CITY OF MEADOW LANDFILL TERRY COUNTY, TEXAS TCEQ PERMIT NO. MSW-2293C

MAJOR PERMIT AMENDMENT APPLICATION

VOLUME 5 OF 6

Prepared for

Meadow Landfill, LLC

August 2024



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. 0120-809-11-05

This document is intended for permitting purposes only.

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MAJOR PERMIT AMENDMENT APPLICATION VOLUME 5 OF 6

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PART III – SITE DEVELOPMENT PLAN APPENDIX IIIG GEOLOGY REPORT

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GEOLOGY REPORT CERTIFICATION

Site Information

Site:	City of Meadow Landfill
Site Location:	Terry County
MSW Permit No ·	22930
	22,50

Qualified Groundwater Scientist Statement

I, Aaron K. Evans, am a Texas-licensed professional geoscientist and a qualified groundwater scientist as defined in Title 30 TAC §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 Title 30 TAC §§330.63(e). This report has been completed specifically for the City of Meadow 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 AARON K. EVANS 11143
Signature:	08/05/2024 Aaron K. Evans, P.G., Texas License No. 11143
Date:	08/05/2024

1 INTRODUCTION

This Geology Report has been prepared for the City of Meadow Landfill facility pursuant to the lateral and vertical landfill expansion in accordance with Texas Commission on Environmental Quality (TCEQ) Municipal Solid Waste (MSW) rules in Title 30 Texas Administrative Code (TAC) §330.63(e). Regional and site-specific geologic and hydrogeologic information

This attachment addresses §330.63(e)

are discussed in Section 2 and Section 3 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).

The City of Meadow Landfill is an existing Type IAE and Type IVAE arid exemption municipal solid waste (MSW) facility (TCEQ Permit No. MSW-2293). This Major Permit Amendment application (pursuant to Permit MSW-2293C) proposes an expansion of the currently permitted waste disposal area and permit boundary areas to achieve a proposed waste disposal footprint area of approximately 210.7-acres and a proposed permit boundary area of approximately 337.9-acres with an elevation of deepest excavation (EDE) of 3,250 feet above mean sea level (ft-msl). The maximum final cover elevation will also be increased from 3,300 ft-msl to 3,425 ft-msl.

The existing Type IAE and Type IVAE facility is uncharacterized under arid exemption. This report presents a subsurface characterization for the proposed 210.7-acre waste disposal footprint and 3,250 ft-msl EDE pursuant to the Major Permit Amendment for Type I Permit MSW-2293C.

2 REGIONAL GEOLOGIC/HYDROGEOLOGIC INFORMATION

2.1 Regional Physiography and Site Topography

According to the Bureau of Economic Geology (BEG) (BEG, 1996), the City of Meadow Landfill is located in the Southern portion of the High Plains subdivision of the Great Plains regional physiographic province. The Southern High Plains lies atop the flat, expansive plateau known as the Llano Estacado, covering a roughly rectangular, north-south area of 32,000 square miles across parts of Texas and New Mexico, formed predominantly of Tertiary Ogallala Formation sediments that slope at a near uniform 10 feet per mile towards the North-Central Plains of Texas where it ends in an erosional escarpment at the eastern edge of the formation. The plateau is underlain by heavily eroded Cretaceous Edwards-Trinity sediments and large expanses of Triassic Dockum Group sediments that fill the Midland branch of the Permian Basin system.

According to USGS 7.5-minute topographic maps of the landfill area (reference Figure IIIG-A-8 in Appendix IIIG-A), the topography in the landfill vicinity generally slopes from northwest to southeast. Local topography is largely controlled by Rich Lake drainage located south of the Site, with a large channel running along the southwest permit boundary. The Site is relatively flat with an elevated ridge between the existing facility permit boundary and the proposed northern expansion area. Predevelopment, natural ground surface within the proposed permit boundary ranged from an elevation high of approximately 3,320 ft-msl at the northwestern corner of the property to an elevation low of approximately 3,260 ft-msl at the southeastern corner of the property.

2.2 Regional Geology

2.2.1 Geologic History

Geologic formations in the site vicinity are comprised of Quaternary and Tertiary age sediments, emplaced over highly eroded Cretaceous-age strata, that in turn overlay Triassic-age sediments that largely fill the greater regional Midland Basin (Deeds et al., 2015). Miocene-age geological uplift processes elevated the region and formed the eastern escarpment of the Llano Estacado (Spearing, 1991). The landfill permit boundary is underlain by the Tertiary-age Ogallala Formation, Cretaceous-age

Washita, Fredericksburg, and Trinity group, and Triassic-age Dockum Group sediments.

2.2.2 Regional Structural Geology

Figure IIIG-A-2 (Regional Structural Features Map) presents the major regional structural geologic features. The landfill is located within the Midland Basin, sitting just off the northwestern side of the Scurry Platform. The Midland Basin contains a sequence of fluvial sediments which were deposited over heavily eroded Cretaceous-age marine sediments and fluvial Triassic-age sediments. Based on published information, dominant regional structures were all in place before deposition of the above strata. There have been no major geological events to deform landfill area sediments. In the landfill area, surficial eolian Quaternary-age sediments have been deposited as shown on the regional geologic map presented in Figure IIIG-A-1.

2.2.3 Regional Stratigraphy

Regional stratigraphy consists of Tertiary-age Ogallala Formation, Cretaceous-age Washita, Fredericksburg, and Trinity group, and Triassic-age Dockum Group sediments which overlie deeper Permian strata. Stratigraphic positions, general lithologic characteristics, and approximate depths and thicknesses for these formations are presented in Table 2-1 (modified from Deeds et al., 2015, and Fallin, J. A. Tony, 1989).

According to the Bureau if Economic Geology (BEG) Regional Geologic Map, Geologic Atlas of Texas, Brownfield Sheet (BEG, 1974) the Site is located upon Quaternary-age dune sands and Tertiary-age Ogallala Formation sediments as shown on Figure IIIG-A-1 (Regional Geologic Map) and Figure IIIG-A-3 (Regional Geologic Cross Sections) in Appendix IIIG-A. The uppermost Quaternary-age sediments are present due to the regional weathering of the Blackwater Draw Formation which is composed predominately of fine to very fine-grained sandstone (Muhs and Holliday, 2001).

The Ogallala Formation trends in a west-northwest to east-southeast direction from the Mescalero Escarpment at the edge of the Pecos River valley in the west to the Caprock Escarpment in the east where it meets the Central Plains of Texas. According to the Texas Water Development Board (TWDB), the Ogallala was deposited under a combination of eolian and fluvial depositional environments. Subsequent soil leaching has resulted in the buildup of the relatively ubiquitous caliche caprock comprises uppermost Ogallala Formation sediments. Water-bearing sandy sediments of the lower Ogallala Formation host the regional Ogallala Aquifer.

Beneath the Ogallala, the underlying Edwards-Trinity sediments are the heavily eroded remnants of Cretaceous-age lacustrine and marine sedimentation. The Edwards-Trinity consists predominantly of limestone, clays, shales, and sandstones that are typically broken down into six discontinuous units that results in varied facies with contrasting aquifer and aquiclude characteristics within the Formation. The Edwards-Trinity High Plains is an erosionally discontinuous portion of the larger Edwards-Trinity Plateau that is observed in the formation's southernmost expression. The eroded nature of this formation leads to a wide range of thicknesses across the region with a generally consistent dip trend toward the east-southeast.

Outcrop of Tertiary Ogallala Formation sediments generally strike northnortheastward with the regional dip to the east-southeast at roughly 10 feet per mile. The Dockum Group was deposited predominantly by fluvial action off the San Juan Mountains with large scale deltaic patterns being seen in formation maps.

Geologic formations in the Site vicinity are predominately Quaternary sediments which overlay eroded Tertiary and Cretaceous strata. Quaternary windblown sand and playa deposit sediments are present across the majority of the facility area with Tertiary Ogallala Formation sediments outcropping within the southernmost extents of the Site. The Site is situated near the northern margin of a localized outcrop of eroded Cretaceous-age Edwards-Trinity sediments which occurs approximately ³/₄miles south of the Site at closest extent near the northern margin of Rich Lake. Stratigraphic positions, general lithologic characteristics, and approximate depths and thicknesses for these groups are summarized in Table 2-1 (modified from Deeds et al., 2015, and Fallin, J. A. Tony, 1989).

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

System	Group Formation / Unit Lithologic Chara		Lithologic Characteristics	Aquifer	Approximate Formation Depth and Thickness (in Feet)
Quaternary		Windblown Sand & Playa	Sand, silt, clay, and caliche.		Depth: Outcrops regionally
		Deposits			Thickness: 10' in Site Area
Tertiary		Ogallala	Sand, silt, clay, gravel, and	Ogallala	Depth: Outcrops in Site area
rendary		opanaia	sandstone.	OBunun	Thickness: ~130' in Site area
	Washita	Duck Creek	Shale, limestone, clay, and sand.		
	Fredericksburg	Kiamichi	Shale with limestone and sandstone.		Depth: ~130' in Site area
	Trinity	Edwards	Shale, clay, and limestone.	Edwards-	
Cretaceous		Comanche Peak	Limestone and shale.	Trinity High	
		Walnut	Sandstone, shale, and limestone.	Plains	Thickness: ~190' in Site area
		Antlers	Sandstone, sandy, conglomerate, siltstone, and clay.		
		Cooper Canyon	Siltstone and mudstone with sandstone and conglomerate.		Dopth: ~220' in Site area
Triassic	Dockum	Trujillo	Sandstone and conglomerate with shale.	Dockum	Depth: 320 in site area
		Tecovas	Mudstone and Sandstone.		
		Santa Rosa	Sandstone and conglomerate.		INICKNESS: 1,500 Regionally

Notes: Modified from Deeds et al. (TWDB, 2015), and Fallin, J. A. Tony (TWDB, 1989).

Lithologic characteristics from Deeds et al. (TWDB, 2015), and Fallin, J. A. Tony (TWDB, 1989).

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 site.

2.3.2 Erosional Processes

Erosional processes in the landfill area are limited to those produced by the Meadow Landfill drainage system which include rill and channel erosion and sheet flow. Erosion from natural drainage processes is minimal in the vicinity of the site. No adverse effects from natural erosional processes 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 Aquifers

According to the Texas Water Development Board (TWDB), regional aquifers in the facility area consist of the Tertiary-age Ogallala Aquifer and the underlying Cretaceous-age Edwards-Trinity High Plains Aquifer which are components of the greater High Plains Aquifer System that extends across the majority of west Texas and into eastern New Mexico (TWDB, 2015).

The Ogallala and Edwards-Trinity aquifers are hydraulically connected in limited areas regionally where Edwards-Trinity sediments exhibit higher permeability at contact with the overlying Ogallala sediments (TWDB, 2015). The Edwards-Trinity acts as an aquitard to the overlying saturated Ogallala Aquifer in areas where Edwards-Trinity sediments are fine-grained and exhibit low permeability. According to the TWDB and area water well logs, the Edwards-Trinity is comprised of low permeability clay and shale sediments beneath the Site. Approximately 1,500 feet of low permeability Triassic-age Dockum Group sediments underlay the Edwards-Trinity beneath the Site (TWDB, 2015). The Dockum Group is composed predominately of fine-grained siltstone and mudstone sediments that comprises an aquiclude to the overlying Ogallala and Edward-Trinity aquifers in the Site area (TWDB, 2015).

2.4.1 Ogallala Aquifer

The Ogallala Aquifer is classified by the TWDB as a major Texas aquifer (Ashworth, 1995). The Ogallala is comprised of predominately interbedded sand/sandstone

facies with caliche, silts, clays, and gravels (BEG, 1974) (Gustavson, 1996). According to the TWDB and area water well logs, the Ogallala Aquifer is observed to be about 500-feet thick regionally with an approximate thickness of 120-feet in the immediate Site area (TWDB, 2015). Ogallala groundwater is present under semi-confined watertable conditions regionally with a saturated thickness of approximately 25-feet in the Site area (Bell & Morrison, 1978). As illustrated in Figure IIIG-A-4, the regional Ogallala Aquifer groundwater flow generally follows the regional dip of the formation toward the south-southeast with a potentiometric head elevation of approximately 3,250 ft-msl locally (TWDB, 2015). The primary source of recharge to the aquifer is precipitation infiltration on outcrop and through overlying transmissive Quaternary sediments (where present).

Hydraulic properties and groundwater quality in the Ogallala Aquifer are summarized in Table 2-2. According to the TWDB, the aquifer produces substantial amounts of fresh to moderately saline water.

2.4.2 Edwards-Trinity High Plains Aquifer

TWDB classifies the Edwards-Trinity High Plains (ETHP) Aquifer as a minor Texas aquifer (Ashworth, 1995). Occurrence, sedimentary composition, and saturation of the Edwards-Trinity varies regionally. According to the TWDB, sediments of the Edwards-Trinity vary regionally (where present) and are characterized with an approximate thickness of 180-feet of low permeability clay and shale in the Site area (TWDB, 2015). Groundwater in the ETHP Aquifer is present under mostly confined conditions, being overlain nearly completely by Ogallala Formation sediments. As shown in Figure IIIG-A-5, groundwater flow is generally to the east-southeast following the dip of the host formation, with an approximate potentiometric head of 3,200 ft-msl locally (TWDB, 2015). The primary source of recharge for the ETHP is percolation from the overlying Ogallala Aquifer.

Hydraulic properties and groundwater quality in the ETHP Aquifer is summarized in Table 2-2. The ETHP Aquifer produces small to moderate amounts of generally saline water (Bruun and Jackson, 2016).

2.4.3 Dockum Aquifer

The Dockum Aquifer is classified as a minor Texas aquifer by the TWDB, comprised of sandstone, siltstone, mudstone, and shale originally deposited in fluvial and lacustrine environments (Hopkins, 1993). Dockum groundwater is present under confined conditions regionally and is commonly delineated into Upper and Lower aquifer components in geologic literature. According to the TWDB and regional well logs, the Dockum Aquifer strata is approximately 1,500 feet thick with upper contact depth of about 320 feet below ground surface (ft-bgs) in the site area (TWDB, 2015). As illustrated in Figure IIIG-A-6 and Figure IIIG-A-7, groundwater flow in both the Upper and Lower components of the Dockum Aquifer follows the regional trend of the host formation towards the south-southeast with a local potentiometric head elevation of approximately 3,180 ft-msl in the Upper Dockum Aquifer locally. The

primary source of recharge for the Dockum though surficial infiltration on outcrop which occurs predominantly on the southeastern edge of the formation (Deeds et al., 2015).

Hydraulic properties and groundwater quality in the Dockum Aquifer are summarized in Table 2-2. The water quality of the Dockum Aquifer is characterized as predominantly poor and highly saline, to the extent that some groundwater maps exclude central portions of the aquifer as they are considered unusable. The Site is located within an area that is excluded from usable Dockum Aquifer groundwater.

Table 2-2

Regional Hydraulic Properties and Water Quality Parameters in the Ogallala, Edwards-Trinity High Plains, and Dockum Aquifers¹

Hydraulic Properties	Ogallala Aquifer	Edwards-Trinity High Plains Aquifer	Dockum Aquifer
Composition	Sand/sandstone, caliche, silts, clay, & gravels.	Clay, shale, & basal sand/sandstone.	Sandstone, siltstone, mudstone, & shale.
Transmissivity	Range 315 – 200,987 gal/day/ft	Range 2,200 – 125,000 gal/day/ft	Range 360 – 37,000 gal/day/ft
Hydraulic Conductivity	25 – 300 ft/day	~11.5 – 660 ft/day	0.2 – 22 ft/day
Flow Rate	~1 ft/day	~2.5 – 142 ft/yr	<1 – 20 ft/yr
Recharge Zones	On outcrop (at Rich Lake ~0.75-miles south of site)	On outcrop & via percolation from overlying aquifers	On outcrop
Potentiometric Surface	See Figure IIIG-A-4	See Figure IIIG-A-5	See Figure IIIG-A-6 and Figure IIIG-A-7
Present Water Use	Public supply, industrial, irrigation, & domestic	Irrigation, public supply, & industrial	Irrigation, public supply, & industrial
Water Wells Within One Mile	See Figure IIIG-A-8 and Table 2-3	See Figure IIIG-A-8 and Table 2-3	No known wells
Water Quality Parameters	Ogallala Aquifer	Edwards-Trinity High Plains Aquifer	Dockum Aquifer
Total Dissolved Solids (mg/l)	319 - 10,000	~0 - 10,000	1,000-60,000
Chloride (mg/l Cl)	6 – 5,000	~300 - 800	3 - 38,022
Sodium (mg/l Na)	13 - 1,340	~500 - 800	6.1 - 19,216
Bicarbonate (mg/l HCO ₃)	173 - 1,123	~40 - 600	84 - 1,036
Sulfate (mg/l SO ₄)	19 – 2,262	~40 - 850	9 - 5,514
Fluoride (mg/l F)	0.2 - 12.1	NA	NA

¹Modified from Ashworth et al. (1991), Bradley et al. (2003) Deeds et al. (2015), Hopkins (1993), Knowles et al. (1984), and Fallin (1989).

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 performed by Environmental Risk Information Services (ERIS) in October 2023 for records and maps on file in the USGS National Water Information System (NWIS), Texas Submitted Drillers Report Database (SDRD), TCEQ database, Texas Water Development Board (TWDB) database, and state Water Utility Database (WUD) records. ERIS identified 32 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, review of facility records, and a field reconnaissance search from area roadways. A total of 67 additional water wells were identified by field reconnaissance. The ERIS water well report is provided in Appendix IIIG-A. The water well locations are shown on Figure IIIG-A-6. The information for the 32 identified registered water wells is summarized in Table 2-3.

Six water wells were identified within 200-feet of the permit boundary, and 10 water wells were identified within the permit boundary area.

It is noted that five of the 32 registered water wells identified in TCEQ records do not have associated well identification or depth related information. These five water wells appear on the ERIS map (see Appendix IIIG-A), and if possible were associated with wells and potential uses found during the visual well search. The remaining water wells were screened at depths ranging from 95 to 160 ft-bgs and appear to be screened in the Ogallala aquifer.

2.6 Site Reconnaissance

WCG completed water well reconnaissance from area roadways during multiple site visits conducted from June to September 2023. The purpose of the reconnaissance was to identify potential unregistered water wells within a one-mile radius of the landfill permit boundary. WCG also searched for the presence of springs and faults within the publicly accessible area within one mile 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, 67 potential unregistered water wells were identified within one mile of the permit boundary. No springs and no surface expressions of faulting were identified by site reconnaissance. According to Brune (2002), there are no active springs in the site vicinity.

Well Identification Number	Total Well Depth (ft)	Screened Aquifer ²	Reported Use
Unknown	Unknown	Unknown	Unknown
640567	140	Ogallala	Domestic
541799	131	Ogallala	Domestic
Unknown	Unknown	Unknown	Unknown
471114	136	Ogallala	Irrigation
640565	130	Ogallala	Domestic
Unknown	Unknown	Unknown	Unknown
369227	120	Ogallala	Irrigation
Unknown	Unknown	Unknown	Unknown
640529	121	Ogallala	Domestic
579618	125	Ogallala	Irrigation
588653	Unknown	Unknown	Irrigation
651630	116	Ogallala	Domestic
310202	128	Ogallala	Irrigation
640562	120	Ogallala	Domestic
Unknown	Unknown	Unknown	Unknown
252695	108	Ogallala	Irrigation
471992	160	Ogallala	Irrigation
267468	140	Ogallala	Irrigation
538593	127	Ogallala	Domestic
5284	150	Ogallala	Domestic
309309	125	Ogallala	Irrigation
162283	107	Ogallala	Irrigation
35865	143	Ogallala	Irrigation
275396	143	Ogallala	Domestic
359344	150	Ogallala	Irrigation
595861	145	Ogallala	Irrigation
89069	125	Ogallala	Irrigation
283191	143	Ogallala	Irrigation
517459	95	Ogallala	Domestic
247941	137	Ogallala	Irrigation
597252	130	Ogallala	Domestic
449555	149	Ogallala	Domestic
TX2447501	132	Ogallala	Irrigation
TX001-331841102103401	Unknown	Unknown	Unknown
517458	100	Ogallala	Domestic

Table 2-3Registered Water Wells Within One Mile of Meadow Landfill¹

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

3 SUBSURFACE INVESTIGATION REPORT

3.1 Site Stratigraphy

3.1.1 Borehole Data

The subsurface characterization of the site is supported by data from 30 subsurface investigation boreholes and 10 groundwater piezometers advanced by Weaver Consultants Group, LLC (WCG) in 2023. The data from these boreholes are summarized in Table 3-2 and their locations are shown on Figure IIIG-B-1 (Borehole Location Map). The individual lithologic logs are provided in Appendix IIIG-B. The boreholes were advanced during drilling events conducted in 2023 and are further discussed in Section 3.3.

To illustrate subsurface conditions, 11 geologic cross sections were constructed from the available lithologic and hydrogeologic data obtained from the site-specific lithologic logs (provided in Appendix IIIG-B). These cross sections are presented in Appendix IIIG-C as Figures IIIG-C-2 through IIIG-C-12. A geologic cross section location map is included as Figure IIIG-C-1.

The groundwater elevation data presented on the cross-section drawings was obtained from gauging conducted by WCG in September 2023. The subsurface investigation data and geologic cross sections indicate that the facility's geology can be divided into four site-specific stratigraphic units (Surficial Sediments, Caprock, Lower Sand, Basal Clay). Each site-specific subsurface stratigraphic unit is further discussed in the subsequent sections.

3.1.2 Surficial Sediments

At ground surface lies the Surficial Sediments site-specific stratum which is comprised predominantly loose windblown sand and silt sediments. The Surficial Sediments have been largely removed from within the sites constructed waste disposal footprint. These uppermost sediments are present across the proposed expansion area, and within existing landfill permit boundary area outside of the developed waste disposal footprint. According to the site exploration data, these sediments exhibit a high degree of compositional homogeneity with little to no change in material composition, and a predevelopment average thickness of about six feet across the site.

3.1.3 Caprock

Beneath the Surficial Sediments lies the Caprock stratum. The Caprock is comprised of upper Ogallala Formation sediments that are continuous across the permit boundary. The Caprock is comprised predominately of dry to moist, loose to very dense, caliche with lesser sands, silts, and clays, and occasional clay lenses, chert gravel, and calcite. The Caprock exhibits an average thickness of approximately 50 feet across the site. Laboratory soil testing indicate a Caprock stratum vertical permeability of 2.3x10⁻⁷ cm/sec for an in-situ clay sample collected from boring PWCG-5A.

3.1.4 Lower Sand

Beneath the Caprock lies the Lower Sand stratum. The Lower Sand is comprised of Ogallala Formation sediments that are continuous beneath the permit boundary. The Lower Sand contains the facility's uppermost monitorable groundwater zone which is hydraulically separated from any potential underlying groundwater zones by the Basal Clay stratum. A total of 12 expansion boreholes (PWCG-3, PWCG-5A, PWCG-6, PWCG-7A, WCG-9, WCG-11, WCG-19, WCG-20, WCG-22, WCG-25, WCG-26, and WCG-27) were advanced to significant depth to penetrate through the Lower Sand and into the underlying Basal Clay aquiclude. The observations and data from these 12 deep boreholes were used to determine the total thickness of the Lower Sand stratum and delineate the underlying Basal Clay stratum which comprises the Lower Confining Unit beneath the Site.

