90	Static Water Level
EB-9	06/11/91	453.30	Static Water Level

Borehole Designation	SampleDate	GW Elevation	Comments
EB-9	06/27/91	452.60	Static Water Level
EB-9	07/15/91	451.50	Static Water Level
9	08/02/91	451.20	Static Water Level
EB-9	08/20/91	451.80	Static Water Level
EB-9	08/27/91	451.40	Static Water Level
EB-9	09/06/91	452.40	Static Water Level
EB-9	09/23/91	452.00	Static Water Level
EB-9	09/30/91	451.60	Static Water Level
EB-9	10/04/91	451.30	Static Water Level
EB-9	10/10/91	451.20	Static Water Level
EB-9	10/17/91	450.80	Static Water Level
EB-9	10/24/91	450.50	Static Water Level
EB-9	11/08/91	456.70	Static Water Level
EB-9	11/26/91	455.70	Static Water Level
EB-9I	01/05/94	450.97	Static Water Level
EB-9I	01/26/94	450.79	Static Water Level
EB-9I	02/04/94	450.47	Static Water Level
EB-9I	02/14/94	450.27	Static Water Level
-9I	03/02/94	451.01	Static Water Level
EB-9I	03/06/91	453.40	Static Water Level
EB-9I	03/26/91	452.10	Static Water Level
EB-9I	04/11/91	452.00	Static Water Level
EB-9I	04/29/91	452.50	Static Water Level
EB-9I	05/09/91	453.10	Static Water Level
EB-9I	05/24/91	452.60	Static Water Level
EB-9I	05/28/91	453.40	Static Water Level
EB-9I	06/11/91	453.00	Static Water Level
EB-9I	06/27/91	452.50	Static Water Level
EB-9I	07/15/91	451.90	Static Water Level
EB-9I	08/02/91	451.40	Static Water Level
EB-9I	08/20/91	452.20	Static Water Level
EB-9I	08/27/91	451.60	Static Water Level
EB-9I	09/06/91	451.50	Static Water Level
-9I	09/23/91	450.10	Static Water Level
EB-9I	09/30/91	448.90	Static Water Level

Borehole Designation	SampleDate	GW Elevation	Comments
EB-9I	10/04/91	448.50	Static Water Level
EB-9I	10/10/91	448.10	Static Water Level
9I	10/17/91	447.90	Static Water Level
EB-9I	10/24/91	447.40	Static Water Level
EB-9I	11/08/91	456.00	Static Water Level
EB-9I	11/26/91	452.20	Static Water Level
EXP-2	01/17/09	451.50	Static Water Level
EXP-2	12/23/08	456.80	Initial Water Level
EXP-5	01/03/09	456.00	Initial Water Level
EXP-5	01/17/09	449.30	Static Water Level
EXP-7	01/17/09	447.80	Static Water Level
EXP-7	12/24/08	452.50	Initial Water Level
H-1	07/22/10	455.63	Static Water Level
H-2	07/23/10	454.82	Static Water Level
H-3	07/23/10	455.49	Static Water Level
H-4	07/27/10	454.46	Static Water Level
MW-1	01/04/96	459.73	Static Water Level
MW-1	01/05/94	462.96	Static Water Level
.W-1	01/20/11	460.10	Static Water Level
MW-1	01/26/94	463.45	Static Water Level
MW-1	01/94	463.46	Static Water Level
MW-1	02/04/94	463.48	Static Water Level
MW-1	02/14/94	462.15	Static Water Level
MW-1	03/02/94	463.36	Static Water Level
MW-1	03/09/04	457.25	Static Water Level
MW-1	03/12/03	459.04	Static Water Level
MW-1	03/12/08	460.12	Static Water Level
MW-1	03/15/05	460.21	Static Water Level
MW-1	03/15/10	460.94	Static Water Level
MW-1	03/20/01	459.33	Static Water Level
MW-1	03/22/05	464.48	Static Water Level
MW-1	03/26/02	462.04	Static Water Level
MW-1	03/26/09	457.30	Static Water Level
W-1	03/26/98	463.94	Static Water Level
MW-1	03/27/97	462.36	Static Water Level

Borehole Designation	SampleDate	GW Elevation	Comments
MW-1	03/28/00	455.56	Static Water Level
MW-1	03/28/96	459.99	Static Water Level
MW-1	03/29/06	456.43	Static Water Level
MW-1	03/29/07	456.83	Static Water Level
MW-1	04/02/99	459.73	Static Water Level
MW-1	04/28/93	465.72	Static Water Level
MW-1	06/10/08	459.46	Static Water Level
MW-1	06/14/07	458.39	Static Water Level
MW-1	06/21/93	464.00	Static Water Level
MW-1	07/20/95	462.75	Static Water Level
MW-1	07/30/10	454.90	Static Water Level
MW-1	09/05/03	454.70	Static Water Level
MW-1	09/08/09	454.81	Static Water Level
MW-1	09/10/97	459.17	Static Water Level
MW-1	09/12/00	453.36	Static Water Level
MW-1	09/15/99	455.16	Static Water Level
MW-1	09/17/02	455.79	Static Water Level
MW-1	09/17/96	456.93	Static Water Level
MW-1	09/18/01	455.27	Static Water Level
MW-1	09/18/08	456.12	Static Water Level
MW-1	09/19/07	459.44	Static Water Level
MW-1	09/21/05	453.96	Static Water Level
MW-1	09/22/04	457.68	Static Water Level
MW-1	09/26/95	460.43	Static Water Level
MW-1	09/27/06	452.54	Static Water Level
MW-1	10/01/98	458.23	Static Water Level
MW-1	10/27/10	459.98	Static Water Level
MW-1	11/09/93	461.21	Static Water Level
MW-1	11/26/10	459.80	Static Water Level
MW-1	12/09/08	455.77	Static Water Level
MW-1	12/12/07	458.78	Static Water Level
MW-1	12/20/93	462.55	Static Water Level
MW-1	12/22/94	463.81	Static Water Level
MW-1	12/28/10	459.4	Static Water Level
MW-1	8/30/10	453.40	Static Water Level

Borehole Designation	SampleDate	GW Elevation	Comments
MW-1	9/20/10	460.58	Static Water Level
MW-10	01/04/96	445.61	Static Water Level
MW-10	01/05/94	450.63	Static Water Level
MW-10	01/20/11	443.80	Static Water Level
MW-10	01/26/94	450.83	Static Water Level
MW-10	01/94	450.83	Static Water Level
MW-10	02/04/94	450.82	Static Water Level
MW-10	02/14/94	450.67	Static Water Level
MW-10	03/02/94	450.91	Static Water Level
MW-10	03/09/04	442.59	Static Water Level
MW-10	03/12/03	443.87	Static Water Level
MW-10	03/12/08	443.41	Static Water Level
MW-10	03/15/05	444.93	Static Water Level
MW-10	03/15/10	444.24	Static Water Level
MW-10	03/20/01	444.56	Static Water Level
MW-10	03/22/95	451.27	Static Water Level
MW-10	03/26/02	445.43	Static Water Level
MW-10	03/26/09	441.60	Static Water Level
MW-10	03/26/96	444.62	Static Water Level
MW-10	03/26/98	450.87	Static Water Level
MW-10	03/27/97	448.19	Static Water Level
MW-10	03/28/00	442.88	Static Water Level
MW-10	03/29/06	441.97	Static Water Level
MW-10	03/29/07	441.65	Static Water Level
MW-10	04/02/99	444.89	Static Water Level
MW-10	04/23/93	453.36	Static Water Level
MW-10	06/10/08	443.79	Static Water Level
MW-10	06/14/07	443.23	Static Water Level
MW-10	06/21/93	450.50	Static Water Level
MW-10	07/20/95	450.12	Static Water Level
MW-10	07/30/10	442.40	Static Water Level
MW-10	09/05/03	442.90	Static Water Level
MW-10	09/08/09	440.89	Static Water Level
MW-10	09/10/97	447.07	Static Water Level
MW-10	09/12/00	442.13	Static Water Level

Borehole Designation	SampleDate	GW Elevation	Comments
MW-10	09/15/99	443.54	Static Water Level
MW-10	09/17/02	445.30	Static Water Level
MW-10	09/17/96	444.76	Static Water Level
MW-10	09/18/01	444.07	Static Water Level
MW-10	09/18/08	442.08	Static Water Level
MW-10	09/19/07	444.18	Static Water Level
MW-10	09/21/05	442.60	Static Water Level
MW-10	09/22/04	444.53	Static Water Level
MW-10	09/26/95	447.50	Static Water Level
MW-10	09/27/06	441.53	Static Water Level
MW-10	10/01/98	444.44	Static Water Level
MW-10	10/27/10	444.13	Static Water Level
MW-10	11/09/93	450.88	Static Water Level
MW-10	11/26/10	443.90	Static Water Level
MW-10	12/09/08	441.39	Static Water Level
MW-10	12/12/07	443.37	Static Water Level
MW-10	12/20/93	450.94	Static Water Level
MW-10	12/22/94	451.51	Static Water Level
MW-10	12/28/10	444.0	Static Water Level
MW-10	8/30/10	441.40	Static Water Level
MW-10	9/20/10	444.63	Static Water Level
MW-11	01/04/96	464.94	Static Water Level
MW-11	01/20/11	464.40	Static Water Level
MW-11	03/09/04	466.72	Static Water Level
MW-11	03/12/03	468.18	Static Water Level
MW-11	03/12/08	466.55	Static Water Level
MW-11	03/15/05	467.02	Static Water Level
MW-11	03/15/10	467.79	Static Water Level
MW-11	03/20/01	467.86	Static Water Level
MW-11	03/22/95	468.28	Static Water Level
MW-11	03/26/02	468.35	Static Water Level
MW-11	03/26/09	467.21	Static Water Level
MW-11	03/26/98	468.48	Static Water Level
MW-11	03/27/97	467.62	Static Water Level
MW-11	03/28/00	466.65	Static Water Level

Borehole Designation	SampleDate	GW Elevation	Comments
MW-11	03/28/96	465.23	Static Water Level
MW-11	03/29/06	465.20	Static Water Level
V-11	03/29/07	465.22	Static Water Level
MW-11	04/02/99	467.51	Static Water Level
MW-11	06/10/08	465.68	Static Water Level
MW-11	06/14/07	466.91	Static Water Level
MW-11	07/20/95	466.58	Static Water Level
MW-11	07/30/10	463.70	Static Water Level
MW-11	09/05/03	463.89	Static Water Level
MW-11	09/08/09	464.69	Static Water Level
MW-11	09/10/97	464.22	Static Water Level
MW-11	09/12/00	462.63	Static Water Level
MW-11	09/15/99	463.86	Static Water Level
MW-11	09/17/02	464.90	Static Water Level
MW-11	09/17/96	463.13	Static Water Level
MW-11	09/18/01	464.28	Static Water Level
MW-11	09/18/08	463.76	Static Water Level
MW-11	09/19/07	466.04	Static Water Level
W-11	09/21/05	463.39	Static Water Level
MW-11	09/22/04	466.04	Static Water Level
MW-11	09/26/95	464.77	Static Water Level
MW-11	09/27/06	461.75	Static Water Level
MW-11	10/01/98	461.22	Static Water Level
MW-11	10/27/10	464.03	Static Water Level
MW-11	11/26/10	463.90	Static Water Level
MW-11	12/09/08	463.74	Static Water Level
MW-11	12/12/07	465.33	Static Water Level
MW-11	12/22/94	467.39	Static Water Level
MW-11	12/28/10	464.2	Static Water Level
MW-11	8/30/10	463.10	Static Water Level
MW-11	9/20/10	464.33	Static Water Level
MW-12	01/04/96	443.42	Static Water Level
MW-12	01/17/95	450.44	Static Water Level
W-12	01/20/11	444.70	Static Water Level
MW-12	03/09/04	444.91	Static Water Level

Borehole Designation	SampleDate	GW Elevation	Comments
MW-12	03/12/03	445.20	Static Water Level
MW-12	03/12/08	445.25	Static Water Level
MW-12	03/15/05	444.33	Static Water Level
MW-12	03/15/10	447.26	Static Water Level
MW-12	03/20/01	448.97	Static Water Level
MW-12	03/22/95	450.44	Static Water Level
MW-12	03/26/02	449.06	Static Water Level
MW-12	03/26/09	440.88	Static Water Level
MW-12	03/26/98	453.38	Static Water Level
MW-12	03/27/97	448.30	Static Water Level
MW-12	03/28/00	441.76	Static Water Level
MW-12	03/28/96	442.38	Static Water Level
MW-12	03/29/06	444.98	Static Water Level
MW-12	03/29/07	443.34	Static Water Level
MW-12	04/02/99	442.39	Static Water Level
MW-12	06/10/08	444.58	Static Water Level
MW-12	06/14/07	446.78	Static Water Level
MW-12	07/20/95	447.94	Static Water Level
MW-12	07/30/10	443.10	Static Water Level
MW-12	09/05/03	442.53	Static Water Level
MW-12	09/08/09	442.07	Static Water Level
MW-12	09/10/97	442.42	Static Water Level
MW-12	09/12/00	440.65	Static Water Level
MW-12	09/15/99	441.13	Static Water Level
MW-12	09/17/02	442.94	Static Water Level
MW-12	09/17/96	441.66	Static Water Level
MW-12	09/18/01	443.73	Static Water Level
MW-12	09/18/08	442.53	Static Water Level
MW-12	09/19/07	445.18	Static Water Level
MW-12	09/21/05	442.00	Static Water Level
MW-12	09/22/04	444.54	Static Water Level
MW-12	09/26/95	445.84	Static Water Level
MW-12	09/27/06	441.45	Static Water Level
MW-12	10/01/98	441.71	Static Water Level
MW-12	10/27/10	446.13	Static Water Level

Borehole Designation	SampleDate	GW Elevation	Comments
MW-12	11/26/10	445.20	Static Water Level
MW-12	12/09/08	441.61	Static Water Level
MW-12	12/12/07	443.58	Static Water Level
MW-12	12/28/10	444.7	Static Water Level
MW-12	8/30/10	442.20	Static Water Level
MW-12	9/20/10	447.73	Static Water Level
MW-13	01/04/96	443.77	Static Water Level
MW-13	01/20/11	445.40	Static Water Level
MW-13	01/20/95	450.75	Static Water Level
MW-13	03/09/04	445.47	Static Water Level
MW-13	03/12/03	445.65	Static Water Level
MW-13	03/12/08	445.74	Static Water Level
MW-13	03/15/05	445.78	Static Water Level
MW-13	03/15/10	447.96	Static Water Level
MW-13	03/20/01	449.29	Static Water Level
MW-13	03/22/95	450.75	Static Water Level
MW-13	03/26/02	449.56	Static Water Level
MW-13	03/26/09	441.23	Static Water Level
MW-13	03/26/98	450.85	Static Water Level
MW-13	03/27/97	448.76	Static Water Level
MW-13	03/28/00	442.05	Static Water Level
MW-13	03/28/96	442.75	Static Water Level
MW-13	03/29/06	445.51	Static Water Level
MW-13	03/29/07	443.58	Static Water Level
MW-13	04/02/99	442.62	Static Water Level
MW-13	06/10/08	445.10	Static Water Level
MW-13	06/14/07	447.44	Static Water Level
MW-13	07/20/95	448.68	Static Water Level
MW-13	07/30/10	443.20	Static Water Level
MW-13	09/05/03	442.86	Static Water Level
MW-13	09/08/09	442.47	Static Water Level
MW-13	09/10/97	439.99	Static Water Level
MW-13	09/12/00	441.04	Static Water Level
MW-13	09/15/99	441.44	Static Water Level
MW-13	09/17/02	443.31	Static Water Level

Borehole Designation	SampleDate	GW Elevation	Comments
MW-13	09/17/96	442.30	Static Water Level
MW-13	09/18/01	444.11	Static Water Level
V-13	09/18/08	442.97	Static Water Level
MW-13	09/19/07	445.81	Static Water Level
MW-13	09/21/05	442.38	Static Water Level
MW-13	09/22/04	444.99	Static Water Level
MW-13	09/26/95	448.57	Static Water Level
MW-13	09/27/06	441.83	Static Water Level
MW-13	10/01/98	442.68	Static Water Level
MW-13	10/27/10	446.50	Static Water Level
MW-13	11/26/10	445.60	Static Water Level
MW-13	12/09/08	442.13	Static Water Level
MW-13	12/12/07	443.92	Static Water Level
MW-13	12/28/10	445.2	Static Water Level
MW-13	8/30/10	442.40	Static Water Level
MW-13	9/20/10	448.40	Static Water Level
MW-14	01/04/96	445.66	Static Water Level
MW-14	01/20/11	447.20	Static Water Level
W-14	01/24/93	451.93	Static Water Level
MW-14	03/09/04	447.88	Static Water Level
MW-14	03/12/03	447.48	Static Water Level
MW-14	03/12/08	447.79	Static Water Level
MW-14	03/15/05	447.74	Static Water Level
MW-14	03/15/10	449.83	Static Water Level
MW-14	03/20/01	450.00	Static Water Level
MW-14	03/22/95	451.93	Static Water Level
MW-14	03/26/02	450.91	Static Water Level
MW-14	03/26/09	444.91	Static Water Level
MW-14	03/26/98	454.61	Static Water Level
MW-14	03/27/97	449.33	Static Water Level
MW-14	03/28/00	443.88	Static Water Level
MW-14	03/28/96	444.78	Static Water Level
MW-14	03/29/06	447.80	Static Water Level
W-14	03/29/07	445.93	Static Water Level
MW-14	04/02/99	444.55	Static Water Level

Borehole Designation	SampleDate	GW Elevation	Comments
MW-14	06/10/08	447.52	Static Water Level
MW-14	06/14/07	449.37	Static Water Level
MW-14	07/20/95	450.74	Static Water Level
MW-14	07/30/10	446.30	Static Water Level
MW-14	09/05/03	445.17	Static Water Level
MW-14	09/08/09	445.15	Static Water Level
MW-14	09/10/97	444.80	Static Water Level
MW-14	09/12/00	443.49	Static Water Level
MW-14	09/15/99	443.60	Static Water Level
MW-14	09/17/02	445.50	Static Water Level
MW-14	09/17/96	444.02	Static Water Level
MW-14	09/18/01	445.95	Static Water Level
MW-14	09/18/08	445.59	Static Water Level
MW-14	09/19/07	447.94	Static Water Level
MW-14	09/21/05	444.90	Static Water Level
MW-14	09/22/04	447.15	Static Water Level
MW-14	09/26/95	448.03	Static Water Level
MW-14	09/27/06	444.47	Static Water Level
MW-14	10/01/98	443.26	Static Water Level
MW-14	10/27/10	448.04	Static Water Level
MW-14	11/26/10	447.30	Static Water Level
MW-14	12/09/08	445.32	Static Water Level
MW-14	12/12/07	447.61	Static Water Level
MW-14	12/28/10	447.1	Static Water Level
MW-14	8/30/10	445.60	Static Water Level
MW-14	9/20/10	450.44	Static Water Level
MW-15	01/04/96	446.95	Static Water Level
MW-15	01/20/11	448.70	Static Water Level
MW-15	03/09/04	449.56	Static Water Level
MW-15	03/12/03	448.60	Static Water Level
MW-15	03/12/08	449.63	Static Water Level
MW-15	03/15/05	449.33	Static Water Level
MW-15	03/15/10	450.92	Static Water Level
MW-15	03/20/01	450.50	Static Water Level
MW-15	03/26/02	452.56	Static Water Level

Borehole Designation	SampleDate	GW Elevation	Comments
MW-15	03/26/09	447.53	Static Water Level
MW-15	03/26/98	454.94	Static Water Level
W-15	03/27/97	449.62	Static Water Level
MW-15	03/28/00	445.17	Static Water Level
MW-15	03/28/96	446.36	Static Water Level
MW-15	03/29/06	450.15	Static Water Level
MW-15	03/29/07	447.64	Static Water Level
MW-15	04/02/99	445.64	Static Water Level
MW-15	06/10/08	449.13	Static Water Level
MW-15	06/14/07	450.23	Static Water Level
MW-15	07/19/95	450.63	Static Water Level
MW-15	07/20/95	451.68	Static Water Level
MW-15	07/30/10	447.70	Static Water Level
MW-15	09/05/03	447.03	Static Water Level
MW-15	09/08/09	446.85	Static Water Level
MW-15	09/10/97	445.74	Static Water Level
MW-15	09/12/00	445.22	Static Water Level
MW-15	09/15/99	445.18	Static Water Level
W-15	09/17/02	447.09	Static Water Level
MW-15	09/17/96	446.46	Static Water Level
MW-15	09/18/01	447.13	Static Water Level
MW-15	09/18/08	447.59	Static Water Level
MW-15	09/19/07	449.28	Static Water Level
MW-15	09/21/05	446.79	Static Water Level
MW-15	09/22/04	448.88	Static Water Level
MW-15	09/26/95	448.59	Static Water Level
MW-15	09/27/06	446.59	Static Water Level
MW-15	10/01/98	444.21	Static Water Level
MW-15	10/27/10	449.18	Static Water Level
MW-15	11/26/10	448.60	Static Water Level
MW-15	12/09/08	447.68	Static Water Level
MW-15	12/12/07	448.18	Static Water Level
MW-15	12/28/10	448.2	Static Water Level
W-15	8/30/10	447.60	Static Water Level
MW-15	9/20/10	451.48	Static Water Level

Borehole Designation	SampleDate	GW Elevation	Comments
MW-16	01/20/11	456.90	Static Water Level
MW-16	10/27/10	457.11	Static Water Level
MW-16	11/26/10	456.90	Static Water Level
MW-16	12/28/10	456.6	Static Water Level
MW-16	9/20/10	456.81	Static Water Level
MW-17	01/20/11	446.70	Static Water Level
MW-17	10/27/10	447.22	Static Water Level
MW-17	11/26/10	446.60	Static Water Level
MW-17	12/28/10	446.4	Static Water Level
MW-17	9/20/10	448.22	Static Water Level
MW-18	01/20/11	442.40	Static Water Level
MW-18	10/27/10	443.63	Static Water Level
MW-18	11/26/10	442.50	Static Water Level
MW-18	12/28/10	442.4	Static Water Level
MW-18	9/20/10	446.63	Static Water Level
MW-19	01/20/11	447.00	Static Water Level
MW-19	10/27/10	447.84	Static Water Level
MW-19	11/26/10	448.20	Static Water Level
MW-19	12/28/10	447.0	Static Water Level
MW-19	9/20/10	452.24	Static Water Level
MW-2	01/04/96	461.68	Static Water Level
MW-2	01/05/94	462.23	Static Water Level
MW-2	01/20/11	463.40	Static Water Level
MW-2	01/26/94	462.03	Static Water Level
MW-2	01/94	462.03	Static Water Level
MW-2	02/04/94	462.17	Static Water Level
MW-2	02/14/94	462.17	Static Water Level
MW-2	03/02/94	462.44	Static Water Level
MW-2	03/09/04	463.47	Static Water Level
MW-2	03/12/03	462.11	Static Water Level
MW-2	03/12/08	464.70	Static Water Level
MW-2	03/15/05	463.72	Static Water Level
MW-2	03/15/10	464.36	Static Water Level
MW-2	03/20/01	463.00	Static Water Level
MW-2	03/22/95	462.83	Static Water Level

Borehole Designation	SampleDate	GW Elevation	Comments
MW-2	03/26/02	462.81	Static Water Level
MW-2	03/26/09	463.48	Static Water Level
MW-2	03/26/98	463.48	Static Water Level
MW-2	03/27/97	462.32	Static Water Level
MW-2	03/28/00	462.12	Static Water Level
MW-2	03/28/96	461.68	Static Water Level
MW-2	03/29/06	463.38	Static Water Level
MW-2	03/29/07	463.72	Static Water Level
MW-2	04/02/99	462.43	Static Water Level
MW-2	05/04/93	460.09	Static Water Level
MW-2	06/10/08	464.05	Static Water Level
MW-2	06/14/07	464.16	Static Water Level
MW-2	06/21/93	462.78	Static Water Level
MW-2	07/20/95	462.31	Static Water Level
MW-2	07/30/10	462.70	Static Water Level
MW-2	09/05/03	462.23	Static Water Level
MW-2	09/08/09	463.37	Static Water Level
MW-2	09/10/97	461.82	Static Water Level
MW-2	09/12/00	461.94	Static Water Level
MW-2	09/15/99	462.72	Static Water Level
MW-2	09/17/02	461.62	Static Water Level
MW-2	09/17/96	461.92	Static Water Level
MW-2	09/18/01	462.32	Static Water Level
MW-2	09/18/08	463.54	Static Water Level
MW-2	09/19/07	464.46	Static Water Level
MW-2	09/21/05	462.69	Static Water Level
MW-2	09/22/04	463.37	Static Water Level
MW-2	09/26/95	461.80	Static Water Level
MW-2	09/27/06	462.51	Static Water Level
MW-2	10/01/98	452.57	Static Water Level
MW-2	10/27/10	463.47	Static Water Level
MW-2	11/09/93	462.22	Static Water Level
MW-2	11/26/10	463.30	Static Water Level
MW-2	12/09/08	463.28	Static Water Level
MW-2	12/12/07	464.05	Static Water Level

Borehole Designation	SampleDate	GW Elevation	Comments
MW-2	12/20/93	462.51	Static Water Level
MW-2	12/22/94	462.10	Static Water Level
MW-2	12/28/10	463.4	Static Water Level
MW-2	8/30/10	462.60	Static Water Level
MW-2	9/20/10	463.77	Static Water Level
MW-20	01/20/11	452.50	Static Water Level
MW-20	10/27/10	453.05	Static Water Level
MW-20	11/26/10	453.60	Static Water Level
MW-20	12/28/10	452.4	Static Water Level
MW-20	9/20/10	456.05	Static Water Level
MW-21	01/20/11	449.10	Static Water Level
MW-21	10/27/10	449.64	Static Water Level
MW-21	11/26/10	450.50	Static Water Level
MW-21	12/28/10	449.0	Static Water Level
MW-21	9/20/10	452.64	Static Water Level
MW-22	01/20/11	451.60	Static Water Level
MW-22	10/27/10	453.64	Static Water Level
MW-22	11/26/10	453.20	Static Water Level
MW-22	12/28/10	451.7	Static Water Level
MW-22	9/20/10	451.74	Static Water Level
MW-23	01/20/11	457.90	Static Water Level
MW-23	10/27/10	458.49	Static Water Level
MW-23	11/26/10	458.50	Static Water Level
MW-23	12/28/10	458.1	Static Water Level
MW-23	9/20/10	458.15	Static Water Level
MW-3	01/04/96	455.34	Static Water Level
MW-3	01/05/94	456.42	Static Water Level
MW-3	01/20/11	458.70	Static Water Level
MW-3	01/26/94	456.70	Static Water Level
MW-3	01/94	456.70	Static Water Level
MW-3	02/04/94	456.60	Static Water Level
MW-3	02/14/94	456.23	Static Water Level
MW-3	03/02/94	456.88	Static Water Level
MW-3	03/09/04	457.61	Static Water Level
MW-3	03/12/03	457.66	Static Water Level

Borehole Designation	SampleDate	GW Elevation	Comments
MW-3	03/12/08	458.67	Static Water Level
MW-3	03/15/05	458.10	Static Water Level
MW-3	03/15/10	458.96	Static Water Level
MW-3	03/20/01	457.47	Static Water Level
MW-3	03/22/95	458.16	Static Water Level
MW-3	03/26/02	458.24	Static Water Level
MW-3	03/26/09	457.32	Static Water Level
MW-3	03/26/98	458.30	Static Water Level
MW-3	03/27/97	457.64	Static Water Level
MW-3	03/28/00	455.28	Static Water Level
MW-3	03/28/96	454.97	Static Water Level
MW-3	03/29/06	456.11	Static Water Level
MW-3	03/29/07	456.64	Static Water Level
MW-3	04/02/99	456.35	Static Water Level
MW-3	04/23/93	454.64	Static Water Level
MW-3	06/10/08	458.06	Static Water Level
MW-3	06/14/07	458.19	Static Water Level
MW-3	06/21/93	453.40	Static Water Level
MW-3	07/20/95	456.72	Static Water Level
MW-3	07/30/10	456.70	Static Water Level
MW-3	09/05/03	455.48	Static Water Level
MW-3	09/08/09	456.79	Static Water Level
MW-3	09/10/97	457.86	Static Water Level
MW-3	09/12/00	452.93	Static Water Level
MW-3	09/15/99	453.29	Static Water Level
MW-3	09/17/02	456.04	Static Water Level
MW-3	09/17/96	454.10	Static Water Level
MW-3	09/18/01	455.78	Static Water Level
MW-3	09/18/08	455.60	Static Water Level
MW-3	09/19/07	458.04	Static Water Level
MW-3	09/21/05	454.18	Static Water Level
MW-3	09/22/04	457.12	Static Water Level
MW-3	09/26/95	455.74	Static Water Level
MW-3	09/27/06	453.35	Static Water Level
MW-3	10/01/98	452.93	Static Water Level