The Lower Sand stratum comprises the Uppermost Aquifer beneath the proposed expansion area and is comprised predominately of dry to wet, dense to very dense, silt sand and sandy silt, with lesser occurrences of caliche, chert gravel, and clay.

Lower Sand sediments exhibit thicknesses ranging from 7.5 to 54 feet with an average thickness of approximately 25 feet across the site. Laboratory soil testing indicates a vertical permeability of 2.8x10⁻³ cm/sec for an in-situ Lower Sand stratum Uppermost Aquifer sample collected from boring PWC-1A. Field slug test data from piezometers screened within the Lower Sand indicate an Uppermost Aquifer horizontal permeability ranging from 1.37x10⁻⁴ to 2.96x10⁻³ cm/sec with an arithmetic mean horizontal permeability of 1.08x10⁻³ cm/sec.

3.1.5 Basal Clay

Lower Sand sediments are underlain by low permeability fine-grained, dry to moist, clayey sediments of the Basal Clay stratum that function as the Lower Confining Unit to groundwater within the overlying Lower Sand stratum.

Twelve deep borings were advanced to depths ranging from 2 to 20 feet into the Basal Clay stratum (PWCG-3, PWCG-5A, PWCG-6, PWCG-7A, WCG-9, WCG-11, WCG-19,

WCG-20, WCG-22, WCG-25, WCG-26, and WCG-27). The Basal Clay is comprised predominately of hard interbedded clay, silty clay, shaley clay, and sandy clay. Laboratory soil testing indicates a vertical permeability range of 4.0x10⁻¹⁰ to 3.3x10⁻⁸ cm/sec with an arithmetic mean vertical permeability of 8.2x10⁻⁹ cm/sec for the insitu Basal Clay aquiclude samples. The deepest expansion borehole (WCG-22) was advanced to a bottom elevation of about 3194 ft-msl where it was terminated in hard, dry, shaley clay sediments of the Basal Clay Lower Confining Unit.

3.2 Soil Boring Plan

Because the existing facility permit is arid exempt, no site-specific Geology Report or permitted site-specific subsurface lithologic or hydrogeologic subsurface characterization has been established previously.

Title 30 TAC §330.63(e)(4)(B) requires that 27 boreholes be advanced to a minimum of five feet below the EDE, of which 15 are required to be advanced to a minimum of 30 feet below the EDE pursuant to characterizing the approximately 210.7-acre proposed cumulative waste disposal area. The 2023 Soil Boring Plan proposed the advancement of 27 new geotechnical borings with seven piezometer installations based on an EDE of 3,250 ft-msl. Three additional boreholes with piezometer installations were added to characterize a potential perched uppermost aquifer groundwater zone identified within the Lower Sand stratum. The geologic and hydrogeological data and information from the 30 borings and 10 piezometers installed in 2023 were utilized to assess subsurface conditions within the proposed lateral expansion areas and beneath the facility as a whole pursuant to the development of this Major Permit Amendment.

On July 14, 2023, the facility submitted a Soil Boring Plan to TCEQ pursuant to the proposed TCEQ Permit No. MSW-2293C landfill expansion. Soil Boring Plan approval was issued by TCEQ on July 28, 2023. Excerpts from the 2023 Soil Boring Plan are presented in Appendix IIIG-E. The TCEQ Soil Boring Plan approval letter is also presented in Appendix IIIG-E.

3.3 Previous Site Exploration Summary

A summary of site explorations is provided in this section. Information regarding the borings completed at the site are summarized in Table 3-1 and Table 3-2. The boring logs are presented in Appendix IIIG-B. The borehole locations and ground surface elevations are shown on Figure IIIG-B-1. The available information from past drilling and installation events are provided in Appendix IIIG-B, but the data were not considered in determining the number and depths of boreholes and piezometers required for characterization in accordance with Title 30 TAC§330.63(e)(4).

• A limited subsurface investigation was conducted by Terra Engineers, Inc. (Terra) in 2000 and included five shallow test holes advanced to depths from 30 to 47 feet below ground surface (ft-bgs) to assess surficial stratigraphy within the permitted 80-acre facility permit boundary. The results of the investigation were documented in a Soil Investigation report in Attachment 4 of the facility's existing Site Development Plan (SDP) (Permit No. MSW 2293), a copy of which is provided in Appendix IIIG-B of this application. The report includes lithologic logs for each of the five test holes, but the locations and

surface elevations of each test hole are unknown. The Soil Investigation report narrative states the test hole locations are shown on the report Borehole Location Plan map included therein. However, the map was scanned foldedover in both TCEQ, and the facility's digital record scans and a hardcopy could not be located.

• A search of available records on file with the Texas Water Development Board (TWDB) was conducted in February 2023 to identify any borehole, piezometer, or monitor well information for the facility from submitted Driller's Reports. The search identified nine records associated with relict facility groundwater piezometer installations which include two 2007 installations and seven 2008 installations. The Driller's State of Texas Well Reports (STWRs) for these relict piezometers are provided in Appendix IIIG-B.

It is noted that the STWRs are submitted by the individual Driller based on their records and the data are often generalized and approximated. No corresponding lithologic logs, Monitor Well Data Sheets, or similar professionally certified information were identified in TCEQ and facility records. The STWR coordinates indicate three of the piezometers were installed within the facility's existing permit boundary area, with the remaining six piezometers installed to the west and north. Site reconnaissance conducted by WCG in March 2023 verified these installations in the field which appear to correspond to the STWR listed coordinates. These existing locations are shown on Figure IIIG-B-1 (Borehole Location Map) in Appendix IIIG-B.

Two of the onsite relict installations (NW Corner #1 and SW Corner #2) were completed in 2007 and were identified in site records existing gas monitoring probes GMP-1 and GMP-2. One onsite piezometer (PB-128) and the six offsite piezometers (PB-103, PB-107, PB-116, PB-128, PB-130, and PB-134) were completed in 2008 and are screened at depths ranging from about 70 to 120 ft-bgs (according to the Driller's STWRs). It is likely that these piezometers were installed pursuant to a former potential landfill expansion by the City of Meadow. TCEQ records indicate the facility stated intent to pursue a landfill expansion in 2007/2008 that was subsequently retracted. However, no additional information was located in TCEQ and facility records. The current asbuilt conditions of these relict piezometers were surveyed by WCG in August 2023 and WCG began gauging water levels in the relict piezometers, in conjunction with the facility's 2023 newly-installed expansion piezometers, starting in August 2023. The locations and data from these relict piezometers are provided for informational purposes but have not been formally incorporated into the 2023 subsurface characterization for the facility due to the lack of certified subsurface lithologic and construction information. However, it is noted that the groundwater elevation data from these relict piezometers appear to correlate generally those of nearby 2023 expansion piezometers.

A 2023 subsurface investigation by Weaver Consultants Group included the advancement of 30 boreholes (PWCG-1, PWCG-2, PWCG-3, PWCG-4A, PWCG-4B, PWCG-5A, PWCG-5B, PWCG-6, PWCG-7A, PWCG-7B, WCG-8, WCG-9, WCG-10, WCG-11, WCG-12, WCG-13, WCG-14, WCG-15, WCG-16, WCG-17, WCG-18, WCG-19, WCG-20, WCG-21, WCG-22, WCG-23, WCG-24, WCG-25, WCG-26 and WCG-27) and installation of 10 groundwater piezometers (PWCG-1, PWCG-2, PWCG-3, PWCG-4A, PWCG-5B, PWCG-5A, PWCG-5B, PWCG-6, PWCG-7A, and PWCG-7B). These boreholes and piezometers were drilled and installed to characterize subsurface conditions across the proposed facility area pursuant to this Major Permit Amendment.

Table 3-1	
Summary of Former Borehole Depths and Elevations	

Borehole	Northing	Easting	Surface Elevation	Total Depth	Bottom Elevation	Bottom Depth Above (+) or Below (-) EDE ¹	Tally of Borings 5 Feet or Greater Below FDF	Tally of Borings 30 Feet or Greater Below EDE
	NAD05	200	0 Boreholes	by Terra I	Engineers	(10)		
TH-1	NA	NA	NA	30.0	NA	NA	NA	NA
TH-2	NA	NA	NA	30.0	NA	NA	NA	NA
TH-3	NA	NA	NA	47.0	NA	NA	NA	NA
TH-4	NA	NA	NA	30.0	NA	NA	NA	NA
TH-5	NA	NA	NA	30.0	NA	NA	NA	NA
		2007 - 200	8 Piezometei	rs and Pro	bes by Unkn	own		
GMP-1	7179141.67	841959.66	3297.8	35.0	3262.8	12.8		
GMP-2	7177582.08	840023.06	3288.3	35.3	3253.0	3.0		
PB-103	7181874.55	840568.31	3306.1	85.0	3221.1	-28.9	1	
PB-107	7181972.07	837665.51	3319.5	120.0	3199.5	-50.5	2	1
PB-116	7180941.57	840644.67	3308.5	110.0	3198.5	-51.5	3	2
PB-117	7180999.58	842059.43	3309.5	77.1	3232.4	-17.6	4	
PB-128	7179228.31	841440.96	3298.6	75.0	3223.6	-26.4	5	
PB-130	7179240.14	839798.69	3309.3	71.5	3237.8	-12.2	6	
PB-134	7180906.72	839264.26	3314.3	110.0	3204.3	-45.7	7	3

<u>NOTES:</u> No location or elevation information available for 2000 boreholes by Terra Engineers. Coordinates and surface elevations for 2007-2008 Piezometers obtained from 2023 survey by WCG. The proposed EDE is 3,250 ft-msl. NA = Not Available

Table 3-2Summary of 2023 Expansion Borehole Depths and Elevations

Borehole	Northing	Easting	Surface Elevation	Total Depth	Bottom Elevation	Bottom Depth Above (+) or Below (-) EDE ¹	Tally of Borings 5 Feet or Greater Below EDE	Tally of Borings 30 Feet or Greater Below EDE
	NAD83	2022 David	(IT-MSI)	(IT-Dgs)	(ft-msi)	(π)		
	7192024 70	2023 BOR	2216.2) /27	1	1
PWCG-2	718182944	842081.66	3314.8	90.0	3200.3	-43.7	2	1
PWCG-3	7179290.62	841999.62	3295.9	92.0	3203.9	-46.1	3	2
PWCG-4A	7177577.27	841014.12	3267.1	55.0	3212.1	-37.9	4	3
PWCG-4B	7177579.69	840996.83	3267.1	32.0	3235.1	-14.9	5	
PWCG-5A	7179381.82	839309.31	3309.1	110.0	3199.1	-50.9	6	4
PWCG-5B	7179389.37	839298.83	3309.0	80.0	3229.0	-21.0	7	
PWCG-6	7180756.96	838049.09	3311.7	101.5	3210.2	-39.8	8	5
PWCG-7A	7181315.52	840014.52	3311.7	100.0	3211.7	-38.3	9	6
PWCG-7B	7181315.96	840001.46	3311.9	60.0	3251.9	1.9		
WCG-8	7181988.89	837939.73	3318.6	75.0	3243.6	-6.4	10	
WCG-9	7181965.13	838968.07	3316.8	110.0	3206.8	-43.2	11	7
WCG-10	7181925.41	839995.75	3308.2	65.5	3242.7	-7.3	12	
WCG-11	7181889.76	841024.05	3310.0	103.0	3207.0	-43.0	13	8
WCG-12	7181384.74	837940.66	3316.5	75.0	3241.5	-8.5	14	
WCG-13	7181348.32	838968.07	3314.2	75.0	3239.2	-10.8	15	
WCG-14	7181272.86	841023.95	3308.2	65.0	3243.2	-6.8	16	
WCG-15	7181239.21	842039.92	3310.4	70.0	3240.4	-9.6	17	
WCG-16	7180796.59	836895.87	3318.3	75.0	3243.3	-6.7	18	
WCG-17	7180731.85	838972.24	3313.4	70.0	3243.4	-6.6	19	
WCG-18	7180693.17	839976.36	3311.8	70.0	3241.8	-8.2	20	
WCG-19	7180657.57	841004.45	3305.0	105.0	3200.0	-50.0	21	9
WCG-20	7180636.28	842036.62	3305.4	102.0	3203.4	-46.6	22	10
WCG-21	7180040.83	838966.21	3311.7	70.0	3241.7	-8.3	23	
WCG-22	7180017.37	839980.11	3309.4	115.0	3194.4	-55.6	24	11
WCG-23	7179995.47	841012.85	3297.3	57.0	3240.3	-9.7	25	
WCG-24	7179987.21	842002.01	3302.2	61.0	3241.2	-8.8	26	
WCG-25	7179354.45	841012.89	3293.3	90.0	3203.3	-46.7	27	12
WCG-26	7177609.79	840044.40	3288.3	85.0	3203.3	-35.5	28	13
WCG-27	7177537.70	841930.42	3264.5	50.0	3214.5	-35.5	29	14

NOTES: Coordinates and surface elevations obtained from 2023 survey by WCG.

The proposed EDE is 3,250 ft-msl.

4 GROUNDWATER INVESTIGATION REPORT

4.1 Water Level Measurements

Groundwater is present within saturated Lower Sand stratum sediments which are commensurate with the regional Ogalla Aquifer. Groundwater at the facility has been evaluated utilizing 10 newly installed piezometers which are screened within the Uppermost Aquifer. The site has no historical groundwater data to refer to due to its currently permitted status as an arid exempt landfill.

Weaver Consultants Group began manually gauging static groundwater potentiometric head elevations in the facility's 10 newly installed groundwater piezometers, and the facility seven relict piezometers, starting in August 2023. These manually gauged groundwater potentiometric head elevation data are summarized in Table 4-1.

In addition to manual gauging, WCG installed dedicated transducer dataloggers in each of the 10 newly installed groundwater piezometers in October 2023. The dataloggers were programmed to collect groundwater potentiometric head elevation measurements on a daily basis. Data from the loggers was retrieved by WCG intermittently during manual groundwater gauging site visits. The daily datalogger groundwater potentiometric head readings are provided in table format in Appendix IIIG-D. Groundwater potentiometric head elevation data from the manual and datalogger readings were used to determine the highest measured potentiometric head elevation in each expansion piezometer. These data are provided on Figure IIIG-D-1B (Highest Measured Groundwater Potentiometric Surface Contour Map) in Appendix IIIG-D.

Groundwater potentiometric surface contour maps prepared from the 2023/2024 manually gauged static groundwater potentiometric head data are presented on Figures IIIG-D-2A through IIIG-D-2H in Appendix IIIG-D. The groundwater contour maps indicate a groundwater flow regime from a groundwater high observed at PWCG-5A/PWCG-5B outwards and toward the northwest, north, northeast, east, southeast, and south. Site-specific aquifers, groundwater flow regimes, and proposed groundwater monitoring system design, are further discussed in Appendix IIIH of the SDP.

Discometer	Manually Gauged Static Groundwater Potentiometric Head Elevation Data									
Flezoffleter	August 2023	September 2023	October 2023	November 2023	January 2024	April 2024	June 2024	July 2024		
PWCG-1	3252.78	3253.26	3253.62	3254.40	3254.65	3255.10	3254.78	3254.51		
PWCG-2	3248.43	3249.28	3249.57	3250.05	3250.63	3251.04	3250.98	3250.96		
PWCG-3	3257.56	3257.66	3259.24	3260.03	3277.06	3258.23	3257.70	3257.52		
PWCG-4A	3247.79	3248.75	3249.49	3249.35	3248.19	3247.79	3247.59	3247.78		
PWCG-4B	3247.96	3248.83	3249.52	3249.47	3248.33	3247.95	3247.74	3247.90		
PWCG-5A	3262.79	3262.55	3262.78	3263.30	3263.29	3262.98	3262.35	3262.08		
PWCG-5B	3263.59	3263.43	3263.61	3264.09	3264.22	3263.70	3263.23	3263.00		
PWCG-6	3261.71	3261.66	3261.75	3261.77	3261.75	3261.58	3261.35	3261.15		
PWCG-7A	3259.64	3259.52	3261.04	3261.66	3261.42	3260.51	3259.79	3258.60		
PWCG-7B	3260.29	3259.18	3260.20	3260.82	3261.26	3260.79	3260.20	3260.09		
PB-103	3255.71	3255.62	3259.76	3261.64	3259.58	3257.77	3256.39	3255.94		
PB-107	3252.47	3252.95	3253.19	3253.65	3254.09	3254.34	3254.20	3253.93		
PB-116	3256.74	3256.63	3257.13	3258.46	3258.21	3257.60	3257.07	3256.82		
PB-117	3253.58	3253.32	3253.42	3253.93	3254.50	3254.47	3254.19	3254.02		
PB-128	3259.33	3260.86	3264.34	3265.57	3261.92	3260.51	3259.70	3259.62		
PB-130	3262.69	3262.56	3262.73	3263.21	3263.43	3262.88	3262.38	3262.22		
PB-134	3256.05	3256.05	3256.48	3256.90	3256.85	3256.65	3256.37	3256.03		

Table 4-1Landfill Expansion Groundwater Potentiometric Head Elevations

<u>NOTES:</u> Groundwater elevations listed in feet above mean sea level.

4.2 Permeability of the Uppermost Aquifer

Field slug testing and in-situ vertical hydraulic conductivity laboratory testing (conducted by WCG in 2023) are summarized in Table 4-2 and Table 4-3; respectively. The geotechnical laboratory reports and information pertaining to the performed permeability testing are provided in Appendix IIIE (Geotechnical Report). The slug test reports are provided in Appendix IIIG-D.

The first continuous groundwater zone observed beneath both the developed landfill unit and proposed expansion area is contained within the site-specific Lower Sand stratum which resides above low permeability sediments of the Basal Clay stratum aquiclude. The Lower Sand stratum constitutes the Uppermost Aquifer beneath the Site.

Laboratory soil testing indicates a vertical permeability of 2.8x10⁻³ cm/sec for an insitu Lower Sand stratum Uppermost Aquifer sample collected from boring PWC-1A. Field slug test data from piezometers screened within the Lower Sand indicate an Uppermost Aquifer horizontal permeability ranging from 1.37x10⁻⁴ to 2.96x10⁻³ cm/sec with an arithmetic mean horizontal permeability of 1.08x10⁻³ cm/sec. This range of hydraulic conductivity values is characteristic of the silty sand sediments which constitute the predominant lithology for the Lower Sand Uppermost Aquifer stratum.

Conversely, laboratory soil testing indicates a vertical permeability range of 4.0x10⁻¹⁰ to 3.3x10⁻⁸ cm/sec with an arithmetic mean vertical permeability of 8.2x10⁻⁹ cm/sec for the in-situ Basal Clay stratum aquiclude samples. This range of hydraulic conductivity values is characteristic of the clay-rich sediments which constitute the predominant lithology for the Basal Clay Lower Confining Unit aquiclude stratum.

The vertical hydraulic conductivity values for the Basal Clay aquiclude are four to six orders of magnitude lower than the horizontal permeability of its overlying Lower Sand stratum Uppermost Aquifer. The range of contrasting horizontal (aquifer) to vertical (aquiclude) permeability values are reasonable given the sedimentary composition and structure of the facility's site-specific aquifer and underlying associated aquiclude. The contrasting permeability between the aquifer and aquiclude strata demonstrate a lack of hydraulic interconnectivity between the Uppermost Aquifer and any potential underlying aquifers which may be present at depth beneath the Basal Clay stratum across the site.

During the 2023 subsurface investigation, shallower perched saturated intervals were observed within the Lower Sand stratum and above the lowermost saturated sediments. Three shallow piezometers (PWCG-4B, PWCG-5B, and PWCG-7B) were installed within shallower perched lenses of Lower Sand saturated sediments adjacent deeper installations as piezometer pairs. Static groundwater elevation data

indicate a slightly higher potentiometric head within the shallow piezometers when compared to their adjacent deeper-installed paired piezometer. These findings suggest a slight vertical downward gradient that is consistent with the hydrogeological characterization of the regional Ogallala Aquifer.

Table 4-2 Summary of Slug Testing Hydraulic Conductivity Results^{*}

Borehole	Ву	Date	Туре	Hydraulic Conductivity (cm/sec)					
Lower Sand - Slug Test Results (K _H)									
PWCG-1	WCG	0ct-23	Rising Head	1.21E-03					
PWCG-2	WCG	0ct-23	Rising Head	1.53E-03					
PWCG-3	WCG	0ct-23	Rising Head	9.64E-04					
PWCG-4A	WCG	0ct-23	Rising Head	1.19E-03					
PWCG-4B	WCG	0ct-23	Rising Head	1.68E-03					
PWCG-5A	WCG	Oct-23	Rising Head	1.62E-04					
PWCG-5B	WCG	0ct-23	Rising Head	2.96E-03					
PWCG-6	WCG	0ct-23	Rising Head	1.37E-04					
PWCG-7A	WCG	Oct-23	Rising Head	3.49E-04					
PWCG-7B	WCG	Oct-23	Rising Head	6.06E-04					
	<u>1.08E-03</u>								

<u>NOTES:</u> *Refer to Appendix IIIG-D for slug test reports. K_h = Horizontal hydraulic conductivity value.

> Weaver Consultants Group, LLC Rev. 0, 08/2024 Appendix IIIG

Table 4-3 Summary of Laboratory Testing In-Situ Hydraulic Conductivity Results^{*}

Borehole	Test Interval (ft-bgs)			Hydraulic Conductivity (cm/sec)				
Caprock (Clay Lense) - Laboratory Test Results (K _v)								
PWCG-5A	67.5	-	75	2.3E-07				
Lower Sand - Laboratory Test Results (K _v)								
PWCG-1	105	-	110	2.8E-03				
Basal Clay - Laboratory Test Results (K _v)								
PWCG-3	80	-	91	8.1E-09				
PWCG-5A	105	-	110	1.5E-08				
PWCG-6	91	-	100	2.1E-09				
PWCG-7A	90	-	100	5.1E-09				
WCG-9	100	-	110	4.4E-09				
WCG-11	100	-	103	7.5E-09				
WCG-19	102.5	-	105	4.2E-09				
WCG-20	97	-	102	5.2E-09				
WCG-22	107.5	-	115	1.1E-09				
WCG-25	85		90	4.0E-10				
WCG-26	70	-	75	8.1E-09				
WCG-26	75	-	80	8.5E-09				
WCG-26	80	-	85	1.3E-08				
WCG-27	40	-	47.5	7.3E-09				
WCG-27	47.5	-	50	3.3E-08				
Basal Clay (Aquiclu	<u>6.7E-09</u>							

<u>NOTES:</u> *Refer to Appendix IIIE-C for geotechnical laboratory reports. K_v = Vertical hydraulic conductivity value.

The site-wide hydraulic gradients for the site-specific aquifer were approximated from the September 2023 groundwater contour map in Appendix IIIG-D (Figure IIIG-D-2B). An effective porosity has been estimated at 30 percent for the silty sand sediments (after Morris and Johnson, 1967). The mean slug testing hydraulic conductivity value for each aquifer is utilized in the below linear flow velocity calculations.

The formula for the groundwater linear flow velocity calculation is as follows:

V = K_h* i *1,034,646/ n_e

Where:

```
V = linear velocity (ft/year)
K<sub>h</sub> = hydraulic conductivity (cm/sec)
i = hydraulic gradient (ft/ft)
1,034,646 = scalar to convert from cm/sec to ft/year
n<sub>e</sub> = effective porosity
```

Using the above calculation, the horizontal groundwater linear velocity for the site-specific aquifer is summarized as follows.

- Lower Sand (Southeasterly Gradient)
 - > Hydraulic Conductivity: 1.08x10⁻³ cm/sec
 - Hydraulic Gradient (PWCG-5A to PWCG-4A): 0.0056 ft/ft
 - ➢ Effective Porosity: 0.3
 - Groundwater Velocity: 20.86 ft/year
- Lower Sand (Northwesterly Gradient)
 - Hydraulic Conductivity: 1.08x10⁻³ cm/sec
 - Hydraulic Gradient (PWCG-5A to PWCG-1): 0.0026 ft/ft
 - Effective Porosity: 0.3
 - ➢ Groundwater Velocity: 9.68 ft/year
- Lower Sand (Northeasterly Gradient)
 - Hydraulic Conductivity: 1.08x10⁻³ cm/sec
 - > Hydraulic Gradient (PWCG-5A to PWCG-2): 0.0036 ft/ft
 - Effective Porosity: 0.3
 - > Groundwater Velocity: 13.41 ft/year

4.3 Hydrogeologic Interpretation

Groundwater at the site is observed within the site-specific Lower Sand stratum which resides above the low permeability sediments of site-specific Basal Clay stratum.

4.3.1 Uppermost Aquifer

The uppermost monitorable groundwater zone within the landfill permit boundary is encountered within Lower Sand stratum sediments which transmit groundwater within the subsurface and above the underlying Basal Clay stratum aquiclude. Lower Sand groundwater exhibits confined conditions with greater confining potential in the northwest (where Lower Sand sediments are overlain by greater thicknesses of Caprock stratum sediments) and lesser confined conditions observed downgradient to the south nearing the Ogallala Formation outcrop approaching Rich Lake. The Lower Sand constitutes the Uppermost Aquifer beneath the Site. The subsurface investigation and potentiometric head elevation data indicate that shallower saturated intervals observed within the Lower Sand sediments are commensurate with those observed at greater depth above the Basal Clay stratum aquiclude. These saturated intervals are hydraulically interconnected and collectively make-up the facility's Uppermost Aquifer. These observations are consistent with the characterization for the regional Ogallala Aquifer which is described as a sequence of hydraulically interconnected saturated stratified coarse-grained seams residing beneath overlying confining Caprock sediments.

Due to its confined condition, the top of the facility's Uppermost Aquifer is commensurate with the uppermost saturated sediments observed at time of drilling within each expansion borehole. These top of Uppermost Aquifer elevations are provided on Figure IIID-1A (Top of Uppermost Aquifer Contour Map) in Appendix IIIG-D. The top of Uppermost Aquifer hydrostratigraphic structural contours depicted on Figure IIIG-D-1A characterize the uppermost elevations at which saturated sediments are present within the subsurface and do not represent groundwater potentiometric head elevations are provided on Figure IIIG-D-1B (Highest Measured Groundwater Potentiometric Surface Contour Map) in Appendix IIIG-D.

4.3.2 Lower Confining Unit

The low vertical hydraulic conductivity of site-specific Basal Clay aquiclude stratum indicates a directional permeability differential of four to six orders of magnitude between sediments of the Lower Sand stratum Uppermost Aquifer and the underlying Basal Clay aquiclude. Given these conditions, groundwater within the Lower Sand flows horizontally above the low permeability sediments of the Basal Clay aquiclude strata and downgradient in the direction of general stratigraphic dip and under influence of local irrigation and residential groundwater withdrawal from nearby water wells. The Basal Clay comprises the Lower Confining Unit beneath the facility permit boundary.

4.3.3 Groundwater Monitoring System

The facility's proposed groundwater monitoring system network buildout is illustrated on Figure IIIH-A-2 in Appendix IIH of the SDP and includes the installation of a groundwater monitoring network for the Uppermost Aquifer within the existing and proposed permit boundary. 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 uppermost saturated aquifer strata at the point of release. Once within the Uppermost Aquifer, pollutants would be transported within the Lower Sand stratum, above the Basal Clay stratum Lower Confining Unit, and down gradient in the direction of groundwater flow toward the permitted Point of Compliance and network of groundwater detection monitor wells.

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APPENDIX IIIG-A

REGIONAL GEOLOGIC DATA



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FIGURE IIIG-A-1 – Regional Geologic Map FIGURE IIIG-A-2 – Regional Structural Features Map FIGURE IIIG-A-3 – Regional Geologic Cross Sections FIGURE IIIG-A-4 – Regional Ogallala Aquifer Potentiometric Surface Map FIGURE IIIG-A-5 – Regional ETHP Aquifer Potentiometric Surface Map FIGURE IIIG-A-6 – Regional Upper Dockum Aquifer Potentiometric Surface Map FIGURE IIIG-A-7 – Regional Lower Dockum Aquifer Potentiometric Surface Map FIGURE IIIG-A-8 – Water Well Location Map FIGURE IIIG-A-9 – Oil and Gas Well Location Map

ERIS Water Well Report



IIIG-A-10







MAJOR PERMIT AMENDMENT		
REGIONAI	REGIONAL GEOLOGIC MAP	
CITY OF MEADOW LANDFILL TERRY COUNTY, TEXAS		
WWW.WCGRP.COM	FIGURE IIIG-A-1	
	MAJOR PE REGIONAI CITY OF TERRY WWW.WCGRP.COM	



PREPARED FOR MEADOW LANDFILL, LLC	MAJOR PERMIT AMENDMENT REGIONAL STRUCTURAL FEATURES MAP CITY OF MEADOW LANDFILL TERRY COUNTY, TEXAS	
REVISIONS DATE DESCRIPTION		
	WWW.WCGRP.COM	FIGURE IIIG-A-2



- 3. ET PLATEAU = EDWARDS-TRINITY PLATEAU.

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DATE: FILE: CAD:	08/2024 0120-809-11 IIIG-A-3_REGIONAL SECTIONS.DWG	DRAWN BY: DCS DESIGN BY: AKE REVIEWED BY: AKE	NO.	ſ
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		ants Group		I
	IBPE REGISTRATION N	0. 1-3/27		ĺ

WWW.WCGRP.COM

FIGURE IIIG-A-3



Colorado	Kansas Toklahoma
2010 Wate	er-level Elevation (ft)
Control Po	int
Aquifer Bo	undary
Active Bou	Indary
County Bo	undary

1

OGALLALA AQUIFER GROUNDWATER CONTOURS ADAPTED FROM FINAL CONCEPTUAL MODEL REPORT FOR THE HIGH PLAINS AQUIFER SYSTEM GROUNDWATER AVAILABILITY MODEL, TEXAS WATER DEVELOPMENT BOARD, AUGUST 2015.

PREPARED FOR MEADOW LANDFILL, LLC	MAJOR PERMIT AMENDMENT OGALLALA AQUIFER REGIONAL GROUNDWATER CONTOUR MAP CITY OF MEADOW LANDFILL TERRY COUNTY, TEXAS	
REVISIONS DATE DESCRIPTION		
	WWW.WCGRP.COM	FIGURE IIIG-A-4



Colorado Kansas New Mexedo Texas
 - 2010 Water-level Elevation (ft)
Control Point
Aquifer Boundary
Active Boundary
County Boundary

EDWARDS TRINITY HIGH PLAINS AQUIFER GROUNDWATER CONTOURS ADAPTED FROM FINAL CONCEPTUAL MODEL REPORT FOR THE HIGH PLAINS AQUIFER SYSTEM GROUNDWATER AVAILABILITY MODEL, TEXAS WATER DEVELOPMENT BOARD, AUGUST 2015.

PREPARED FOR MEADOW LANDFILL, LLC	MAJOR PERMIT AMENDMENT ETHP AQUIFER REGIONAL GROUNDWATER CONTOUR MAP CITY OF MEADOW LANDFILL TERRY COUNTY, TEXAS	
REVISIONS DATE DESCRIPTION		
	WWW.WCGRP.COM	FIGURE IIIG-A-5



	Colorado Kansas
Ľ	New Mexico
- 20	10 Water-level Elevation (ft)
	ontrol Point
	uner Boundary
Ac	tive Boundary
Co	ounty Boundary
1	David Street

UPPER DOCKUM AQUIFER GROUNDWATER CONTOURS ADAPTED FROM FINAL CONCEPTUAL MODEL REPORT FOR THE HIGH PLAINS AQUIFER SYSTEM GROUNDWATER AVAILABILITY MODEL, TEXAS WATER DEVELOPMENT BOARD, AUGUST 2015.

PREPARED FOR MEADOW LANDFILL, LLC	MAJOR PERMIT AMENDMENT UPPER DOCKUM AQUIFER REGIONAL	
REVISIONS DATE DESCRIPTION	GROUNDWA	TER CONTOUR MAP
	CITY OF MEADOW LANDFILL TERRY COUNTY, TEXAS	
	WWW.WCGRP.COM	FIGURE IIIG-A-6



	Colorado Kansas New Mexeo Texas
-	2010 Water-level Elevation (ft)
	Control Point
	Aquifer Boundary
]	Active Boundary
ļ	County Boundary
Ì	State Boundary

LOWER DOCKUM AQUIFER GROUNDWATER CONTOURS ADAPTED FROM FINAL CONCEPTUAL MODEL REPORT FOR THE HIGH PLAINS AQUIFER SYSTEM GROUNDWATER AVAILABILITY MODEL, TEXAS WATER DEVELOPMENT BOARD, AUGUST 2015.

PREPARED FOR MEADOW LANDFILL, LLC	MAJOR PERMIT AMENDMENT LOWER DOCKUM AQUIFER REGIONAL GROUNDWATER CONTOUR MAP CITY OF MEADOW LANDFILL TERRY COUNTY, TEXAS	
REVISIONS DATE DESCRIPTION		
	WWW.WCGRP.COM	FIGURE IIIG-A-7





1. SITE LOCATION BASE MAP REPRODUCED FROM 7.5 MINUTE, MEADOW, TEXAS QUADRANGLE USGS MAP DATED 2022.

State Route

US Route

MEADOW, TX

2022

2. WATER WELLS IDENTIFIED IN TCEQ, SSDRD, TWDB, AND CITY OF MEADOW LANDFILL SITE RECORDS IN OCTOBER AND NOVEMBER OF 2023.

3. WATER WELL LOCATIONS PROVIDED BY GEOSEARCH, SSDRD, TCEQ, AND TWDB INTERACTIVE DATABASE VIEWER AND MODIFIED BASED ON REVIEW OF INDIVIDUAL WATERWELL REPORTS, GOOGLE EARTH AERIAL IMAGES, AND SITE RECONNAISSANCE PERFORMED BY WCG.

PREPARED FOR	MAJOR PE	RMIT AMENDMENT
REVISIONS	CITY OF MEADOW LANDFILL TERRY COUNTY, TEXAS	
DATE DESCRIPTION		
	WWW.WCGRP.COM	FIGURE IIIG-A-8





NOTES:

	DRAFT FOR PERMITTING PURPOSES ONL ISSUED FOR CONSTRUCTION	Y		МЕ
DATE: FILE:	08/2024 0120-809-11	DRAWN BY: SRF DESIGN BY: JPI	NO.	DAT
CAD:	IIIG-A-9_OIL AND GAS WELL MAP.DWG	REVIEWED BY: AKE		
	Weaver Consult	ants Group		
Ι	TBPE REGISTRATION N	0. F-3727		



ROAD CLASSIFICATION Local Connector Local Road 4WD US Route State Route

> MEADOW, TX 2022

1. SITE LOCATION BASE MAP REPRODUCED FROM 7.5 MINUTE, MEADOW, TEXAS QUADRANGLE USGS MAP DATED 2022.

PERMITTED OIL AND GAS WELL LOCATIONS IN LANDFILL VICINITY OBTAINED FROM TEXAS RAILROAD COMMISSION ONLINE GIS AT http://www.gisp.rrc.texas.gov/gisviewer2/ IN NOVEMBER 2023.



ERIS WATER WELL REPORT



TEXAS WATER WELL REPORT

Project Property:

Project No: Order No: Requested by: Date Completed: Meadow LF - Water Well Search City of Meadow Landfill Meadow TX 79345 0120-809-11 23101200492 Weaver Consultants Group October 17, 2023

Environmental Risk Information Services A division of Glacier Media Inc. 1.866.517.5204 | info@erisinfo.com | erisinfo.com

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Executive Summary

Property Information:

Project Prope	erty:	Meadow LF - Water Well Search City of Meadow Landfill Meadow TX 79345
Project No:		0120-809-11
Coordinates:		
	Latitude:	33.30701483
	Longitude:	-102.1951857
	UTM Northing:	3,688,835.15
	UTM Easting:	761,144.57
	UTM Zone:	13S
	Target Property Geometry:	POLYGON
County/Parish	Covered:	Terry (TX)
Zipcode(s) Co	overed:	Meadow TX: 79345
State(s) Cover	red:	ТХ

Executive Summary: Report Summary

Database	Searched	Project Property	Within 1.00mi	Total
Federal				
FED USGS	Y	0	1	1
State				
TCEQ WELL LOGS	Y	0	5	5
SDRW WELLS	Y	0	27	27
GWDB	Y	0	1	1
WW FORT BEND	Y	0	0	0
WW HIGH PLAINS	Y	0	0	0
WW HARRIS GAL	Y	0	0	0
WUD	Y	0	0	0
	Total:	0	34	34

* PO – Property Only

Executive Summary: Site Report Summary - Project Property

Мар	DB	Company/Site Name	Address	Direction	Distance	Page
Key					(mi/ft)	Number

No records found in the selected databases for the project property.

Executive Summary: Site Report Summary - Surrounding Properties

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Page Number
<u>1</u>	TCEQ WELL LOGS		тх	S	0.02 / 83.32	<u>14</u>
			Grid No Owners Name: 24-47-5	PENDERGRAS	S CATTLE CO.	
2	SDRW WELLS	Nellie Dyck	Block 4X Sec 19 NW 1/4 Brownfield TX 79316 <i>Track NO:</i> 640567	W	0.03 / 156.27	<u>21</u>
<u>3</u>	SDRW WELLS	Brent Pendergrass	Brownfield TX 79316 <i>Track NO: 54179</i> 9	ENE	0.05 / 269.41	<u>22</u>
<u>4</u>	TCEQ WELL LOGS		ТХ	WNW	0.13 / 670.13	<u>23</u>
			Grid No Owners Name: 24-47-4	QUALITY HOM	ES AND LAND	
<u>5</u>	SDRW WELLS	Triple D Trust	Meadow TX 79345 Track NO: 471114	NW	0.13 / 705.48	<u>26</u>
<u>6</u>	SDRW WELLS	Heinrich F Fehr	Block 4X Sec 19 NW 1/4 Brownfield TX 79316 <i>Track NO:</i> 640565	W	0.21 / 1,086.04	<u>27</u>
<u>7</u>	TCEQ WELL LOGS		TX Crid No / Ourpero Namo: 24 47 5 /	SSW	0.22 / 1,178.67	<u>28</u>
			Ghu No Owners Name. 24-47-5	CALVININGRA	IVI	
<u>8</u>	SDRW WELLS	Penny Pierce Farms 3B	Sect 22 Block 4X Brownfield TX 79316	W	0.25 / 1,300.84	<u>35</u>
			Track NO: 369227			
<u>9</u>	TCEQ WELL LOGS		ТХ	NNW	0.25 / 1,327.30	<u>36</u>
			Grid No Owners Name: 24-47-5	TRIPLE D TRU	ST	
<u>10</u>	SDRW WELLS	Johan Klassen	Block 4X Sec 19 Sw 1/4 Brownfield TX 79316	WSW	0.28 / 1,462.39	<u>39</u>
			Track NO: 640529			
<u>11</u>	SDRW WELLS	Joan Williams	In Country TX Track NO: 579618	WNW	0.34 / 1,771.26	<u>40</u>
<u>11</u>	SDRW WELLS	John Williams	In Country TX	WNW	0.34 / 1,771.26	<u>41</u>
			Track NO: 588653			
<u>12</u>	SDRW WELLS	Triple D Trust	South of Meadow on CR 535, 1.25 mile, East 1/4 mi. Meadow TX 79345	NW	0.37 / 1,958.82	<u>42</u>
6	erisinfo.com	l Environmental Risk Inforn	nation Services		Order No:	23101200492

Мар Кеу	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Page Number
			Track NO: 310202			
<u>13</u>	SDRW WELLS	Johan Dyck	Block 4X Sec 19 NW 1/4 Brownfield TX 79316 <i>Track NO:</i> 640562	SW	0.47 / 2,465.17	<u>43</u>
<u>14</u>	TCEQ WELL LOGS		TX Grid No Owners Name: 24-47-4 /	WNW AUGUSTINE OI	0.50 / 2,650.38 RT <i>IZ</i>	<u>44</u>
<u>15</u>	SDRW WELLS	Pendergrass, Brent	S of CR 250/ N 1/2 Sec 54 Blk 4X Meadow TX <i>Track NO:</i> 252695	E	0.51 / 2,682.82	<u>47</u>
<u>16</u>	SDRW WELLS	Triple D Trust	Brownfield TX 79316 <i>Track NO: 47199</i> 2	NW	0.51 / 2,686.36	<u>48</u>
<u>17</u>	SDRW WELLS	Jeanne Morgan	East of Meadow on FR 211 - 1 1/4 mi Meadow TX 79345 <i>Track NO:</i> 267468	NNE	0.65 / 3,451.44	<u>49</u>
<u>18</u>	SDRW WELLS	CHARLES BOLES	cORNERW OF cr 250 US HWY 62 & 180 MEADOW TX 79345 <i>Track NO:</i> 538593	WNW	0.67 / 3,537.70	<u>50</u>
<u>19</u>	SDRW WELLS	Francisco Carvvazo	C.R. 535 Meadow TX 79345 <i>Track NO: 5</i> 284	NW	0.75 / 3,959.99	<u>51</u>
<u>20</u>	SDRW WELLS	loyd jorden	TX Track NO: 309309	NE	0.79 / 4,174.85	<u>52</u>
<u>21</u>	SDRW WELLS	DON CAROL	TX Track NO: 35865	WNW	0.82 / 4,309.12	<u>53</u>
<u>22</u>	SDRW WELLS	Richard Cavazos	517 CR 535 Meadow TX 79345 <i>Track NO:</i> 275396	NW	0.82 / 4,324.65	<u>54</u>
<u>23</u>	SDRW WELLS	brent pendergrass	TX Track NO: 359344	Ν	0.85 / 4,476.82	<u>55</u>
<u>24</u>	SDRW WELLS	TKT Farms	Meadow TX <i>Track NO:</i> 595861	NE	0.86 / 4,553.40	<u>56</u>
<u>25</u>	SDRW WELLS	Richard Parrish	TX Track NO: 89069	W	0.89 / 4,719.36	<u>57</u>

Map Key	DB	Company/Site Name	Address	Direction	Distance (mi/ft)	Page Number
<u>26</u>	SDRW WELLS	Jeanne Morgan	East of Meadow, 1 mile on FM 211 Meadow TX 79345 <i>Track NO:</i> 283191	N	0.92 / 4,840.57	<u>58</u>
<u>27</u>	SDRW WELLS	Craig Brooks	NE/4 SEC 57 BLK E Terry CO Meadow TX	ESE	0.92 / 4,841.77	<u>59</u>
			Track NO: 517459			
<u>28</u>	SDRW WELLS	Brent Pendergass	S of Meadow on Hwy 62-82 to CR 250, E to CR 555 Meadow TX 79345 <i>Track NO:</i> 247941	E	0.92 / 4,866.78	<u>60</u>
<u>29</u>	SDRW WELLS	JACOB GIESPRECHT	ΜΕΑDOW ΤΧ	W	0.93 / 4 911 49	<u>61</u>
			Track NO: 597252		.,	
<u>30</u>	SDRW WELLS	Jeff Adams	2352 FM 211 Meadow TX 79345	Ν	0.96 / 5,066.00	<u>62</u>
			Track NO: 449555			
<u>31</u>	GWDB	Carl Pendergrove	тх	E	0.97 / 5,132.15	<u>63</u>
			State Well No Owner Name: 2447	501 Carl Pend	ergrove	
<u>31</u>	FED USGS	TX001-331841102103401	тх	E	0.97 / 5,132.15	<u>68</u>
			Site No: TX001-331841102103401			
<u>32</u>	SDRW WELLS	Craig Brooks	NE/4 SEC 57 BLK E Terry CO Meadow TX	ESE	0.98 / 5,173.63	<u>69</u>
			Track NO: 517458			