Borehole Designation	SampleDate	GW Elevation	Comments
MW-3	10/27/10	458.75	Static Water Level
MW-3	11/09/93	454.97	Static Water Level
MW-3	11/26/10	458.60	Static Water Level
MW-3	12/09/08	455.56	Static Water Level
MW-3	12/12/07	457.84	Static Water Level
MW-3	12/20/93	456.47	Static Water Level
MW-3	12/22/94	457.69	Static Water Level
MW-3	12/28/10	458.4	Static Water Level
MW-3	8/30/10	456.60	Static Water Level
MW-3	9/20/10	458.45	Static Water Level
MW-4	01/04/96	454.97	Static Water Level
MW-4	01/05/94	455.82	Static Water Level
MW-4	01/20/11	458.60	Static Water Level
MW-4	01/26/94	456.25	Static Water Level
MW-4	01/94	456.25	Static Water Level
MW-4	02/04/94	456.08	Static Water Level
MW-4	02/14/94	455.74	Static Water Level
MW-4	03/02/94	456.45	Static Water Level
MW-4	03/09/04	457.37	Static Water Level
MW-4	03/12/03	457.40	Static Water Level
MW-4	03/12/08	458.50	Static Water Level
MW-4	03/15/05	457.87	Static Water Level
MW-4	03/15/10	456.84	Static Water Level
MW-4	03/20/01	457.13	Static Water Level
MW-4	03/22/95	457.87	Static Water Level
MW-4	03/25/93	450.24	Static Water Level
MW-4	03/26/02	457.96	Static Water Level
MW-4	03/26/09	456.84	Static Water Level
MW-4	03/26/98	458.10	Static Water Level
MW-4	03/27/97	457.38	Static Water Level
MW-4	03/28/00	454.87	Static Water Level
MW-4	03/28/96	454.53	Static Water Level
MW-4	03/29/06	455.78	Static Water Level
MW-4	03/29/07	456.11	Static Water Level
MW-4	04/02/99	456.01	Static Water Level

Borehole Designation	SampleDate	GW Elevation	Comments
MW-4	06/10/08	457.47	Static Water Level
MW-4	06/14/07	457.94	Static Water Level
MW-4	06/21/93	452.40	Static Water Level
MW-4	07/20/95	456.40	Static Water Level
MW-4	07/30/10	457.10	Static Water Level
MW-4	09/05/03	455.18	Static Water Level
MW-4	09/08/09	456.84	Static Water Level
MW-4	09/10/97	456.86	Static Water Level
MW-4	09/12/00	452.69	Static Water Level
MW-4	09/15/99	452.99	Static Water Level
MW-4	09/17/02	455.86	Static Water Level
MW-4	09/17/96	453.97	Static Water Level
MW-4	09/18/01	455.54	Static Water Level
MW-4	09/18/08	455.89	Static Water Level
MW-4	09/19/07	457.74	Static Water Level
MW-4	09/21/05	453.96	Static Water Level
MW-4	09/22/04	456.97	Static Water Level
MW-4	09/26/95	455.52	Static Water Level
MW-4	09/27/06	453.15	Static Water Level
MW-4	10/01/98	451.70	Static Water Level
MW-4	10/27/10	458.59	Static Water Level
MW-4	11/09/93	454.39	Static Water Level
MW-4	11/26/10	458.40	Static Water Level
MW-4	12/09/08	455.48	Static Water Level
MW-4	12/12/07	457.38	Static Water Level
MW-4	12/20/93	456.00	Static Water Level
MW-4	12/22/94	457.25	Static Water Level
MW-4	12/28/10	458.2	Static Water Level
MW-4	8/30/10	456.00	Static Water Level
MW-4	9/20/10	458.29	Static Water Level
MW-5	01/05/94	447.14	Static Water Level
MW-5	01/26/94	447.16	Static Water Level
MW-5	02/04/94	447.12	Static Water Level
MW-5	02/14/94	446.70	Static Water Level
MW-5	03/02/94	447.55	Static Water Level

Borehole Designation	SampleDate	GW Elevation	Comments
MW-5	06/21/93	447.63	Static Water Level
MW-5	11/09/93	446.92	Static Water Level
V-5	12/20/93	447.55	Static Water Level
MW-5	1993	445.90	Static Water Level
MW-6	01/05/94	438.46	Static Water Level
MW-6	01/26/94	440.06	Static Water Level
MW-6	02/04/94	439.66	Static Water Level
MW-6	02/14/94	438.06	Static Water Level
MW-6	03/02/94	441.91	Static Water Level
MW-6	06/21/93	442.59	Static Water Level
MW-6	11/09/93	438.61	Static Water Level
MW-6	12/20/93	438.42	Static Water Level
MW-6	1993	441.30	Static Water Level
MW-7	01/04/96	440.59	Static Water Level
MW-7	01/05/94	440.97	Static Water Level
MW-7	01/20/11	440.00	Static Water Level
MW-7	01/26/94	441.78	Static Water Level
MW-7	01/94	441.78	Static Water Level
MW-7	02/04/94	441.62	Static Water Level
MW-7	02/14/94	441.04	Static Water Level
MW-7	03/02/94	443.72	Static Water Level
MW-7	03/09/04	441.63	Static Water Level
MW-7	03/12/03	441.14	Static Water Level
MW-7	03/12/08	440.93	Static Water Level
MW-7	03/15/05	440.44	Static Water Level
MW-7	03/15/10	442.70	Static Water Level
MW-7	03/20/01	445.08	Static Water Level
MW-7	03/22/95	444.09	Static Water Level
MW-7	03/26/02	444.38	Static Water Level
MW-7	03/26/09	440.56	Static Water Level
MW-7	03/26/98	450.72	Static Water Level
MW-7	03/27/97	443.79	Static Water Level
MW-7	03/28/00	441.37	Static Water Level
W-7	03/28/96	440.54	Static Water Level
MW-7	03/29/06	441.57	Static Water Level

Borehole Designation	SampleDate	GW Elevation	Comments
MW-7	03/29/07	442.15	Static Water Level
MW-7	04/02/99	441.35	Static Water Level
W-7	04/20/93	442.29	Static Water Level
MW-7	06/10/08	439.99	Static Water Level
MW-7	06/14/07	442.14	Static Water Level
MW-7	06/21/93	444.02	Static Water Level
MW-7	07/20/95	440.81	Static Water Level
MW-7	07/30/10	438.70	Static Water Level
MW-7	09/05/03	440.67	Static Water Level
MW-7	09/08/09	439.98	Static Water Level
MW-7	09/10/97	441.28	Static Water Level
MW-7	09/12/00	440.71	Static Water Level
MW-7	09/15/99	441.39	Static Water Level
MW-7	09/17/02	440.45	Static Water Level
MW-7	09/17/96	440.98	Static Water Level
MW-7	09/18/01	440.65	Static Water Level
MW-7	09/18/08	440.02	Static Water Level
MW-7	09/19/07	440.55	Static Water Level
W-7	09/21/05	439.88	Static Water Level
MW-7	09/22/04	440.50	Static Water Level
MW-7	09/26/95	440.94	Static Water Level
MW-7	09/27/06	439.91	Static Water Level
MW-7	10/01/98	439.27	Static Water Level
MW-7	10/27/10	440.99	Static Water Level
MW-7	11/09/93	441.39	Static Water Level
MW-7	11/26/10	440.10	Static Water Level
MW-7	12/09/08	440.00	Static Water Level
MW-7	12/12/07	440.12	Static Water Level
MW-7	12/20/93	441.22	Static Water Level
MW-7	12/22/94	442.09	Static Water Level
MW-7	12/28/10	440.1	Static Water Level
MW-7	8/30/10	438.50	Static Water Level
MW-7	9/20/10	441.19	Static Water Level
W-8	01/04/96	442.71	Static Water Level
MW-8	01/05/94	445.43	Static Water Level

Borehole Designation	SampleDate	GW Elevation	Comments
MW-8	01/20/11	444.60	Static Water Level
MW-8	01/26/94	445.39	Static Water Level
W-8	01/94	445.39	Static Water Level
MW-8	02/04/94	445.49	Static Water Level
MW-8	02/14/94	444.98	Static Water Level
MW-8	03/02/94	446.17	Static Water Level
MW-8	03/09/04	443.74	Static Water Level
MW-8	03/12/03	444.45	Static Water Level
MW-8	03/12/08	445.05	Static Water Level
MW-8	03/15/05	444.81	Static Water Level
MW-8	03/15/10	447.05	Static Water Level
MW-8	03/20/01	449.01	Static Water Level
MW-8	03/22/95	448.84	Static Water Level
MW-8	03/26/02	451.96	Static Water Level
MW-8	03/26/09	442.83	Static Water Level
MW-8	03/26/98	455.10	Static Water Level
MW-8	03/27/97	449.61	Static Water Level
MW-8	03/28/00	442.97	Static Water Level
W-8	03/28/96	445.42	Static Water Level
MW-8	03/29/06	443.93	Static Water Level
MW-8	03/29/07	443.18	Static Water Level
MW-8	04/02/99	444.44	Static Water Level
MW-8	04/19/93	448.07	Static Water Level
MW-8	06/10/08	444.82	Static Water Level
MW-8	06/14/07	443.79	Static Water Level
MW-8	06/21/93	447.26	Static Water Level
MW-8	07/20/95	444.80	Static Water Level
MW-8	07/30/10	442.80	Static Water Level
MW-8	09/05/03	442.62	Static Water Level
MW-8	09/08/09	442.39	Static Water Level
MW-8	09/10/97	444.15	Static Water Level
MW-8	09/12/00	442.16	Static Water Level
MW-8	09/15/99	442.92	Static Water Level
W-8	09/17/02	443.50	Static Water Level
MW-8	09/17/96	442.51	Static Water Level

Borehole Designation	SampleDate	GW Elevation	Comments
MW-8	09/18/01	443.33	Static Water Level
MW-8	09/18/08	442.79	Static Water Level
V-8	09/19/07	445.34	Static Water Level
MW-8	09/21/05	442.29	Static Water Level
MW-8	09/22/04	444.77	Static Water Level
MW-8	09/26/95	443.69	Static Water Level
MW-8	09/27/06	442.06	Static Water Level
MW-8	10/27/10	446.19	Static Water Level
MW-8	11/09/93	446.79	Static Water Level
MW-8	11/26/10	445.20	Static Water Level
MW-8	12/09/08	442.46	Static Water Level
MW-8	12/12/07	443.86	Static Water Level
MW-8	12/20/93	446.18	Static Water Level
MW-8	12/22/94	447.72	Static Water Level
MW-8	12/28/10	444.8	Static Water Level
MW-8	8/30/10	441.80	Static Water Level
MW-8	9/20/10	449.99	Static Water Level
MW-9	01/04/96	450.08	Static Water Level
W-9	01/05/94	452.92	Static Water Level
MW-9	01/20/11	449.50	Static Water Level
MW-9	01/26/94	452.48	Static Water Level
MW-9	01/94	452.48	Static Water Level
MW-9	02/04/94	452.29	Static Water Level
MW-9	02/14/94	452.09	Static Water Level
MW-9	03/02/94	452.30	Static Water Level
MW-9	03/09/04	447.59	Static Water Level
MW-9	03/12/03	448.42	Static Water Level
MW-9	03/12/08	449.16	Static Water Level
MW-9	03/15/05	449.17	Static Water Level
MW-9	03/15/10	450.10	Static Water Level
MW-9	03/20/01	450.37	Static Water Level
MW-9	03/22/95	455.63	Static Water Level
MW-9	03/26/02	454.30	Static Water Level
W-9	03/26/09	447.75	Static Water Level
MW-9	03/26/98	460.03	Static Water Level

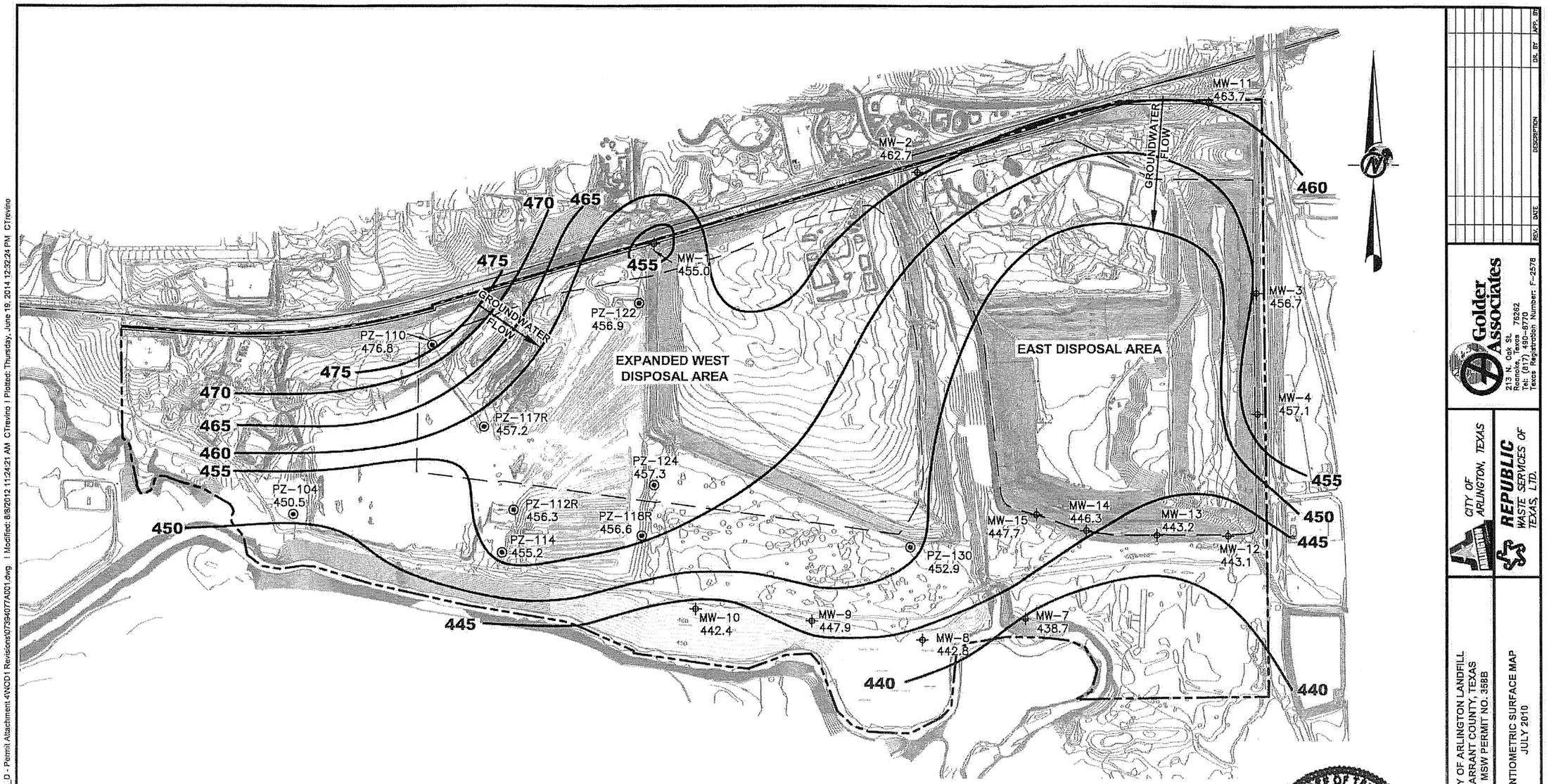
Borehole Designation	SampleDate	GW Elevation	Comments
MW-9	03/27/97	456.61	Static Water Level
MW-9	03/28/00	447.11	Static Water Level
V-9	03/28/96	449.66	Static Water Level
MW-9	03/29/06	447.93	Static Water Level
MW-9	03/29/07	447.69	Static Water Level
MW-9	04/02/99	448.34	Static Water Level
MW-9	04/23/93	455.01	Static Water Level
MW-9	06/10/08	449.19	Static Water Level
MW-9	06/14/07	448.61	Static Water Level
MW-9	06/21/93	453.47	Static Water Level
MW-9	07/20/95	454.42	Static Water Level
MW-9	07/30/10	447.90	Static Water Level
MW-9	09/05/03	447.32	Static Water Level
MW-9	09/08/09	447.42	Static Water Level
MW-9	09/10/97	451.08	Static Water Level
MW-9	09/12/00	446.77	Static Water Level
MW-9	09/15/99	447.44	Static Water Level
MW-9	09/17/02	448.17	Static Water Level
W-9	09/17/96	449.24	Static Water Level
MW-9	09/18/01	447.73	Static Water Level
MW-9	09/18/08	447.93	Static Water Level
MW-9	09/19/07	449.36	Static Water Level
MW-9	09/21/05	447.53	Static Water Level
MW-9	09/22/04	449.16	Static Water Level
MW-9	09/26/95	451.27	Static Water Level
MW-9	09/27/06	446.70	Static Water Level
MW-9	10/27/10	450.04	Static Water Level
MW-9	11/09/93	453.00	Static Water Level
MW-9	11/26/10	449.70	Static Water Level
MW-9	12/09/08	447.59	Static Water Level
MW-9	12/12/07	448.49	Static Water Level
MW-9	12/20/93	453.12	Static Water Level
MW-9	12/22/94	455.30	Static Water Level
W-9	12/28/10	449.5	Static Water Level
MW-9	8/30/10	447.30	Static Water Level

Borehole Designation	SampleDate	GW Elevation	Comments
MW-9	9/20/10	452.54	Static Water Level
PMW-11	01/26/94	466.66	Static Water Level
1W-11	02/04/94	466.53	Static Water Level
PMW-11	02/14/94	466.21	Static Water Level
PMW-11	02/15/94	467.39	Static Water Level
PMW-11	03/02/94	466.55	Static Water Level
PZ-104	01/20/11	452.80	Static Water Level
PZ-104	07/30/10	450.50	Static Water Level
PZ-104	10/27/10	453.38	Static Water Level
PZ-104	11/26/10	453.00	Static Water Level
PZ-104	12/28/10	452.9	Static Water Level
PZ-104	8/30/10	448.70	Static Water Level
PZ-104	9/20/10	454.18	Static Water Level
PZ-110	01/20/11	478.30	Static Water Level
PZ-110	07/30/10	476.80	Static Water Level
PZ-110	10/27/10	478.27	Static Water Level
PZ-110	11/26/10	478.00	Static Water Level
PZ-110	12/28/10	478.3	Static Water Level
-110	8/30/10	476.80	Static Water Level
PZ-110	9/20/10	477.97	Static Water Level
PZ-112R	07/30/10	456.30	Static Water Level
PZ-112R	10/27/10	458.46	Static Water Level
PZ-112R	11/26/10	458.20	Static Water Level
PZ-112R	12/28/10	457.9	Static Water Level
PZ-112R	8/30/10	454.00	Static Water Level
PZ-112R	9/20/10	459.06	Static Water Level
PZ-114	01/20/11	458.80	Static Water Level
PZ-114	07/30/10	455.20	Static Water Level
PZ-114	10/27/10	459.01	Static Water Level
PZ-114	11/26/10	458.50	Static Water Level
PZ-114	12/28/10	458.3	Static Water Level
PZ-114	8/30/10	453.70	Static Water Level
PZ-114	9/20/10	461.11	Static Water Level
-117	10/27/10	460.14	Static Water Level
PZ-117	11/26/10	459.89	Static Water Level

Borehole Designation	SampleDate	GW Elevation	Comments
PZ-117R	01/20/11	459.80	Static Water Level
PZ-117R	12/28/10	459.7	Static Water Level
117R	7/30/10	457.20	Static Water Level
PZ-117R	8/30/10	456.10	Static Water Level
PZ-117R	9/20/10	460.94	Static Water Level
PZ-118R	01/20/11	459.80	Static Water Level
PZ-118R	07/30/10	456.60	Static Water Level
PZ-118R	10/27/10	460.38	Static Water Level
PZ-118R	11/26/10	460.00	Static Water Level
PZ-118R	12/28/10	459.5	Static Water Level
PZ-118R	8/30/10	455.30	Static Water Level
PZ-118R	9/20/10	462.48	Static Water Level
PZ-122	01/20/11	459.90	Static Water Level
PZ-122	07/30/10	456.90	Static Water Level
PZ-122	10/27/10	459.95	Static Water Level
PZ-122	11/26/10	459.80	Static Water Level
PZ-122	12/28/10	460.0	Static Water Level
PZ-122	8/30/10	455.50	Static Water Level
-122	9/20/10	460.65	Static Water Level
PZ-122R	01/20/11	458.20	Static Water Level
PZ-124	01/20/11	459.60	Static Water Level
PZ-124	07/30/10	457.30	Static Water Level
PZ-124	10/27/10	460.23	Static Water Level
PZ-124	11/26/10	459.90	Static Water Level
PZ-124	12/28/10	459.5	Static Water Level
PZ-124	8/30/10	455.90	Static Water Level
PZ-124	9/20/10	461.43	Static Water Level
PZ-130	01/20/11	455.90	Static Water Level
PZ-130	07/30/10	452.90	Static Water Level
PZ-130	10/27/10	458.40	Static Water Level
PZ-130	11/26/10	457.10	Static Water Level
PZ-130	12/28/10	455.8	Static Water Level
PZ-130	8/30/10	452.10	Static Water Level
-130	9/20/10	462.10	Static Water Level
S-1	01/05/94	440.46	Static Water Level

Borehole Designation	SampleDate	GW Elevation	Comments
S-1	01/26/94	441.60	Static Water Level
S-1	02/04/94	441.30	Static Water Level
	02/14/94	440.75	Static Water Level
S-1	03/02/94	441.37	Static Water Level
S-1	03/06/91	441.10	Static Water Level
S-1	03/26/91	441.00	Static Water Level
S-1	04/11/91	441.10	Static Water Level
S-1	04/29/91	442.60	Static Water Level
S-1	05/09/91	442.90	Static Water Level
S-1	05/24/91	441.50	Static Water Level
S-1	05/28/91	443.70	Static Water Level
S-1	06/11/91	441.80	Static Water Level
S-1	06/27/91	441.00	Static Water Level
S-1	07/15/91	440.70	Static Water Level
S-1	08/02/91	441.10	Static Water Level
S-1	08/20/91	441.40	Static Water Level
S-1	08/27/91	441.00	Static Water Level
S-1	09/06/91	442.10	Static Water Level
	09/23/91	442.20	Static Water Level
S-1	09/30/91	441.70	Static Water Level
S-1	10/04/91	442.00	Static Water Level
S-1	10/10/91	441.80	Static Water Level
S-1	10/17/91	441.80	Static Water Level
S-1	10/24/91	441.60	Static Water Level
S-1	11/08/91	448.40	Static Water Level
S-1	11/26/91	443.30	Static Water Level
S-1	12/20/93	440.82	Static Water Level

GOLDER GRONDWATER CONTOUR MAPS



LEGEND

- PERMIT BOUNDARY
- LIMITS OF WASTE
- POTENTIOMETRIC CONTOUR (5 FT INTERVAL)
- TOPOGRAPHIC CONTOUR (2 FT INTERVAL)
- PIEZOMETER LOCATION
- MONITORING WELL LOCATION

NOTES

1. EXISTING TOPOGRAPHY IS A COMPILATION OF THE FOLLOWING AERIAL SURVEYS: JUNE 6, 2010, DALLAS AERIAL SURVEY; MAY 13, 2007, DALLAS AERIAL SURVEY; MAY 14, 2005, METROPOLITAN AERIAL SURVEYS.
2. POTENTIOMETRIC INTERVAL = 5 FT ELEVATIONS RELATIVE TO MEAN SEA LEVEL (MSL).

800 0 800
SCALE FEET

STATE OF TEXAS
JAY A. WINTERS
GEOLOGY
1292
LICENSED
PROFESSIONAL GEOSCIENTIST

PERMIT ISSUED

GOLDER ASSOCIATES INC.
Geoscience Firm Registration Certificate Number 50369

NO.	REV. DATE	DESCRIPTION	DR. BY	APP. BY

Golder Associates
213 N. Oak St. 76262
Roanoke, Texas
(817) 491-6776
Texas Registration Number: F-2578

CITY OF ARLINGTON, TEXAS
REPUBLIC WASTE SERVICES OF TEXAS, LTD.

PROJECT: CITY OF ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS
MSW PERMIT NO. 358B

TITLE: POTENTIOMETRIC SURFACE MAP
JULY 2010

DRAWN	TWM
REVIEWED	SJK
CHECKED	DJL/CMT
APPROVED	JW
DATE	FEBRUARY 2014
SCALE	AS SHOWN
JOB NO.	073-9407711
DWG. NO.	073940774001.dwg

FIGURE NUMBER
PART III, ATT. 4
4-19A

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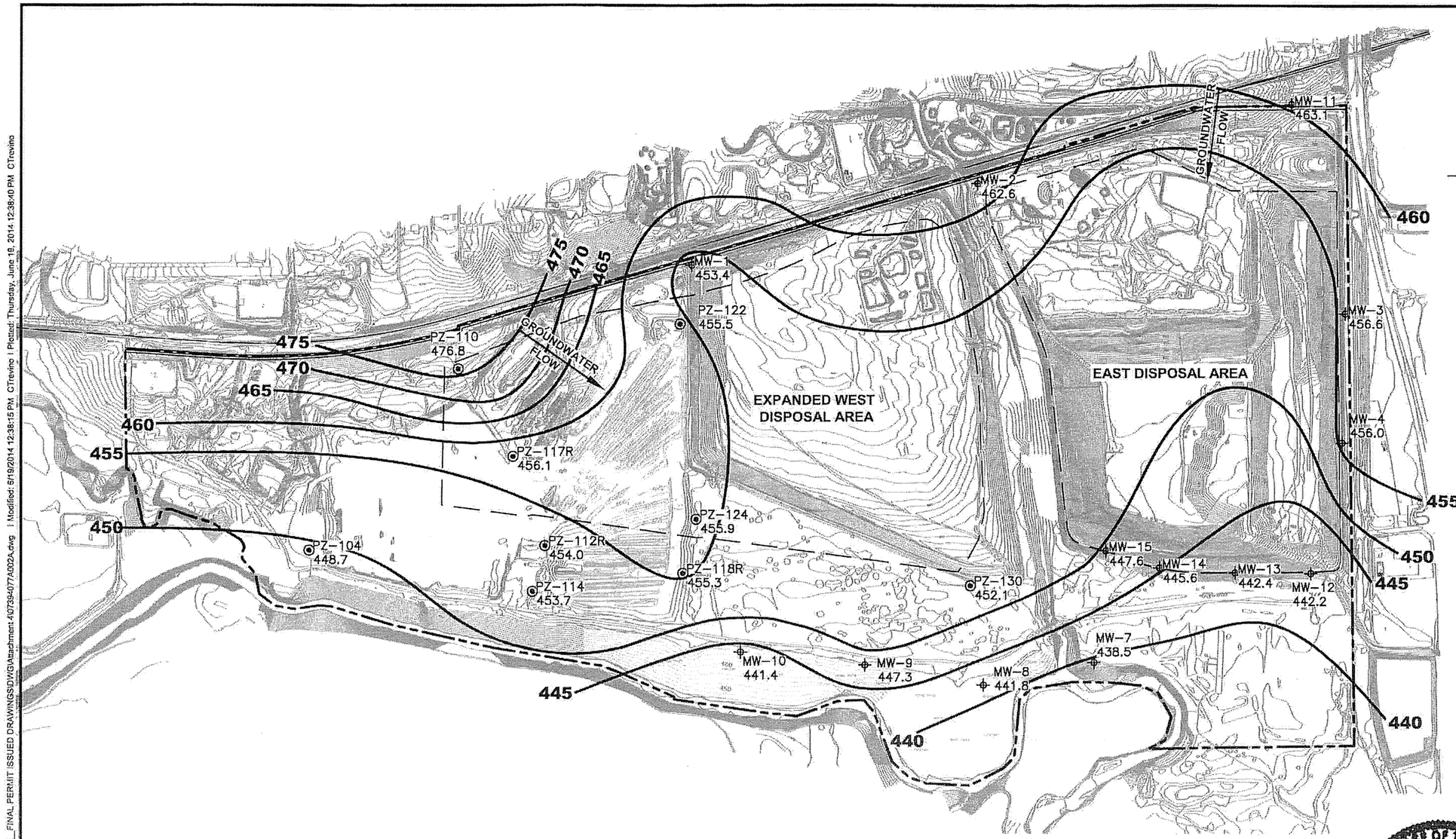

LEGEND

- PERMIT BOUNDARY
- LIMITS OF WASTE
- POTENTIOMETRIC CONTOUR (5 FT INTERVAL)
- TOPOGRAPHIC CONTOUR (2 FT INTERVAL)
- PIEZOMETER LOCATION
- MONITORING WELL LOCATION

NOTES

1. EXISTING TOPOGRAPHY IS A COMPILATION OF THE FOLLOWING AERIAL SURVEYS: JUNE 6, 2010, DALLAS AERIAL SURVEY; MAY 13, 2007, DALLAS AERIAL SURVEY; MAY 14, 2005, METROPOLITAN AERIAL SURVEYS.