Plotted Water Wells









0.1

0.05

33°18'30"N

Aerial Year: 2022

0.1

0

Address: City of Meadow Landfill, Meadow, TX



IIIG-A-22

Order Number: 23101200492

Source: Esrl, Maxar, Earthstar Geographics, and the GIS User Community



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Detail Report

Мар Кеу	Number of Records	Direction	Distance (mi/ft)	Site	DB
1	1 of 1	S	0.02 / 83.32	ТХ	TCEQ WELL LOGS
Grid No: Date Drilled Owners Nar County: Water Usag Static Level Depth Drille Latitude: Longitude:	: ne: e: : d:	24-47-5 10/25/1990 PENDERGRA TERRY DOMESTIC 50 95 33.302735691 -102.19537425	SS CATTLE CO. 37333 5792693		

p Key	Number of Records	Direction	Distance (mi/ft)	Site)								D
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p Key	Number of Records	Direction	Distance (mi/ft)	Site)								D
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Send o certifi Texas P. O. E Austin	original copy by ed mail to the Department of Water Re Box 13087 h, Texas 78711	esources ATTE	WAT	Confident	LL R	EPO vilege	RT Notice o	n Reverse	Side		Fexas Water V P. O. Box 130 Austin, Texas	Vell Drillers 187 78711	Board
1) OV 2) LC C	VNER <u>Pending</u> CCATION OF WELL: COUNTY <u>TETTY</u>	Name)	<u>ilis</u> m	iles in A	(Stree (Stree (N.E., 1	ر د ر t or R	FD) stc.)	n directio	n from	(City)	Jefa (St. (St. (Town	ate) (Z	3 4
Driller with d tion or well or Genera	must complete the legal istance and direction fro survey lines, or he must n an official Quarter- or al Highway Map and atta	description to the rig m two intersecting se t locate and identify t Half-Scale Texas Cour ch the map to this for	ht c- he nty m.	Legal desc Section I Abstract Distance	No No No and dire	19 ection	Blo	ock No Survey M intersec	Name	_ Town:	ship		
3) TY	PE OF WORK (Check)	41 88080	SED USE (Chack):	See attach	ed map.	Τ.			THOD IC	hook):			
	ew Well Dee econditioning Plug	pening Domes	tic Industrial Con Test Well] Public Su] Other	ирріу	_		Rotary Cotary	Air Ham	nner [ool [] Driven 🔲 🛙	Bored Other	
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		The Water cerned that som ity privilege prov of Well Logs, re	Well Drillers Boar e persons having w vision of Section 5 o ads as follows:	d and the Departm ater wells drilled m of the Water Well D	eent of Water Resource ay not be aware of the c rillers Act. Section 5, th	ces are con- confidential- he Reporting		
140 05			"Every licensed way otherwise altering make and keep, or and accurate well completion or cess wise altering such by certified mail a ment, and the own such well drilled. I department copy, address, and tele department. The	ater well driller dril a water well with cause to be made l log, and within 3 sation of drilling, de a water well, shall copy of such well ner thereof or the p Each copy of a wel shall include th ohone number of t well log required h	ling, deepening or in this State shall and kept, a legible 30 days from the eepening or other- deliver or transmit log to the depart- oerson having had I log, other than a e name, mailing the Board and the herein shall at the			
			request in writing t the owner or the po as confidential ma	to the department, b erson having such v tter and not made	oy certified mail, by well drilled be held of public record."			- 19
		The last ser of your wells w	ntence specifies the ill be kept confider	e means whereby yo ntial.	ou can, if you wish, ass	ure that logs		
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		The Water cerned that som ity privilege prov of Well Logs, re	Well Drillers Board e persons having w vision of Section 5 o eads as follows:	d and the Departm ater wells drilled m of the Water Well D	nent of Water Resources an ay not be aware of the confid prillers Act. Section 5, the Rep	e con- ential- porting		
e e			"Every licensed wu otherwise altering make and keep, or and accurate well completion or cess wise altering such by certified mail a ment, and the own such well drilled. I department copy, address, and teleg department. The v	ater well driller dril a water well with cause to be made l log, and within sation of drilling, d a water well, shall copy of such well ner thereof or the Each copy of a wel shall include th bhone number of well log required f	ling, deepening or hin this State shall and kept, a legible 30 days from the eepening or other- deliver or transmit log to the depart- person having had ll log, other than a he name, mailing the Board and the herein shall at the			
			request in writing t the owner or the po as confidential ma	to the department, l erson having such itter and not made	by certified mail, by well drilled be held . of public record."	•	·**	
		The last ser of your wells w	ntence specifies the ill be kept confider	r means whereby y ntial.	ou can, if you wish, assure th	at logs		
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Мар Кеу	Number of Records	Direction	Distance (mi/ft)	Site	DB
2	1 of 1	w	0.03 / 156.27	Nellie Dyck Block 4X Sec 19 NW 1/4 Brownfield TX 79316	SDRW WELLS
Track NO:		640567			
Date Submi	tted:	2023-06-05			
Owner Nam	e:	Nellie Dyck			
Owner Add	ress:	11611 ÚS Hwy	62		
Owner Add	ress2:				
Owner City:		Wolfforth			
Owner State	e:	ТХ			
Owner Zip:		79382			
County:		Terry			
Type of Wo	rk:	New Well			
Typ of Wrk	Oth Descr:				
Proposed U	lse:	Domestic			
Prop Use O	th Descr:				
Latitude:		33.307707			
Longitude:		-102.205558			
Drilling Date	e Started:	2023-05-04			
Drilling Date	e Completed:	2023-05-06			
Chemical A	nalysis:	No			
Company N	lame:	JB Drilling			
Company A	ddress:	P O Box 12			
CompanyA	ddress2:				
Company C	ity:	Seminole			
Company S	tate:	TX			
Company Z	ïp:	79360			
Company C	ountry:				
Data Source	e:	Full SDR Datab	ase; SDRDB W	ell Location (Map)	
Report Link		https://www3.tv	/db.texas.gov/ap	ps/waterdatainteractive/GetReports.aspx?Num=6	40567&Type=SDR-Well
Well Boreho	ole Information				
Top Depth: Bottom Dep	oth:	140.0			
•					
Top Depth:		0			
Bottom Dep	oth:	140			
<u>Well Levels</u>					
Measureme	nt:	83			
Measureme	nt Date:				

Map Key	Number of Records	Direction	Distance (mi/ft)	Site	DB
3	1 of 1	ENE	0.05 / 269.41	Brent Pendergrass Brownfield TX 79316	SDRW WELLS
Track NO: Date Submi Owner Nam Owner Addi Owner Addi Owner City: Owner State Owner Zip: County: Type of Wok Typ of Wrk Proposed U Prop Use O Latitude: Longitude: Drilling Date Chemical A Company A Company A Company A Company Z Company Z Company C Data Source Report Link	tted: e: ress: ress2:	541799 2020-04-27 Brent Penderg 6019 87th Stree Lubbock TX 79424 Terry New Well Domestic 33.310489 -102.18781 2020-04-20 2020-04-20 2020-04-20 No Jacob P Klasse 1382 US Hwy S Brownfield TX 79316 Full SDR Datal https://www3.ty	rass et en Drilling Co 380 base; SDRDB W wdb.texas.gov/ap	'ell Location (Map) pps/waterdatainteractive/GetReports.aspx?Num=541799&Typ	e=SDR-Well
Well Boreho	ole Information				
Top Depth: Bottom Dep	oth:	0 131			
Top Depth: Bottom Dep	th:	131.0			
<u>Well Strata</u>					
Water Type.					

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Map Key	Number of Records	Direction	Distance (mi/ft)	Site	DB
4	1 of 1	WNW	0.13 / 670.13	тх	TCEQ WELL LOGS
Grid No:	4.	24-47-4			
Owners Na	1: me:	OUALITY HOM			
County:	inc.	TERRY			
Water Usag	je:	DOMESTIC			
Static Leve	l:	30			
Depth Drille	ed:	118			
Latitude:		33.312714991	95597		
Longitude:		-102.2076676	5993517		

Send original copy by certified return receipt reque

ATTENTION OWNER: Confidentiality Privilege Notice on reverse side of Well Owner's copy (pink) WELL R			exas POR	T,	Texas C	Texas Department of Licensing & Regulation P.O. Box 12157 Austin, TX 78711 512-463-7880			
1) OWNER QUIALITETOM	ne) <u>SECTION2</u>	s F	?0.8 Bla	DX 69 N (StreetorRFD) DCK 4X	(City) Long	در دم در دم	/x / (State) 45 Lat. 3 4-47-	9350 3'18'75 4	
3) TYPE OF WORK (Check):  3) TYPE OF WORK (Check):  3) Reconditioning Plugging	(4) PROPOSED USE (Check): M Industrial Irrigation In If Public Supply well, were plans sul	( onitor jection bmitted	Entry)	(State) (2 wironmental Soil Boring blic Supply De-water NRCC? Yes D	ing  Testv No	yell	5)	<b>.</b>	
6) WELL LOG: Date Drilling: Started <u>12 30</u> 19 <u>99</u> Completed <u>12 - みひ</u> 19 <u>99</u>	7)	DRILLIN	IG METHOD (Check): Rolary ArMud Rotan Hammer Cable Tool Hammer Cable Tool	Driven G Bored			• N		
From (ft.) To (ft.) Descript 0 3 To P 3 6 QAL	ion and color of formation material SolL che	8)	Borehol	e Completion (Check): erreamed A Gravel Pa Packed give interval from	Open H  acked      Oth  m /0	lole ner ft. I	] Straight W	əll <b>8</b> fi.	
15 20 SAN	D StoNe	CAS	ING, BL	ANK PIPE, AND WELL S	CREEN DATA	:	- (0)	1 6	
50 55 SADD	4 Clay + Clay Mrx	Dia.	or	Steel, Plastic, etc. Perf., Slotted, etc.		Settin	ig (n.)	Casting	
55 95 SANI	Stole + Study Clay MIX	(in.)	Vsed	Place Place	rcial	From	10	Screen	
95 105 SAND 105 115 Sang	y clay + gravel + Said	3	Dell	Slotted	-	58	118	1035	
(Use reverse side of Well Own 13) Well plugged within 48 hours Casing left in well: Cement/benton From (ft) To (ft) From (ft)	ner's copy, if necessary) ite placed in well: Sacks used: To (R)		Cemente Methodu Cemente Distance Methodo	themfi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.tofi.to_	10 ft. 1 11 X 15 J N prother concept nce HO Se	No. of sacks No. of sacks rated conta	sused sused mination //	En.	
14) TYPEPUMP: Turbine Jet Submer Other Depth to pump bowls, cylinder, jet, et 15) WELLTESTS:	sibleft.	10)	SURFA	CE COMPLETION iffed Surface Slab Installed iffed Steel Sleeve Installed ss Adapter Used oved Alternative Procedure	Jsed				
Typetest: Pump Bailer Yield: 25 gpm with 20	ft. drawdown after hrs.	11)	WATER Static le Artesian	LEVEL: /el_ <u>30_</u> fl. below flow	land surface gpm.	Date _	12-30	<u></u>	
Constituents?			PACKE	RS:	Ty:	00	Dep	th 2	
Type of water? I Was a chemical analysis made?	es INo			FIL: IC	1				
I certify that I drilled this well (or the well w to complete items 1 thru 16 will result in the COMPANY NAME <u>Plank Well</u> ADDRESS <u>P.O., Box Yo</u> (Streetor	as drilled under my direct supervision) and top(s) being returned for completion and re <i>Stunce of Browpreld in</i> peorprini) BC BROWNFIL RFD	I that e resubm	ach and ittal. WELL D (City)	all of the statements here	in are true and	Correct. 1	understand Dist	that failure	
(Signed)	dWell Driller) ease attach electric log, chemical analysi	s, and	(Signed) other pe	rtinent information, if av	(Registered Dril vallable.	ller Trainee	r [		

mail to: TDLR, P.O. Box 12157, Austin, TX 78711

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Send original copy by certified return receipt reque

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ATTENTION OWNER: Confidentiality Privilege Notice on reverse side of Well Owner's copy (pink) WELL R				г	Texas Department of Licensing & Regulation P.O. Box 12167 Austin, TX 78711 612-463-7880			
1) OWNER Quality Horn	es + Land ADDRES	is E	?0.8	DX 69 Ne (Street or RFD)	(City)	7×	( 7 State)	9350 (Zip)
2) ADDRESS OF WELL'S LOCATION: County TERRY	(Street, RFD or other)	. (	BI ( City)	(State) (Zip	) Grid #	24-	47-	4
3) TYPE OF WORK (Check): A New Well Deepening Reconditioning Plugging	(4) PROPOSED USE (Check): Mi Industrial Irrigation In If Public Supply well, were plans sul	onitor jection bmitted	En En	wironmental Soil Boring   blic Supply   De-waterin NRCC?   Yes   N	Domestic g 🔲 Testwell lo	5)		
6) WELL LOG: Date Drilling: Started <u>12 30</u> 19 <u>99</u> Completed <u>12 - 30</u> 19 <u>99</u>	7)	DRILLIN Air Air Air I Othe	IG METHOD (Check): Rolary ArMud Rotary Hammer Cable Tool rr	Driven Bored Jetted			• Ñ	
From (ft.) To (ft.) Descript 0 3 To P 3 6 Capita	ion and color of formation material SOLム こんこ	8)	Borehol	e Completion (Check): erreamed B Gravel Pac Packed give interval from	Open Hole     ked      Other _     /0	ft. to _	aight Wi	all <b>8</b> ft.
6 15 CIA	t Stalls	CAS	ING, BL	ANK PIPE, AND WELL SC	REEN DATA:			-
50 55 SADO	4 Clay + Clay MIX	Dia.	New or	Steel, Plastic, etc. Perf., Slotted, etc.		Setting (ft.	)	Gage Casting
55 95 SAND	Stolle + Sardy Clay MIX	(in.)	Used	Screen Mfg., if commerc	ial Fr	rom	To	Screen
95 105 SAND	y Clay + markel + Sal	5	Den	Slotted		8 1	18	1035
	W + Shie Play							
(Use reverse side of Well Ow 13) Well plugged within 48 hours Casing left in well: Cement/benton From (ft) To (ft) From (ft)	ner's copy, if necessary) nite placed in well: Sacks used: To (R)		Cemente Methodu Cemente Distance Methodo	thromft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.toft.to_ft.toft.toft.toft.toft.toft.toft.toft.toft.to_	10 ft. No. of ft. No. of 14 14 14 14 14 15 16 16 16 16 16 16 16 16 16 16	fsacksuse fsacksuse lpontamina	$\frac{1}{d}$	In.
14) TYPEPUMP: Turbine Jet Submer Other Depth to pump bowts, cylinder, jet, e	sible Cylinder tc., ft.	10)	SURFA	CE COMPLETION iffied Surface Slab Installed iffied Steel Sleeve Installed ss Adapter Used oved Alternative Procedure L	Jsed			
15) WELLTESTS: Typetest: ∑Fump □ Bailer Yield: 2.5 gpm with 2.0 16) WATER QUALITY:	Jetted Estimated hrs.	11)	WATER Static le	LEVEL: rel <u>30</u> fl. below la flow	nd surface _ gpm.	Date <u>/ 2</u> Date	2-30	<u> </u>
Did you knowingly penetrate any strata which contained undesirable constituents?			PACKE	RS:	Туре		Dept	h , /
Type of water?			20 m	yes		10	/	
Was a chemical analysis made?		Libel o	ach and	FIU: ID	are Inte and com	First	a l	that failure
to complete items 1 thru 16 will result in the COMPANY NAME <u>Plaints Well</u>	stories and and in area supervision and in stories of Drougheld h	esubm	ittal. WELL D	EMP JT	4446	TH)	5	
ADDRESS P.O. Box 40	RED BROWNFIL	εL	) (City)		(State)	<u> </u>	79	316
(Signed)(Licehse Plu	d Well Driller) ease attach electric log, chemical analysi	 Is, and	(Signed) other pe	(F rtinent information, if ava	Registered Driller Tr Ilable.	rainee)***		

mail to: TDLR, P.O. Box 12157, Austin, TX 78711

25

DB

L
Map Key	Number of Records	Direction	Distance (mi/ft)	Site	DB
5	1 of 1	NW	0.13/	Triple D Trust	SDRW WELLS
			705.46	Meadow TX 79345	
Track NO:		471114			
Date Submi	tted:	2018-02-19			
Owner Nam	e:	Triple D Trust			
Owner Addı	ress:	4471 77th stree	et		
Owner Addı	ress2:				
Owner City:		lubbock			
Owner State	<del>)</del> :	TX			
Owner Zip:		79424			
County:		Terry			
Type of Wo	rk:	New Well			
Typ of Wrk	Oth Descr:				
Proposed U	se:	Irrigation			
Prop Use O	th Descr:				
Latitude:		33.313611			
Longitude:		-102.203889			
Drilling Date	e Started:	2018-01-28			
Drilling Date	e Completed:	2018-01-28			
Chemical A	nalysis:	No			
Company N	ame:	Jacob P Klasse	en Drilling Co		
Company A	ddress:	1382 US Hwy 3	380		
CompanyA	ddress2:	,			
Company C	ity:	Brownfield			
Company S	tate:	ТХ			
Company Z	ip:	79316			
Company C	ountry:				
Data Source	a:	Full SDR Data	base: SDRDB W	ell Location (Map)	
Report Link	:	https://www3.tv	wdb.texas.gov/ap	ops/waterdatainteractive/GetReports.aspx?Num=471114	Type=SDR-Well
Well Boreho	ole Information				
Top Depth:		0			
Bottom Dep	oth:	136			
Top Depth: Bottom Den	oth:	136.0			
20110111 200					
Well Strata					
Water Type	;				

Good

Мар Кеу	Number of Records	Direction	Distance (mi/ft)	Site	DB
6	1 of 1	W	0.21 / 1,086.04	Heinrich F Fehr Block 4X Sec 19 NW 1/4 Brownfield TX 79316	SDRW WELLS
Track NO:		640565			
Date Submi	tted:	2023-06-05			
Owner Nam	e:	Heinrich F Fehr			
Owner Add	ress:	902 N D Street			
Owner Addı	ress2:				
Owner City:		Brownfield			
Owner State	<del>)</del> :	ТХ			
Owner Zip:		79316			
County:		Terry			
Type of Wo	rk:	New Well			
Typ of Wrk	Oth Descr:				
Proposed U	se:	Domestic			
Prop Use O	th Descr:				
Latitude:		33.305153			
Longitude:		-102.205297			
Drilling Date	e Started:	2023-05-08			
Drilling Date	e Completed:	2023-05-09			
Chemical A	nalysis:	No			
Company N	ame:	JB Drilling			
Company A	ddress:	P O Box 12			
CompanyA	ddress2:				
Company C	ity:	Seminole			
Company S	tate:	ТХ			
Company Z	ip:	79360			
Company C	ountry:				
Data Source	<del>)</del> :	Full SDR Databa	ase; SDRDB W	ell Location (Map)	
Report Link	:	https://www3.tw	db.texas.gov/ap	ops/waterdatainteractive/GetReports.aspx?Num=640565	&Type=SDR-Well
Well Boreho	ole Information				
Top Depth: Bottom Dep	th:	130.0			
Ton Denth:		0			
Bottom Don	th-	130			
вопот рер	·u	100			

Map Key	Number of Records	Direction	Distance (mi/ft)	Site	DB
7	1 of 1	SSW	0.22 / 1,178.67	тх	TCEQ WELL LOGS
Grid No: Date Drilled Owners Nar County: Water Usag Static Level Depth Drille Latitude: Longitude:	: ne: e: : d:	24-47-5 06/11/1985 CALVIN INGR TERRY DOMESTIC 21 62 33.298472961 -102.19865685	AM 63072 9218602		

Key	Number of Records	Direc	tion	Distance (mi/ft)	Site							
•						:	8n 7m	NI EIG	s1 v			1
Please Send o certifie Texas I P. O. B	use black ink. riginal copy by d mail to the Department of Water Re ox 13087	sources	ATTE		State o TER WE	of Te	exas REP rivileg	ORT e Notice o	n Reverse Side	-	Texas Water Well Driller P. O. Box 13087 Austin, Texas 78711	s Boar
Austin	Texas 78/11	т				- (8)	D	1	<u> </u>	1	7	
1) OW 2) LO Co	CATION OF WELL:	<u>In or</u>	9m8	?r	Address	(Str <b>N</b> , (N.E.	E.	RFD)	_ direction from	Bro	(State) (2 unfield (Town)	Zip)
Driller with di- tion or well on Genera	must complete the legal stance and direction fro survey lines, or he must an official Quarter- or H I Highway Map and attac	description m two inters locate and i Half-Scale To ch the map	to the rig secting sec identify th exas Coun to this for	ht c- he hty m.	Legal descr Section 1 Abstract Distance	No No and d	rectio	Bl	ock No _ Survey Name o intersecting sec	Town	ship	
		8			See attach	ed ma	<b>.</b>		Street Street			
3) TY 2 Ne Re	PE OF WORK (Check): w Well Deep conditioning Plug	a) pening [ ging [	PROPOS Domest	SED USE (Check) tic Industrial on Test Well [	): Public Su Other	ipply		5) DRIL	LING METHOD Rotary 🗌 Air H Rotary 🔲 Cable	(Check): lammer [ r Tool [	] Driven    Bored ] Jetted    Other	
6) WE	LL LOG:		DIA ia. (in.)	METER OF HOL From (ft.)	.E To (ft.)			HOLE CO n Hole vel Packed	MPLETION:	ht Wall	Underreamed	đ
Dat	e drilled <u>6-11-85</u>	- 8	334	0	62		If G	ravel Pack	ed give interval	. from	15_ft. to _62	
Fro (ft.	m To ) (ft.)	Des	cription a	ind color of forma material	ation	8)	CASIN	IG, BLAN	K PIPE, AND WE	LL SCRE	EN DATA:	
0	- 5 Topso	n'l	2	*		Dia. (in.)	New or Used	Stee Perf Scre	l, Plastic, etc. ., Slotted, etc. en Mgf., if comm	ercial	Setting (ft.)	- Ga Ca Sc
1:	2-21 rock	OIC.				5	N	prc	Blank	-	0 32	16
2	1-61 sand	QLue	12			5	N	pre	Slotte	d	32-62	1
<u> </u>	sh= Clay=	Biae						15 No	Wes rg SI	0/3		
							Cemer Metho Cemer	nted from d used nted by	0	.ft. to	15	ft ft
			RE	CEIVER	2	10)	SURI	FACE CON ecified Sur less Adapt proved Al	MPLETION face Slab Installe er Used [Rule 31 ternative Procedu	d [Rule 31 9.44(d)] re Used [F	19.44(c)] Rule 319.71]	
			AU	G 2 5 86	-	11)	WAT	ER LEVE	2/ a.s.		-11-	-85
	8-14 - 1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-		Texas V	Water Commissi	ion	{	Ar	tesian flow	/	gpm.	Date	
			~		/	12)	PAC	CERS:	NA.	linde,	Depth	_
	(1):00	overce cide i	f necessar		3	13)	TYP Turl	E PUMP: bine er	🗆 Jet 🛛 🖬	Submersi	ble Cylinder	ti
15) W D W If T	VATER QUALITY: id you knowingly penet ater? Yes yes, submit "REPORT ype of water? /as a chemical analysis.m	rate any stre No OF UNDES ade?	IRABLE 1 Depth of Yes	contained undesir WATER" strata No	rable	14)	WEL 'Typ Yiel	L TESTS: e Test: d:5	Pump 2 gpm with _	Bailer	Jetted Estimation	ated hrs.
COMP	I here by certify that knowledge and belief ANY NAME F<+	this well with the second seco	as drilled I and that fi	by me (or under n silure to complete Q	ny supervisi e items 1 thr Water V	on) an ru 12 v Vell Dr	d that vill res iller's	each and out in the License N	all of the stateme log(s) being retur $a_{0}$ $2320$	nts herein ned for co	are true to the best of m mpletion and resubmitta	il.
ADDR	ESS BOX 6	Type or Pri	nt)	Br	ownfie	eld			Tex	as	39316	
	. NIL A	" A t	21	1	(Cit	(Y)		0	022.	state)	(Zip)	
(Signer		censed Wate	ar Well Dri	iller)	(Sigi	ned)		(Register	ed Driller Trainee	mag	For TDWR use only	~