2. POTENTIOMETRIC INTERVAL = 5 FT ELEVATIONS RELATIVE TO MEAN SEA LEVEL (MSL).

800 0 800
SCALE FEET

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JAY A. WINTERS
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1292
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PROFESSIONAL GEOSCIENTIST

PERMIT ISSUED

GOLDER ASSOCIATES INC.
Geoscience Firm Registration Certificate Number 50369

REV.	DATE	DESCRIPTION	DR. BY	APP. BY

Golder Associates
213 N. Oak St.
Roanoke, Texas 76262
Tel: (817) 491-8770
Texas Registration Number: F-2578

CITY OF ARLINGTON, TEXAS

REPUBLIC WASTE SERVICES OF TEXAS, LTD.

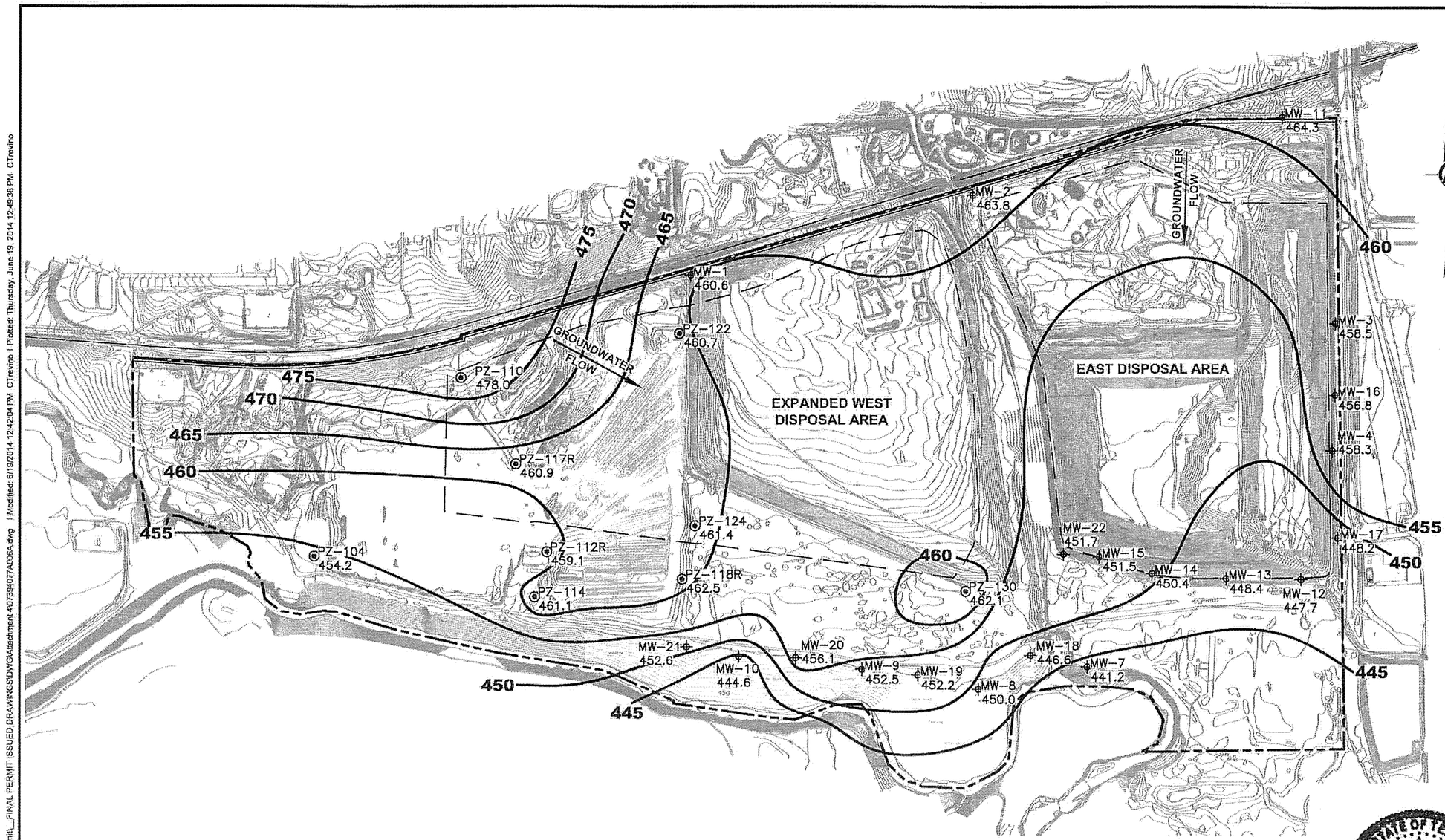
PROJECT: CITY OF ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS
MSW PERMIT NO. 358B

TITLE: POTENTIOMETRIC SURFACE MAP
AUGUST 2010

DRAWN: TWM	REVIEWED: SJK
CHECKED: DML/CMT	APPROVED: JW
DATE:	FEBRUARY 2014
SCALE:	AS SHOWN
JOB NO.	073-8407711
DWG. NO.	07394077A002A.dwg

FIGURE NUMBER
PART III, ATT. 4
4-19B

Drawing File: J:_2007\073-8407711 Rep Art Expan Permit__FINAL PERMIT ISSUED DRAWINGS\DWG\Attachment 4\07394077A002A.dwg | Modified: 6/19/2014 12:38:15 PM CTrevino | Plotted: Thursday, June 19, 2014 12:38:40 PM CTrevino



LEGEND

- PERMIT BOUNDARY
- LIMITS OF WASTE
- POTENTIOMETRIC CONTOUR (5 FT INTERVAL)
- TOPOGRAPHIC CONTOUR (2 FT INTERVAL)
- PIEZOMETER LOCATION
- MONITORING WELL LOCATION

NOTES

1. EXISTING TOPOGRAPHY IS A COMPILATION OF THE FOLLOWING AERIAL SURVEYS: JUNE 6, 2010, DALLAS AERIAL SURVEY; MAY 13, 2007, DALLAS AERIAL SURVEY; MAY 14, 2005, METROPOLITAN AERIAL SURVEYS.
2. POTENTIOMETRIC INTERVAL = 5 FT ELEVATIONS RELATIVE TO MEAN SEA LEVEL (MSL).

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SCALE FEET

STATE OF TEXAS
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ISSUED FOR PERMITTING

GOLDER ASSOCIATES INC.
Geoscience Firm Registration Certificate Number 50369

REV.	DATE	DESCRIPTION	DR. BY	APP. BY

Golder Associates
213 N. Oak St.
Roanoke, Texas 76262
Tel: (817) 490-8770
Texas Registration Number: F-2578

CITY OF ARLINGTON, TEXAS

REPUBLIC WASTE SERVICES OF TEXAS, LTD.

PROJECT: CITY OF ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS
MSW PERMIT NO. 358B

TITLE: POTENTIOMETRIC SURFACE MAP
SEPTEMBER 2010

DRAWN	TWM	REVIEWED	SJK
CHECKED	DML/CMT	APPROVED	JW
DATE	FEBRUARY 2011		
SCALE	AS SHOWN		
JOB NO.	073-9407711		
DWG. NO.	073194077A008A.dwg		

FIGURE NUMBER
PART III, ATT. 4
4-19C

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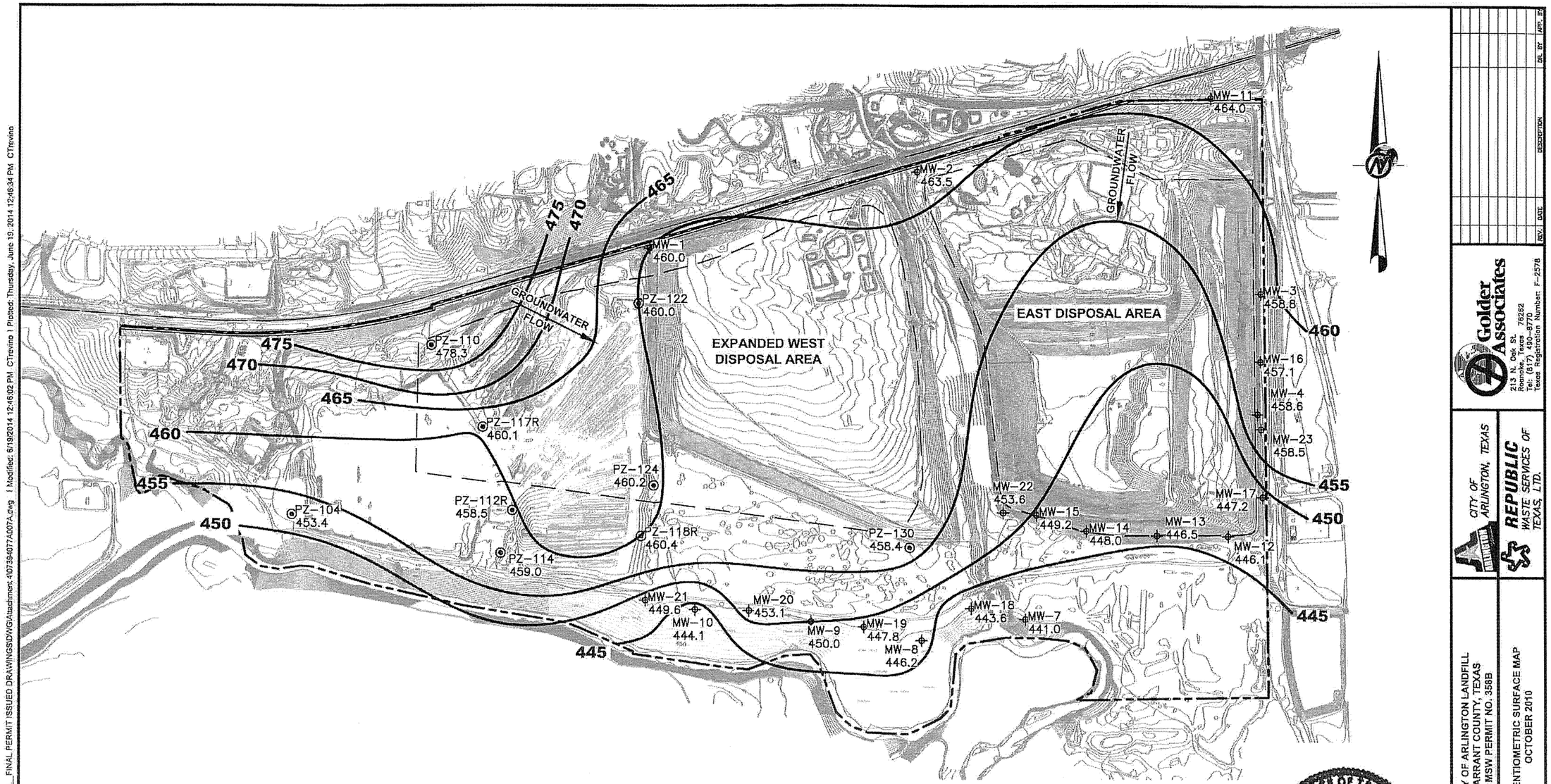

LEGEND

- PERMIT BOUNDARY
- LIMITS OF WASTE
- POTENTIOMETRIC CONTOUR (5 FT INTERVAL)
- TOPOGRAPHIC CONTOUR (2 FT INTERVAL)
- PIEZOMETER LOCATION
- MONITORING WELL LOCATION

NOTES

1. EXISTING TOPOGRAPHY IS A COMPILATION OF THE FOLLOWING AERIAL SURVEYS: JUNE 6, 2010, DALLAS AERIAL SURVEY; MAY 13, 2007, DALLAS AERIAL SURVEY; MAY 14, 2005, METROPOLITAN AERIAL SURVEYS.

2. POTENTIOMETRIC INTERVAL = 5 FT ELEVATIONS RELATIVE TO MEAN SEA LEVEL (MSL).

STATE OF TEXAS
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Geoscience Firm Registration Certificate Number 50369

REV.	DATE	DESCRIPTION	DR. BY	APP. BY

Golder Associates
213 N. Oak St.
Roanoke, Texas 76262
Tel: (817) 490-8770
Texas Registration Number: F-2578

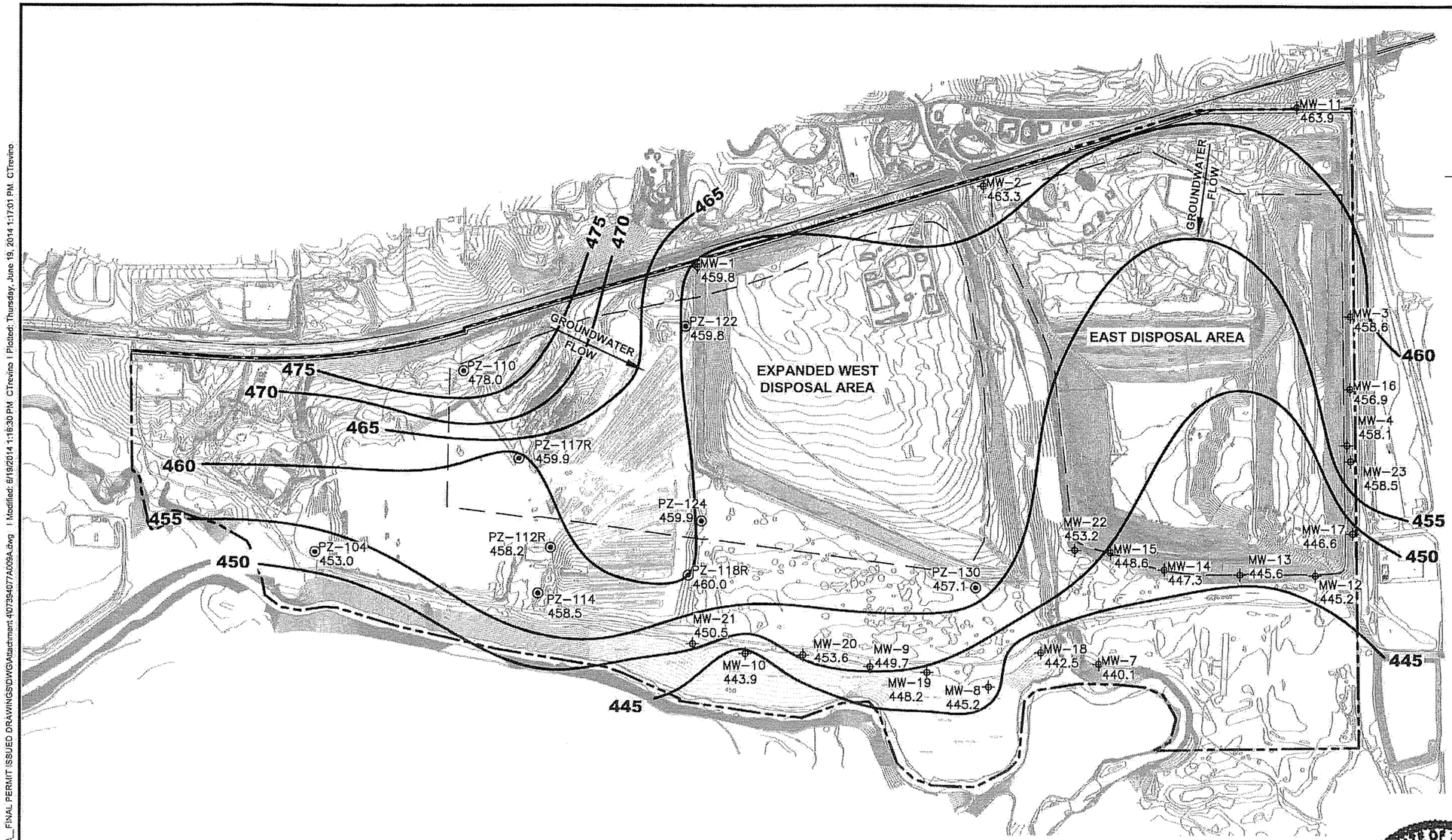
CITY OF ARLINGTON, TEXAS
REPUBLIC WASTE SERVICES OF TEXAS, LTD.

PROJECT: CITY OF ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS
MSW PERMIT NO. 358B

TITLE: POTENTIOMETRIC SURFACE MAP
OCTOBER 2010

DRAWN: TWU	REVIEWED: SJK
CHECKED: SJK/CMT	APPROVED: JW
DATE:	FEBRUARY 2014
SCALE:	AS SHOWN
JOB NO.:	073-9407711
DWG. NO.:	073940774007A.dwg

FIGURE NUMBER
PART III, ATT. 4
4-19D



LEGEND

- PERMIT BOUNDARY
- LIMITS OF WASTE
- POTENTIOMETRIC CONTOUR (5 FT INTERVAL)
- TOPOGRAPHIC CONTOUR (2 FT INTERVAL)
- PIEZOMETER LOCATION
- MONITORING WELL LOCATION

NOTES

1. EXISTING TOPOGRAPHY IS A COMPILATION OF THE FOLLOWING AERIAL SURVEYS: JUNE 6, 2010, DALLAS AERIAL SURVEY; MAY 13, 2007, DALLAS AERIAL SURVEY; MAY 14, 2005, METROPOLITAN AERIAL SURVEYS.

2. POTENTIOMETRIC INTERVAL = 5 FT ELEVATIONS RELATIVE TO MEAN SEA LEVEL (MSL).

STATE OF TEXAS
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Geoscience Firm Registration Certificate Number 50389

REV.	DATE	DESCRIPTION	DR. BY	APP. BY

Golder Associates
213 N. Oak St.
Roanoke, Texas 76262
Tel: (817) 491-5770
Texas Registration Number: F-2578

CITY OF ARLINGTON, TEXAS
REPUBLIC WASTE SERVICES OF TEXAS, LTD.

PROJECT: CITY OF ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS
MSW PERMIT NO. 358B

TITLE: POTENTIOMETRIC SURFACE MAP
NOVEMBER 2010

DRAWN	TWM
REVISED	SJK
CHECKED	DML/CMT
APPROVED	JW
DATE	FEBRUARY 2014
SCALE	AS SHOWN
JOB NO.	073-9407711
DWG. NO.	073940774009A.dwg

FIGURE NUMBER

PART III, ATT. 4

4-19E

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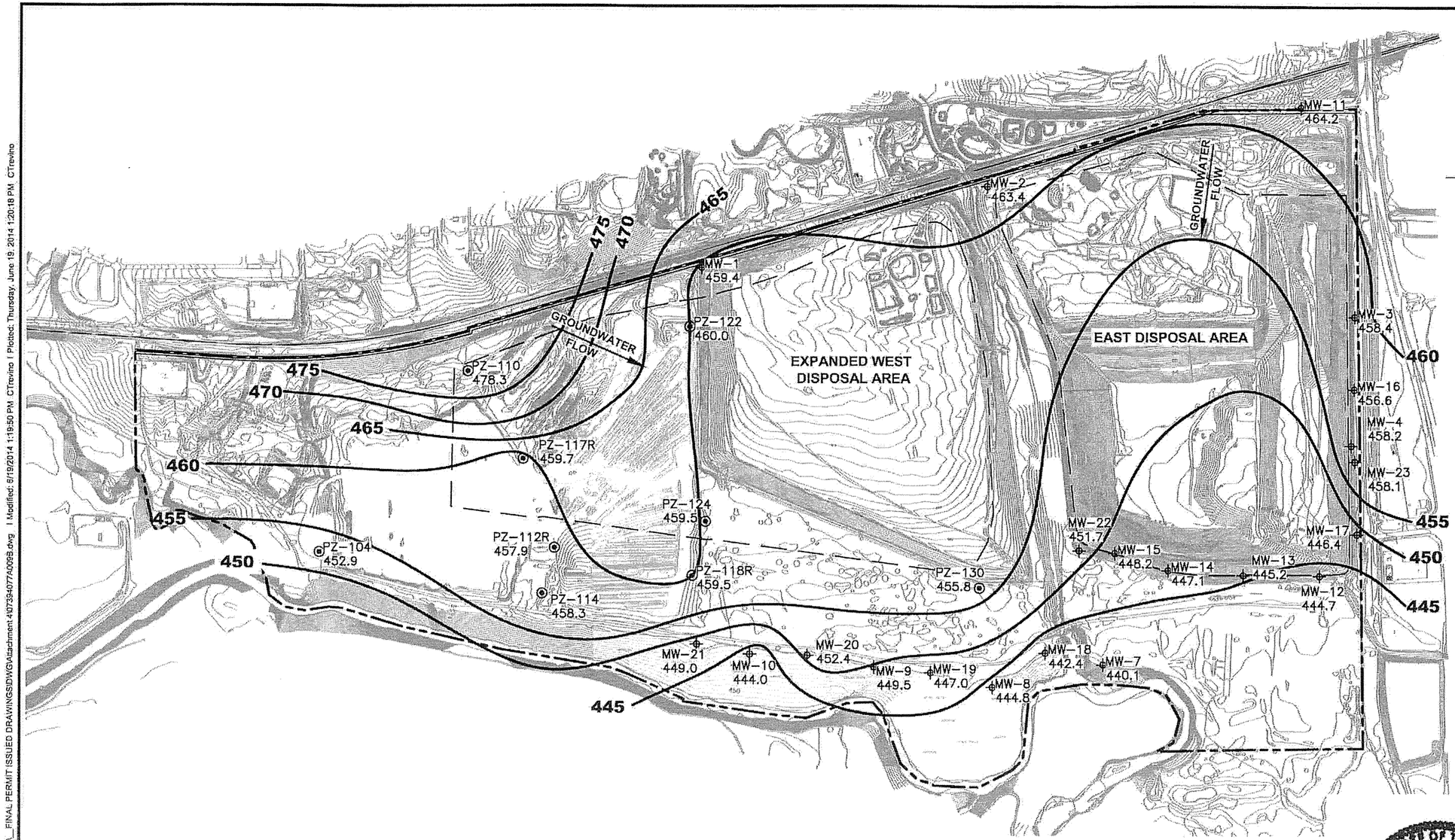

LEGEND

- PERMIT BOUNDARY
- LIMITS OF WASTE
- POTENTIOMETRIC CONTOUR (5 FT INTERVAL)
- TOPOGRAPHIC CONTOUR (2 FT INTERVAL)
- PIEZOMETER LOCATION
- MONITORING WELL LOCATION

NOTES

1. EXISTING TOPOGRAPHY IS A COMPILATION OF THE FOLLOWING AERIAL SURVEYS: JUNE 6, 2010, DALLAS AERIAL SURVEY; MAY 13, 2007, DALLAS AERIAL SURVEY; MAY 14, 2005, METROPOLITAN AERIAL SURVEYS.

2. POTENTIOMETRIC INTERVAL = 5 FT ELEVATIONS RELATIVE TO MEAN SEA LEVEL (MSL).

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SCALE FEET

STATE OF TEXAS
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GOLDER ASSOCIATES INC.
Geoscience Firm Registration Certificate Number 50369

REV.	DATE	DESCRIPTION	DR. BY	APP. BY

Golder Associates
213 N. Oak St.
Roanoke, Texas 76262
Tel: (817) 490-8770
Texas Registration Number: F-2578

CITY OF ARLINGTON, TEXAS
REPUBLIC WASTE SERVICES OF TEXAS, LTD.

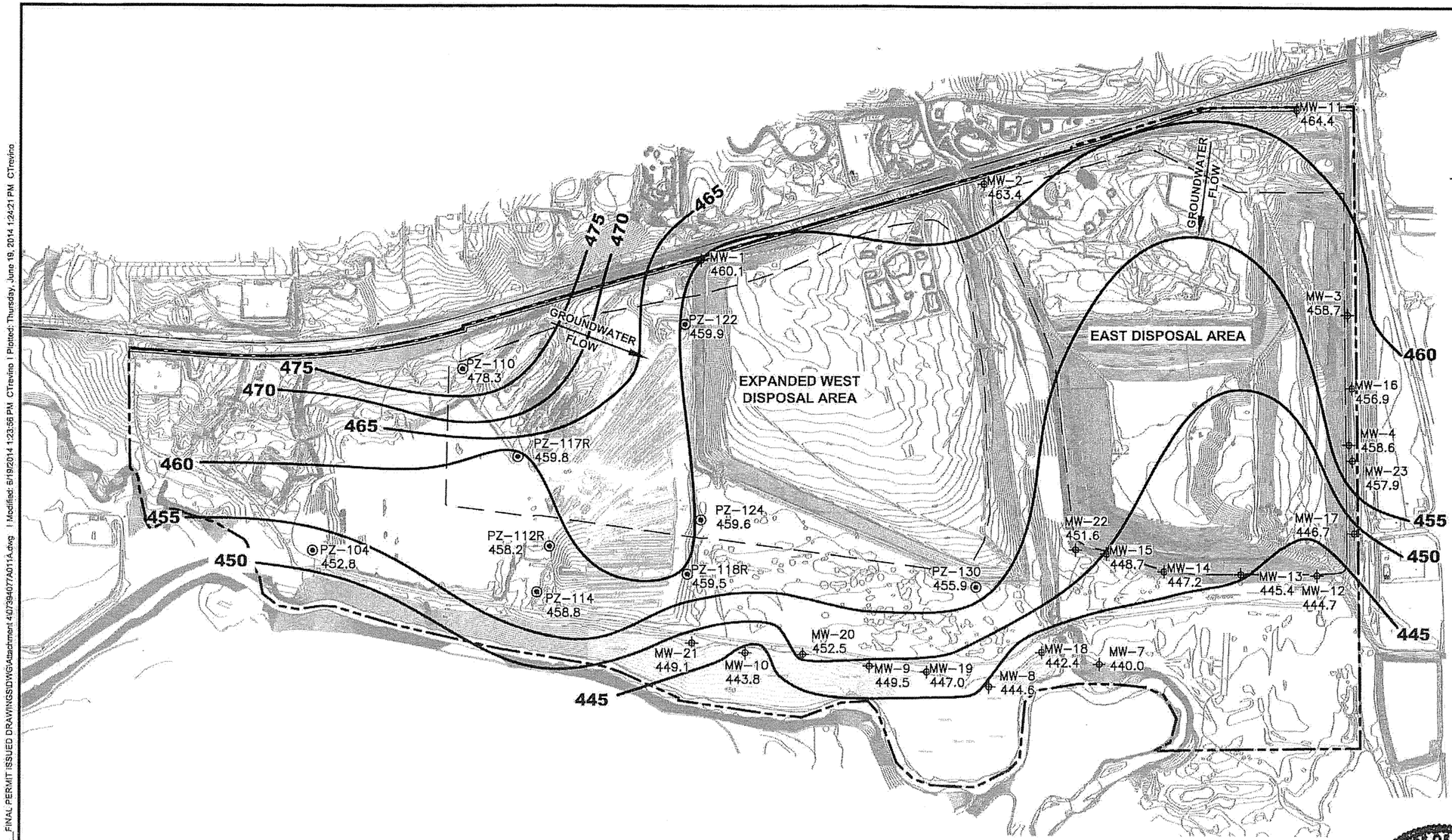
PROJECT: CITY OF ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS
MSW PERMIT NO. 358B

TITLE: POTENTIOMETRIC SURFACE MAP
DECEMBER 2010

DRAWN: TWM	REVIEWED: SJK
CHECKED: DML/CMT	APPROVED: JW
DATE:	FEBRUARY 2014
SCALE:	AS SHOWN
JOB NO.	073-9407711
DWG. NO.	07394077A009B.dwg

FIGURE NUMBER
PART III, ATT. 4
4-19F

Drawing File: J:_2007\073-9407711 Rep Arl Expan Permit_FINAL PERMIT ISSUED DRAWINGS\DWG\Attachment 4\07394077A009B.dwg | Modified: 8/19/2014 1:19:50 PM CTrevino | Plotted: Thursday, June 19, 2014 1:20:18 PM CTrevino



LEGEND

- PERMIT BOUNDARY
- LIMITS OF WASTE
- POTENTIOMETRIC CONTOUR (5 FT INTERVAL)
- TOPOGRAPHIC CONTOUR (2 FT INTERVAL)
- PIEZOMETER LOCATION
- MONITORING WELL LOCATION

NOTES

1. EXISTING TOPOGRAPHY COMPILED FROM AERIAL SURVEY, JUNE 6, 2010. DALLAS AERIAL SURVEY.
2. POTENTIOMETRIC INTERVAL = 5 FT ELEVATIONS RELATIVE TO MEAN SEA LEVEL (MSL).