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Key	Number of Records	Direc	tion	Distance (mi/ft)	Site							
•						:	8n 7m	NI EIG	s1 v			1
Please Send o certifie Texas I P. O. B	use black ink. riginal copy by d mail to the Department of Water Re ox 13087	sources	ATTE		State o TER WE	of Te	exas REP rivileg	ORT e Notice o	n Reverse Side	1	Texas Water Well Driller P. O. Box 13087 Austin, Texas 78711	s Boar
Austin	Texas 78/11	т				- (8)	D	1	<u> </u>	1	7	
1) OW 2) LO Co	CATION OF WELL:	<u>In or</u>	9m8	?r	Address	(Str <b>N</b> , (N.E.	E.	RFD)	_ direction from	Bro	(State) (2 unfield (Town)	Zip)
Driller with di- tion or well on Genera	must complete the legal stance and direction fro survey lines, or he must an official Quarter- or H I Highway Map and attac	description m two inters locate and i Half-Scale To ch the map	to the rig secting sec identify th exas Coun to this for	ht c- he nty m.	Legal descr Section 1 Abstract Distance	No No and d	: rectio	Bl	ock No _ Survey Name o intersecting sec	Town	ship	
		8			See attach	ed ma	<b>.</b>		Street Street			
3) TY 2 Ne Re	PE OF WORK (Check): w Well Deep conditioning Plug	a) pening [ ging [	PROPOS Domest	SED USE (Check) tic Industrial on Test Well [	): Public Su Other	ipply		5) DRIL	LING METHOD Rotary 🗌 Air H Rotary 🔲 Cable	(Check): lammer [ r Tool [	] Driven    Bored ] Jetted    Other	
6) WE	LL LOG:		DIA ia. (in.)	METER OF HOL From (ft.)	.E To (ft.)			HOLE CO n Hole vel Packed	MPLETION:	ht Wall	Underreamed	đ
Dat	e drilled <u>6-11-85</u>	- 8	334	0	62		If G	ravel Pack	ed give interval	. from	15_ft. to _62	
Fro (ft.	m To ) (ft.)	Des	cription a	ind color of forma material	ation	8)	CASIN	IG, BLAN	K PIPE, AND WE	LL SCRE	EN DATA:	
0	- 5 Top so	n'l	2	*		Dia. (in.)	New or Used	Stee Perf Scre	l, Plastic, etc. ., Slotted, etc. en Mgf., if comm	ercial	Setting (ft.)	- Ga Ca Sc
1:	2-21 rock	OIC.				5	N	prc	Blank	-	0 32	16
2	1-61 sand	QLue	12			5	N	pre	Slotte	d	32-62	1
<u> </u>	sh= Clay=	Biae						15 No	Wes rg SI	0/3		
							Cemer Metho Cemer	nted from d used nted by	0	.ft. to	15	ft ft
			RE	CEIVER	2	10)	SURI	FACE CON ecified Sur less Adapt proved Al	MPLETION face Slab Installe er Used [Rule 31 ternative Procedu	d [Rule 31 9.44(d)] re Used [F	19.44(c)] Rule 319.71]	
			AU	G 2 5 86	-	11)	WAT	ER LEVE	2/ a.s.		-11-	-85
	8-14 - 1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-		Texas V	Water Commissi	ion	{	Ar	tesian flow	/	gpm.	Date	
			~		/	12)	PAC	CERS:	NA.	linde,	Depth	
	(1):00	overce cide i	f necessar		3	13)	TYP Turl	E PUMP: bine er	🗆 Jet 🛛 🖬	Submersi	ble Cylinder	ti
15) W D W If T	VATER QUALITY: id you knowingly penet ater? Yes yes, submit "REPORT ype of water? /as a chemical analysis.m	rate any stre No OF UNDES ade?	IRABLE 1 Depth of Yes	contained undesir WATER" strata No	rable	14)	WEL 'Typ Yiel	L TESTS: e Test: d:5	Pump 2 gpm with _	Bailer	Jetted Estimation	ated hrs.
COMP	I here by certify that knowledge and belief ANY NAME F<+	this well with the second seco	as drilled I and that fi	by me (or under n silure to complete Q	ny supervisi e items 1 thr Water V	on) an ru 12 v Vell Dr	d that vill res iller's	each and out in the License N	all of the stateme log(s) being retur $a_{0}$ $2320$	nts herein ned for co	are true to the best of m mpletion and resubmitta	il.
ADDR	ESS BOX 6	Type or Pri	nt)	Br	ownfie	eld			Tex	as	39316	
	. NIL A	" A t	21	1	(Cit	(Y)		0	022.	state)	(Zip)	
(Signer		censed Wate	ar Well Dri	iller)	(Sigi	ned)		(Register	ed Driller Trainee	mag	For TDWR use only	~

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## IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING PRIVILEGE OF CONFIDENTIALITY

The Water Well Drillers Board and the Department of Water Resources are concerned that some persons having water wells drilled may not be aware of the confidentiality privilege provision of Section 5 of the Water Well Drillers Act. Section 5, the Reporting of Well Logs, reads as follows:

> "Every licensed water well driller drilling, deepening or otherwise altering a water well within this State shall make and keep, or cause to be made and kept, a legible and accurate well log, and within 30 days from the completion or cessation of drilling, deepening or otherwise altering such a water well, shall deliver or transmit by certified mail a copy of such well log to the department, and the owner thereof or the person having had such well drilled. Each copy of a well log, other than a department copy, shall include the name, mailing address, and telephone number of the Board and the department. The well log required herein shall at the request in writing to the department, by certified mail, by the owner or the person having such well drilled be held as confidential matter and not made of public record."

The last sentence specifies the means whereby you can, if you wish, assure that logs of your wells will be kept confidential.

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The last sentence specifies the means whereby you can, if you wish, assure that logs of your wells will be kept confidential.





Map Key	Number of Records	Direction	Distance (mi/ft)	Site	DB
8	1 of 1	w	0.25 / 1,300.84	Penny Pierce Farms 3B Sect 22 Block 4X Brownfield TX 79316	SDRW WELLS
Track NO:		369227			
Date Submit	ted:	2014-07-21			
Owner Name	9:	Penny Pierce F	Farms 3B		
Owner Addr	ess:	3216 90th St			
Owner Addr	ess2:				
Owner City:		Lubbock			
Owner State	:	TX			
Owner Zip:		79423			
County:		Terry			
Type of Wor	k:	New Well			
Typ of Wrk (	Oth Descr:				
Proposed U	se:	Irrigation			
Prop Use Ot	h Descr:				
Latitude:		33.307223			
Longitude:		-102.209723			
Drilling Date	Started:	2014-04-28			
Drilling Date	Completed:	2014-04-28			
Chemical Ar	nalysis:	No			
Company Na	ame:	Goertzen Drillir	ng		
Company A	ddress:	Rt 1 Box 505			
CompanyAd	dress2:	0			
Company Ci	ty:	Seminole			
Company St	ate:	1X			
Company Zi	p:	79360			
Company Co	Suntry:			(all Lagation (Man)	
Data Source		https://www.2.tu	udb toxoc gov/or	ell Location (Map)	
кероп Link.		nups.//www3.tv	vub.iexas.yov/a		59227 & Type=SDR-Weil
<u>Well Boreho</u>	<i>le Information</i>				
Top Denth [.]		0			
Bottom Dep	th·	120			
Dottom Dop					
Top Depth: Bottom Dep	th:	120.0			
<u>Well Levels</u>					
Maasurama	at-	80			
Moasuromo	n. ht Dato:	2014-04-28			
measuremen	n bate.	2014 04 20			

Map Key	Number of Records	Direction	Distance (mi/ft)	Site	DB
9	1 of 1	NNW	0.25 / 1,327.30	ТХ	TCEQ WELL LOGS
Grid No: Date Drilled Owners Nar County: Water Usag Static Level Depth Drille Latitude: Longitude:	: ne: e: : d:	24-47-5 09/23/1999 TRIPLE D TRI TERRY IRRIGATION 100 142 33.315351700 -102.19938260	JST 511016 0427783		

ATTENTION OWNER: Confidentiality Privilege Natice on reverse side of Well Owner's copy (pink)	State o WELL	of Te REF	exas POR	т	Texa	s Departmen Regul P.O. Bo: Austin, T 512-46	at of Licensi ation x 12157 X 78711 3-7880	ng &
1) OWNER Triple D Tru Na 2) ADDRESS OF WELL'S LOCATION: County Terry	staddress me) Black 4x, Section (Street, RFD or other)	ss 4	17/8 ) 5	<u>64^{+h}</u> (StreetorRFD) <u>い '14</u> (State)	Lubbock (City Loi (Zip)	/ T /) ng irid #2	X 7 (State) Lat 4-47-5	9414 (Zip)
3) TYPE OF WORK (Check): New Well Deepening Reconditioning Plugging	(4) PROPOSEDUSE(Check): LM Industrial V Irrigation In If Public Supply well, were plans su	onitor ijection bmitted	D Pu to the 1	nvironmental Soil I Iblic Supply	Boring Dome: De-watering Te s No	stic /	<u>"</u>	
6) WELL LOG: Date Drilling: Started <u>9-プン</u> 19 <u>クラ</u> Completed <u>9-ン3</u> 19 <u>クラ</u>	DIAMETER OF HOLE           Dia. (in.)         From (ft.)         To (ft.)           9         Zg         Surface         1432	7)	DRILLII Air Air Oth	NG METHOD (C Rotary Mu Hammer (Cat er	heck): Driver ad Rotary Bored ble Tool Detter		-05	
From (ft.)         To (ft.)         Descrip           0         4         To           4         15         Classical           15         18         Ca	ion and color of formation material Sq.1 4. Soft Culiche liche	B) CAS	Boreho	le Completion (C lerreamed el Packed give int ANK PIPE, AND	Check): Oper Gravel Packed () Ierval from () WELL SCREEN DA	n Hole C Other	) Straight Wi	all fl.
18 78 me	d. SAndstone		New	Steel, Plastic,	, etc.	Settin	ig (fl.)	Gage
18 42 Med. 5AI	tone Isandy Clay mix	Dia. (in.)	or Used	Perf., Slotted, Screen Mfg., i	, etc. if commercial	From	То	- Casting Screen
112 127 Soft	Sandstone	6"	ne	plass."		0	102	
127 138 Grave	Le. Clay	6"	me	PLACET	SIGHE	102	142	1035
(Use reverse side of Well Ow	ner's copy, if necessary)	9)	CEMEN	ITING DATA	_ft.to <u>/0</u> ft. ft.toft.	No. of sack	sused	<u></u>
13)     Well plugged within 48 hours       Casing left in well:     Cement/bentor       From (ft)     To (ft)     From (ft)	nite placed in well: Sacks used; To (ft)		Method Cement Distanc Method	ed by <u><u><u></u></u> ed by <u><u><u></u></u> eto septic system f of verification of ab</u></u>	ield lines or other conc ove distance	entraled conta	mination <u>A</u>	ンタ用. シュムコーク
14) TYPEPUMP: Turbine Jet Subme Other Depth to pump bowls, cylinder, jet, et	rsible  Cylinder tc.,ft.	10)	SURFA	CE COMPLETIC cified Surface Slab cified Steel Sleeve ess Adapter Used	DN Installed Installed			
15) WELL TESTS: Typetest: ☑ Pump ☐ Bailer Yield: <u>30</u> gpm with <u>30</u> 16) WATER QUALITY:	Estimated hrs.	11)	WATER Static le Artesia	LEVEL: wel 100	fi. below land surfact	e Date	9-23 9-23	- 78
Did you knowingly penetrate any strata w constituents?	hich contained undesirable	12)	PACKE	RS:		Fy 2 0 19	98 pept	h
Yes No If yes, submit "R Type of water?	EPORT OF UNDESIRABLE WATER" Depth of strata		600	-e1	COMMENT		/ ₆₀ .	<u> </u>
Was a chemical analysis made?	res DI No				1			
I certify that I drilled this well (or the well v to complete items 1 thru 16 will result in th COMPANY NAME <u>Plains We</u> ADDRESS <u>P. D. Box 406</u> (Streeto	ras drilled under my direct supervision) and a log(s) being returned for completion and <u>II Service</u> peor print) Broyn (RFD)	that environment	ach and ittal. WELL D (City)	all of the statem RILLER'S LICEN	ents herein are true a NSE NO4 TX	(State)	understand W 793 (Z	ihat failure
(Signed)	ease attach electric log, chemical analys White - TDI R Vellow - DR	is, and	(Signed) other p	ertinent informat	(Registered tion, if available. WNER	Driller Trainee	)	

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

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ATTENTION OWNER: Confidentiality Privilege Notice on reverse side of Well Owner's copy (pink)	State o WELL	of Te REF	exas POR	т	Texa	s Departmer Regul P.O. Bo Austin, 1 512-46	nt of Licensi ation x 12157 X 78711 3-7880	ng &
1) OWNER Triple D True 2) ADDRESS OF WELL'S LOCATION: County TErry	st ADDRES _Block 4x Section (Street, RFD or Other)	135 4 12(	17/8 ) 5	(StreetorRFD) VV 14 (State	Lubbock (City b) (Zip) G	/ 7 /) ng srid #2	X 7 (State) Lat. .4-47-5	9414 (Zip) 5
3) TYPE OF WORK (Check):  New Well Deepening Reconditioning Plugging	(4) PROPOSEDUSE(Check): M Industrial Virrigation In If Public Supply well, were plans su	onitor jection bmitted	E Pu to the 1	nvironmental Soil Iblic Supply	Boring Dome De-watering Te es No	stic stwell	5)	1
6) WELL LOG: Date Drilling: Started <u> </u>	DIAMETER OF HOLE           Dia. (in.)         From (ft.)         To (ft.)           9         Zg         Surface         / 43	7)	DRILLII Air Air Oth	NG METHOD (C Rotary 2 M Hammer 1 Ca er	Check): Drive ud Rotary Bored ble Tool Detter	n	-05	Ň
From (ft.) To (ft.) Descrip 0 4 To 4 15 Clau 15 18 C.a	ion and color of formation material	8) CAS	Boreho	le Completion ( lerreamed el Packed give in ANK PIPE, AND	Check): Open Gravel Packed Official Interval from 0	n Hole Otherft TA:	] Straight Wi 0	all ft.
18 78 me	d. SAndstone		New	Steel, Plastic	, etc.	Settir	ig (ft.)	Gage
18 92 med. 5AI	tone white sandy clay mik	Dia. (in.)	or Used	Perf., Slotted Screen Mfg.,	l, etc. if commercial	From	То	- Casting Screen
112 127 Soft	SANdstone	6"	ne	plass."		0	102	
127 138 Grave	clay	6"	ne	PIACAUL	Slore/	102	142	1035
150 142 DIG					545			
(Use reverse side of Well Ow 13) Well plugged within 48 hours Casing left in well: Cement/bentor From (ft) To (ft) From (ft)	ner's copy, if necessary) nite placed in well: Sacks used: To (fl)	.,	Cement Method Cement Distanc Method	wdfrom used ed by et o septic system of verification of al	ft. to <u>/O</u> ft. ft. to <u></u> ft. toft. ft. toft. ft. diff. ft. ft. ft. ft. ft. ft. ft. ft. ft.	No. of sack No. of sack entrated conta	sused 8 sused mination 14 Tt +4:	2                                                                                                                                 
14) TYPEPUMP: Turbine Jet Subme Other Depth to pump bowls, cylinder, jet, e	sible Cylinder tc.,ft.	10)	SURFA	CE COMPLET	ION Dinstalled Installed			
15) WELLTESTS: Typetest: ∯Pump Beiler Yield: _32 gpm with _32 16) WATER QUALITY:	Estimated hrs.	11)	WATER Static le Artesia	LEVEL: wel 100	fi. below land surfac	e Date	9-23 50	- 28
Did you knowingly penetrate any strata w constituents?	hich contained undesirable	12)	PACKE	RS:		Fyp2 0 19	98 pept	<u>h</u>
Type of water?	Depth of strata	_			1			
ADDRESS	res Let No res drilled under my direct supervision) and e log(s) being returned for completion and <u>H</u> <u>Service</u> <u>Broy</u> (RFD)	t that e resubm	ach and iiltal. WELL C <u>e / c/</u> (City)	all of the statem	nents herein are true a NSE NO4 	and correct. I 446 I (State)	understand W 793 (Zi	that failure
(Signed)	ease attach electric log, chemical analys	is, and	(Signed) other p	ertinent informa	(Registered ation, if available.	Driller Trainee	)	

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

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Map Key	Number of Records	Direction	Distance (mi/ft)	Site	DB
10	1 of 1	wsw	0.28 / 1,462.39	Johan Klassen Block 4X Sec 19 Sw 1/4 Brownfield TX 79316	SDRW WELLS
Track NO:		640529			
Date Submi	tted:	2023-06-05			
Owner Nam	e:	Johan Klassen			
Owner Addı	ress:	1012 Old Lame	esa Road		
Owner Addı	ress2:				
Owner City:	,	Brownfield			
Owner State	ə:	ТХ			
Owner Zip:		79316			
County:		Terry			
Type of Wo	rk:	New Well			
Typ of Wrk	Oth Descr:				
Proposed U	se:	Domestic			
Prop Use O	th Descr:				
Latitude:		33.303021			
Longitude:		-102.203748			
Drilling Date	e Started:	2023-05-19			
Drilling Date	e Completed:	2023-05-19			
Chemical A	nalysis:	No			
Company N	ame:	JB Drilling			
Company A	ddress:	P O Box 12			
CompanyA	ddress2:				
Company C	ity:	Seminole			
Company S	tate:	TX			
Company Z	ip:	79360			
Company C	ountry:				
Data Source	<del>)</del> :	Full SDR Data	base; SDRDB W	ell Location (Map)	
Report Link	:	https://www3.tv	wdb.texas.gov/ap	ops/waterdatainteractive/GetReports.aspx?Num=	640529&Type=SDR-Well
<u>Well Boreho</u>	ole Information				
Top Depth: Bottom Dep	th:	121.0			
Top Depth:		0			
Bottom Dep	oth:	121			

Мар Кеу	Number of Records	Direction	Distance (mi/ft)	Site	DB
11	1 of 2	WNW	0.34/	Joan Williams	SDRW WELLS
			1,771.20	In Country TX	
Track NO:		579618			
Date Submi	itted:	2021-07-29			
Owner Nam	e:	Joan Williams			
Owner Add	ress:	2294 Fm 211			
Owner Add	ress2:				
Owner City:	:	Meadow			
Owner State	e:	ТХ			
Owner Zip:		79345			
County:		Terry			
Type of Wo	rk:	New Well			
Typ of Wrk	Oth Descr:				
Proposed U	lse:	Irrigation			
Prop Use O	th Descr:	-			
Latitude:		33.31118			
Longitude:		-102.21163			
Drilling Date	e Started:	2021-07-08			
Drilling Date	e Completed:	2021-07-08			
Chemical A	nalysis:	No			
Company N	lame:	Carter Drilling C	Co., Inc		
Company A	ddress:	3301 56th St			
CompanyA	ddress2:				
Company C	ity:	Lubbock			
Company S	tate:	ТХ			
Company Z	ip:	79413			
Company C	Country:				
Data Source	e:	Full SDR Datab	ase; SDRDB W	/ell Location (Map)	
Report Link	C	https://www3.tw	/db.texas.gov/a	ops/waterdatainteractive/GetReports.aspx?Num=57961	8&Type=SDR-Well
Well Boreho	ole Information				
Top Depth:					
Bottom Dep	oth:	125.0			
Top Depth:		0			
Bottom Dep	oth:	125			

Map Key	Number of Records	Direction	Distance (mi/ft)	Site	DB
11	2 of 2	WNW	0.34/	John Williams	SDRW WELLS
			1,771.20	In Country TX	
Track NO:		588653			
Date Submi	tted:	2021-11-08			
Owner Nam	e:	John Williams			
Owner Add	ress:	2294 FM211			
Owner Add	ress2:				
Owner Citv:	•	Meadow			
Owner State	e;	ТХ			
Owner Zip:		79345			
County:		Terry			
Type of Wo	rk:	New Well			
Typ of Wrk	Oth Descr				
Proposed U	lse:	Irrigation			
Pron Use O	th Descr	mgallon			
l atitude:		33 31118			
Lonaitude [.]		-102 21163			
Drilling Date	e Started	2021-08-31			
Drilling Date	e Completed:	2021-08-31			
Chomical A	nalveie:	No			
Company N	lamo.	Carter Drilling (	o Inc		
Company A	ddross	3301 56th St	<i>b</i> 0., mo		
Company A	ddrocc?	3301 30(1) 3(			
CompanyA	1016332.	Lubbock			
Company S	ily.	TY			
Company 3	iale.	70/12			
Company Z		79415			
Company C	ountry:			(all Leastion (Man)	
Data Source	9:	Full SDR Dalab	ase, SDRDB W	/eii Localion (Map)	
Report Link		https://www3.tw	/db.texas.gov/ap	ops/waterdatainteractive/GetReports.aspx?Num=588653&I	ype=SDR-Well
Well Boreho	ole Information				
Top Depth:					
Bottom Dep	oth:	125.0			
Ton Don't		0			
i op Depth:	. 41.	U			
Bottom Dep	om:	125			

Map Key	Number of Records	Direction	Distance (mi/ft)	Site	DB
12	1 of 1	NW	0.37 / 1,958.82	Triple D Trust South of Meadow on CR 535, 1.25 mile, East 1/4 mi. Meadow TX 79345	SDRW WELLS
Track NO:		310202			
Date Submi	tted:	2013-01-30			
Owner Nam	e:	Triple D Trust			
Owner Add	ress:	4417 77th Stre	et		
Owner Add	ress2:				
Owner City		Lubbock			
Owner State	e:	ТХ			
Owner Zip:		79424			
County:		Terry			
Type of Wo	rk:	New Well			
Typ of Wrk	Oth Descr:				
Proposed U	lse:	Irrigation			
Prop Use O	th Descr:				
Latitude:		33.316944			
Longitude:		-102.203612			
Drilling Date	e Started:	2013-01-23			
Drilling Date	e Completed:	2013-01-23			
Chemical A	nalysis:				
Company N	lame:	Presage Enviro	onmental, Inc.		
Company A	ddress:	P. O. Box 288			
CompanyA	ddress2:	D (1)			
Company C	ity:	Brownfield			
Company S	tate:	1X			
Company Z	ip:	79316			
Company C	ountry:			(all Leastion (Man)	
Data Source	8.	Full SDR Dala	Jase, SDRDB W	en Location (Map)	
	alo Information	https://www3.tv	vub.iexas.yov/a		x ype=3DK-weii
weii Borend	ble information				
Top Depth: Bottom Dep	oth:	128.0			
Ton Donth		0			
Rottom Der	oth.	128			
20110111 Dep		120			

Мар Кеу	Number of Records	Direction	Distance (mi/ft)	Site	DB
13	1 of 1	SW	0.47 / 2,465.17	Johan Dyck Block 4X Sec 19 NW 1/4 Brownfield TX 79316	SDRW WELLS
Track NO:		640562			
Date Submit	ted:	2023-06-05			
Owner Name	<del>)</del> :	Johan Dyck			
Owner Addr	ess:	2024 County R	oad 505		
Owner Addr	ess2:				
Owner City:		Brownfield			
Owner State	:	TX			
Owner Zip:		79316			
County:		Terry			
Type of Wor	k:	New Well			
Typ of Wrk (	Oth Descr:				
Proposed Us	se:	Domestic			
Prop Use Ot	h Descr:				
Latitude:		33.299399			
Longitude:		-102.203301			
Drilling Date	Started:	2023-05-19			
Drilling Date	Completed:	2023-05-19			
Chemical Ar	nalysis:	No			
Company Na	ame:	JB Drilling			
Company Ad	ddress:	P O Box 12			
CompanyAd	dress2:	0			
Company Ci	ty:	Seminole			
Company St	ate:	1X			
Company Zi	D:	79360			
Company Co	ountry:			all Leastion (Man)	
Data Source	:	Full SDR Data	vdb toxoo gov/or	ell Location (Map)	
Report Link:		nttps://www3.tv	vob.texas.gov/ap	ps/waterdatainteractive/GetReports.aspx?Num=6	40562&Type=SDR-weil
Well Boreho	le Information				
Top Depth: Bottom Dept	th:	120.0			
Top Depth: Bottom Dept	th:	0 120			