800 0 800
SCALE FEET

STATE OF TEXAS
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GEOLOGY
1292
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PROFESSIONAL GEOSCIENTIST

PERMIT ISSUED

GOLDER ASSOCIATES INC.
Geoscience Firm Registration Certificate Number 50369

REV.	DATE	DESCRIPTION	DR. BY	APP. BY

Golder Associates
213 N. Oak St.
Roanoke, Texas 76262
Tel: (817) 490-8770
Texas Registration Number: F-2578

CITY OF ARLINGTON, TEXAS

REPUBLIC WASTE SERVICES OF TEXAS, LTD.

PROJECT: CITY OF ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS
MSW PERMIT NO. 358B

TITLE: POTENTIOMETRIC SURFACE MAP
JANUARY 2011

DRAWN	TRM
REVIEWED	SJK
CHECKED	DWL/CM1
APPROVED	JW
DATE	FEBRUARY 2014
SCALE	AS SHOWN
JOB NO.	073-9407711
DWG. NO.	07394077A011A.dwg

FIGURE NUMBER
PART III, ATT. 4
4-19G

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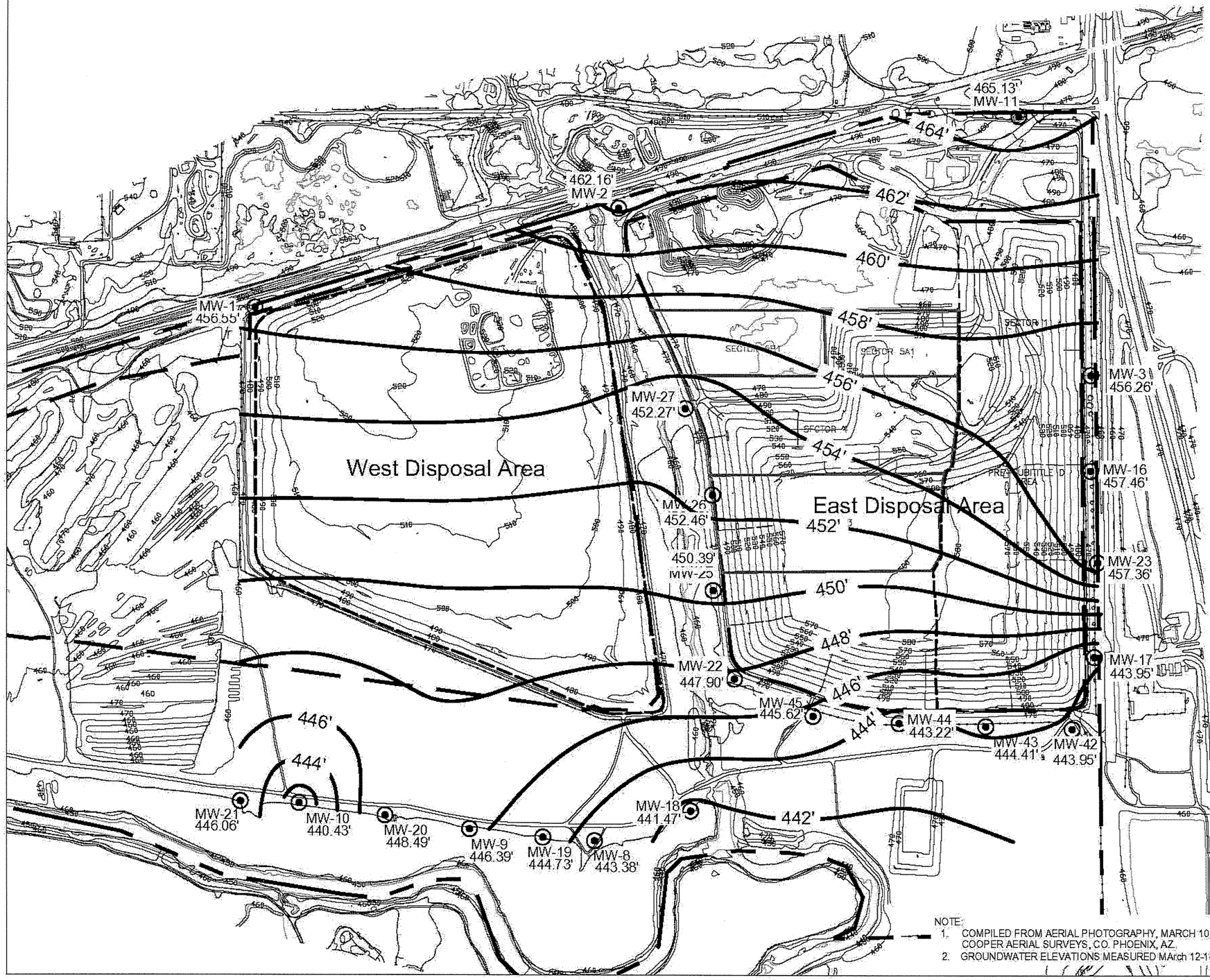
THE CAREL CORPORATION GROUNDWATER CONTOUR MAPS



NOTE:
1. COMPILED FROM AERIAL PHOTOGRAPHY, MARCH 10, 2014. COOPER AERIAL SURVEYS, CO. PHOENIX, AZ.
2. GROUNDWATER ELEVATIONS MEASURED MArch 12-14, 2018

The CAREL CORPORATION
136 Pecan Street, Keller, TX 76248

LEGEND:

- PERMIT BOUNDARY
- PERMITTED WASTE BOUNDARY
- FENCE
- MONITOR WELL
- SURFACE CONTOURS
- GROUNDWATER CONTOUR
- PRE-SUBTITLE D AREA
- ACTIVE AREA

N

SCALE:

0 300 600
FEET

GROUNDWATER CONTOUR MAP

MARCH 2018

ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS

DATE DRAFTED: May 9, 2018	REV. NO.:
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DRAWN BY: CMT	1
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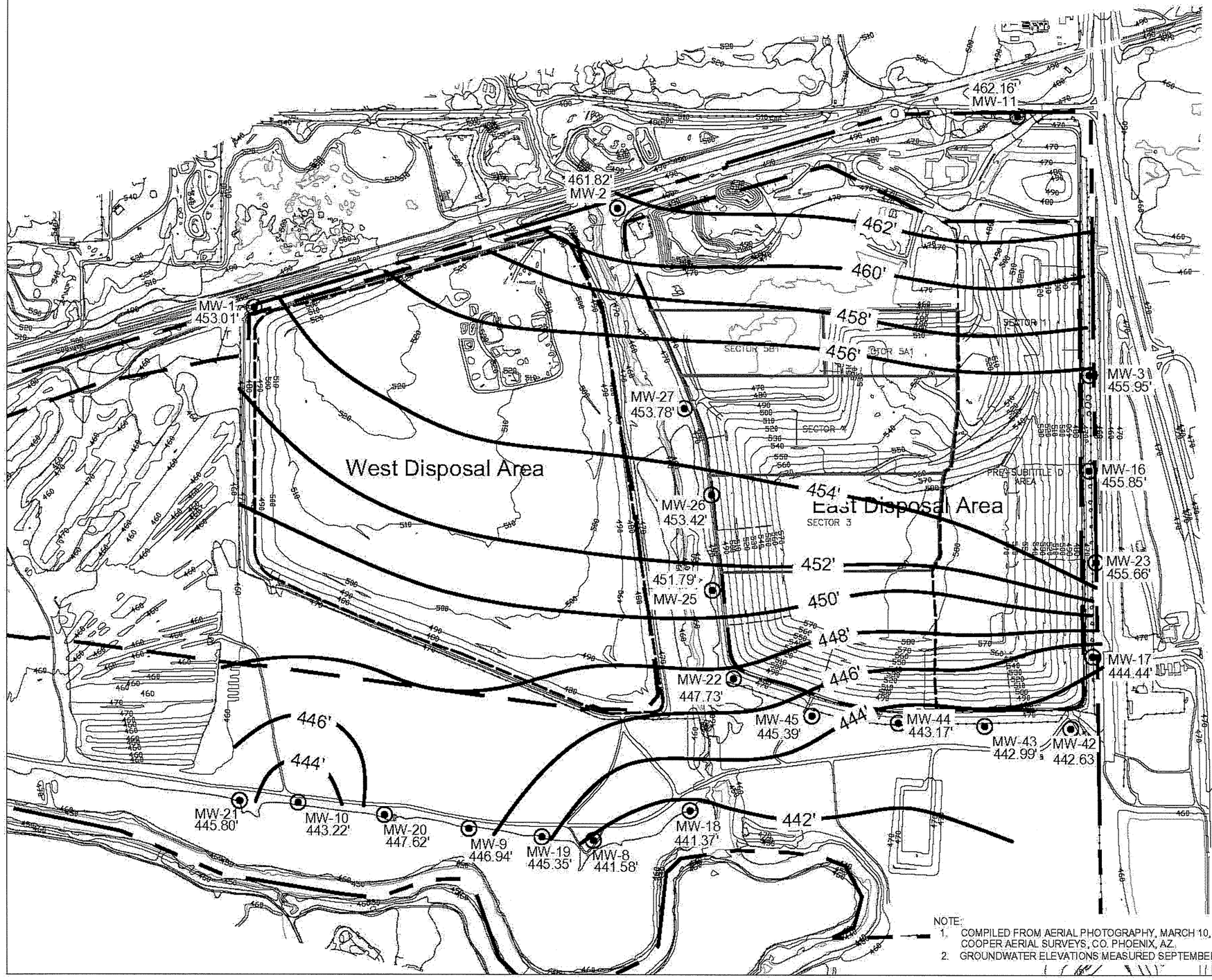

NOTE:
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2. GROUNDWATER ELEVATIONS MEASURED SEPTEMBER 4-6, 2018

The CAREL CORPORATION

136 Pecan Street, Keller, TX 76248

LEGEND:

- PERMIT BOUNDARY
- PERMITTED WASTE BOUNDARY
- FENCE
- MONITOR WELL
- SURFACE CONTOURS
- GROUNDWATER CONTOUR
- PRE-SUBTITLE D AREA
- ACTIVE AREA

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SCALE: 0 300 600 FEET

GROUNDWATER CONTOUR MAP

SEPTEMBER 2018

ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS

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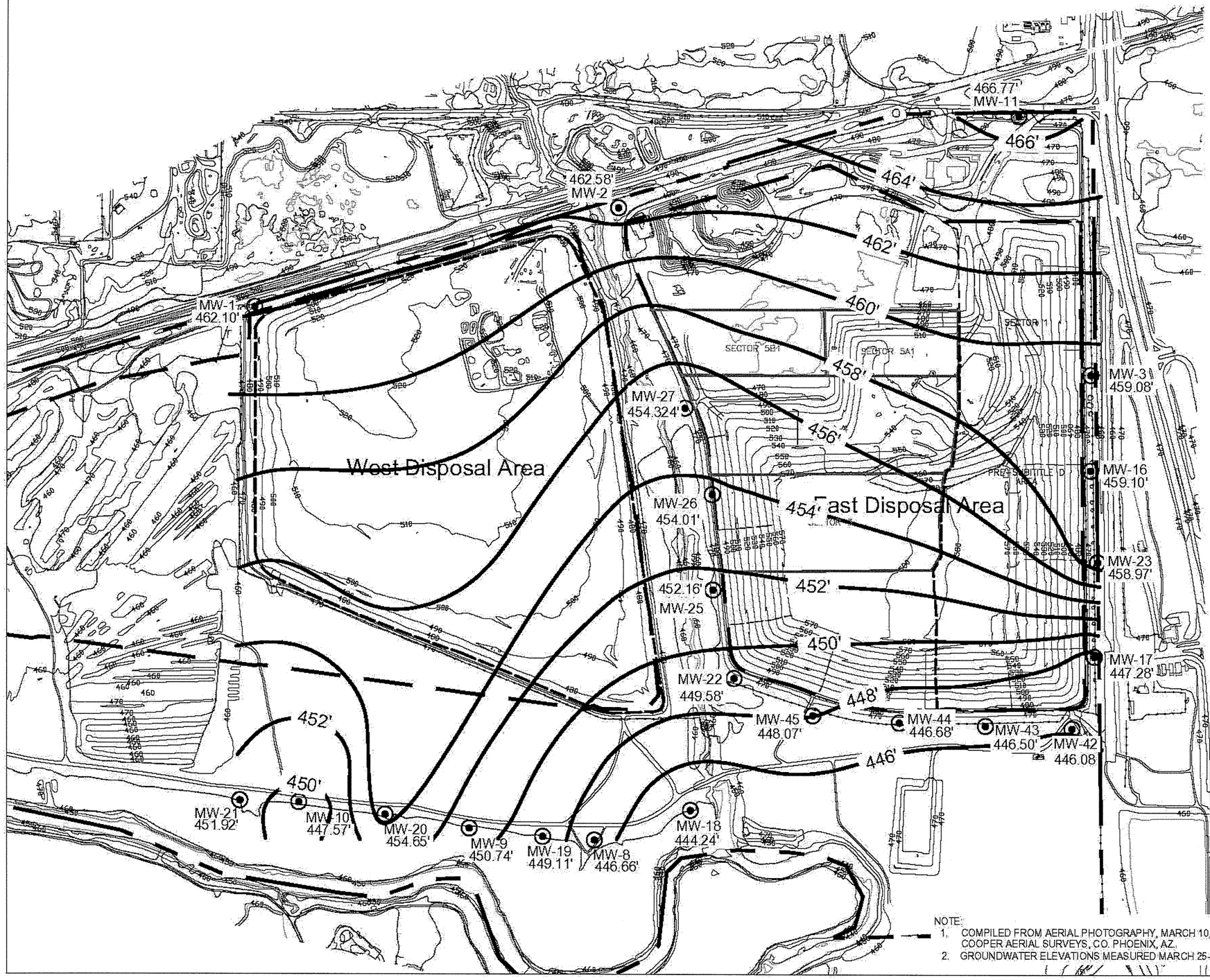

NOTE:
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2. GROUNDWATER ELEVATIONS MEASURED MARCH 25-27, 2019.

The CAREL CORPORATION

136 Pecan Street, Keller, TX 76248

LEGEND:

- PERMIT BOUNDARY
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- FENCE
- MONITOR WELL
- SURFACE CONTOURS
- GROUNDWATER CONTOUR
- PRE-SUBTITLE D AREA
- ACTIVE AREA

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SCALE:

0 300 600
FEET

GROUNDWATER CONTOUR MAP

MARCH 2019

ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS

DATE DRAFTED: June 10, 2019	REV. NO.:
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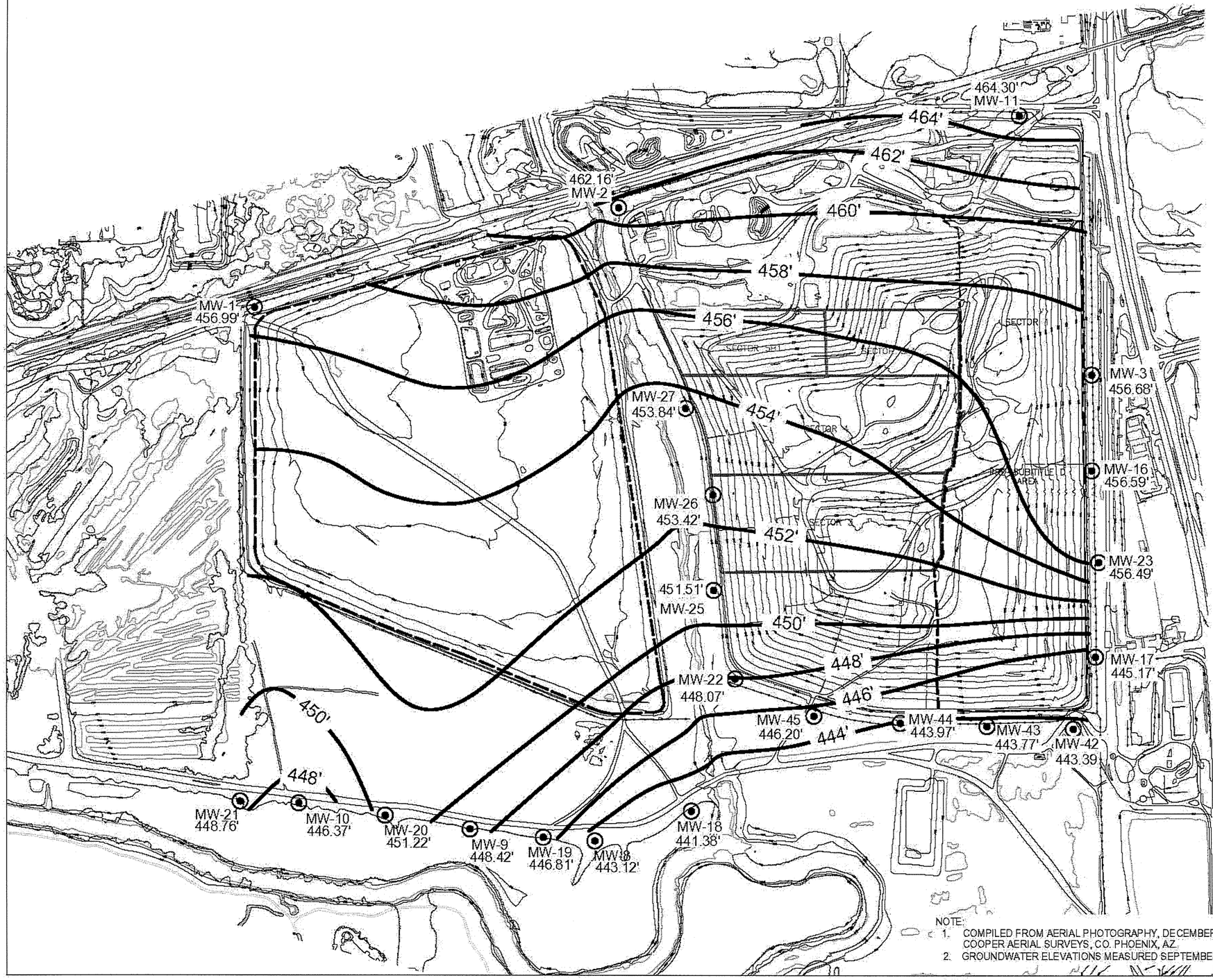

NOTE:
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2. GROUNDWATER ELEVATIONS MEASURED SEPTEMBER 23-24, 2019

The CAREL CORPORATION

136 Pecan Street, Keller, TX 76248

LEGEND:

- PERMIT BOUNDARY
- PERMITTED WASTE BOUNDARY
- FENCE
- MONITOR WELL
- SURFACE CONTOURS
- GROUNDWATER CONTOUR
- PRE-SUBTITLE D AREA
- ACTIVE AREA

N

SCALE:

0 300 600
FEET

GROUNDWATER CONTOUR MAP

SEPTEMBER 2019

ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS

DATE DRAFTED: November 26, 2019	REV. NO.:
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DESIGNED BY:	FIGURE:
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CHECKED BY:	
APPROVED BY:	

NOTE:
1. COMPILED FROM AERIAL PHOTOGRAPHY, DECEMBER 4, 2018. COOPER AERIAL SURVEYS, CO. PHOENIX, AZ.
2. GROUNDWATER ELEVATIONS MEASURED MARCH 16-18, 2020.

The CAREL CORPORATION

136 Pecan Street, Keller, TX 76248

LEGEND:

- PERMIT BOUNDARY
- PERMITTED WASTE BOUNDARY
- FENCE
- MONITOR WELL
- 540 SURFACE CONTOURS
- GROUNDWATER CONTOUR
- PRE-SUBTITLE D AREA
- ACTIVE AREA

N

SCALE:

0 300 600
FEET

GROUNDWATER CONTOUR MAP

MARCH 2020

ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS

DATE DRAFTED: June 1, 2020	REV. NO.:
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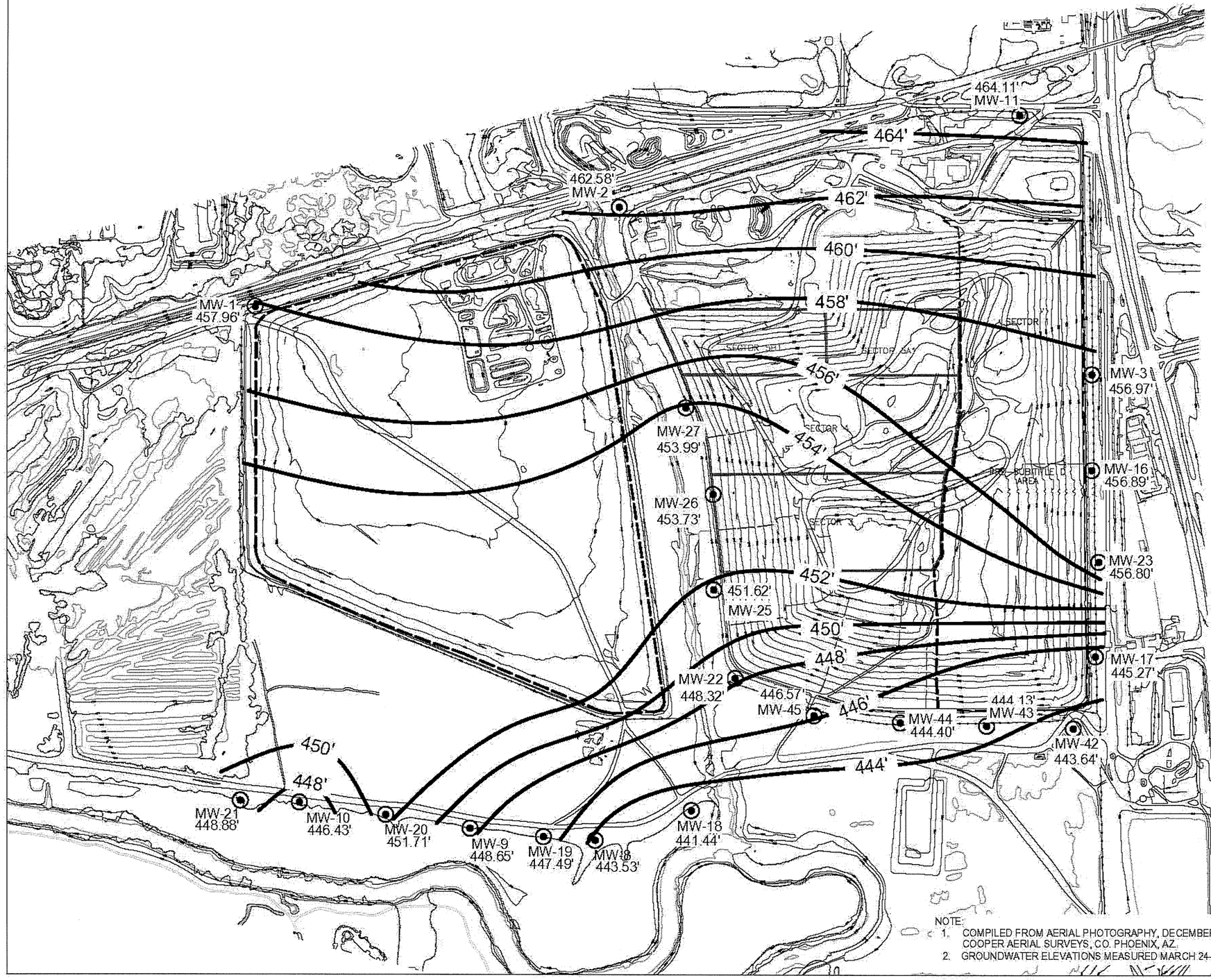

NOTE:
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2. GROUNDWATER ELEVATIONS MEASURED MARCH 24-26, 2020

The CAREL CORPORATION

136 Pecan Street, Keller, TX 76248

LEGEND:

- PERMIT BOUNDARY
- PERMITTED WASTE BOUNDARY
- FENCE
- MONITOR WELL
- 546 SURFACE CONTOURS
- GROUNDWATER CONTOUR
- PRE-SUBTITLE D AREA
- ACTIVE AREA

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SCALE:

0 300 600
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GROUNDWATER CONTOUR MAP

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TARRANT COUNTY, TEXAS

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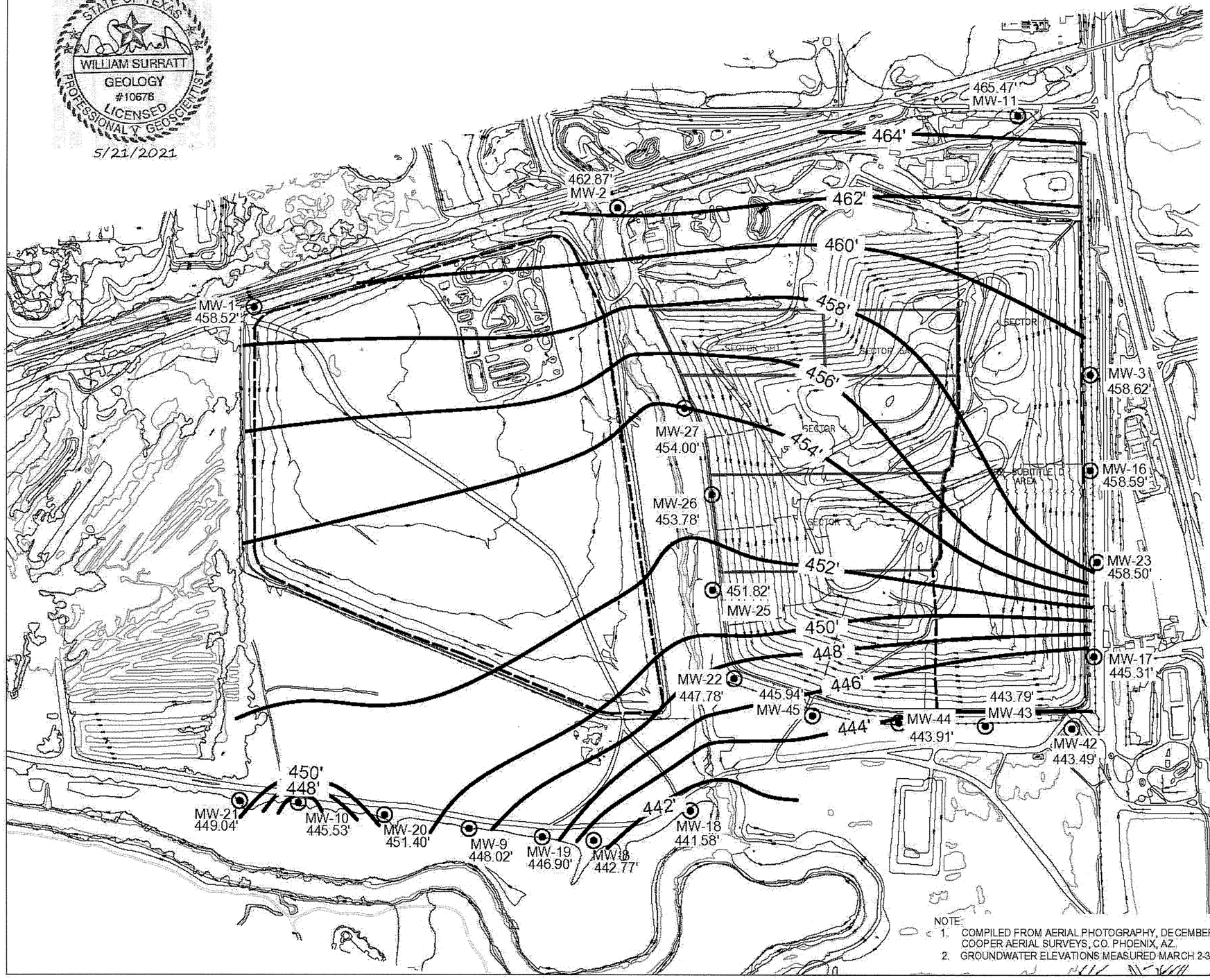
DESIGNED BY:	FIGURE:
DRAWN BY:	2
CHECKED BY:	
APPROVED BY:	

STATE OF TEXAS
WILLIAM SURRATT
GEOLOGY
#10678
LICENSED
PROFESSIONAL GEOSCIENTIST
5/21/2021



NOTE:
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2. GROUNDWATER ELEVATIONS MEASURED MARCH 2-3, 2021

The CAREL CORPORATION

136 Pecan Street, Keller, TX 76248

LEGEND:

- PERMIT BOUNDARY
- PERMITTED WASTE BOUNDARY
- FENCE
- MONITOR WELL
- SURFACE CONTOURS
- GROUNDWATER CONTOUR
- PRE-SUBTITLE D AREA
- ACTIVE AREA

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SCALE:

0 300 600
FEET

GROUNDWATER CONTOUR MAP

MARCH 2021

ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS

DATE DRAFTED: May 13, 2021	REV. NO.:
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DESIGNED BY:	FIGURE:
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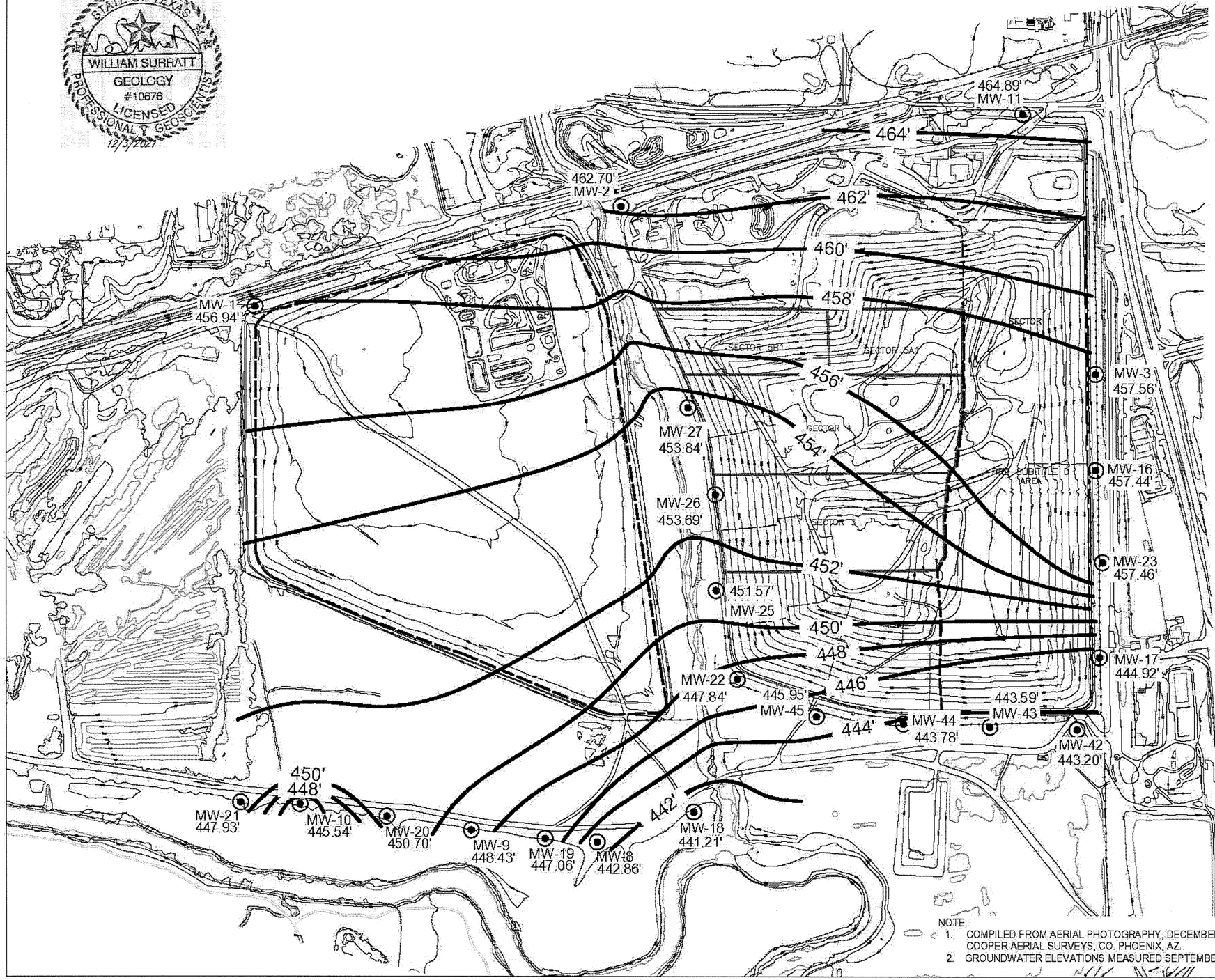
CHECKED BY:	
APPROVED BY:	

STATE OF TEXAS
WILLIAM SURRATT
GEOLOGY
#10676
LICENSED
PROFESSIONAL GEOSCIENTIST
12/3/2021



NOTE:
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2. GROUNDWATER ELEVATIONS MEASURED SEPTEMBER 20-22, 2021

The CAREL CORPORATION

136 Pecan Street, Keller, TX 76248

LEGEND:

- PERMIT BOUNDARY
- PERMITTED WASTE BOUNDARY
- FENCE
- MONITOR WELL
- 540 SURFACE CONTOURS
- GROUNDWATER CONTOUR
- PRE-SUBTITLE D AREA
- ACTIVE AREA

N

SCALE:
0 300 600
FEET

GROUNDWATER CONTOUR MAP

SEPTEMBER 2021

ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS

DATE DRAFTED: November 30, 2021	REV. NO.:
FILENAME: I:\TEXAS\Arlington\Contour Maps\2021\2nd 2021 CONTOUR MAP.dwg	
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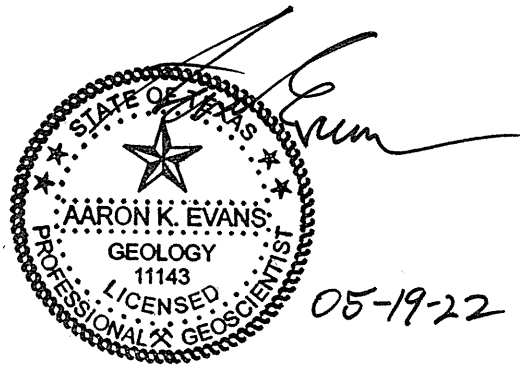
APPROVED BY: WDS	

APPENDIX IIIG-E

2022 SOIL BORING PLAN EXCERPTS



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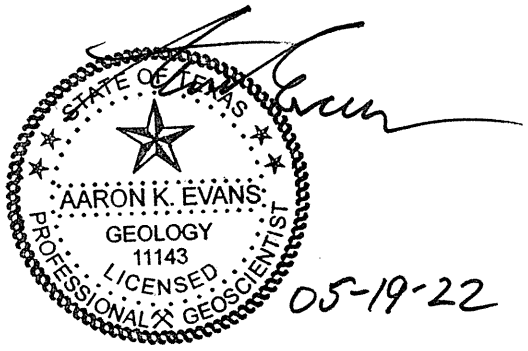


2022 SOIL BORING PLAN (EXCEPRTS ONLY)

REPUBLIC SERVICES

Sustainability in Action

April 8, 2022

Mr. Chance Goodin
MC 124
Municipal Solid Waste Permits Section
Texas Commission on Environmental Quality
P. O. Box 13087
Austin, Texas 78711-3087

Re: Soil Boring Plan for Major Permit Amendment
City of Arlington Landfill
TCEQ Permit No. MSW-358C
Tarrant County, Texas

Dear Mr. Goodin:

On behalf of the City of Arlington (Owner), please find attached one original and one copy of the referenced submittal. The purpose of this submittal is to provide the Texas Commission on Environmental Quality (TCEQ) with a Soil Boring Plan (SBP) in accordance with Title 30 Texas Administrative Code (TAC) §330.63(e)(4) for the referenced facility. The SBP has been prepared to support the proposed reconfiguration of the facility's existing permitted waste disposal footprint areas.

The proposed reconfiguration includes a horizontal increase of the disposal waste footprint by approximately 7.8-acres. The proposed disposal area reconfiguration is located entirely within the existing 774.3-acre permit boundary area currently approved under Permit No. MSW-358B. There are no changes to be proposed to the permit boundary, elevation of deepest excavation (EDE)(424.5 ft-msl), and maximum elevation of final cover (759 ft-msl) currently approved under TCEQ permit MSW-358B.

The facility's regional and site-specific geology and hydrogeology characterizations are summarized in the attached SBP. Site plan drawings depicting the currently permitted and proposed site conditions are provided in Appendix A. Site geology figures are provided in Appendix B. Historical site exploration data is provided in Appendix C. Site geotechnical data is summarized in Appendix D. Select historical groundwater contour maps of the facility are provided in Appendix E.

Two copies of this Soil Boring Plan have been provided for your use and distribution. One copy has been sent to the TCEQ Region 4 office. An electronic copy of this submittal was sent to mswper@tceq.texas.gov. A copy of this report has been placed in the facility's Site Operating Record.

REPUBLIC SERVICES

Sustainability in Action

During the course of your review, if you need additional information or have any questions, please do not hesitate to call.

Sincerely,
Republic Waste Services of Texas, Ltd.

Adam Hart
Team Environmental Manager

Attachment: Soil Boring Plan

cc: TCEQ Region 4 Office
Site Operating Record, City of Arlington Landfill
Sunanda Katragadda, City of Arlington
David Hildreth, Republic Waste Services of Texas, Ltd.
Aaron Evans, P.G., Weaver Consultants Group

CITY OF ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS
TCEQ PERMIT NO. MSW 358C

SOIL BORING PLAN

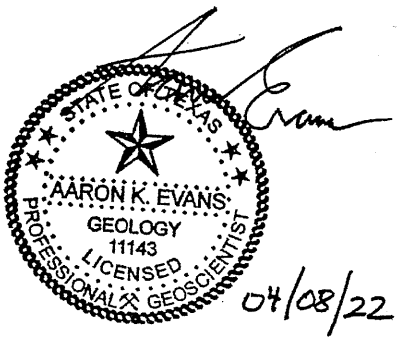
Prepared for

City of Arlington

And

Republic Waste Services of Texas, Ltd.

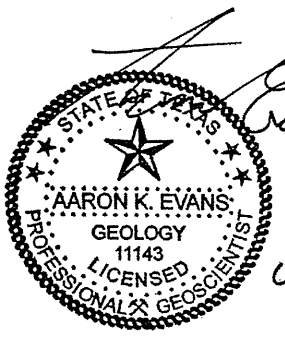
April 2022



Prepared by

Weaver Consultants Group, LLC
TBPE Registration No. F-3727
6420 Southwest Blvd., Suite 206
Fort Worth, Texas 76109
817-735-9770

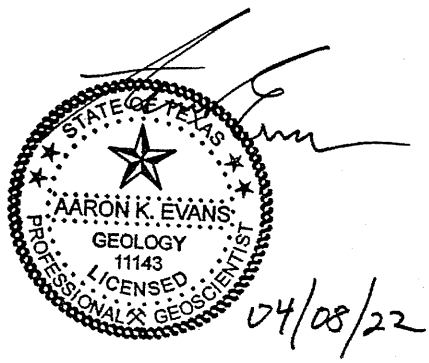
WCG Project No. 0023-404-11-102



04/08/22

CONTENTS

CONTENTS



1 INTRODUCTION

1.1 Purpose

The City of Arlington Landfill is in the process of developing a major permit amendment application (Texas Commission on Environmental Quality [TCEQ] Permit No. MSW-358C) which will reconfigure the facility's existing permitted waste disposal footprint resulting in an increase in disposal area of approximately 7.8 acres (from 382.7 acres to 390.5 acres). No increase to the permitted maximum elevation of final cover (759 ft-msl) is proposed. The proposed disposal area reconfiguration is located entirely within the existing 774.3-acre permit boundary area currently approved under Permit No. MSW-358B. No increase to the existing permitted elevation of deepest excavation (EDE) (424.5 ft-msl) is proposed. Two drawings are provided in Appendix A which illustrate existing site conditions. The following summarizes each of the drawings provided in Appendix A.

- Figure A-1 (Aerial Photograph) – Shows the permitted landfill area on an aerial photographic map.
- Figure A-2 (Site Plan) – shows the existing site conditions and delineates the existing and proposed waste disposal areas.

1.2 Introduction

The City of Arlington Landfill is a Type I municipal solid waste (MSW) management facility located in Tarrant County, Texas, immediately southwest of the intersection of North Collins Street and Mosier Valley Road in Arlington, Texas.

The facility's existing waste disposal design (TCEQ Permit No. MSW-358B) includes two waste disposal areas termed the West Disposal Area (WDA) and East Disposal Area (EDA). These two discrete disposal areas are separated from one another by Hurricane Creek. The proposed permit amendment application will converge these two disposal areas into a single waste disposal unit and reroute the current course of Hurricane Creek around the periphery of the landfill unit.

Previous field investigations for the existing permit have satisfied TCEQ requirements for subsurface characterization and facilitated design of the Subtitle D groundwater monitoring system. In accordance with Title 30 Texas Administrative Code (TAC) §330.63(e)(4)(B), 38 borings advanced to a depth of at least five feet below the EDE and 20 borings advanced to a depth at least 30 feet below the EDE are

required to characterize a 390.5-acre area. Previous subsurface investigations have advanced a total of 142 borings, 76 of which were advanced to a depth of at least five feet below the EDE and 40 of which were advanced to a depth greater than 30 feet below the EDE. Therefore, the number and depths of previously completed borings comply with the requirements of Title 30 TAC §330.63(e)(4)(B).

Additionally, Title 30 TAC §330.63(e)(4)(A) requires that a sufficient number of borings be advanced to establish subsurface stratigraphy and to determine the geotechnical properties of soil beneath the facility. The previously completed subsurface investigations have characterized geotechnical properties beneath the facility deemed satisfactory for the currently permitted waste footprint areas. These previously evaluated areas include the area located between the existing permitted WDA and EDA units. The historical geotechnical testing data were summarized in the facility's existing Geology Report by Golder Associates (Permit No. MSW-358B, Appendix 4). These summary table excerpts are provided in Appendix D as excerpt.

2 REGIONAL GEOLOGIC SETTING

2.1 Geologic History

Geologic formations in the site vicinity are predominately Cretaceous-age sediments. These sediments were deposited by northward advancing seas over the underlying Paleozoic strata. The Cretaceous-age Comanche Series and Guld Series sediments represent two major regional sea transgressions. Marine deposition halted toward the end of the Cretaceous period with the retreat of seas gulfward driven my regional uplifting in the west. Erosion of Cretaceous-age sediments began and continued through the Cenozoic Era to present. This erosion produced limited areas of Quaternary alluvium and terrace deposits along stream courses. The landfill is underlain by the Cretaceous-age upper Gulf and Comanche Series sediments with Quaternary alluvium present surficially across the landfill property (prior to development).

2.2 Regional Stratigraphy

Regional stratigraphy consists of Cretaceous-age Gulf Series (Eagle Ford and Woodbine formations) and Comanche Series (Washita, Fredericksburg, and Trinity group) sediments. Stratigraphic positions and general lithologic characteristics for these groups are presented in Table 2-1 (modified from Langley [1990] and Nordstrom [1982]). The Grayson Marl and Mainstreet Limestone formations (undivided) comprise the upper Washita Group sediments that underlay the Woodbine Formation in the vicinity of the landfill.

According to the Texas Bureau of Economic Geology (BEG), the site is located upon Quaternary alluvium and terrace deposit sediments deposited over Woodbine Formation sediments as shown on the Figure B-1 – Regional Geologic Map (adapted from the BEG Geologic Atlas of Texas, Dallas Sheet, 1987) and Figure B-2 – Regional Geologic Cross Section (adapted from Nordstrom, 1982). The underlying Washita Group (Grayson Marl/Mainstreet Limestone) outcrops approximately 2.5-miles northwest of the site at closest extent and the contact between the Woodbine and overlying Eagle Ford Formation occurs approximately 2.5-miles northeast of the site permit boundary at nearest extent (BEG, 1987).

2.3 Regional Hydrogeology

Regional aquifers beneath the landfill include the Cretaceous-age Woodbine and Trinity aquifers. These aquifers are separated by approximately 500 feet of low permeability Washita and Fredericksburg group sediments and are not hydraulically connected (Harden, 2004). The Paluxy, Glen Rose, and underlying Twin Mountain formations comprise the Trinity Aquifer.

2.3.1 Woodbine Aquifer

The Woodbine Formation is classified by the Texas Water Development Board (TWDB) as a minor Texas aquifer composed of fine-grained, cross-stratified, fluvial sand interbedded with shale and clay, and some gravel (Hopkins, 1996 and Harden et al, 2004). According to Harden et al (2004), Woodbine groundwater is present under confined conditions throughout most of north Texas but may be unconfined in areas of outcrop.

The Woodbine Formation ranges in thickness from less than 100 feet in south Texas to over 600 feet in northeast Texas down-dip areas (Harden et al, 2004). The Woodbine sediments were deposited by fluvial, destructive deltaic, and strand plain depositional systems sourced from erosion of the Ouachita uplift in Oklahoma and Arkansas (BEG, 1971 and Harden et al, 2004). As noted in Figure B-3, the regional Woodbine groundwater flow direction follows the regional dip of the formation to the east-southeast. The average rate of groundwater movement is reported to be about 10 to 20 feet per year (Nordstrom, 1982). The primary source of recharge to the aquifer is precipitation infiltration on formation outcrop.

2.3.2 Trinity Aquifer

From the youngest to oldest, the Trinity Aquifer is comprised of the Paluxy Formation, the Glen Rose Formation, and the Twin Mountain Formation. The TWDB classifies the Trinity Aquifer as a major Texas aquifer (Ashworth and Hopkins, 1995). According to the Harden et al (2004) and local water well logs, depth to the top of the Trinity Aquifer (top of Paluxy Formation) beneath the landfill is approximately 700 feet below ground surface (near mean sea level). The Paluxy potentiometric surface elevation beneath the site is at about 200 ft-msl indicating confined aquifer conditions (Harden et al, 2004). According to Nordstrom (1982), the Paluxy hydraulic gradient is about 27 feet per mile with groundwater flowing to the east at less than two feet per year. According to the Harden et al (2004) and local water well logs, depth to bottom of the Trinity Aquifer (bottom of the Twin Mountains Formation) beneath the landfill is about 1600-1700 ft-bgs, or -900 to -1000 ft-msl.

Table 2-1
Regional Stratigraphy in the Vicinity of City of Arlington Landfill

Period	Series	Group or Formation	Approximate Formation Depth and (Thickness) in feet	Lithologic Characteristics and Depositional Environment
Quaternary	Holocene	Alluvium	At Surface (~ 0'-45' in Site Area)	Clay, silt, sand, and gravel deposited in fluvial environment.
	Pleistocene	Terrace	At Surface (~ 0'-25' Regionally)	Clay, silt, sand, and gravel deposited in fluvial environment.
Cretaceous	Gulfian	Austin Chalk	Outcrops South of Site (~ 0'-700' Regionally)	Chalk, limestone, marl and occasional fine to medium sand deposited in marine environment.
		Eagle Ford	Outcrops South and East of Site (~ 150'-280' thick Regionally)	Shale with some thin platy beds of siltstone and sandy limestone deposited in marine environment.
		Woodbine	At Surface (~ 200' thick beneath Site)	Sand, sandstone, clay, shale, lignite deposited in fluvial and marine deltaic environments.
	Comanchian	Washita Group	~ 200' below landfill (~ 300' thick Regionally)	Limestone, marl, and clay; some sand near top deposited in marine environment.
		Fredericksburg Group	~ 500' below landfill (~ 200' thick Regionally)	Limestone, clay, marl, shale, and shell agglomerates deposited in near shore marine depositional environment.
		Trinity Group	~ 700' below landfill (~ 1,000 feet thick Regionally)	Fine sand, sandy shale, and shale deposited in fluvial, deltaic, and near shore marine environments.
Paleozoic	undifferentiated		~1,700' below landfill	Sandstone, limestone, shale, and conglomerate.

Modified from Langley (1999) and Nordstrom (1982).

3 SITE-SPECIFIC GEOLOGY

3.1 Existing Borehole Data

The currently approved subsurface characterization of the site is supported by 142 soil borings whose locations are shown on Figure B-4 in Appendix B. Additionally, the soil boring information and the soil boring logs from the previous field investigations are provided in Appendix C. Copies of the site-specific geologic cross sections from the facility's existing subsurface characterization by Golder Associates (Golder) are also provided in Appendix C.

The site completed numerous subsurface investigation events between 1984 and 2014, the majority of which are documented in the facility's existing Geology Report of the approved Site Development Plan (Permit No. MSW-358B). The facility's historical subsurface investigations are discussed further in Section 4.1.

3.2 Site-Specific Stratigraphy

The currently permitted site-specific subsurface geologic stratigraphic characterization of the 382.7-acre cumulative landfill unit is detailed in the Geology Report of the approved Site Development Plan (Permit No. MSW-358B). Site-specific stratigraphic units include the Stratum A through Stratum E. The permitted characterization for each of these five site-specific strata are summarized below.

- Stratum A: Predominately clayey sand, silty sand, and sand associated with alluvium sediments and exhibiting varying degrees of saturation.

- Stratum B: Predominately clayey sand, silty sand, and sand deposits associated with alluvium sediments and differentiated from Stratum A by an increase in course-grained sand and the occurrence of gravel. This laterally discontinuous stratum is characterized as the first water-bearing zone beneath the facility.

- Stratum C: Predominately weathered non-transmissive clayey shale, shaley clay, and silty shale sediments exhibiting varying degrees of weathering beneath the site.

- Stratum D: Predominately interbedded sandstone, sand, silt, and shale exhibiting varying degrees of weathering and consolidation. This laterally discontinuous stratum is characterized as a potential second water-bearing zone beneath the facility.

- Stratum E: Predominately dry unweathered/competent shale interjected with laterally discontinuous zones of siltstone and limestone.

3.3 Hydrogeologic Interpretation

The currently permitted site-specific subsurface hydrogeologic characterization of the facility is detailed in the Geology Report of the approved Site Development Plan (Permit No. MSW-358B). Historical groundwater potentiometric surface contour maps obtained from groundwater monitoring reports by The Carel Corporation are provided in Appendix E. As indicated by these figures, groundwater in the uppermost aquifer largely mimics predevelopment surface topography and flows southeast towards the West Fork of the Trinity River. Groundwater at the site is perched within surficial alluvial and upper Woodbine Formation sediments of site-specific Stratum B and the interconnected portions site-specific Stratum D. Groundwater within the Uppermost Aquifer flows horizontally downgradient along the top of the underlying Stratum C and Stratum E; respectively.

3.4 Existing Groundwater Monitoring System

The currently permitted groundwater monitoring system is detailed in the Groundwater Sampling and Analysis Plan in of the approved Site Development Plan (Permit No. MSW-358B). The approved system consists of 22 groundwater monitor wells that include three upgradient background monitor wells (MW-1, MW-2, and MW-11) and 19 downgradient (Point of Compliance) monitor wells (MW-3, MW-8, MW-9, MW-10, MW-16, MW-17, MW-18, MW-19, MW-20, MW-21, MW-22, MW-23, MW-25, MW-26, MW-27, MW-42, MW-43, MW-44, and MW-45). These 22 wells monitor the permitted Uppermost Aquifer beneath the site. The groundwater monitor well locations are shown Figure B-4 in Appendix B and on the groundwater contour map scans provided in Appendix E.

4 EXISTING AND PROPOSED SITE EXPLORATIONS

4.1 Existing Site Explorations

Subsurface characterization of the site has been performed during several drilling events at the landfill. Geotechnical and geological subsurface explorations were completed by EMCON Baker-Shiflett, Inc in 1984-1995, Golder Associates in 2008/2009, 2010, and 2011, Shaw Environmental in 2010, and The Carel Corporation in 2014. These investigations advanced a total of 142 borings across the site. The available borehole data are summarized in Table C-1 and the logs are included in Appendix C.

4.2 Existing Soil Borings

The site has previously received TCEQ approval for its geologic and hydrogeologic characterization based on the permitted EDE, top of liner plan, and disposal waste footprint. The proposed expansion will not include any changes to the currently permitted permit boundary and EDE, and no changes to the currently approved geologic or hydrogeologic characterization are proposed. Previous subsurface investigations and drilling events have advanced 142 borings of which 76 were drilled to a depth of at least five feet below the permitted EDE and 40 were drilled to a depth of at least 30 feet below the permitted EDE. The number of borings and their depths with respect to EDE comply with Title 30 Texas Administrative Code §330.63(e)(4)(B). Review of lithologic logs and reports for these borings indicate that they were conducted in general accordance with established field exploration methods.

Previous field investigations for the existing facility have provided subsurface characterization deemed satisfactory by TCEQ for approval of the currently permitted Type I Subtitle D landfill unit and groundwater monitoring system design. For these reasons, no additional subsurface investigations or new soil borings are proposed.

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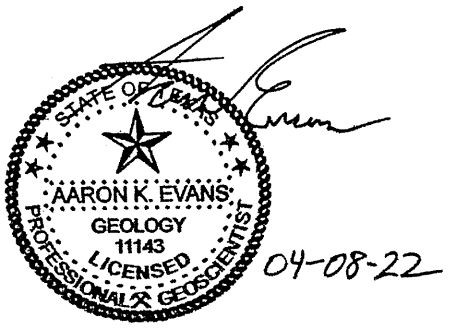
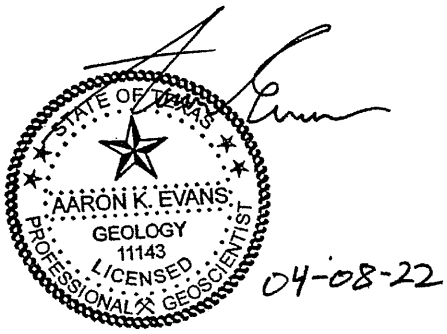
APPENDIX A

LANDFILL OVERVIEW DRAWINGS



CONTENTS



0 1000 2000
SCALE IN FEET

LEGEND

- PERMIT BOUNDARY
- PERMITTED LIMIT OF WASTE
- PROPOSED LIMIT OF WASTE
- PERMITTED PRE-SUBTITLE D LIMIT OF WASTE

NOTE:

1. AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH DATED 11-15-2020.

STATE OF TEXAS
AARON K. EVANS
GEOLOGY
11143
LICENSED
PROFESSIONAL GEOSCIENTIST
04/08/22

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DATE: 04/2022
FILE: 0023-434-11
CAD: FIG A-1-AERIAL PHOTOGRAPH.DWG

DRAWN BY: CRA
DESIGN BY: CRA
REVIEWED BY: AKE

Weaver Consultants Group
TBPE REGISTRATION NO. F-3727

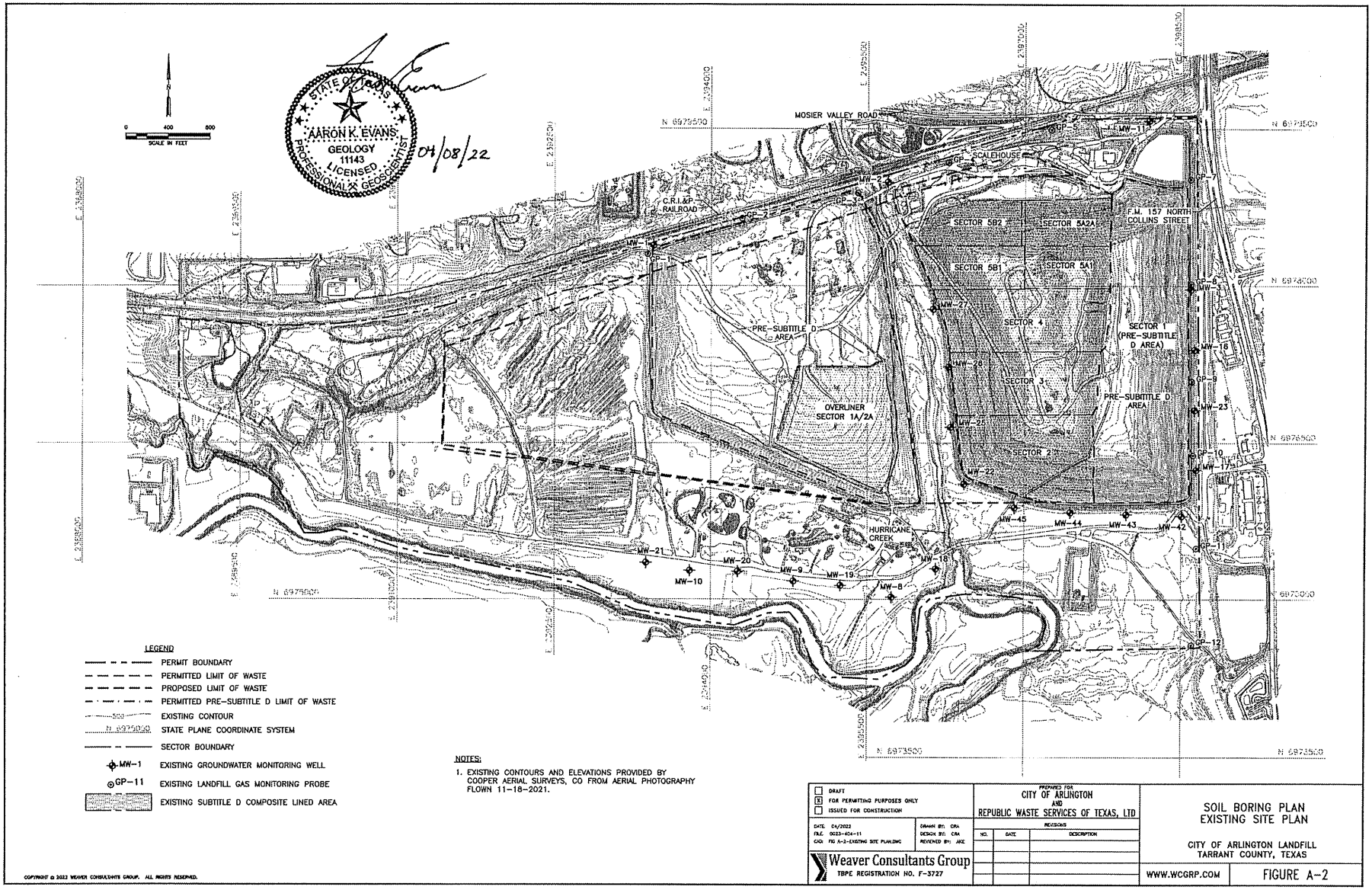
PREPARED FOR
CITY OF ARLINGTON
AND
REPUBLIC WASTE SERVICES OF TEXAS, LTD

REVISIONS		
NO.	DATE	DESCRIPTION

SOIL BORING PLAN
AERIAL PHOTOGRAPH

CITY OF ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS

WWW.WCGRP.COM | FIGURE A-1



LEGEND

- PERMIT BOUNDARY
- PERMITTED LIMIT OF WASTE
- PROPOSED LIMIT OF WASTE
- PERMITTED PRE-SUBTITLE D LIMIT OF WASTE
- 500 EXISTING CONTOUR
- N 6975000 STATE PLANE COORDINATE SYSTEM
- SECTOR BOUNDARY
- MW-1 EXISTING GROUNDWATER MONITORING WELL
- GP-11 EXISTING LANDFILL GAS MONITORING PROBE
- EXISTING SUBTITLE D COMPOSITE LINED AREA