Map Key	Number of Records	Direction	Distance (mi/ft)	Site	DB
14	1 of 1	WNW	0.50 / 2,650.38	ТХ	TCEQ WELL LOGS
Grid No:		24-47-4			
Date Drilled	:	02/06/2001			
Owners Nar	ne:	AUGUSTINE (	ORTIZ		
County:		TERRY			
Water Usag	e:	DOMESTIC			
Static Level	:	90			
Depth Drille	d:	125			
Latitude:		33.312546510	87786		
Longitude:		-102.21444936	6441628		

Records	(	(mi/ft)							
•	2							2	2
Attention Owner: Confidentiality Privilege Notice on reverse side of owner's copy.	T_ P.O. Box 121	s Departm Water Well 57 Austin, Tex To Email address	ent of Licer Driller/Pump In kas 78711 (51) Il free (800)803 :: water.well@	staller Pro 2)463-788 3-9202 license.st	Regul: gram 80 FAX (5 ate.tx.us	<b>n</b> 12)463-861	This and f and c upon	form must be co iled with the dep owner within 60 completion of the	mp bart da he
		n A grister	ELL REP	JRI	1+1***********************************		an in the second second	en e	100 E
Name Algustine OATiz	Address P.O. Bo	**	City	IRAdo	w		State TEALS	Zip 2934	13
County JEAN 11	Physical Addre	ess	City			ал на таку (тр. 1996) Спорти и при стану (тр. 1996) Спорти и при стану (тр. 1996)	State	Zip	
3) Type of Work	Lat. 33	1 18 1	45 Lon	g. /02	12	152	Grid # 2	1-47-4	(
Reconditioning	4) Proposed Industrial	d Use (check)	Monitor	Environi Public Su TNRCC?	nental Soil Ipply	Boring <b>T</b> De-watering Yes <b>D</b> No	Domestic Testwell	5)	
6) Drilling Date	Di	ameter of Hol	e	7) Dril	ling Met	hod (check)	) Driven		
Started 2/6 /01	Dia.(in)	From (ft)	To (ft)	Air	Rotary 🗳 Hammer (	Mud Rotary	ol D Jetted		
Completed 2/6/0/				O Oth	er				
From (ft) To (ft) Descri	ption and col	or of formatio ん	on material	8) Bor	ehole Co nder-rear	mpletion ned BGray	□ Open Ho vel Packed □ al from _/0	le Straight Otherft. to 120	t V
3 30 30 79	SANDS?	E ON E		Dia.	ng, Blan New Or	Steel, Plast Perf., Slott	Well Screen lic, etc. ed. etc	Data Setting (ft)	G
99 101	CLAY			(in.)	Used	Screen Mf	g., if commercial	From To	s
10/ 110	SANd W	; Thelay	strasks	5	Ń	PERF	Phastic	80 120	-
120 125	BLYE	Chily							t
				9) Cene	menting nting from	Data ft. 1	to_10ft.	# of sacks used .	4
(Use reverse side of We	ell Owner's copy,	If necessary)		Method	Used_H	AND ft. t	oft.	# of sacks used	_
13) Plugged Casing left in well: Cement/Bentonit	ed within 48 h	ours		Cement	e to septic s	system field or	other concentrate	d contamination	15
From (ft) To (ft) From	(ft) T	To (ft)	Sacks used	Method	of verifical	tion of above d	istance <u>72.4</u>	4420	_
					ified Surfac	e Slab Installe	d		
14) Typepump		Cylinder		Pitles     Appr	ified Surfac is Adapter I oved Alterr	e Sleeve Instal Jsed ative Procedu	lled re Used		
Other Depth to pump bowls, cylinder, jet etc Depth to pump bowls, cylinder, jet etc Depth to pump bowls, cylinder, jet etc	ft.			11) W	ater Lev	el EHER		c nai Ta	50
Typetest Pump Bailer Jet Yield: / gpm with ft dr	ted Estimate	ed hrs.		Artesia	n Flow		Date /		
16) Water Quality Did you knowingly penetrate and strata YES NO If yes, did you submi	which contain un	desirable constitue	ents. WATER	12) Pa	ackers	NB	TYPRIAR 0 (	3 2007	cc
Was a chemical analysis made Yes	Depth of S No	trata				L	4!	1	ē
Company or individual's Name (1	type or print)	MANZ	5 Jano	520	UjCE		h the second		
Address O. ROX 16:	144		City hugo	och		State	TRAAS	Zip	Y
Address P. Or BOX 16: Signature Strength	<i>h.h.</i> 4	2, 18	City h upp	oc.h	free starts and	State	TRAAS	Zip <b>y</b>	¥-

DB

Мар Кеу

Number of

Direction

Distance

Site

	(1	mi/ft)							
•								2	2
Attention Owner: Confidentiality Privilege Notice on reverse side of owner's copy.	T_ P.O. Box 1215	s Departme Water Well 57 Austin, Tex Toli Email address:	ent of Licen Driller/Pump Ins as 78711 (512 I free (800)803 water.well@1	se and staller Proj 2)463-788 -9202 icense.st	Regul:	<b>n</b> 12)463-8610	This and fi 5 and o upon	form must be co iled with the dep owner within 60 completion of th	mj bar da he
en e		W	ELL REPO	ORT	: ±./**/3		an suite an sit		10. 5
Name	Address		City			**********	State	Zip	2.4
AUSUSIINE DATIZ	1.0. 60	<u>^ 44</u>	<u></u>	PAdo			IFAAS	773	
County JEAN V	Physical Addre	ess	City	- 1977 C 64			State	Zip	
3) Type of Work	Lat. 33	1 18 1	45 Long	102	12	152	Grid # 24	4-47-4	(
New Well Deepening	4) Proposed	Use (check)	Monitor	Environ	nental Soil	Boring	omestic	5)	
Reconditioning		Irrigation	Injection	Public Su	ipply 🛄 .	De-watering	Testwell		
6) Drilling Date	If Public Suppl	y well, were plans	submitted to the	TNRCC?	ling Met	(es INO hod (check)	Driven	-	
Started 2 16 101	Dia.(in)	From (ft)	To (ft)	Air	Rotary	Mud Rotary	Bored		
	124	Toy	17.8	Air	Hammer [	Cable Too	Jetted		
Completed X 16 101		T2.	-	Oth Oth	er				
From (ft) To (ft) Descri	intion and col	or of formatio	n material	8) Bor	ehole Co	moletion		le 🖼 traight	+ V
0 3 7	Ton Go!	2	ii iiideer iai		nder-rear	ned BGrav	el Packed	Other	
3 30 /	Silich	6		- If Gra Casi	ng, Blanl	give the interv k Pipe, and	Well Screen	ft. to 120 Data	
30 79	SANDIST.	NE			New	Steel, Plast	ic, etc.	Setting (ft)	G
79 89	SAND			Dia. (in.)	Or Used	Perf., Slotte Screen Mfg	ed, etc 2., if commercial	From To	s
89 101	Chay			5	N	Ph427	ic	Toy 80	Þ
10/ 110	5400 W	; Therey	STREAKS	5	N	PERF	Phastic	80 120	+
120 125	RLUE	Pille							+
1.0 1.0	12			9) Cer	nenting	Data			-
			1900 M.BARCA	Ceme	nting from	ft. t	o_ <u>10</u> ft.	# of sacks used . # of sacks used	4
(Use reverse side of We	ell Owner's copy, l	If necessary)		Method	Used_H	ANG	Deres	" or sucks used	_
		OTTER		l Cement					1.
13) Plugged Used Well plugged Casing left in well: Cement/Bentonite	ed within 48 h c placed in well:	ours		Distanc	e to septic s	ystem field or	other concentrate	ed contamination	12
13) Plugged     U Well plugged       Casing left in well:     Cement/Bentonitie       From (ft)     To (ft)     From	ed within 48 h <u>c placed in well:</u> (ft) T	o (ft)	Sacks used	Distanc Method	e to septic s of verificat	ystem field or ion of above d	other concentrate	ed contamination	12
13) Plugged     □ Well plugg:       Casing left in well:     Cement/Bentonitit       From (ft)     To (ft)     From (ft)	ed within 48 h <u>c placed in well:</u> (ft) T	o (ft)	Sacks used	10) Su	e to septic s of verificat	ystem field or ion of above d ompletion e Slab Installed	other concentrate istance <b>MEAS</b>	ed contamination	~
13) Plugged     □ Well plugg.       Casing left in well:     Cement/Bentonits       From (ft)     To (ft)       From (ft)     To (ft)	ed within 48 h <u>e placed in well:</u> (ft) T		Sacks used	10) Su	e to septic s of verificat	system field or tion of above d mpletion e Slab Installer e Sleeve Instal	other concentrate istance <b>MEAS</b> I led	ed contamination	
13) Plugged     Well plugged       Casing left in well:     Cement/Bentonius       From (ft)     To (ft)     From       14) Typepump     Jet     Image: Comparison of the second sec	ed within 48 h <u>e placed in well:</u> (ft) T Submersible	o (ft)	Sacks used	10) St Speci Pitles Appr	e to septic s of verifical <b>orface Co</b> fied Surfac fied Surfac s Adapter I oved Altern	ystem field or ion of above d mpletion e Slab Installed e Sleeve Instal Jsed lative Procedur	other Concentrate istance <b>47241</b> I led re Used	ed contamination	
13) Plugged     Well plugg.       Casing left in well:     Cement/Bentonitit       From (ft)     To (ft)       From (ft)     To (ft)       Id) Typepump     Jet       Other     Depth to pump bowls, cvlinder, jet etc.,	ed within 48 h c placed in well: (ft) T Submersible C	o (ft)	Sacks used	10) Su Speci Pitles Appr 11) W	e to septic s of verificat inface Co fied Surfac is Adapter I oved Altern ater Lev	ystem field or ion of above d ompletion e Slab Installed e Sleeve Instal Jscd ative Procedur	other concentrate istance <b>MRAS</b> d led e Used	ed contamination	
13) Plugged     Well plugged       Casing left in well:     Cement/Bentonitis       From (ft)     To (ft)     From       14) Typepump     Jet     Image: Comparison of the second se	ed within 48 h c placed in well: (ft) T Submersible C ft. ted E Estimate	o (ft)	Sacks used	10) St Speci Pitles Appr 11) W Static le Artesian	e to septic s of verifical orface Co fied Surfac is Adapter I oved Altern ater Lev evel	ystem field or ion of above d mpletion e Slab Installed e Sleeve Instal Jsed ative Procedur el ft. below ft. below	the Concentrate istance <b>AZAS</b> led be Used Date <b>Z</b> 7 <b>4</b> Date /	6 <u>rO</u>	
13) Plugged     Well plugged       Casing left in well:     Cement/Bentoniti       From (ft)     To (ft)       From (ft)     To (ft)       From     Jet       14) Typepump     Jet       Other     Jet       Depth to pump bowls, cvlinder, jet etc.,       15) Water Test       Typetest     Pump       Yield:     // gpm with	ed within 48 h c placed in well: (ft) T Submersible C ft. ted E Estimated wdown after	dhrs.	Sacks used	Cerrent Distanc Method 10) St Speci Speci Pitles Appr 11) W Static le Artesian	e to septic s of verificat orface Co fied Surfac is Adapter I oved Alterr ater Lev evel flow	ystem field or ion of above d mpletion e Slab Installer e Sleeve Instal Jsed ative Procedur el Elow ft. below gpm.	other concentrate istance <b>AZAS</b> led e Used Date	6 <u>roj</u> s	EQ
13) Plugged     Well plugged       Casing left in well:     Cement/Bentoniti       From (ft)     To (ft)       From (ft)     To (ft)       Id) Typepump     Id)       Other     Jet       Depth to pump bowls, cvlinder, iet etc.,       15) Water Test       Typetest     Pump       Yield:     Pump       Id) Water Quality       Did you knowingly penetrate and strata	ed within 48 h c placed in well: (ff) T Submersible ft. ft. ted Estimate wdown after which contain und	dhrs.	Sacks used	10) St Species Pittes Appr 11) W Static le Artesian 12) Pa	e to septic s of verificat inface Cc fied Surface fied Surface fied Surface is Adapter I oved Altern atter Lev vvel Flow ackers	ystem field or ion of above d mpletion e Slab Installes e Slaeve Instal Jsed ative Procedur el <u>fieldow</u> ft. below gpm.	the Concentrate istance <b>MEAL</b> led e Used Date / Typ <b>Fri A P 0 8</b>	6 7 01 S	
13) Plugged     Well plugged       Casing left in well:     Cement/Bentonitit       From (ft)     To (ft)       From (ft)     To (ft)       Id) Typepump     Image: State Stat	ed within 48 h c placed in well: (ft) T Submersible C ft. ted Estimated awdown after which contain und t a REPORT OF U	dhrs.	Sacks used	10) St Speci Speci Pitles Appr 11) W Static le Artesian 12) Pg	e to septic s of verificat orface Cc fifed Surfac fifed Surfac s Adapter I oved Altern atter Lev vevel h Flow ackers	ystem field or ion of above d mpletion e Slab Installed e Sleeve Instal Jsed ative Procedur et ft. below ft. below	other Concentrate istance 4211	C <u>r O</u> S	
13) Plugged       Well plugg.         Casing left in well:       Cement/Bentoniti         From (ft)       To (ft)       From         14) Typepump       Jet       Image: Comparison of the second se	ed within 48 h c placed in well: (ff) T Submersible C ft. ted Estimated awdown after which contain und t a REPORT OF U Depth of St No	d	Sacks used	Cernent Distance Method     Speci Pittes Appr     Appr     11) W Static le Artesian     12) Pg	e to septie s of verificat orface Cc fifed Surfac fifed Surfac s Adapter I oved Alterr ater Lev vel Flow ackers	ystem field or ion of above d mpletion e Slab Installer e Slaeve Instal Jsed ative Procedur el <u>HEAD</u> ft. below gpm. BIJPT	other Concentrate istance <b>MEALS</b> led e Used Date TypeAAP0_E	ed contamination	
13) Plugged       Well plugg.         Casing left in well:       Cement/Bentoniti         From (ft)       To (ft)         From (ft)       To (ft)         Id) Typepump       Id)         Id) Typepump       Jet         Other       Jet         Depth to pump bowls, cvlinder, iet etc.,       15) Water Test         Typetest       Pump I Bailer       Jet         16) Water Quality       Did you knowingly penetrate and strata         YES       NO. Jf yes, did you submit         Type of water       Mate I         Yes       Company or individual's Name (t	ed within 48 h c placed in well: (ff) T Submersible ft. ted Estimated awdown after which contain und it a REPORT OF U Depth of St No ype or print)	d	Sacks used	10) St Speci Speci Pittes Appr 11) W Static le Artesian 12) Pa	e to septie s of verificat Inface Co fied Surfac fied Surfac Surface Surfac s Adapter I oved Altern atter Lev vel Surfac ackers	ystem field or ion of above d mpletion e Slab Installes e Sleeve Instal Jsed ative Procedur el field ft. below gpm.	other Concentrate istance <b>AZA</b>	C 7 C) S	
13) Plugged       Well plugged         Casing left in well:       Cement/Bentonitit         From (ft)       To (ft)       From         14) Typepump       Image: Company of the second s	ed within 48 h c placed in well: (ft) T Submersible ft. ted Estimated awdown after which contain und it a REPORT OF U Depth of St No ype or print)	d d d desirable constituer JNDESIRABLE V rrata	Sacks used	10) St Speci Prites Appr 11) W Static le Artesian 12) Pe	e to septie s of verificat orface Cc fifed Surfac fied Surfac s Adapter I oved Alterr ater Lev vel Flow n Flow n ckers	ystem field or ion of above d mpletion e Slab Installer e Slab Installer e Slaeve Instal Jsed ative Procedur ft. below gpm. EIJP T	other concentrate istance <b>MEALS</b> led e Used Date / TypeMAP 0 8	ed contamination	
13) Plugged       Well plugg.         Casing left in well:       Cement/Bentoniti         From (ft)       To (ft)       From         14) Typepump       Jet       Jet         Other       Jet       Jet         Depth to pump bowls, cvlinder, iet etc.,       15) Water Test       Jump         Typetest       Pump       Bailer       Jet         16) Water Quality       Did you knowingly penetrate and strata       Yes       Yes         Company or individual's Name (t       Address       Address       Address       Mater	ed within 48 h c placed in well: (ff) T Submersible C ft. ted Estimated awdown after which contain undit a REPORT OF U Depth of St No type or print) 2.4.4	d Cylinder d hrs. desirable constituer UNDESIRABLE V rrata	Sacks used	Static le Static 10) Su Speci Pittes Appr 11) W Static le Artesian 12) Pa SCAN CC h	e to septie s of verificat orface Cc fited Surfac fited Surfac Surface Surfac s Adapter I oved Altern atter Lev vel Flow neckers	ystem field or ion of above d mpletion e Slab Installed e Sleeve Instal Jsed ative Procedur el ft. JElow gpm. BLIP // N. D	other Concentrate istance 424 led e Used Date 7 TypenAR 0 8	contamination	
13) Plugged       Well plugg.         Casing left in well:       Cement/Bentonitit         From (ft)       To (ft)       From         14) Typepump       Jet       Image: Cement/Bentonitit         14) Typepump       Jet       Image: Cement/Bentonitit         15) Water Test       Jet       Image: Cement/Bentonitit         16) Water Test       Jet       Image: Cement/Bentonitit         16) Water Test       Jet       Image: Cement/Bentonitit         16) Water Quality       Image: Cement Cementon Cementon       Jet         16) Water Quality       Image: Cementon Cementon       Jet         Vestor Voltation       Yes       No. Jf yes, did you submit         Type of water_Cementon Cementon Cementon       Yes       Company or individual's Narme (t         Address       Or Box       Jet       Signature	ed within 48 h c placed in well: (ft) T T Submersible ft. ted Estimate awdown after which contain und it a REPORT OF U Depth of St No type or print) R 4 4	d Cylinder d hrs. desirable constituer JNDESIRABLE V trata MANR2	Sacks used	10) Su 10) Su Speci Speci Pitles Appr 11) W Static le Artesian 12) Pr SSM CC h	e to septie s of verificat Inface Co fied Surfac fied Surfac S Adapter I oved Altern ater Lev vel S Flow ackers	ystem field or ion of above d mpletion e Slab Installes e Sleeve Instal Jsed ative Procedur el <u>the Euo</u> ft. below <u>i gpm</u> <b>N B</b> <b>N B</b> <b>State</b>	other Concentrate istance <b>MRAS</b> illed e Used Date 7 TypenAB 0 8 ff	c roj s 20 Pepul DEs Zip	

DB

Мар Кеу

Number of

Direction

Distance

Site

Мар Кеу	Number of Records	Direction	Distance (mi/ft)	Site	DB
15	1 of 1	E	0.51 / 2,682.82	Pendergrass, Brent S of CR 250/ N 1/2 Sec 54 Blk 4X Meadow TX	SDRW WELLS
Track NO:		252695			
Date Submit	ted:	2011-05-11			
Owner Name	<del>)</del> :	Pendergrass, E	Brent		
Owner Addr	ess:	6019 87th			
Owner Addr	ess2:				
Owner City:		Lubbock			
Owner State	:	TX			
Owner Zip:		79424			
County:		Terry			
Type of Wor	k:	New Well			
Typ of Wrk C	Oth Descr:				
Proposed Us	se:	Irrigation			
Prop Use Ot	h Descr:				
Latitude:		33.307501			
Longitude:		-102.179722			
Drilling Date	Started:	2010-03-30			
Drilling Date	Completed:	2010-03-31			
Chemical Ar	alysis:	NO Dati i su Daillia			
Company Na	ame:	Robinson Drillin	ng		
Company Ad	aress:	PO Box 1495			
CompanyAd	aressz:	Sominolo			
Company Cr	ty:				
Company 3	dle.	70260			
Company Zi	U.	79300			
Data Source		Full SDR Datak		ell Location (Man)	
Report Link	•	https://www3.tw	vdb texas dov/ar	ons/waterdatainteractive/GetReports aspx?Num=252695	Type=SDR-Well
Report Link.		11103.// WWW0.10	vab.ic.as.gov/ap		
<u>Well Boreho</u>	le Information				
Top Depth:		0			
Bottom Dep	th:	108			
20110111 20p					
Top Depth: Bottom Dept	th:	108.0			
<u>Well Levels</u>					
Mossurama	· · ·	60			
Moasuromor	n. ht Dato:	2010-03-31			
measureniei		2010/00/01			

Map Key	Number of Records	Direction	Distance (mi/ft)	Site	DB
16	1 of 1	NW	0.51 / 2.686.36	Triple D Trust	SDRW WELLS
			_,	Brownfield TX 79316	
Track NO:		471992			
Date Submi	tted:	2018-03-05			
Owner Nam	e:	Triple D Trust			
Owner Addı	ress:	4471 77th Stre	et		
Owner Addı	ress2:				
Owner City:		Lubbock			
Owner State	<del>)</del> :	ТХ			
Owner Zip:		79424			
County:		Terry			
Type of Wo	rk:	New Well			
Typ of Wrk	Oth Descr:				
Proposed U	se:	Irrigation			
Prop Use O	th Descr:	00.040000			
Latitude:		33.318889			
Longitude:	- Céanta de	-102.207833			
Drilling Date	e Started:	2018-02-20			
Chamical A	e Completed:	2010-02-20 No			
Company M	naiysis: amo:	lacob P Klass	en Drilling Co		
Company A	dille. ddross:		380		
	duress. droce?	1302 US Hwy	300		
Company C	itv	Brownfield			
Company S	tato:	TX			
Company Z	in [.]	79316			
Company C	ountry.	10010			
Data Source	a.	Full SDR Data	base [:] SDRDB W	ell Location (Map)	
Report Link		https://www3.tv	wdb.texas.gov/ap	ops/waterdatainteractive/GetReports.aspx?Num=471992&T	ype=SDR-Well
Well Boreho	ole Information				
Top Depth:		0			
Bottom Dep	oth:	160			
Top Depth:	th.	160.0			
<i>Βυττοι</i> τί Dep	ui.	100.0			
Well Strata					
Water Type.	<del>.</del>				