NOTES:

1. EXISTING CONTOURS AND ELEVATIONS PROVIDED BY COOPER AERIAL SURVEYS, CO FROM AERIAL PHOTOGRAPHY FLOWN 11-18-2021.

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DATE 04/2022
FILE 0023-404-11
CAD FIG A-2-EXISTING SITE PLAN.DWG
DRAWN BY: CRA
DESIGN BY: CRA
REVIEWED BY: AKE

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SOIL BORING PLAN
EXISTING SITE PLAN

CITY OF ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS

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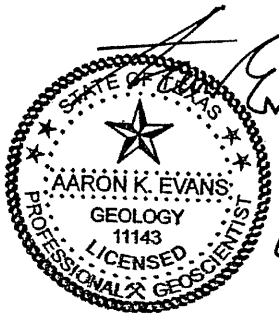
FIGURE A-2

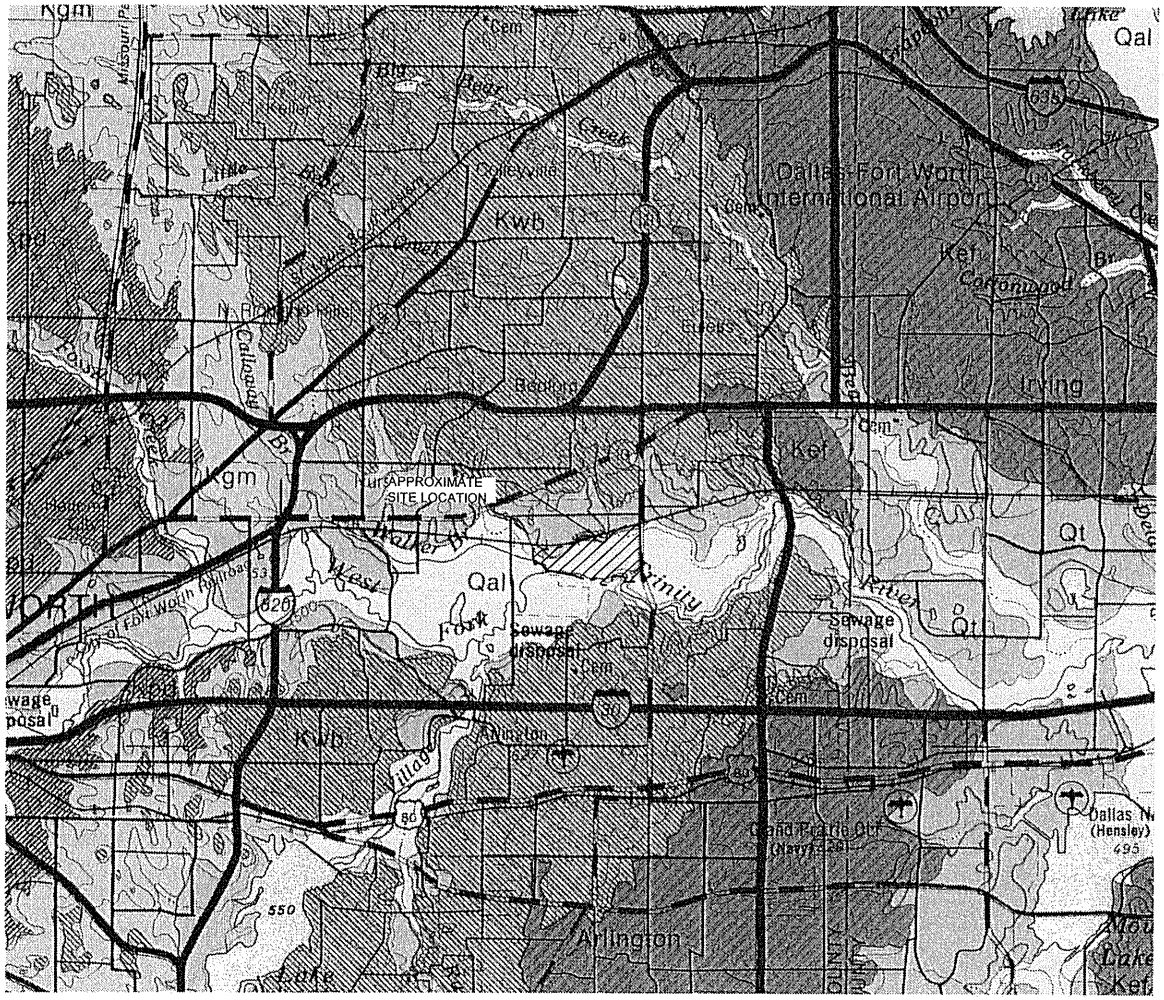
APPENDIX B

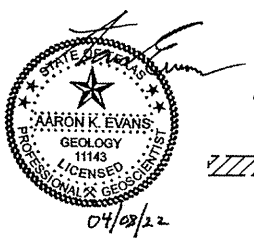
GEOLOGY FIGURES

CONTENTS



04-08-22





0 1 2
SCALE IN MILES

LEGEND

LANDFILL PROPERTY

Qal Qt — Alluvium and Quaternary deposits undivided

Qt — Fluviatile terrace deposits

EPwl — Wilcox Group undivided

Pwp / Pwc — Midway Group

Kemp Clay and Corsicana Marl undivided

Nacatoch Sand

Knm / Kmb — Neylandville Marl and Marlbrook Marl

Pecan Gap Chalk (?)

Wolfe City Sand

Ko — Ozan Formation ("lower Taylor marl")

Austin Chalk

Eagle Ford Formation

Woodbine Formation

Kgm — Grayson Marl and Main Street Limestone undivided

NOTES:

1. REPRODUCED FROM THE GEOLOGIC ATLAS OF TEXAS, DALLAS SHEET, 1987.

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DATE: 04/2022
FILE: 0023-404-11
CAD: FIG B-1 GEOLOGIC MAP.DWG
DRAWN BY: CRA
DESIGN BY: CRA
REVIEWED BY: AKE

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SOIL BORING PLAN
REGIONAL GEOLOGIC MAP

CITY OF ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS

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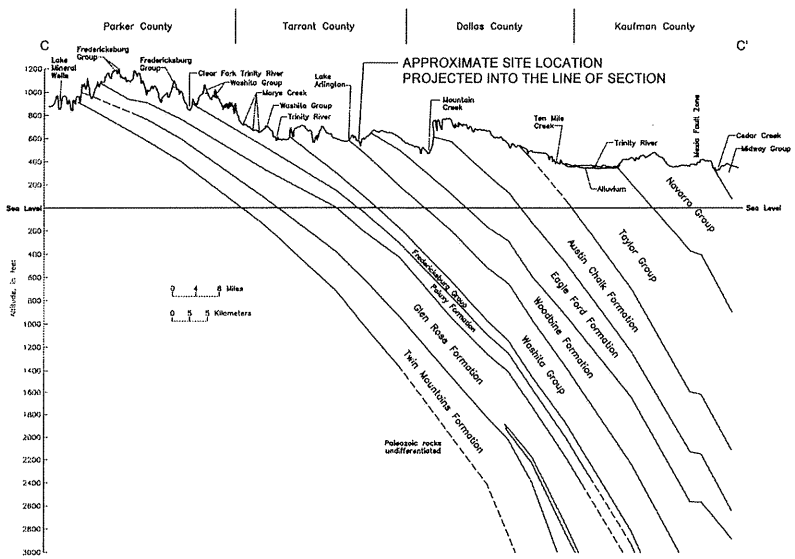
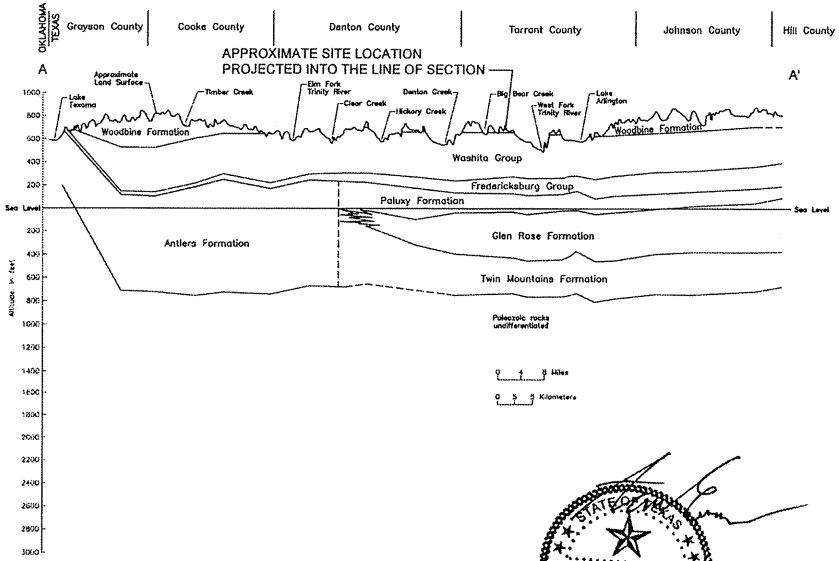
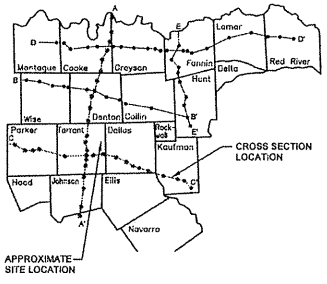
FIGURE B-1







INDEX MAP
NTS

STATE OF TEXAS
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NOTE:

1. CROSS SECTIONS ADAPTED FROM NORDSTROM 1982, OCCURRENCE, AVAILABILITY, AND CHEMICAL QUALITY OF GROUNDWATER IN THE CRETACEOUS AQUIFERS OF NORTH CENTRAL TEXAS, TEXAS WATER DEVELOPMENT BOARD REPORT 269.

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DATE: 04/2022
FILE: 0023-404-11
CAD: FIG B-2 REGIONAL GEO SECTIONS.DWG

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DESIGN BY: AKE
REVIEWED BY: AKE

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SOIL BORING PLAN
REGIONAL GEOLOGIC CROSS SECTIONS

CITY OF ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS

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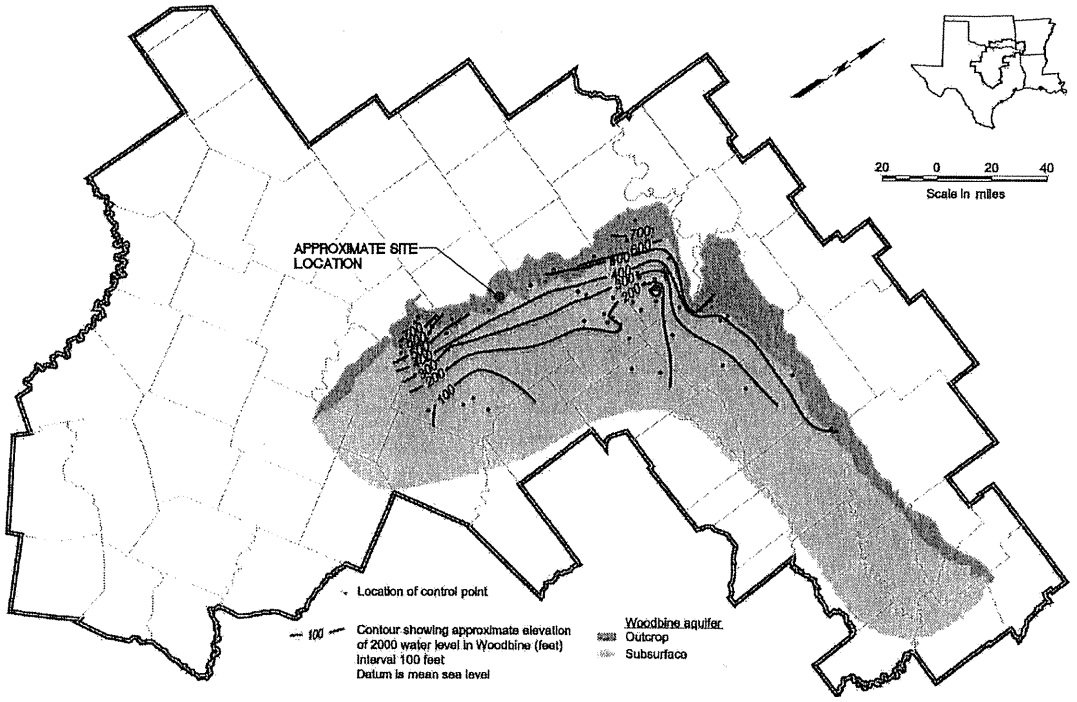
FIGURE B-2

C:\0023\Vol4\EXPANSION 2021\SOIL BORING PLAN\FIGURE B-2 - REGIONAL GEOLOGIC SECTIONS.dwg, 4/8/2022 1:2



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NOTES:

1. WOODBINE AQUIFER POTENTIOMETRIC SURFACE ELEVATIONS MEASURED IN 2000 BY TEXAS WATER DEVELOPMENT BOARD.
2. POTENTIOMETRIC SURFACE MAP ADAPTED FROM HARDEN ET AL, 2004, NORTHERN TRINITY/WOODBINE AQUIFER GROUNDWATER AVAILABILITY MODEL, TEXAS WATER DEVELOPMENT BOARD.

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DATE: 04/2022
FILE: 0023-604-11
CAD: FIG B-3 WOODBINE AQUIFER.DWG
DRAWN BY: CRA
DESIGN BY: AKE
REVIEWED BY: AKE

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SOIL BORING PLAN
REGIONAL WOODBINE AQUIFER
POTENTIOMETRIC SURFACE MAP

CITY OF ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS

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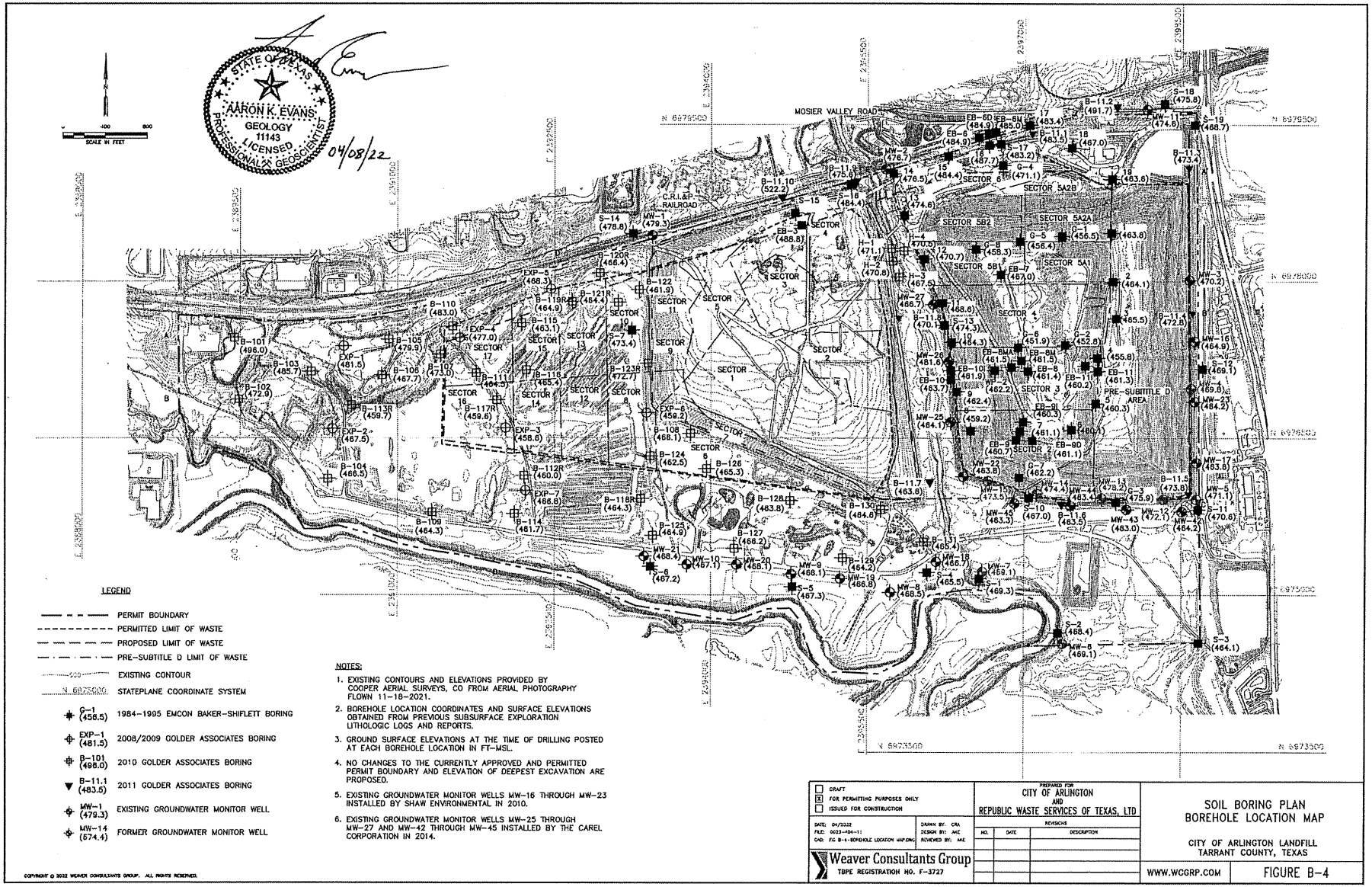
FIGURE B-3


STATE OF TEXAS
AARON K. EVANS
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11143
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SCALE IN FEET
MOSIER VALLEY ROAD
C.R.I.&P. RAILROAD
PRE-SUBTITLE D AREA
SECTOR 1
SECTOR 2
SECTOR 3
SECTOR 4
SECTOR 5
SECTOR 5A1
SECTOR 5A2A
SECTOR 5A2B
SECTOR 5B1
SECTOR 5B2
SECTOR 6
SECTOR 7
SECTOR 8
SECTOR 9
SECTOR 10
SECTOR 11
SECTOR 12
SECTOR 13
SECTOR 14
SECTOR 15
SECTOR 16
SECTOR 17
LEGEND
PERMIT BOUNDARY
PERMITTED LIMIT OF WASTE
PROPOSED LIMIT OF WASTE
PRE-SUBTITLE D LIMIT OF WASTE
EXISTING CONTOUR
STATEPLANE COORDINATE SYSTEM
C-1 (458.5) 1984-1995 EMCON BAKER-SHIFLETT BORING
EXP-1 (481.5) 2008/2009 GOLDER ASSOCIATES BORING
B-101 (496.0) 2010 GOLDER ASSOCIATES BORING
B-11.1 (483.6) 2011 GOLDER ASSOCIATES BORING
MW-1 (479.3) EXISTING GROUNDWATER MONITOR WELL
MW-14 (674.4) FORMER GROUNDWATER MONITOR WELL
NOTES:
1. EXISTING CONTOURS AND ELEVATIONS PROVIDED BY COOPER AERIAL SURVEYS, CO FROM AERIAL PHOTOGRAPHY FLOWN 11-18-2021.
2. BOREHOLE LOCATION COORDINATES AND SURFACE ELEVATIONS OBTAINED FROM PREVIOUS SUBSURFACE EXPLORATION LITHOLOGIC LOGS AND REPORTS.
3. GROUND SURFACE ELEVATIONS AT THE TIME OF DRILLING POSTED AT EACH BOREHOLE LOCATION IN FT-MSL.
4. NO CHANGES TO THE CURRENTLY APPROVED AND PERMITTED PERMIT BOUNDARY AND ELEVATION OF DEEPEST EXCAVATION ARE PROPOSED.
5. EXISTING GROUNDWATER MONITOR WELLS MW-16 THROUGH MW-23 INSTALLED BY SHAW ENVIRONMENTAL IN 2010.
6. EXISTING GROUNDWATER MONITOR WELLS MW-25 THROUGH MW-27 AND MW-42 THROUGH MW-45 INSTALLED BY THE CAREL CORPORATION IN 2014.
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DRAFT
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DATE: 04/2022
FILE: 0023-404-11
CAD: FIG B-4-BOREHOLE LOCATION MAP.DWG
DRAWN BY: CRA
DESIGN BY: JMC
REVIEWED BY: AKE
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SOIL BORING PLAN
BOREHOLE LOCATION MAP
CITY OF ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS
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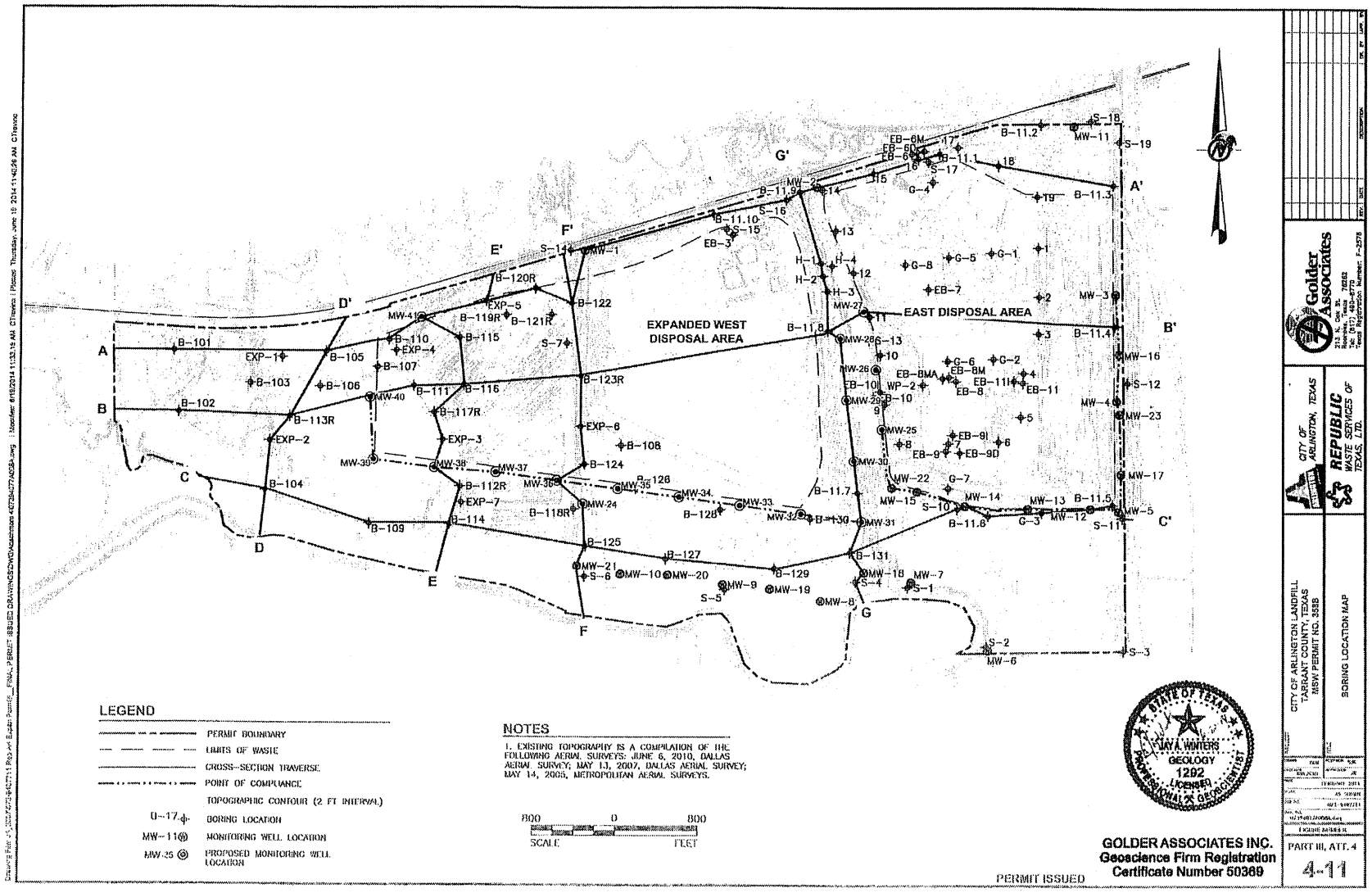
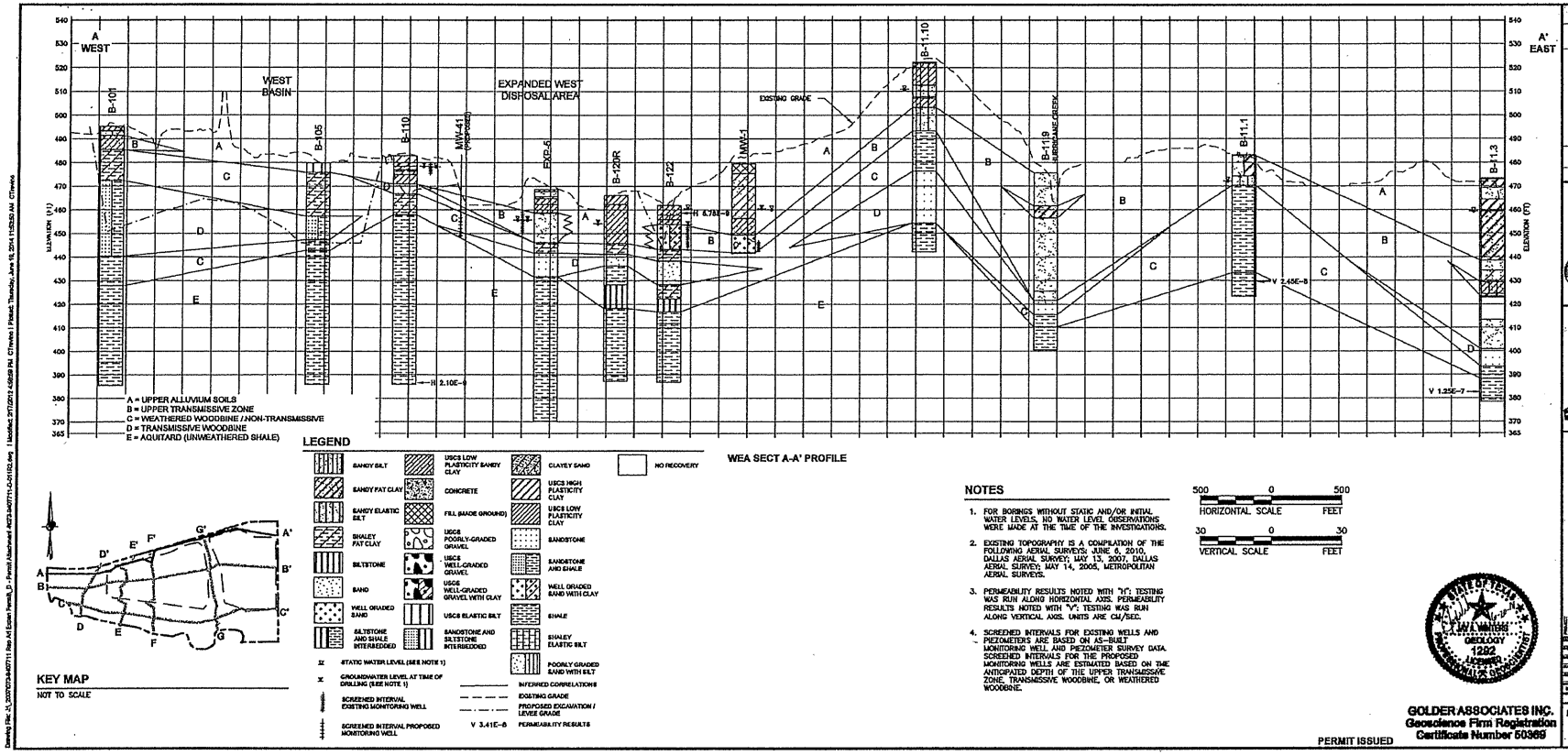
FIGURE B-4

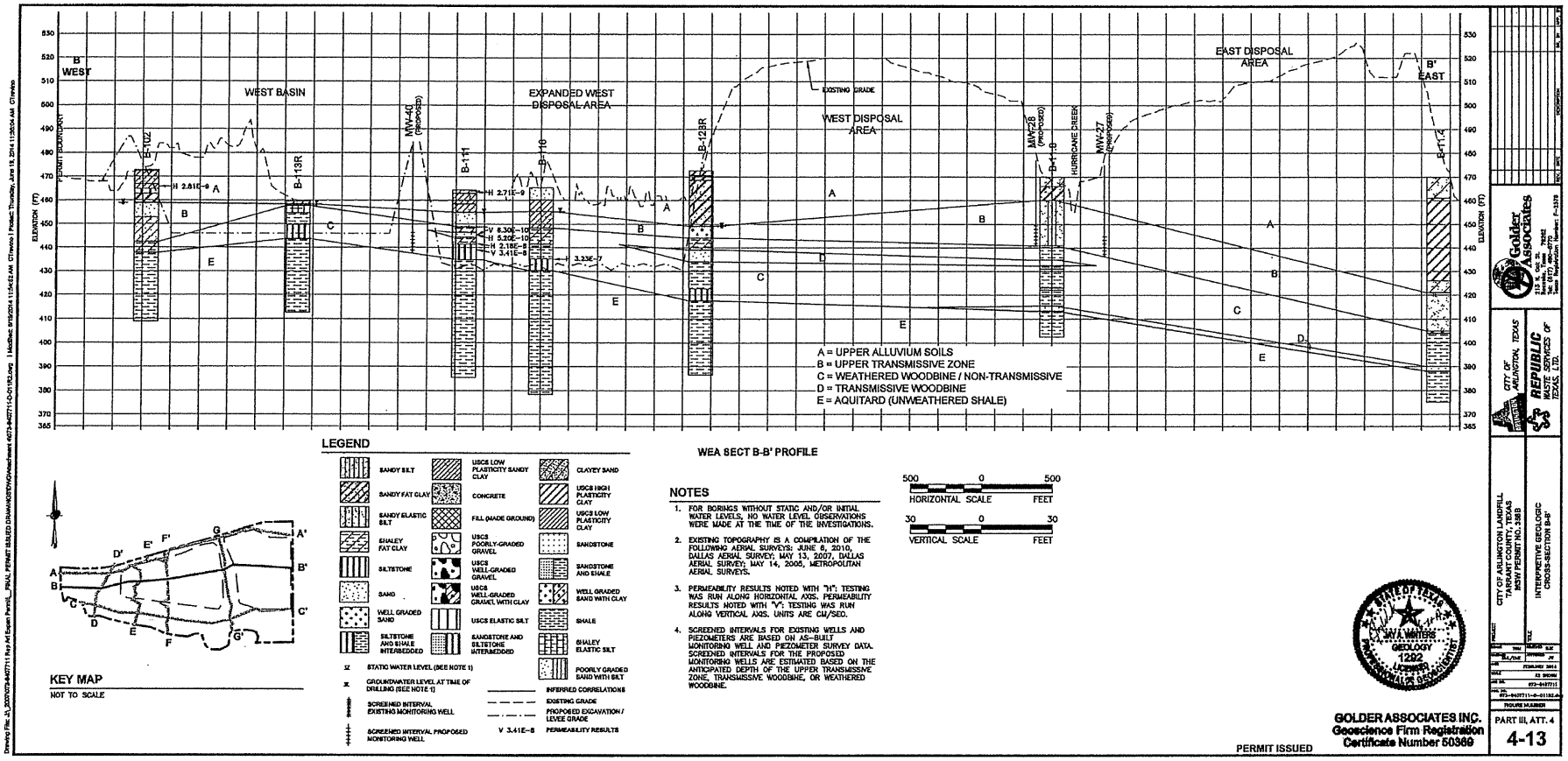
GEOLOGIC CROSS SECTION DRAWINGS

BY GOLDER ASSOCIATES INC.


EXPANDED WEST DISPOSAL AREA
EAST DISPOSAL AREA
A
A'
B
B'
C
C'
D
D'
E
E'
F
F'
G
G'
LEGEND
PERMIT BOUNDARY
LIMITS OF WASTE
CROSS-SECTION TRAVERSE
POINT OF COMPLIANCE
TOPOGRAPHIC CONTOUR (2 FT INTERVAL)
BORING LOCATION
MONITORING WELL LOCATION
PROPOSED MONITORING WELL LOCATION
NOTES
1. EXISTING TOPOGRAPHY IS A COMPILATION OF THE FOLLOWING AERIAL SURVEYS: JUNE 6, 2010, DALLAS AERIAL SURVEY; MAY 13, 2007, DALLAS AERIAL SURVEY; MAY 14, 2005, METROPOLITAN AERIAL SURVEYS.
800 0 800
SCALE FEET
JAY A. WINTERS
GEOLOGY
1292
LICENSED
PROFESSIONAL GEOSCIENTIST
GOLDER ASSOCIATES INC.
Geoscience Firm Registration
Certificate Number 50369
PERMIT ISSUED
Golder Associates
CITY OF ARLINGTON, TEXAS
REPUBLIC WASTE SERVICES OF TEXAS, LTD.
CITY OF ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS
MSW PERMIT NO. 1538
SORTING LOCATION MAP
PART III, ATT. 4
4-11


A
WEST
A'
EAST
WEST BASIN
EXPANDED WEST DISPOSAL AREA
EXISTING GRADE
B-101
B-105
B-110
MW-41 (PROPOSED)
EXP-5
B-123R
B-122
MW-1
B-1.10
B-119
B-11.1
B-11.3
ELEVATION (FT)
A = UPPER ALLUVIUM SOILS
B = UPPER TRANSMISSIVE ZONE
C = WEATHERED WOODBINE / NON-TRANSMISSIVE
D = TRANSMISSIVE WOODBINE
E = AQUITARD (UNWEATHERED SHALE)
H 2.10E-6
H 8.78E-8
V 1.45E-8
V 1.35E-7
LEGEND
SANDY SILT
SANDY FAT CLAY
SANDY ELASTIC SILT
SHALEY FAT CLAY
SILTSTONE
SAND
WELL GRADED SAND
SILTSTONE AND SHALE INTERBEDDED
USCS LOW PLASTICITY SANDY CLAY
CONCRETE
FILL (MADE GROUND)
USCS POORLY-GRADED GRAVEL
USCS WELL-GRADED GRAVEL
USCS WELL-GRADED GRAVEL WITH CLAY
USCS ELASTIC SILT
SANDSTONE AND SILTSTONE INTERBEDDED
CLAYEY SAND
USCS HIGH PLASTICITY CLAY
USCS LOW PLASTICITY CLAY
SANDSTONE
SANDSTONE AND SHALE
WELL GRADED SAND WITH CLAY
SHALE
SHALEY ELASTIC SILT
POORLY GRADED SAND WITH SILT
NO RECOVERY
STATIC WATER LEVEL (SEE NOTE 1)
GROUNDWATER LEVEL AT TIME OF DRILLING (SEE NOTE 1)
SCREENED INTERVAL EXISTING MONITORING WELL
SCREENED INTERVAL PROPOSED MONITORING WELL
INFERRED CORRELATIONS
EXISTING GRADE
PROPOSED EXCAVATION / LEVEE GRADE
V 3.41E-8 PERMEABILITY RESULTS
KEY MAP
NOT TO SCALE
NOTES
1. FOR BORINGS WITHOUT STATIC AND/OR INITIAL WATER LEVELS, NO WATER LEVEL OBSERVATIONS WERE MADE AT THE TIME OF THE INVESTIGATIONS.
2. EXISTING TOPOGRAPHY IS A COMPILATION OF THE FOLLOWING AERIAL SURVEYS: JUNE 6, 2010, DALLAS AERIAL SURVEY; MAY 13, 2007, DALLAS AERIAL SURVEY; MAY 14, 2005, METROPOLITAN AERIAL SURVEYS.
3. PERMEABILITY RESULTS NOTED WITH "H": TESTING WAS RUN ALONG HORIZONTAL AXIS. PERMEABILITY RESULTS NOTED WITH "V": TESTING WAS RUN ALONG VERTICAL AXIS. UNITS ARE cu/SEC.
4. SCREENED INTERVALS FOR EXISTING WELLS AND PIEZOMETERS ARE BASED ON AS-BUILT MONITORING WELL AND PIEZOMETER SURVEY DATA. SCREENED INTERVALS FOR THE PROPOSED MONITORING WELLS ARE ESTIMATED BASED ON THE ANTICIPATED DEPTH OF THE UPPER TRANSMISSIVE ZONE, TRANSMISSIVE WOODBINE, OR WEATHERED WOODBINE.
500 0 500
HORIZONTAL SCALE FEET
30 0 30
VERTICAL SCALE FEET
STATE OF TEXAS
J. WILLIAM
GEOLOGY
1222
LICENSED
PROFESSIONAL GEOLOGIST
GOLDER ASSOCIATES INC.
Geoscience Firm Registration
Certificate Number 50369
PERMIT ISSUED
Golder Associates
CITY OF ARLINGTON, TEXAS
REPUBLIC WASTE SERVICES OF TEXAS, LTD.
CITY OF ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS
MSW PERMIT NO. 2348B
INTERPRETIVE GEOLOGIC CROSS-SECTION A-A'
PART III, ATT. 4
4-12

B-7



KEY MAP

NOT TO SCALE

LEGEND

SANDY SILT
SANDY FAT CLAY
SANDY ELASTIC SILT
SHALEY FAT CLAY
SILTSTONE
SAND
WELL GRADED SAND
SILTSTONE AND SHALE INTERBEDDED
USCS LOW PLASTICITY SANDY CLAY
CONCRETE
FILL (MADE GROUND)
USCS POORLY-GRADED GRAVEL
USCS WELL-GRADED GRAVEL
USCS WELL-GRADED GRAVEL WITH CLAY
USCS ELASTIC SILT
SANDSTONE AND SILTSTONE INTERMIXED
CLAYEY SAND
USCS HIGH PLASTICITY CLAY
USCS LOW PLASTICITY CLAY
SANDSTONE
SANDSTONE AND SHALE
WELL GRADED SAND WITH CLAY
SHALE
SHALEY ELASTIC SILT
POORLY GRADED SAND WITH SILT
STATIC WATER LEVEL (SEE NOTE 1)
GROUNDWATER LEVEL AT TIME OF DRILLING (SEE NOTE 1)
SCREENED INTERVAL EXISTING MONITORING WELL
SCREENED INTERVAL PROPOSED MONITORING WELL
INFERRED CORRELATIONS
EXISTING GRADE
PROPOSED EXCAVATION / LEVEE GRADE
V 3.41E-8 PERMEABILITY RESULTS

WEA SECT B-B' PROFILE

NOTES

1. FOR BORINGS WITHOUT STATIC AND/OR INITIAL WATER LEVELS, NO WATER LEVEL OBSERVATIONS WERE MADE AT THE TIME OF THE INVESTIGATIONS.
2. EXISTING TOPOGRAPHY IS A COMPILATION OF THE FOLLOWING AERIAL SURVEYS: JUNE 8, 2010, DALLAS AERIAL SURVEY; MAY 13, 2007, DALLAS AERIAL SURVEY; MAY 14, 2005, METROPOLITAN AERIAL SURVEYS.
3. PERMEABILITY RESULTS NOTED WITH "H": TESTING WAS RUN ALONG HORIZONTAL AXIS. PERMEABILITY RESULTS NOTED WITH "V": TESTING WAS RUN ALONG VERTICAL AXIS. UNITS ARE CM/SEC.
4. SCREENED INTERVALS FOR EXISTING WELLS AND PIEZOMETERS ARE BASED ON AS-BUILT MONITORING WELL AND PIEZOMETER SURVEY DATA. SCREENED INTERVALS FOR THE PROPOSED MONITORING WELLS ARE ESTIMATED BASED ON THE ANTICIPATED DEPTH OF THE UPPER TRANSMISSIVE ZONE, TRANSMISSIVE WOODBINE, OR WEATHERED WOODBINE.

500 0 500
HORIZONTAL SCALE FEET

30 0 30
VERTICAL SCALE FEET

STATE OF TEXAS
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PROFESSIONAL GEOLOGIST

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Geoscience Firm Registration
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REPUBLIC WASTE SERVICES OF TEXAS, LTD.
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TARRANT COUNTY, TEXAS
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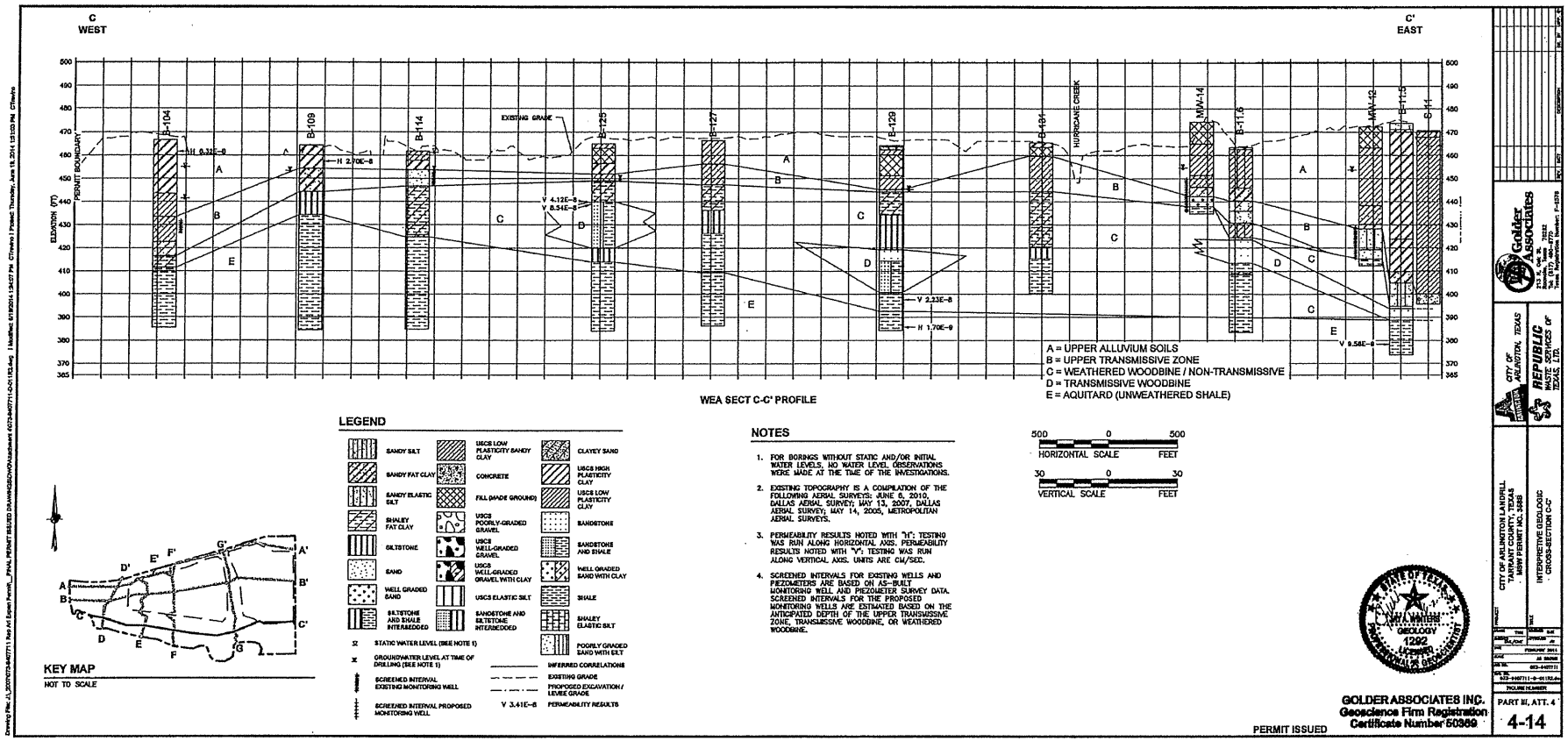
INTERPRETIVE GEOLOGIC CROSS-SECTION B-B'
PART III, ATT. 4
4-13



WEA SECT C-C' PROFILE

KEY MAP

NOT TO SCALE

LEGEND

- SANDY SILT
- SANDY FAT CLAY
- SANDY ELASTIC SILT
- SHALEY FAT CLAY
- SILTSTONE
- SAND
- WELL GRADED SAND
- SILTSTONE AND SHALE INTERBEDDED
- USCS LOW PLASTICITY SANDY CLAY
- CONCRETE
- FILL (MADE GROUND)
- USCS POORLY-GRADED GRAVEL
- USCS WELL-GRADED GRAVEL
- USCS WELL-GRADED GRAVEL WITH CLAY
- USCS ELASTIC SILT
- SANDSTONE AND SILTSTONE INTERBEDDED
- CLAYEY SAND
- USCS HIGH PLASTICITY CLAY
- USCS LOW PLASTICITY CLAY
- SANDSTONE
- SANDSTONE AND SHALE
- WELL GRADED SAND WITH CLAY
- SHALE
- SHALEY ELASTIC SILT
- POORLY GRADED SAND WITH SILT
- STATIC WATER LEVEL (SEE NOTE 1)
- GROUNDWATER LEVEL AT TIME OF DRILLING (SEE NOTE 1)
- SCREENED INTERVAL EXISTING MONITORING WELL
- SCREENED INTERVAL PROPOSED MONITORING WELL
- INFERRED CORRELATIONS
- EXISTING GRADE
- PROPOSED EXCAVATION / LEVEE GRADE
- V 3.41E-8 PERMEABILITY RESULTS

NOTES

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500 0 500
HORIZONTAL SCALE FEET

30 0 30
VERTICAL SCALE FEET

STATE OF TEXAS
JAY A. WHITNEY
GEOLOGY
1292
LICENSED
PROFESSIONAL GEOSCIENTIST

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Certificate Number 50369

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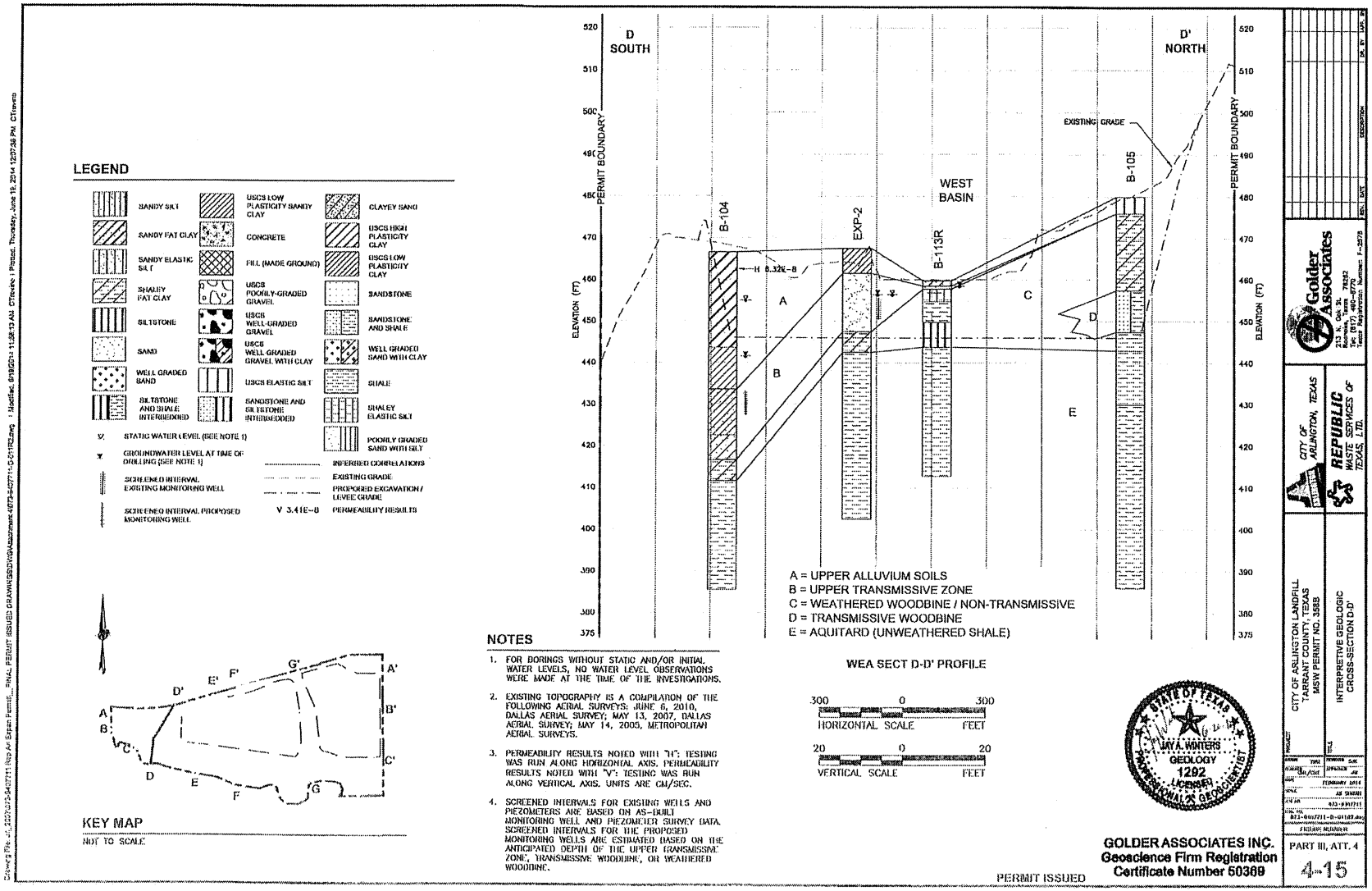
TARRANT COUNTY, TEXAS
MSW PERMIT NO. 1568

INTERPRETIVE GEOLOGIC CROSS-SECTION C-C'

PROJECT NO. 013-4407711

PART III, ATT. 4
4-14


LEGEND
SANDY SILT
SANDY FAT CLAY
SANDY ELASTIC SILT
SHALEY FAT CLAY
SILTSTONE
SAND
WELL GRADED SAND
SILTSTONE AND SHALE INTERBEDDED
USCS LOW PLASTICITY SANDY CLAY
CONCRETE
FILL (MADE GROUND)
USCS POORLY-GRADED GRAVEL
USCS WELL-GRADED GRAVEL
USCS WELL-GRADED GRAVEL WITH CLAY
USCS ELASTIC SILT
SANDSTONE AND SILTSTONE INTERBEDDED
CLAYEY SAND
USCS HIGH PLASTICITY CLAY
USCS LOW PLASTICITY CLAY
SANDSTONE
SANDSTONE AND SHALE
WELL GRADED SAND WITH CLAY
SHALE
SHALEY ELASTIC SILT
POORLY GRADED SAND WITH SILT
STATIC WATER LEVEL (SEE NOTE 1)
GROUNDWATER LEVEL AT TIME OF DRILLING (SEE NOTE 1)
SCREENED INTERVAL EXISTING MONITORING WELL
SCREENED INTERVAL PROPOSED MONITORING WELL
INFERRED CORRELATIONS
EXISTING GRADE
PROPOSED EXCAVATION / LEVEE GRADE
K 3.41E-8 PERMEABILITY RESULTS
D SOUTH
D' NORTH
PERMIT BOUNDARY
ELEVATION (FT)
B-104
EXP-2
B-113R
B-105
WEST BASIN
EXISTING GRADE
K 8.32E-8
A
B
C
D
E
A = UPPER ALLUVIUM SOILS
B = UPPER TRANSMISSIVE ZONE
C = WEATHERED WOODBINE / NON-TRANSMISSIVE
D = TRANSMISSIVE WOODBINE
E = AQUITARD (UNWEATHERED SHALE)
WEA SECT D-D' PROFILE
300 0 300
HORIZONTAL SCALE FEET
20 0 20
VERTICAL SCALE FEET
KEY MAP
NOT TO SCALE
A
B
C
D
E
F
G
A'
B'
C'
D'
E'
F'
G'
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STATE OF TEXAS
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GEOLOGY
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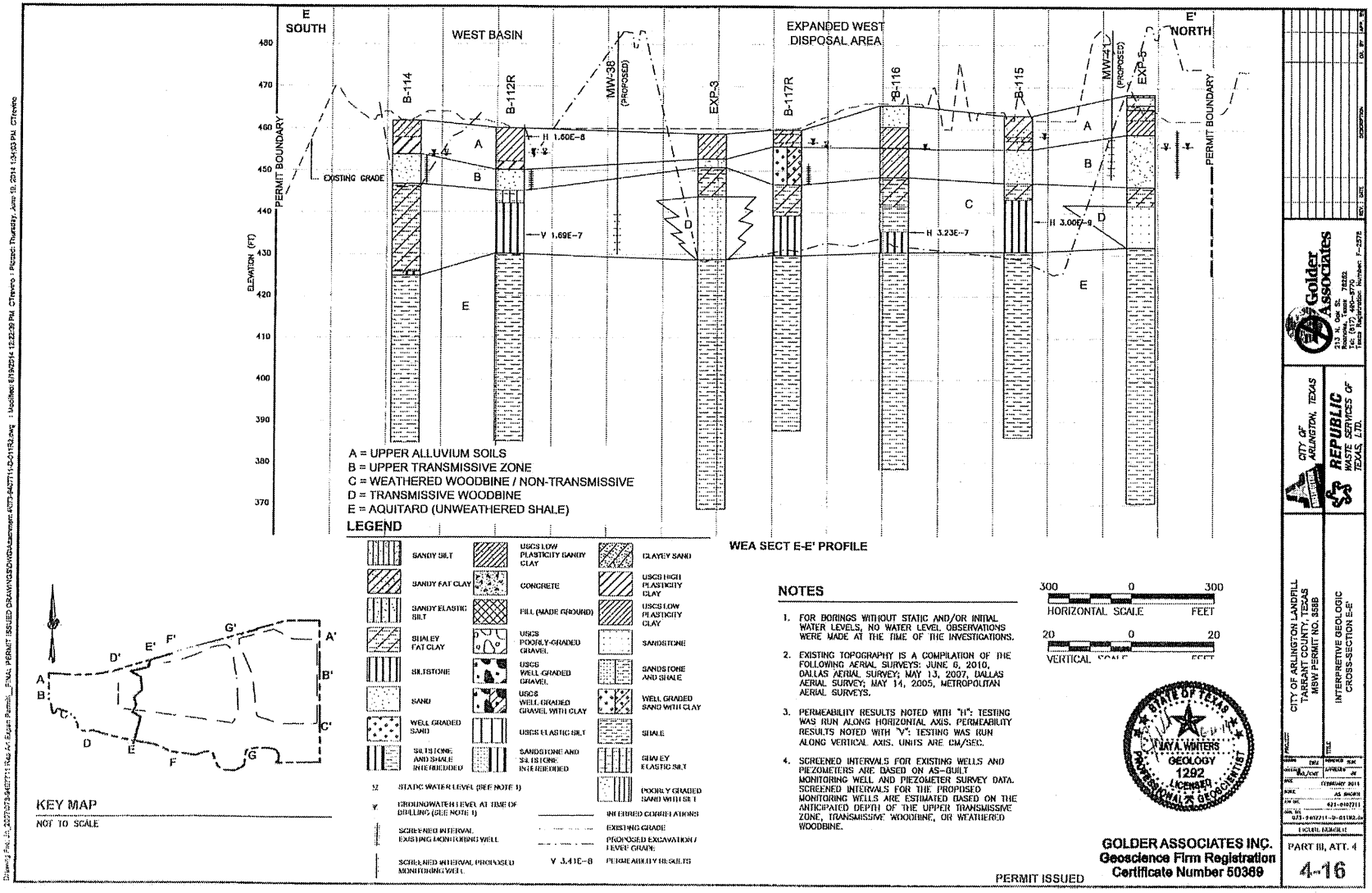
CITY OF ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS
MSW PERMIT NO. 358B
INTERPRETIVE GEOLOGIC CROSS-SECTION D-D'
FEBRUARY 2014
PART III, ATT. 4
4-15