Good

Map Key	Number of Records	Direction	Distance (mi/ft)	Site	DB
17	1 of 1	NNE	0.65/ 3,451.44	Jeanne Morgan East of Meadow on FR 211 - 1 1/4 mi Meadow TX 79345	SDRW WELLS
Track NO:		267468			
Date Submi	tted:	2011-10-04			
Owner Nam	e:	Jeanne Morgan			
Owner Add	ress:	5901 86th Stree	t		
Owner Add	ress2:				
Owner City:		Lubbock			
Owner State	9;	ТХ			
Owner Zip:		79424			
County:		Terry			
Type of Wo	rk:	New Well			
Tvp of Wrk	Oth Descr:				
Proposed U	lse:	Irrigation			
Prop Use O	th Descr:	0			
Latitude:		33.321111			
Longitude:		-102.190834			
Drilling Date	e Started:	2011-09-29			
Drilling Date	e Completed:	2011-09-30			
Chemical A	nalysis:				
Company N	ame:	Presage Enviror	nmental, Inc.		
Company A	ddress:	P. O. Box 288			
CompanyA	ddress2:				
Company C	ity:	Brownfield			
Company S	tate:	ТХ			
Company Z	ip:	79316			
Company C	ountry:				
Data Source	9:	Full SDR Databa	ase; SDRDB W	(ell Location (Map)	
Report Link	:	https://www3.tw	db.texas.gov/ap	pps/waterdatainteractive/GetReports.aspx?Num=267468&1	ſype=SDR-Well
<u>Well Boreho</u>	ole Information				
Top Depth: Bottom Dep	oth:	140.0			
Top Depth:	46.	0			

Мар Кеу	Number of Records	Direction	Distance (mi/ft)	Site	DB
18	1 of 1	WNW	0.67 / 3,537.70	CHARLES BOLES cORNERW OF cr 250 US HWY 62 & 180 MEADOW TX 79345	SDRW WELLS
Track NO:		538593			
Date Submit	ted:	2020-03-09			
Owner Name	<del>;</del>	CHARLES BO	LES		
Owner Addr	ess:	PO BOX 243			
Owner Addr	ess2:				
<b>Owner City:</b>		MEADOW			
Owner State	:	ТХ			
Owner Zip:		79345			
County:		Terry			
Type of Wor	k:	New Well			
Typ of Wrk (	Oth Descr:				
Proposed Us	se:	Domestic			
Prop Use Ot	h Descr:				
Latitude:		33.312117			
Longitude:		-102.213133			
Drilling Date	Started:	2020-02-19			
Drilling Date	Completed:	2020-02-20			
Chemical Ar	alysis:	No			
Company Na	ame:	PETER KLASS	SEN		
Company Ac	ddress:	457 US HWY 3	385 S		
CompanyAd	dress2:				
Company Ci	ty:	SEMINOLE			
Company St	ate:	ТХ			
Company Zi	p:	79360			
Company Co	ountry:				
Data Source	:	Full SDR Data	base; SDRDB W	ell Location (Map)	
Report Link:		https://www3.tv	wdb.texas.gov/ap	ops/waterdatainteractive/GetReports.aspx?Num=5385938	Type=SDR-Well
<u>Well Boreho</u>	le Information				
Top Depth: Bottom Dept	th:	127.0			
Top Depth: Bottom Dept	th:	0 127			

Map Key	Number of Records	Direction	Distance (mi/ft)	Site	DB
19	1 of 1	NW	0.75 / 3,959.99	Francisco Carvvazo C.R. 535 Meadow TX 79345	SDRW WELLS
Track NO:		5284			
Date Submi	tted:	2002-03-01			
Owner Nam	e:	Francisco Carv	vazo		
Owner Add	ress:	Rt. 1 Box 192 [	2		
Owner Add	ress2:				
Owner City:	;	Meadow			
Owner State	e:	ТХ			
Owner Zip:		79345			
County:		Terry			
Type of Wo	rk:	New Well			
Typ of Wrk	Oth Descr:				
Proposed U	lse:	Domestic			
Prop Use O	th Descr:	22 2225			
Latitude:		33.3223			
Longitude:	o Startadi	-102.200007			
Drilling Date	e Starteu:	2002-02-27			
Chemical A	e Completeu. nalveis:	2002-02-27 No			
Company N	liaiysis. Iamo:	Estill Drilling			
Company A	ddress:	P O Box 683			
CompanyA	ddress2:	1.0. Dox 000			
Company C	itv:	Brownfield			
Company S	tate:	TX			
Company Z	ip:	79316			
Company C	Country:				
Data Source	e:	Full SDR Datab	base; SDRDB W	ell Location (Map)	
Report Link		https://www3.tv	vdb.texas.gov/ap	ps/waterdatainteractive/GetReports.aspx?Nur	n=5284&Type=SDR-Well
Well Boreho	ole Information				
Ton Denth		0			
Bottom Der	oth.	150			
Bottom Dep		100			
Top Depth: Bottom Dep	oth:	150.0			
<u>Well Levels</u>					
Measureme Measureme	nt: nt Date:	105 2002-02-27			
<u>Well Strata</u>					
Water Type	:				
<b>F</b> ace at					
Fresh					

Map Key	Number of Records	Direction	Distance (mi/ft)	Site	DB
20	1 of 1	NE	0.79 / 4.174.85	loyd jorden	SDRW WELLS
			,	тх	
Track NO:		309309			
Date Submi	tted:	2013-01-20			
Owner Nam	e:	loyd jorden			
Owner Add	ress:	2422 F.M. 211			
Owner Add	ress2:				
Owner City:	•	meadow			
Owner State	ə:	ТХ			
Owner Zip:		79345			
County:		Terry			
Type of Wo	rk:	New Well			
Typ of Wrk	Oth Descr:				
Proposed U	lse:	Irrigation			
Prop Use O	th Descr:				
Latitude:		33.3225			
Longitude:		-102.183611			
Drilling Date	e Started:	2012-11-27			
Drilling Date	e Completed:	2012-11-28			
Chemical A	nalysis:	No			
Company N	ame:	MONTE MOOR	E DRILLING		
Company A	ddress:	1313 N.HWY.13	37		
CompanyA	ddress2:				
Company C	ity:	LAMESA			
Company S	tate:	ТХ			
Company Z	ip:	79331			
Company C	ountry:				
Data Source	ə:	Full SDR Datab	ase; SDRDB W	ell Location (Map)	
Report Link		https://www3.tw	db.texas.gov/ap	ops/waterdatainteractive/GetReports.aspx?Num=3	09309&Type=SDR-Well
Well Boreho	ole Information				
Top Depth:		0			
Bottom Dep	oth:	125			
Top Depth:	4.	125.0			
Bottom Dep	otn:	125.0			

Map Key	Number of Records	Direction	Distance (mi/ft)	Site	DB
21	1 of 1	WNW	0.82 / 4,309.12	DON CAROL	SDRW WELLS
				ТХ	
Track NO:		35865			
Date Submi	tted:	2004-04-13			
Owner Nam	e:	DON CAROL			
Owner Add	ress:	ROUTE 1, BO	X 22-A		
Owner Addı	ress2:				
Owner City:		MEADOW			
Owner State	ə:	ТХ			
Owner Zip:		79345			
County:		Terry			
Type of Wo	rk:	New Well			
Typ of Wrk	Oth Descr:				
Proposed U	se:	Irrigation			
Prop Use O	th Descr:				
Latitude:		33.315556			
Longitude:		-102.219167			
Drilling Date	e Started:	2004-03-29			
Drilling Date	e Completea:	2004-03-31			
Cnemical Al	naiysis:			ALLET C	
Company N	dille: ddross:		E FUIVIE SEECI/	ALISTS	
Company A	duress.	0104 WEST 18			
Company C	ituressz.	LUBBOCK			
Company S	tate [.]	TX			
Company Z	in [.]	79407			
Company C	ountry:	10101			
Data Source	e	Full SDR Data	base: SDRDB W	ell Location (Map)	
Report Link	:	https://www3.tv	wdb.texas.gov/ap	ps/waterdatainteractive/GetReports.a	spx?Num=35865&Type=SDR-Well
·		·	с ,		
Well Boreho	ole Information				
Top Denth		0			
Bottom Den	th.	25			
Dottom Dop					
Top Depth:		25			
Bottom Dep	oth:	143			
· · · · · ·					
Top Depth:					
Bottom Dep	oth:	143.0			
Wall Lovela					
<u>wen Levels</u>					
Magguran	nt.	62			
Mossureme	ni. nt Dato:	02 2004-04-07			
measureme.	n Dale.				

Map Key	Number of Records	Direction	Distance (mi/ft)	Site	DB
22	1 of 1	NW	0.82 / 4,324.65	Richard Cavazos 517 CR 535 Meadow TX 79345	SDRW WELLS
Track NO:		275396			
Date Submit	ted:	2011-12-30			
Owner Name	ə:	Richard Cavaz	OS		
Owner Addr	ess:	517 CR 535			
Owner Addr	ess2:				
Owner City:		Meadow			
Owner State	:	ТХ			
Owner Zip:		79345			
County:		Terry			
Type of Wor	k:	New Well			
Typ of Wrk (	Oth Descr:				
Proposed Us	se:	Domestic			
Prop Use Ot	h Descr:				
Latitude:		33.323055			
Longitude:		-102.206389			
Drilling Date	Started:	2011-12-19			
Drilling Date	Completed:	2011-12-20			
Chemical Ar	nalysis:				
Company Na	ame:	Presage Enviro	onmental, Inc.		
Company Ac	ddress:	P. O. Box 288			
CompanyAd	dress2:				
Company Ci	ty:	Brownfield			
Company St	ate:	TX			
Company Zi	p:	79316			
Company Co	ountry:				
Data Source	:	Full SDR Data	base; SDRDB W	ell Location (Map)	
Report Link:		https://www3.tv	wdb.texas.gov/ap	ops/waterdatainteractive/GetReports.aspx?N	um=275396&Type=SDR-Well
<u>Well Boreho</u>	le Information				
Top Depth:	th-	143.0			
Dottom Dep		140.0			
Top Depth:		0			
Bottom Dep	th:	143			

Map Key	Number of Records	Direction	Distance (mi/ft)	Site	DB
23	1 of 1	N	0.85/	brent pendergrass	SDRW WELLS
			4,470.02	ТХ	
Track NO:		359344			
Date Submi	tted:	2014-04-12			
Owner Nam	e:	brent penderg	rass		
Owner Add	ress:	6019 87thst.			
Owner Add	ress2:				
Owner City:	;	lubbock			
Owner State	e:	ТΧ			
Owner Zip:		79424			
County:		Terry			
Type of Wo	rk:	New Well			
Typ of Wrk	Oth Descr:				
Proposed U	lse:	Irrigation			
Prop Use O	th Descr:				
Latitude:		33.324167			
Longitude:		-102.196111			
Drilling Date	e Started:	2014-04-01			
Drilling Date	e Completed:	2014-04-01			
Chemical A	nalysis:				
Company N	lame:	neufeld family	drilling		
Company A	ddress:	457 c.r. 106M			
CompanyA	ddress2:				
Company C	ity:	seminole			
Company S	tate:	ТХ			
Company Z	ïp:	79360			
Company C	country:				
Data Source	e:	Full SDR Data	base; SDRDB W	ell Location (Map)	
Report Link	i -	https://www3.t	wdb.texas.gov/ap	ops/waterdatainteractive/GetReports.aspx?Nu	m=359344&Type=SDR-Well
Well Boreho	ole Information				
Top Depth:		0			
Bottom Dep	oth:	150			
Top Depth:	<i></i>	150.0			
Бошот Dep	<i>.</i>	150.0			

Мар Кеу	Number of Records	Direction	Distance (mi/ft)	Site	DB
24	1 of 1	NE	0.86 / 4.553 40	TKT Farms	SDRW WELLS
			ijecel re	Meadow TX	
Track NO:		595861			
Date Submi	tted:	2022-02-02			
Owner Nam	e:	TKT Farms			
Owner Add	ress:	5212 170 th st	reet		
Owner Add	ress2:				
Owner City:		Lubbock			
Owner State	e:	ТХ			
Owner Zip:		79424			
County:		Terry			
Type of Wo	rk:	New Well			
Typ of Wrk	Oth Descr:				
Proposed U	lse:	Irrigation			
Prop Use O	th Descr:				
Latitude:		33.319889			
Longitude:		-102.1775			
Drilling Date	e Started:	2022-02-01			
Drilling Date	e Completed:	2022-02-02			
Chemical A	nalysis:	No			
Company N	ame:	Neufeld Family	/ Drilling IIc		
Company A	ddress:	475 CR 106m			
CompanyA	ddress2:				
Company C	ity:	Seminole			
Company S	tate:	TX			
Company Z	ip:	79360			
Company C	ountry:				
Data Source	e:	Full SDR Data	base; SDRDB W	ell Location (Map)	
Report Link	:	https://www3.t	wdb.texas.gov/ap	pps/waterdatainteractive/GetReports.aspx?N	um=595861&Type=SDR-Well
Well Boreho	ole Information				
Top Depth:		0			
Bottom Dep	oth:	145			
Top Depth:		445.0			
Bottom Dep	oth:	145.0			

Map Key	Number of Records	Direction	Distance (mi/ft)	Site	DB
25	1 of 1	W	0.89/	Richard Parrish	SDRW WELLS
			4,719.30	тх	
Track NO:		89069			
Date Submi	itted:	2006-08-02			
Owner Nam	ie:	Richard Parrish			
Owner Add	ress:	Rt. 1 Box 33			
Owner Add	ress2:				
Owner City:	:	Meadow			
Owner State	e:	ТХ			
Owner Zip:		79345			
County:		Terry			
Type of Wo	rk:	New Well			
Typ of Wrk	Oth Descr:				
Proposed U	lse:	Irrigation			
Prop Use O	th Descr:				
Latitude:		33.306945			
Longitude:		-102.221944			
Drilling Date	e Started:	2006-05-31			
Drilling Date	e Completed:	2006-05-31			
Chemical A	nalysis:				
Company N	lame:	Monte Moore D	rilling		
Company A	ddress:	1313 N. Hwy. 13	37		
CompanyA	ddress2:				
Company C	City:	Lamesa			
Company S	tate:	ТХ			
Company Z	ïp:	79331			
Company C	country:				
Data Source	e:	Full SDR Datab	ase; SDRDB W	ell Location (Map)	
Report Link	C	https://www3.tw	db.texas.gov/ap	ps/waterdatainteractive/GetReports.aspx?Nur	n=89069&Type=SDR-Well
Well Boreho	ole Information				
Top Depth:					
Bottom Dep	oth:	125.0			
Top Depth:		0			
Bottom Dep	oth:	125			

Map Key	Number of Records	Direction	Distance (mi/ft)	Site	DB
26	1 of 1	N	0.92 / 4,840.57	Jeanne Morgan East of Meadow, 1 mile on FM 211 Meadow TX 79345	SDRW WELLS
Track NO:		283191			
Date Submi	itted:	2012-04-10			
Owner Nam	e:	Jeanne Morgan			
Owner Add	ress:	5901 86th Stree	t		
Owner Add	ress2:				
Owner City	•	Lubbock			
Owner State	e:	ТХ			
Owner Zip:		79424			
County:		Terry			
Type of Wo	rk:	New Well			
Typ of Wrk	Oth Descr:				
Proposed U	lse:	Irrigation			
Prop Use O	th Descr:	•			
Latitude:		33.324722			
Longitude:		-102.195			
Drilling Date	e Started:	2012-03-09			
Drilling Date	e Completed:	2012-03-10			
Chemical A	nalysis:				
Company N	lame:	Presage Enviror	nmental, Inc.		
Company A	ddress:	P. O. Box 288			
CompanyA	ddress2:				
Company C	City:	Brownfield			
Company S	tate:	ТХ			
Company Z	ïp:	79316			
Company C	Country:				
Data Source	e:	Full SDR Databa	ase; SDRDB W	'ell Location (Map)	
Report Link		https://www3.tw	db.texas.gov/ap	ops/waterdatainteractive/GetReports.aspx?Num=28319	1&Type=SDR-Well
Well Boreho	ole Information				
Top Depth:		0			
Bottom Dep	oth:	143			
Top Depth: Bottom Der	oth:	143.0			
Doctorn Dep		140.0			

Мар Кеу	Number of Records	Direction	Distance (mi/ft)	Site	DB
27	1 of 1	ESE	0.92 / 4,841.77	Craig Brooks NE/4 SEC 57 BLK E Terry CO Meadow TX	SDRW WELLS
Track NO:		517459			
Date Submi	tted:	2019-07-31			
Owner Nam	e:	Craig Brooks			
Owner Add	ress:	10513 ECR 10	9		
Owner Add	ress2:				
Owner City:	•	Midland			
Owner State	ə:	ТХ			
Owner Zip:		79706			
County:		Terry			
Type of Wo	rk:	New Well			
Typ of Wrk	Oth Descr:	_			
Proposed U	lse:	Domestic			
Prop Use O	th Descr:				
Latitude:		33.296395			
Longitude:		-102.172445			
Drilling Date	e Started:	2019-07-26			
Drilling Date	e Completed:	2019-07-26			
Chemical A	nalysis:	NO DOD DDU LINK			
Company N	ame:				
Company A	ddress:	6002 FM 1047	5		
CompanyA	ddress2:		·-		
Company C	ity:	GOLDIHWAII	E		
Company S	tate:	18			
Company Z	ip:	/0044			
Doto Source	ounny.	Eull SDR Data		(Man)	
Data Source	<del>.</del>	https://www.3 tu	udb texas dov/ar	ell Location (Map)	
Well Pereb	No Information	nups.// www.s.u	vub.iexas.yov/ap		
wen borend	ne miormation				
Top Depth: Bottom Dep	oth:	95.0			
Top Depth: Bottom Dep	oth:	0 95			

Мар Кеу	Number of Records	Direction	Distance (mi/ft)	Site	DB
28	1 of 1	Ε	0.92 / 4,866.78	Brent Pendergass S of Meadow on Hwy 62-82 to CR 250, E to CR 555 Meadow TX 79345	SDRW WELLS
Track NO [.]		247941			
Date Submi	tted:	2011-03-28			
Owner Nam	e:	Brent Pendera	ass		
Owner Add	ress:	6019 87th Stre	et		
Owner Add	ress2:				
Owner City:	,	Lubbock			
Owner State	<del>)</del> :	ТΧ			
Owner Zip:		79424			
County:		Terry			
Type of Wo	rk:	New Well			
Typ of Wrk	Oth Descr:				
Proposed U	se:	Irrigation			
Prop Use O	th Descr:				
Latitude:		33.310556			
Longitude:		-102.172778			
Drilling Date	e Started:	2011-03-03			
Drilling Date	e Completed:	2011-03-04			
Chemical A	nalysis:	<b>.</b> .			
Company N	ame:	Presage Enviro	onmental Inc		
Company A	ddress:	P O Box 288			
CompanyA	daressz:	Descusfield			
Company C	ity:	Brownfield			
Company 3	iale:	10216			
Company Z	ip. ountru:	79310			
Data Source	ounuy.	Full SDR Data	hase: SDRDB W	(ell Location (Man)	
Report Link	:	https://www3.tv	wdb.texas.gov/ap	ops/waterdatainteractive/GetReports.aspx?Num=247941&	Type=SDR-Well
Well Boreho	ole Information				
Ton Donth		0			
I OP Depth:	th.	U 127			
Bottom Dep	<i>un:</i>	137			
Top Depth:					
Bottom Dep	oth:	137.0			

Map Key	Number of Records	Direction	Distance (mi/ft)	Site	DB
29	1 of 1	W	0.93/	JACOB GIESPRECHT	SDRW WELLS
			4,911.49	MEADOW TX	
Track NO:		597252			
Date Submi	tted:	2022-02-16			
Owner Nam	e:	JACOB GIESF	PRECHT		
Owner Add	ress:	3026 FM 211			
Owner Add	ress2:				
Owner City:		MEADOWS			
Owner State	e:	ТΧ			
Owner Zip:		79345			
County:		Terry			
Type of Wo	rk:	New Well			
Typ of Wrk	Oth Descr:				
Proposed U	lse:	Domestic			
Prop Use O	th Descr:				
Latitude:		33.3029			
Longitude:		-102.2207			
Drilling Date	e Started:	2022-01-18			
Drilling Date	e Completed:	2022-01-18			
Chemical A	nalysis:	No			
Company N	lame:	Vanguard Well	Resources, LLC		
Company A	ddress:	P.O. Box 2278			
CompanyA	ddress2:				
Company C	ity:	Seminole			
Company S	tate:	ТХ			
Company Z	ïp:	79360			
Company C	ountry:				
Data Source	e:	Full SDR Data	base; SDRDB W	'ell Location (Map)	
Report Link	C.	https://www3.tv	wdb.texas.gov/ap	ops/waterdatainteractive/GetReports.aspx?Num=597252&7	ſype=SDR-Well
Well Boreho	ole Information				
Top Depth:					
Bottom Dep	oth:	130.0			
Top Depth:		0			
Bottom Dep	oth:	130			
Мар Кеу	Number of Records	Direction	Distance (mi/ft)	Site	DB
---------------	----------------------	-------------------	---------------------	----------------------------------------------	--------------------------
30	1 of 1	N	0.96 / 5,066.00	Jeff Adams 2352 FM 211 Meadow TX 79345	SDRW WELLS
Track NO:		449555			
Date Submi	tted:	2017-05-21			
Owner Nam	e:	Jeff Adams			
Owner Add	ress:	2352 FM 211			
Owner Add	ress2:				
Owner City		Meadow			
Owner State	e;	ТХ			
Owner Zip:		79345			
County:		Terry			
Type of Wo	rk:	New Well			
Typ of Wrk	Oth Descr:				
Proposed U	lse:	Domestic			
Prop Use O	th Descr:				
Latitude:		33.325623			
Longitude:		-102.196724			
Drilling Date	e Started:	2017-05-18			
Drilling Date	e Completed:	2017-05-19			
Chemical A	nalysis:	No			
Company N	lame:	Carter Drilling (	Co., Inc		
Company A	ddress:	3301 56th St			
CompanyA	ddress2:				
Company C	ity:	Lubbock			
Company S	tate:	ТХ			
Company Z	ïp:	79413			
Company C	ountry:				
Data Source	e:	Full SDR Datab	base; SDRDB W	ell Location (Map)	
Report Link		https://www3.tv	vdb.texas.gov/ap	pps/waterdatainteractive/GetReports.aspx?N	lum=449555&Type=SDR-Well
Well Boreho	ole Information				
Top Depth:		0			
Bottom Dep	oth:	149			
Top Depth:		140.0			
воттот Dep	)UI.	149.0			

Map Key	Number of Records	Direction	Distance (mi/ft)	Site	DB
31	1 of 2	E	0.97 / 5,132.15	Carl Pendergrove	GWDB
Well Rep Tr State Well N Owner Nam Drilling Stat Drilling Mor Drilling Yea Well Depth: Well Usage. Water Leve Latitude: Longitude:	ack No: lo: e: rt Dt: hth: :: r: f Status:	2447501 Carl Pendergro 1968 132 Irrigation 33.3113890 -102.1719440	ove	ΤX	
Data Source Well Info Re Document I	e: eport: _ink:	Groundwater E https://www3.tw https://www3.tw	Database (GWDE vdb.texas.gov/ap vdb.texas.gov/ap	B) Reports; GIS shapefile of GWDB well locations ops/waterdatainteractive//GetReports.aspx?Num=2447501&Type ops/waterdatainteractive//GetScannedImage.aspx?Num=244750	≔GWDB 1&Cnty=Terry