E
SOUTH
E'
NORTH
WEST BASIN
EXPANDED WEST
DISPOSAL AREA
B-114
B-112R
MW-38
(PROPOSED)
EXP-3
B-117R
B-116
B-115
MW-21
(PROPOSED)
EXP-5
PERMIT BOUNDARY
PERMIT BOUNDARY
EXISTING GRADE
ELEVATION (FT)
480
470
460
450
440
430
420
410
400
390
380
370
A
B
C
D
E
H 1.60E-8
V 1.69E-7
H 3.23E-7
H 3.00E-9
A = UPPER ALLUVIUM SOILS
B = UPPER TRANSMISSIVE ZONE
C = WEATHERED WOODBINE / NON-TRANSMISSIVE
D = TRANSMISSIVE WOODBINE
E = AQUITARD (UNWEATHERED SHALE)
LEGEND
WEA SECT E-E' PROFILE
SANDY SILT
SANDY FAT CLAY
SANDY ELASTIC SILT
SHALEY FAT CLAY
SILTSTONE
SAND
WELL GRADED SAND
SILTSTONE AND SHALE INTERBEDDED
USCS LOW PLASTICITY SANDY CLAY
CONCRETE
FILL (MADE GROUND)
USCS POORLY-GRADED GRAVEL
USCS WELL GRADED GRAVEL
USCS WELL GRADED GRAVEL WITH CLAY
USCS ELASTIC SILT
SANDSTONE AND SILTSTONE INTERBEDDED
CLAYEY SAND
USCS HIGH PLASTICITY CLAY
USCS LOW PLASTICITY CLAY
SANDSTONE
SANDSTONE AND SHALE
WELL GRADED SAND WITH CLAY
SHALE
SHALEY ELASTIC SILT
POORLY GRADED SAND WITH SILT
STATIC WATER LEVEL (SEE NOTE 1)
GROUNDWATER LEVEL AT TIME OF DRILLING (SEE NOTE 1)
SCREENED INTERVAL EXISTING MONITORING WELL
SCREENED INTERVAL PROPOSED MONITORING WELL
INFERRED CORRELATIONS
EXISTING GRADE
PROPOSED EXCAVATION / LEVEE GRADE
V 3.41E-8
PERMEABILITY RESULTS
KEY MAP
NOT TO SCALE
A
B
C
D
E
F
G
A'
B'
C'
D'
E'
F'
G'
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300 0 300
HORIZONTAL SCALE FEET
20 0 20
VERTICAL SCALE FEET
STATE OF TEXAS
JAY A. WINTERS
GEOLOGY
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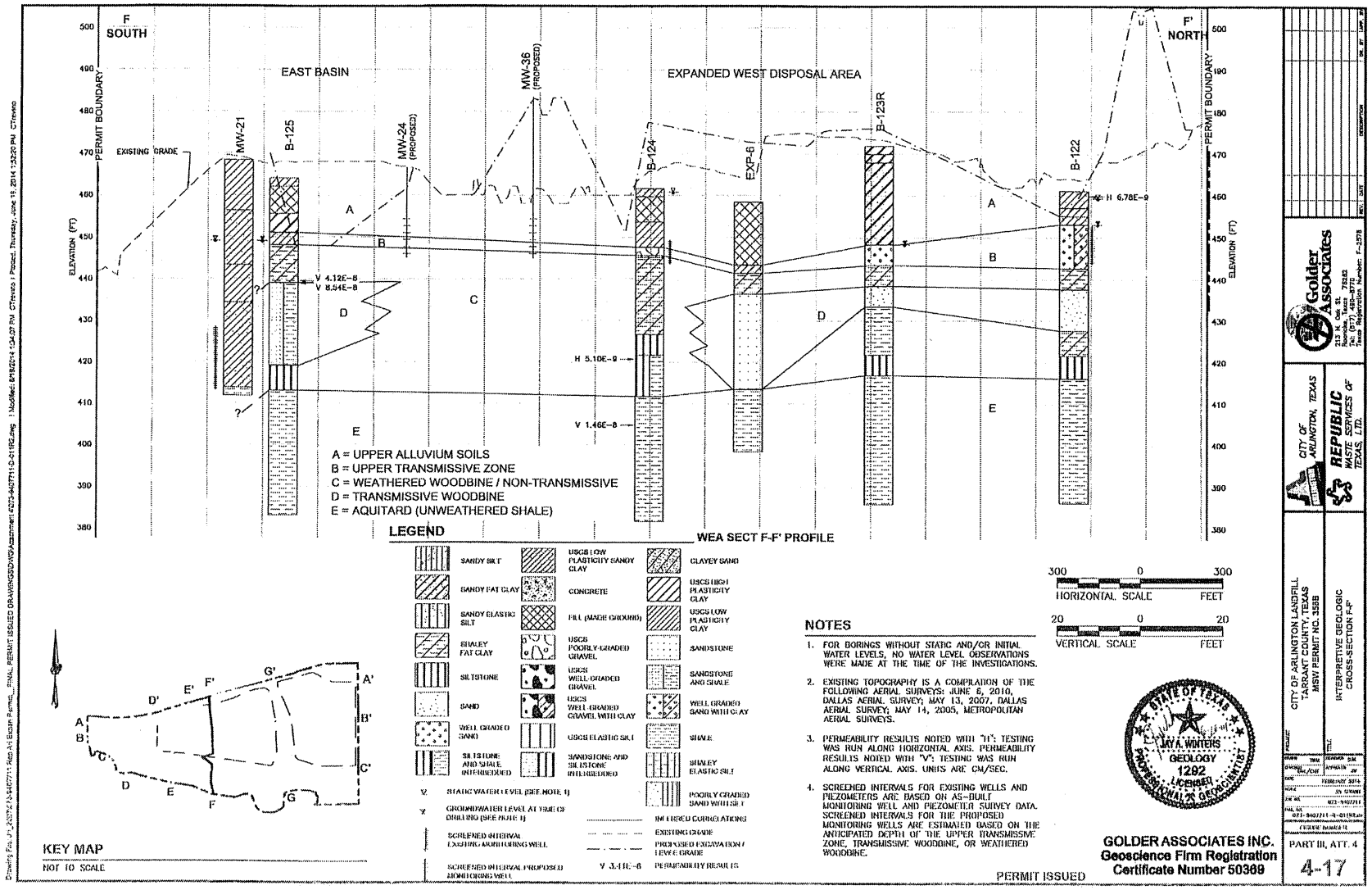
CITY OF ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS
MSW PERMIT NO. 555B
INTERPRETIVE GEOLOGIC CROSS-SECTION E-E'
PART III, ATT. 4
4-16


F
SOUTH
F'
NORTH
EAST BASIN
EXPANDED WEST DISPOSAL AREA
PERMIT BOUNDARY
EXISTING GRADE
MW-21
B-125
MW-24 (PROPOSED)
MW-36 (PROPOSED)
B-124
EXP-6
B-123R
B-122
ELEVATION (FT)
A
B
C
D
E
V 4.12E-8
V 8.54E-8
H 5.10E-9
V 1.46E-8
H 6.78E-9
A = UPPER ALLUVIUM SOILS
B = UPPER TRANSMISSIVE ZONE
C = WEATHERED WOODBINE / NON-TRANSMISSIVE
D = TRANSMISSIVE WOODBINE
E = AQUITARD (UNWEATHERED SHALE)
LEGEND
SANDY SILT
SANDY FAT CLAY
SANDY ELASTIC SILT
SHALEY FAT CLAY
SILTSTONE
SAND
WELL GRADED SAND
SILTSTONE AND SHALE INTERBEDDED
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CONCRETE
FILL (MADE GROUND)
USCS POORLY-GRADED GRAVEL
USCS WELL-GRADED GRAVEL
USCS WELL-GRADED GRAVEL WITH CLAY
USCS ELASTIC SILT
SANDSTONE AND SILTSTONE INTERBEDDED
CLAYEY SAND
USCS HIGH PLASTICITY CLAY
USCS LOW PLASTICITY CLAY
SANDSTONE
SANDSTONE AND SHALE
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SCREENED INTERVAL PROPOSED MONITORING WELL
INFERRED CORRELATIONS
EXISTING GRADE
PROPOSED EXCAVATION / LEVEE GRADE
V 3.41E-6 PERMEABILITY RESULTS
WEA SECT F-F' PROFILE
300 0 300
HORIZONTAL SCALE FEET
20 0 20
VERTICAL SCALE FEET
KEY MAP
NOT TO SCALE
A A' B B' C C' D D' E E' F F' G G'
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STATE OF TEXAS
JAY A. WINTERS
GEOLOGY
1292
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GOLDER ASSOCIATES INC.
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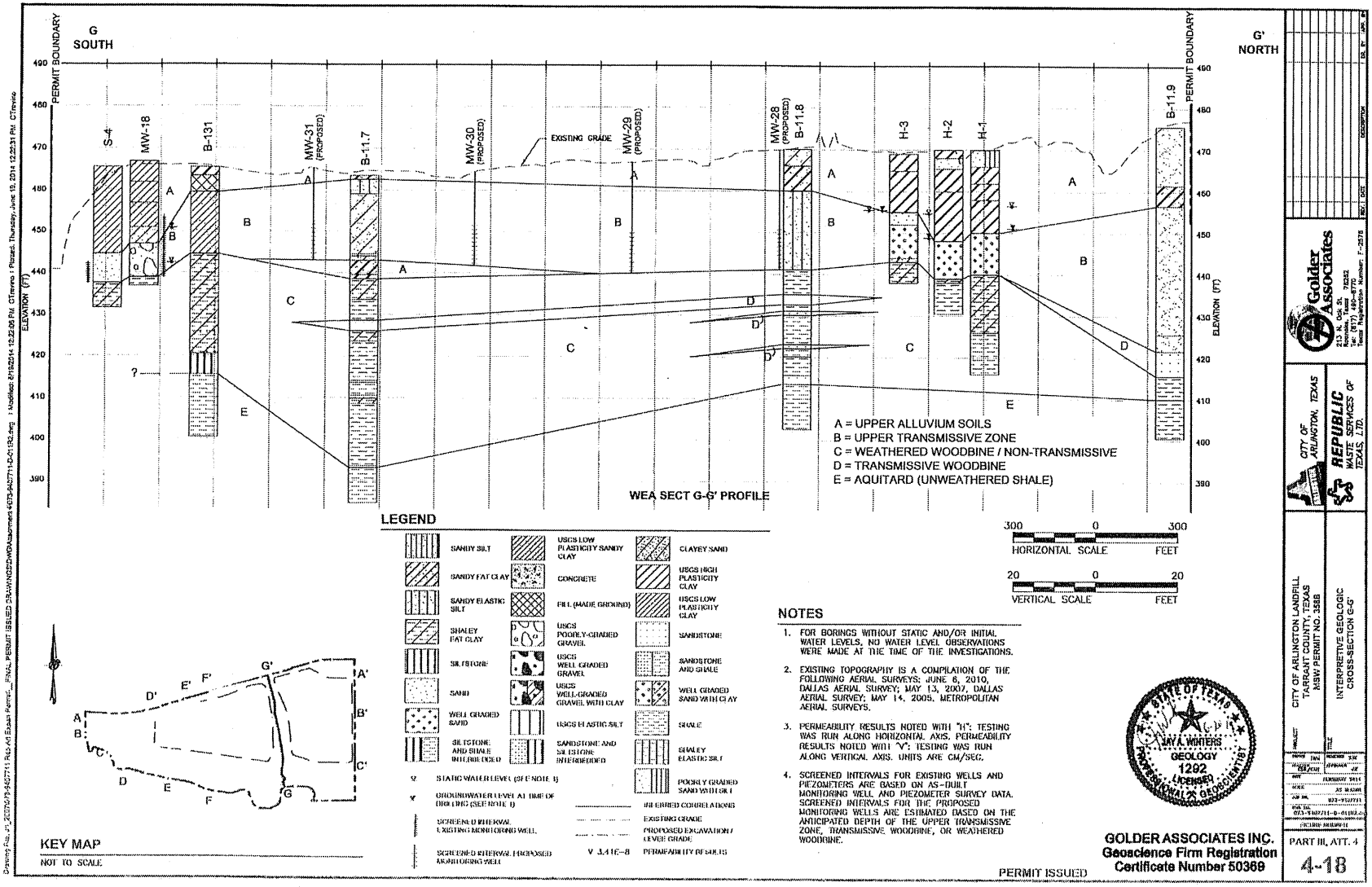
TARRANT COUNTY, TEXAS
MSW PERMIT NO. 1365
INTERPRETIVE GEOLOGIC CROSS-SECTION F-F'
PART III, ATT. 4
4-17



LEGEND

SANDY SILT; SANDY FAT CLAY; SANDY ELASTIC SILT; SHALEY FAT CLAY; SILTSTONE; SAND; WELL GRADED SAND; SILTSTONE AND SHALE INTERBEDDED; USCS LOW PLASTICITY SANDY CLAY; CONCRETE; FILL (MADE GROUND); USCS POORLY-GRADED GRAVEL; USCS WELL GRADED GRAVEL; USCS WELL-GRADED GRAVEL WITH CLAY; USCS ELASTIC SILT; SANDSTONE AND SILTSTONE INTERBEDDED; CLAYEY SAND; USCS HIGH PLASTICITY CLAY; USCS LOW PLASTICITY CLAY; SANDSTONE; SANDSTONE AND SHALE; WELL GRADED SAND WITH CLAY; SHALE; SHALEY ELASTIC SILT; POORLY GRADED SAND WITH GRAVEL

STATIC WATER LEVEL (SEE NOTE 1)

GROUNDWATER LEVEL AT TIME OF DRILLING (SEE NOTE 1)

SCREENED INTERVAL EXISTING MONITORING WELL

SCREENED INTERVAL PROPOSED MONITORING WELL

INFERRED CORRELATIONS

EXISTING GRADE

PROPOSED EXCAVATION / LEVEE GRADE

K 3.41E-8 PERMEABILITY RESULTS

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GOLDER ASSOCIATES INC.
Geoscience Firm Registration
Certificate Number 50369

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Golder Associates
Richardson, Texas 75082
Tel: (972) 490-9770
Texas Registration Number: F-2578

CITY OF ARLINGTON, TEXAS
REPUBLIC WASTE SERVICES OF TEXAS, LTD.

CITY OF ARLINGTON LANDFILL
TARRANT COUNTY, TEXAS
MSW PERMIT NO. 358B

INTERPRETIVE GEOLOGIC CROSS-SECTION G-G'

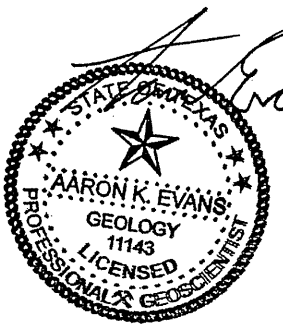
PART III, ATT. 4
4-18

B-13

IIIG-E-35

APPENDIX C

EXISTING SITE EXPLORATION DATA



04-08-22

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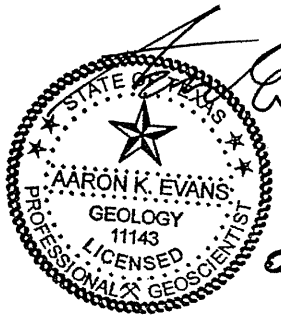

04-08-22

TABLE C-1

Summary of Existing Borehole Depths and Elevations

Borehole	Northing	Easting	Ground Elevation (ft-msl)	Borehole Total Depth (ft-bgs)	Borehole Bottom Elevation (ft-msl)	Feet Above or Below (XX.X) EDE (ft)	Tally of Borings Advanced at Least 5.0 Feet Below EDE	Tally of Borings Advanced at Least 30.0 Feet Below EDE
1984-1995 Borings by EMCON Baker-Shiflett								
G-1	6978365	2397380	456.5	29.0	427.5	3.0		
G-2	6977342	2397402	452.8	27.5	425.3	0.8		
G-3	6975871	2397872	475.9	64.0	411.9	(12.6)	1	
G-4	6979049	2396813	471.1	34.5	436.6	12.1		
G-5	6978323	2396968	456.4	26.5	429.9	5.4		
G-6	6977324	2396958	451.9	17.0	434.9	10.4		
G-7	6976102	2396966	462.2	31.0	431.2	6.7		
G-8	6978253	2396550	458.3	32.0	426.3	1.8		
EB-3	6978532	2394874	488.8	50.0	438.8	14.3		
EB-6	6979313	2396612	484.9	20.0	464.9	40.4		
EB-6D	6979329	2396658	484.9	54.0	430.9	6.4		
EB-6M	6979340	2396730	485.0	41.0	444.0	19.5		
EB-7	6978015	2396773	467.0	70.0	397.0	(27.5)	2	
EB-8	6977130	2397039	461.4	80.0	381.4	(43.1)	3	1
EB-8M	6977169	2396972	461.5	70.0	391.5	(33.0)	4	2
EB-8MA	6977159	2396912	461.5	70.0	391.5	(33.0)	5	3
EB-9	6976460	2396943	460.7	20.0	440.7	16.2		
EB-9D	6976445	2397077	461.1	50.0	411.1	(13.4)	6	
EB-9I	6976617	2397010	460.3	19.5	440.8	16.3		
EB-10	6976977	2396245	463.7	35.0	428.7	4.2		
EB-10I	6977030	2396310	461.9	34.5	427.4	2.9		
EB-11	6977117	2397690	461.3	26.0	435.3	10.8		
EB-11I	6977134	2397603	460.2	23.5	436.7	12.2		
MW-1	6978346	2393414	479.3	38.0	441.3	16.8		
MW-2	6978991	2395691	476.7	55.0	421.7	(2.8)		
MW-3	6977967	2398625	470.2	64.5	405.7	(18.8)	7	
MW-4	6976915	2398637	469.8	61.5	408.3	(16.2)	8	
MW-5	6975883	2398617	471.1	74.0	397.1	(27.4)	9	
MW-6	6974549	2397351	469.1	58.5	410.6	(13.9)	10	
MW-7	6975084	2396616	469.1	37.5	431.6	7.1		
MW-8	6974911	2395745	468.5	31.0	437.5	13.0		
MW-9	6975053	2394747	468.1	25.5	442.6	18.1		
MW-10	6975149	2393750	467.1	51.5	415.6	(8.9)	11	
PMW-11	6976916	2398196	474.6	29.5	445.1	20.6		
MW-12	6975948	2398553	472.1	60.0	412.1	(12.4)	12	
MW-13	6975912	2397737	475.4	54.5	420.9	(3.6)		
MW-14	6975952	2397136	474.4	39.5	434.9	10.4		
MW-15	6976088	2396709	473.5	37.0	436.5	12.0		

TABLE C-1

Summary of Existing Borehole Depths and Elevations (Continued)

Borehole	Northing	Easting	Ground Elevation (ft-msl)	Borehole Total Depth (ft-bgs)	Borehole Bottom Elevation (ft-msl)	Feet Above or Below (XX.X) EDE (ft)	Tally of Borings Advanced at Least 5.0 Feet Below EDE	Tally of Borings Advanced at Least 30.0 Feet Below EDE
1984-1995 Borings by EMCON Baker-Shiflett (Continued)								
S-1	6975152	2396579	469.3	36.5	432.8	8.3		
S-2	6974583	2397339	468.4	63.0	405.4	(19.1)	13	
S-3	6974546	2398667	464.1	60.0	404.1	(20.4)	14	
S-4	6975205	2396073	465.5	34.0	431.5	7.0		
S-5	6975127	2394806	467.3	41.0	426.3	1.8		
S-6	6975254	2393450	467.2	54.5	412.7	(11.8)	15	
S-7	6977487	2393275	473.4	38.5	434.9	10.4		
S-10	6975903	2397053	467.0	30.0	437.0	12.5		
S-11	6975817	2398653	470.6	75.0	395.6	(28.9)	16	
S-12	6977118	2398702	469.1	43.5	425.6	1.1		
S-13	6977524	2396201	474.3	43.5	430.8	6.3		
S-14	6978385	2393308	478.8	45.0	433.8	9.3		
S-15	6978588	2394815	488.9	50.0	438.9	14.4		
S-16	6978873	2395391	484.4	37.0	447.4	22.9		
S-17	6979242	2396769	483.2	38.0	445.2	20.7		
S-18	6979631	2398345	475.8	37.0	438.8	14.3		
S-19	6979442	2398712	468.7	79.0	389.7	(34.8)	17	4
WP-2	6977097	2396723	462.2	58.5	403.7	(20.8)	18	
1	6978416	2397837	463.8	30.0	433.8	9.3		
2	6977944	2397845	464.1	27.0	437.1	12.6		
3	6977587	2397840	465.5	39.0	426.5	2.0		
4	6977208	2397694	455.8	37.0	418.8	(5.7)	19	
5	6976790	2397670	460.3	40.0	420.3	(4.2)		
6	6976552	2397453	460.1	25.8	434.3	9.8		
7	6976534	2396968	461.1	25.0	436.1	11.6		
8	6976531	2396498	459.2	23.0	436.2	11.7		
9	6976910	2396353	462.4	30.0	432.4	7.9		
10	6977380	2396310	464.3	55.0	409.3	(15.2)	20	
11	6977749	2396205	468.6	53.0	415.6	(8.9)	21	
12	6978174	2396045	470.7	61.0	409.7	(14.8)	22	
13	6978578	2395873	474.6	66.0	408.6	(15.9)	23	
14	6978967	2395741	476.5	64.0	412.5	(12.0)	24	
15	6979128	2396240	484.4	17.0	467.4	42.9		
16	6979267	2396674	487.7	14.0	473.7	49.2		
17	6979375	2397054	483.4	35.5	447.9	23.4		
18	6979204	2397448	467.0	35.0	432.0	7.5		
19	6978907	2397826	463.6	77.3	386.3	(38.2)	25	5

TABLE C-1

Summary of Existing Borehole Depths and Elevations (Continued)

Borehole	Northing	Easting	Ground Elevation (ft-msl)	Borehole Total Depth (ft-bgs)	Borehole Bottom Elevation (ft-msl)	Feet Above or Below (XX.X) EDE (ft)	Tally of Borings Advanced at Least 5.0 Feet Below EDE	Tally of Borings Advanced at Least 30.0 Feet Below EDE
2008/2009 Borings by Golder Associates								
EXP-1	6977351	2390533	481.5	90.0	391.5	(33.0)	26	6
EXP-2	6976555	2390418	467.5	65.0	402.5	(22.0)	27	
EXP-3	6976563	2392080	458.6	90.0	368.6	(55.9)	28	7
EXP-4	6977417	2391628	477.0	85.0	392.0	(32.5)	29	8
EXP-5	6977893	2392497	468.3	98.0	370.3	(54.2)	30	9
EXP-6	6976839	2393331	459.2	60.0	399.2	(25.3)	31	
EXP-7	6975961	2392257	466.8	45.0	421.8	(2.7)		
2010 Borings by Golder Associates								
B-101	6977413	2389488	496.0	110.0	386.0	(38.5)	32	10
B-102	6976827	2389537	472.9	64.0	408.9	(15.6)	33	
B-103	6977102	2390224	485.7	102.0	383.7	(40.8)	34	11
B-104	6976080	2390374	466.5	81.0	385.5	(39.0)	35	12
B-105	6977406	2390956	479.9	94.0	385.9	(38.6)	36	13
B-106	6977075	2390898	467.7	57.0	410.7	(13.8)	37	
B-107	6977261	2391447	473.0	86.0	387.0	(37.5)	38	14
B-108	6976511	2393802	466.1	81.0	385.1	(39.4)	39	15
B-109	6975761	2391370	464.3	80.0	384.3	(40.2)	40	16
B-110	6977524	2391558	483.0	97.0	386.0	(38.5)	41	17
B-111	6977079	2391798	464.5	79.0	385.5	(39.0)	42	18
B-112R	6976119	2392250	460.0	75.0	385.0	(39.5)	43	19
B-113R	6976787	2390608	459.7	47.0	412.7	(11.8)	44	
B-114	6975753	2392150	461.7	77.0	384.7	(39.8)	45	20
B-115	6977539	2392239	463.1	77.0	386.1	(38.4)	46	21
B-116	6977088	2392282	465.4	87.0	378.4	(46.1)	47	22
B-117R	6976828	2391998	459.6	72.0	387.6	(36.9)	48	23
B-118R	6975902	2393341	464.3	78.0	386.3	(38.2)	49	24
B-119R	6977761	2392690	464.9	78.0	386.9	(37.6)	50	25
B-120R	6978020	2392969	466.4	79.0	387.4	(37.1)	51	26
B-121R	6977764	2393126	464.4	77.0	387.4	(37.1)	52	27
B-122	6977880	2393323	461.9	75.0	386.9	(37.6)	53	28
B-123R	6977173	2393415	472.7	86.0	386.7	(37.8)	54	29
B-124	6976332	2393449	462.5	80.0	382.5	(42.0)	55	30
B-125	6975546	2393459	464.9	81.0	383.9	(40.6)	56	31
B-126	6976098	2393942	465.3	80.0	385.3	(39.2)	57	32
B-127	6975423	2394235	466.2	80.0	386.2	(38.3)	58	33
B-128	6975893	2394763	463.8	55.0	408.8	(15.7)	59	

TABLE C-1

Summary of Existing Borehole Depths and Elevations (Continued)

Borehole	Northing	Easting	Ground Elevation (ft-msl)	Borehole Total Depth (ft-bgs)	Borehole Bottom Elevation (ft-msl)	Feet Above or Below (XX.X) EDE (ft)	Tally of Borings Advanced at Least 5.0 Feet Below EDE	Tally of Borings Advanced at Least 30.0 Feet Below EDE
2010 Borings by Golder Associates (Continued)								
B-129	6975329	2395285	464.2	80.0	384.2	(40.3)	60	34
B-130	6975810	2395631	464.6	80.0	384.6	(39.9)	61	35
B-131	6075485	2396017	465.4	65.0	400.4	(24.1)	62	
H-1	6978229	2395709	471.1	54.0	417.1	(7.4)	63	
H-2	6978169	2395719	470.8	39.5	431.3	6.8		
H-3	6977971	2395786	467.5	31.0	436.5	12.0		
H-4	6978258	2395846	470.5	37.5	433.0	8.5		
2010 Borings by SHAW Environmental								
MW-16	6977391	2398623	464.9	58.0	406.9	(17.6)	64	
MW-17	6976242	2398643	463.6	58.0	405.6	(18.9)	65	
MW-18	6975295	2396154	466.7	30.0	436.7	12.2		
MW-19	6975133	2395242	466.8	30.0	436.8	12.3		
MW-20	6975268	2394256	468.1	30.0	438.1	13.6		
MW-21	6975355	2393378	468.4	56.5	411.9	(12.6)	66	
MW-22	6976107	2396423	463.8	30.0	433.8	9.3		
MW-23	6976818	2398627	464.2	59.0	405.2	(19.3)	67	
2011 Borings by Golder Associates								
B-11.1	6979315	2396880	483.5	60.0	423.5	(1.0)		
B-11.2	6979503	2397859	491.7	50.0	441.7	17.2		
B-11.3	6979020	2398560	473.4	95.0	378.4	(46.1)	68	36
B-11.4	6977656	2398577	472.8	95.0	377.8	(46.7)	69	37
B-11.5	6975945	2398559	473.8	100.0	373.8	(50.7)	70	38
B-11.6	6975838	2397352	463.5	80.0	383.5	(41.0)	71	39
B-11.7	6976057	2396091	463.6	79.0	384.6	(39.9)	72	40
B-11.8	6977608	2395798	470.1	67.5	402.6	(21.9)	73	
B-11.9	6978947	2395522	475.6	75.0	400.6	(23.9)	74	
B-11.10	6978727	2394691	522.2	80.0	442.2	17.7		
2014 Borings by The Carel Corporation								
MW-25	6976653.3	2396292.6	464.1	23.0	441.1	16.6		
MW-26	6977227.5	2396273.7	481.6	44.2	437.4	12.9		
MW-27	6977776.7	2396121.6	466.7	25.0	441.7	17.2		
MW-42	6975799.7	2398505	464.2	50.0	414.2	(10.3)	75	
MW-43	6975815.9	2397973.5	463.0	45.0	418.0	(6.5)	76	
MW-44	6975834.9	2397440.9	463.4	37.0	426.4	1.9		
MW-45	6975879.2	2396907.3	463.3	26.0	437.3	12.8		