Map Key	Number of Records	Direction	Distance (mi/ft)	Site						DB
<i>t</i> :	•		0		(					•
		TEXAS	DEPARTH	ENT OF WATI	ERRESOU	RCES	5			
				WELL SCHEDULE						
	Aquifer(s) 1. <u>Location:</u>	26466966	9_ Project No Field No./ on,Block_	' Owner's Well No ,Survey	s c	itate We county ,Longitu	11 No 24 1ERR 10-33-18-5	-47-	501	45
	2. <u>Owner:</u> Tenant (other) Dr(ller:	Don Pe	NDERGRO ENDERGRO	VEAddress:_ UEAddress:_ Address:	Rt*1 1	1600	ber [	ē£		
	3. Land Surface E 4. Drilled:	(levation: 33/1	L_ft. above ms	1 determined by Tool, Rotary, Air	ToPa	?				
	5. Depth: Rept.	ft. Me	AS'	ft.	) Destad	Coment	ted From	ft. to	SCREEN ft.	
	6. Borehole Compl	etion: Open Hole,	Straight Wall,	Sum R	Packed	Diam. (in.)	Туре	Setting from	(feet) to	
	/. rump: HTF	 Bowle Di	an in S	e	 f+					
	Column Diam	, bomis bi	Length Tailol	De	 ft.					
	8. Motor: Mfr.	······································	Fuel	ELECT #	P.					
Ĩ.	9. Yleld: Flor	gpm, Pump	gpm, Heas	., Rept., Est	Date		· · · · · · · ·			
	10. Performance Te	est: Date	_Length of Test	Made by						l.
	Static Leve	lft. Pumpi	ing Levelf	t. Drawdown	_ft.		<u> </u>			Ċ.
	Production_		Specific Capac	1ty	gpm/ft.					
	11. Quality: (Rema	arks on taste, odor	, color, etc.)_							
	Analyses									
	Date	Laborato	^{ry}	TDSSp Con	nd					
	Date	Laborato	Pry	TDSSp Cor	nd					
	12. Other data ava	ilable as circled	Pumping test, P	ower & Yield Test,	Drillers			~ ~ ~		
	Logs, Formatio	on Samples, Geophys	ical Log(s)	(type)				L		
	13. <u>Water Level</u> (s)	12.4 ft. 19	Bt: 10/18	929_below		_which _which	1.0 SQL	above Land above Land below Land	Surface   Surface	
	14. Use: Dom., Sto	ock, Public Supply	Ind. Irr., Obs	ervation, Other (T	est Hole, Oll	Test, e	te.)			
	15. Recorded by:		~Sourc	e of data:			Date:			
	16. Remarks:									
								 n		•
	17. Location or Se	<u>setch</u> :			Dise		1° th	hue 1	ett	
Ì					use	- 1-	will	, from	yest a	ide
								U		
	TDWR-0308					W/L Stat	Obs. Well te Well No	4 47	SOL	

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Map Key	Number of Records	Direction	Distance (mi/ft)	Site						DB
<i>t</i> :			0		(					•
		TEXAS	5 DEPARTM	ENT OF WATI	ERRESOU	RCE	s			
				WELL SCHEDULE						
	Aquifer(s)	DGALLAL	A_ Project No Field No./	' Owner's Well No	s	tate We	IERR	47	501	
	1. Location:	[‡] , ^{±,Section}	lon,Block_	,Survey		,Longitu	ud 33-18-	gatitude/	02-10-	45
	2. <u>Owner:</u>	ARL PE	NDERGEO	VEAddress:_	Rt#1 1	lea D	au ,	īe f		
	Driller: 3. Land Surface	Elevation: 33/	0ft. above ms	Address:	Topo	,				
	4. Drilled: 5. Depth: Rept.	132 1. 14	8_: Dug, Cable	Tool, Rotary, Air ft.	 	CAS	SING, BLANK	PIPE & WEL	SCREEN	
	6. Borehole Comp	letion: Open Hole	, Straight Wall,	Underreamed, Grave	1 Packed	Diam.	Type	ft. to Setting	(feet)	
	7. <u>Pump</u> : Hfr.		Тур	Sumb		(in.)		from	to	
	No. Stages	, Bowls D	lamin., S	etting	^{ft.}					6
	Column Dia	^{m.} ⁱ	n., Length Tailpi	BILLET	^{ft.}			t		
	8. <u>Motor</u> : Mfr		Fuel_	HEC. H	P					
	9. <u>Yleld</u> : Flor	9gpm, Pump_	gpm, Heas	., Rept., Est	Date					
	10. Performance T	est: Date	Length of Test	Made by						
	Static Lev	elft. Pump	ing Levelf	t. Drawdown	_ft.					
	Production	gpm	Specific Capac	Ity	gpm/ft.					
	11. <u>Quality</u> : (Rem	arks on taste, odo	r, color, etc.)_							
	Analyses								t	
and the second se	Date	Laborato	ory	TDSSp Cor	nd			t		
	Date	Laborato		TDSSp Cor	nd					
	12. Other data av	ailable as circled	: Pumping test, P	ower & Yield Test,	Drillers				h	
	Logs, Formati	on Samples, Geophy:	sical Log(s)					<u> </u>	1	
	13. <u>Water Level</u> (s	12.4 ft. 1	ent. 10/18 ent. 11/15	929_above 929_above 929_below		_which _which	.0.50	above Lan above Lan above Lan	d Surface d Surface	
	14. <u>Use</u> : Dom., St	ock, Public Supply	, Ind., Irr., Obs	ervation, Other (T	est Hole, Oll	Test, e	tc.)			
	15. Recorded by:		Sourc	e of data:			Date:_			
	16. Remarks:									
								 n		•
	17. Location or S	i <u>ketch</u> :			Dise		10 th	hu e	et a	- for
j.					use	- 1-	will	kiom	Jest 1	ude,
								1)		v
						4/1	Obs 11-11	V W/O OF-	V=11	
	TDWA-0308 f					w/L Sta	te Well No	14 47	501	

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Order No: 23101200492



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Map Key	Number of Records	Direction	Distance (mi/ft)	Site	DB
31	2 of 2	E	0.97/ 5 132 15	TX001-331841102103401	FED USGS
			0,102.10	тх	
Site No:		TX001-331841	102103401		
Site Type:	_	Well			
Formation	Type:	Ogallala Form	ation		
Woll Dopth	a: 	1900			
Well Depth	ı. Almit	132.0 ft			
Well Hole I	Depth:	n			
Well Hole I	Depth Unit:				
Reporting	Agency:	USGS Texas \	Nater Science Co	enter	
Station Na	me:	XY-24-47-501			
Latitude:		33.311479500	00000		
Longitude:	:	-102.17239790	00000		

Map Key	Number of Records	Direction	Distance (mi/ft)	Site	DB
32	1 of 1	ESE	0.98 / 5,173.63	Craig Brooks NE/4 SEC 57 BLK E Terry CO Meadow TX	SDRW WELLS
Track NO:		517458			
Date Submi	tted:	2019-07-31			
Owner Nam	e:	Craig Brooks			
Owner Addı	ress:	10513 ECR 109	)		
Owner Addı	ress2:				
Owner City:		Midland			
Owner State	<del>)</del> :	ТХ			
Owner Zip:		79706			
County:		Terry			
Type of Wo	rk:	New Well			
Typ of Wrk	Oth Descr:				
Proposed U	se:	Domestic			
Prop Use O	th Descr:				
Latitude:		33.295526			
Longitude:		-102.172445			
Drilling Date	e Started:	2019-07-25			
Drilling Date	e Completed:	2019-07-25			
Chemical A	nalysis:	No			
Company N	ame:	R&R DRILLING	LLC		
Company A	ddress:	6002 FM 1047	S		
CompanyA	ddress2:				
Company C	ity:	GOLDTHWAITI	Ξ		
Company S	tate:	ТХ			
Company Z	ip:	76844			
Company C	ountry:				
Data Source	ə:	Full SDR Datab	ase; SDRDB W	ell Location (Map)	
Report Link	:	https://www3.tw	db.texas.gov/ap	ops/waterdatainteractive/GetReports.aspx?Num=51	7458&Type=SDR-Well
Well Boreho	ole Information				
Top Depth: Bottom Dep	th:	100.0			
Ton Donth		0			
Rottom Don	th.	100			
вопот рер	·u	100			

# Appendix: Database Descriptions

Environmental Risk Information Services (ERIS) can search the following databases. The extent of historical information varies with each database and current information is determined by what is publicly available to ERIS at the time of update.

#### Federal

#### Wells from NWIS:

The U.S. Geological Survey's (USGS) National Water Information System (NWIS) is the nation's principal repository of water resources data. The NWIS includes comprehensive information of well-construction details, time-series data for gage height, streamflow, groundwater level, and precipitation and water use data. This select NWIS Wells dataset contains specific Site Types from the overall NWIS Sites data, limited to the following Group Site Types only: Groundwater Group Site Types: Well, Collector or Ranney type well, Hyporheic-zone well, Interconnected Wells, Multiple wells; Spring Group Site Type: Spring; and Other Group Site Types: Aggregate groundwater use, Cistern. Applicable NWIS database information is obtained through the Water Quality Data Portal (WQP). The WQP is a cooperative service sponsored by the USGS, the Environmental Protection Agency (EPA), and the National Water Quality Monitoring Council (NWQMC).

Government Publication Date: Sep 27, 2023

#### <u>State</u>

#### Well Log Reports from Plotted Water Wells:

Locations of TCEQ Water Wells as derived from well logs in the Texas Commission on Environmental Quality (TCEQ) Water Well Report Viewer, which includes unnumbered water wells and those plotted to 2.5 minute grid locations (2-3 miles). In this collection of Well Log Reports, locations have been manually verified.

Government Publication Date: Jul 26, 2022

#### Select Wells from SDR:

Locations of wells from the Submitted Drillers Report (SDR) Database with select proposed usage: Domestic, Fracking Supply, Industrial, Irrigation, Other, Public Supply, Rig Supply, Stock, Unknown. SDR is populated from the online Texas Well Report Submission and Retrieval System (TWRSRS), a cooperative Texas Department of Licensing and Regulation (TDLR) and Texas Water Development Board (TWDB) application requiring registered water-well drillers to submit reports. Excludes SDR records with the following proposed usage: Closed-Loop Geothermal, De-watering, Environmental Soil Boring, Extraction, Injection, Monitor, Test Well.

Government Publication Date: Sep 6, 2023

#### Groundwater Database:

The Texas Water Development Board (TWDB) Groundwater Database (GWDB) contains information on selected water wells, springs, oil/gas tests (that were originally intended to be or were converted to water wells), water levels and water quality. *Government Publication Date: Apr 17, 2023* 

### Fort Bend Subsidence District Water Wells:

List of water wells in the Fort Bend Subsidence District, boundaries of which are defined as all the territory within Fort Bend County. The Fort Bend Subsidence District was created by the Texas Legislature in 1989 as a conservation and reclamation district to control land subsidence and manage groundwater resources through regulation, conservation, and coordination with suppliers of alternative water sources to assure an adequate quantity and quality of water for the future. The District's purpose is to provide for the regulation of the withdrawal of groundwater within the District to prevent subsidence that contributes to flooding, inundation or overflow of areas within the District, including rising waters resulting from storms or hurricanes. *Government Publication Date: Jul 6, 2023* 

### High Plains Water Wells:

Inventory of water wells in the High Plains Underground Water Conservation District No. 1 (HPUWCD), which was created in 1951. As a political subdivision of Texas, HPUWCD is charged with protecting, preserving and conserving aquifers within the District's 16-county service area. *Government Publication Date: Apr 17, 2023* 

# FED USGS

## TCEQ WELL LOGS

## SDRW WELLS

## WW FORT BEND

GWDB

## WW HIGH PLAINS

### Harris Galveston Subsidence District Water Wells:

### Water Utility Database:

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. *Government Publication Date: Oct 1, 2020* 

#### WW HARRIS GAL

WUD

# Definitions

**Database Descriptions:** This section provides a detailed explanation for each database including: source, information available, time coverage, and acronyms used. They are listed in alphabetic order.

**Detail Report**: This is the section of the report which provides the most detail for each individual record. Records are summarized by location, starting with the project property followed by records in closest proximity.

**Distance:** The distance value is the distance between plotted points, not necessarily the distance between the sites' boundaries. All values are an approximation.

Direction: The direction value is the compass direction of the site in respect to the project property and/or center point of the report.

**Executive Summary:** This portion of the report is divided into 3 sections:

'Report Summary'- Displays a chart indicating how many records fall on the project property and, within the report search radii.

'Site Report Summary'-Project Property'- This section lists all the records which fall on the project property. For more details, see the 'Detail Report' section.

'Site Report Summary-Surrounding Properties'- This section summarizes all records on adjacent properties, listing them in order of proximity from the project property. For more details, see the 'Detail Report' section.

<u>Map Key:</u> The map key number is assigned according to closest proximity from the project property. Map Key numbers always start at #1. The project property will always have a map key of '1' if records are available. If there is a number in brackets beside the main number, this will indicate the number of records on that specific property. If there is no number in brackets, there is only one record for that property.

The symbol and colour used indicates 'elevation': the red inverted triangle will dictate 'ERIS Sites with Lower Elevation', the yellow triangle will dictate 'ERIS Sites with Higher Elevation' and the orange square will dictate 'ERIS Sites with Same Elevation.'

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# **APPENDIX IIIG-B**

# SITE EXPLORATION DATA



# **CONTENTS**

FIGURE IIIG-B-1 – Borehole Location Map

2023 Borehole Logs by Weaver Consultants Group Relict Piezometer Driller's Reports 2000 Soil Investigation by Terra Engineers IIIG-B-120

IIIG-B-2 IIIG-B-99





0 300 SCALE IN	AARON K. EVANS 11143 FEET
	08/05/2024
LEGE	IND
	PROPOSED PERMIT BOUNDARY
	PERMITTED PERMIT BOUNDARY
	PROPOSED LIMIT OF WASTE
	PERMITTED LIMIT OF WASTE
80000 ———	STATE PLANE COORDINATE SYSTEM
—350——	EXISTING CONTOUR
→ PB-116 (3308.5)	EXISTING RELICT GROUNDWATER PIEZOMETER LOCATION (WITH SURFACE ELEVATION POSTED IN FT-MSL)
GMP-1 (3297.8)	EXISTING GAS MONITOR PROBE LOCATION (WITH SURFACE ELEVATION POSTED IN FT-MSL)
∑ PWCG-4A (3267.1)	2023 EXPANSION PIEZOMETER LOCATION (WITH SURFACE ELEVATION POSTED IN FT-MSL)
7 PWCG-4B (3267.1)	2023 PERCHED ZONE EXPANSION PIEZOMETER (WITH SURFACE ELEVATION POSTED IN FT-MSL)
7 WCG-27 (3264.5)	EXPANSION BOREHOLE LOCATION (WITH SURFACE ELEVATION POSTED IN FT-MSL)

1. EXISTING CONTOURS ARE CREATED FROM UNMANNED AERIAL SURVEY DATA COLLECTED BY WEAVER CONSULTANTS GROUP, LLC ON OCTOBER 20, 2022. THE GRID SYSTEM IS TIED TO THE TEXAS COORDINATE SYSTEM OF 1983, NORTH CENTRAL ZONE, NAD83 (2011) EPOCH 2010.00 AND HAS BEEN SCALED TO SURFACE COORDINATES BY DIVIDING BY THE COMBINED SCALE FACTOR OF 0.99972824 FROM AN ORIGIN OF 0.0. ELEVATIONS SHOWN RELATIVE TO NORTH AMERICAN VERTICAL DATUM OF 1988.

GROUNDWATER SURFACE ELEVATIONS POSTED AT EACH BOREHOLE LOCATION IN FT-MSL.

3. EXPANSION BOREHOLE LOCATION COORDINATES AND SURFACE ELEVATIONS OBTAINED FROM 2023 STAKING SURVEY BY WEAVER CONSULTANT GROUP PRIOR TO INITIATION OF DRILLING.

PIEZOMETER LOCATION COORDINATES AND SURFACE ELEVATIONS OBTAINED FROM AUGUST 2023 AS-BUILT SURVEY BY WEAVER CONSULTANTS GROUP.

MEADO	W LANDFILL, LLC	MA 
	REVISIONS	
DATE	DESCRIPTION	

PREPARED FOR

JOR PERMIT AMENDMENT OREHOLE LOCATION MAP

CITY OF MEADOW LANDFILL TERRY COUNTY, TEXAS

GRP.COM

FIGURE IIIG-B-1

# 2023 BOREHOLE LOGS BY WEAVER CONSULTANTS GROUP

Weaver Consultants Group	MEADO 2023 EXPA	KEY TO LI DW LANDFI ANSION SUI	THOLOGIC LL - PERM BSURFACE	E LOGS IT MSW-22 E INVESTIG	93C SATION						
SAMPLING N Symbol: Sar U Thir SPT Spli C Spli SC Sor A Aug WR Rot	↓ METHODS: npling Method: n Walled Shelby Tube Samp it Spoon Barrel Sample it Core Barrel Sample nic Core Sample ger Sample ary Wash Sample	Dele RELATIVE I Penetration Re: (Blows/Fc 0 - 4 4 - 10 10 - 30 30 - 50 Over 50	DENSITY OF COA	ARSE GRAINED S Relative Density: Very Loos Loose Medium De Dense Very Dens	KAINED SOILS: Relative Density: Very Loose Loose Wedium Dense Dense Very Dense						
CONSISTENCY OF FINE-GRAINED SOILS:         Unconfined Compressive Strength: (Tons per Square Foot) Less than 0.25       Consistency:       Field Criteria:         0.25 to 0.50       Soft       Squeezes between fingers when fist is closed.         0.25 to 0.50       Soft       Easily molded by fingers.         0.50 to 1.00       Firm       Molded by strong pressure of fingers.         1.00 to 2.00       Stiff       Imprinted very slightly by finger pressure.         2.00 to 4.00       Very Stiff       Cannot imprint with finger pressure / can penetrate w/ pencil.         4.00 and Up       Hard       Imprinted only slightly by pencil point.											
MOISTURE:       PLASTICITY         Description:       Criteria:         Dry       Absence of moisture.         Moist       Damp, but no visible water.         Wet       Very damp to visible water.         High       Low         High       Long time to 1/8" Thread at Plastic Limit.											
STRATIFICA Description: Thio Massive Bedding > 10 Very Thickly Bedded 3 ft. Thickly Bedded 1 ft. Moderately Bedded 3 in Thinly Bedded 1.2 Very Thinly Bedded 3/8 Laminated < 3/ No Visible Bedding Not	ATION: ckness: 0 ft. to 10 ft. to 3 ft. . to 1 ft. in. to 3 in. in. to 1.2 in. '8 in. Visually Evident	SE Description: Slickensides Fractures Blocky Brecciated Friable Calcareous Interbedded Intermixed	EDIMENTARY TE Definition: Polished fracture Failure plane, cor Angular lumps th Angular fragment Consolidated ma Contains calcium Indicates alternat Irregular clasts of	XTURES: surface seen in clay. mmonly w/ mineralizat at resist further breakd s commonly due to fa terial easily broken into carbonate, commonly ing layers of contrastir f contrasting sediments	ion. lown. ulting. o small pieces v as cement. ng sediments. s with no bedding.						
The lithologic log soil and re approximate boundaries bourdaries bourdaries of visual/manual procedures of Water level observations we from those indicated due to	SUE ock descriptions are based etween materials. The ac used for the field classificat are made at the time of drilli climatic factors, construction	SURFACE COND on visual field observat tual contacts may be tion of soils were perfo ng and at subsequent ti n activity, or other facto	ITIONS: ions. The lithologic ur gradational and va rmed in general acco imes, as indicated. Fu rs.	nit contacts shown on ry between borehole ordance with ASTM S ture water levels may	the logs indicate locations. The tandard D-2488. vary significantly						
	LITHOLOGIC UI	NITS		PIEZOME1 PLUGGING	ER AND DETAIL						
Caliche	Sandy Caliche	Caliche with Sand or Sandstone	Caliche with Silt or Siltstone	Hydrated Bentonite Plug	Hydrated Bentonite and PVC Well Riser						
Clay	Sandy Clay or Sandy Silty Clay	Clay or Silty Clay or Silty Sandy Clay	Sand or Sandstone	Well Casing Centralizer	Concrete and PVC Well Riser						
Clayey Sand or Clayey Silty Sand	Silty Sand or or Silty Clayey Sand Sand Silty Clayey Sand Siltstone	or e Sand or Sandstone with Caliche	Saturated	Bentonite Grout Plug	Filter Pack Sand Below Well Casing						
Saturated Sitty Saturated	Caliche with Saturated Sand or Sandstone	Silt Sandy Silt	Silt or Siltstone with Sand or Sandstone	Filter Pack Sand and PVC Well Riser	Filter Pack Sand and PVC Well						
Silt or Siltstone	Silt or Siltstone with Caliche CONSULTANTS GROUP		SERVED								

IIIG-B-3

		Weaver	ſ	LOG OF BORING NO. PWCG-1		Supe	ervising	Geolo	gist:	Aaroi	ı K.	Evai	ns, P.C	j.	1 6	
		Consul	tants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Logg   Drill	ging Geo ling Firm	ologis i:	t:	CGM Envir	otec	h		Pa	ge I of 4	4
		Group		Project No: 0120-809-11-05		Fiel	d Tests			La	ıbora	atory	Tests			
	Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date: 3/14/2023       Northing (State Plane): 71820         Boring End Date: 3/20/2023       Easting (State Pane): 83691         Ground Elevation at Time of Drilling: 3316.30 ft-msl         Top of Well Casing Datum Elevation: 3319.34 ft-msl         Remarks: Borehole drilled and continuously sampled via dry aug and air rotary techniques. Static groundwater elevation gauged September 2023.         ♥ = First Water Encountered at Time of Drilling:       3231.3 ft-1         ♥ = Static Potentiometric Surface Elevation:       3253.26 ft         Description       Description	24.79 3.78 ger -msl ved -msl	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer Construction Detail	(with contact depths posted in ft-bgs)
╞		•1		SAND, with SILT, dry, non-plastic when moistened, very	MSL		2									38
-	_	SPT		loose to loose, no visible bedding, reddish-brown.		-	4 5 5 4								2.0	
	_	SPT	• • • • • • • • • • • • • • • • • • •		2211.2		6 8 7									
_	5 -	SPT		CALICHE, with SAND, intermixed, dry, non-plastic when moistened, loose to medium dense, no visible bedding, white	3311.3		8 10 12									
_	_	SPT		- becomes white, very-pale-vellow & light-reddish-brown			8 9 11									
	-	SPT		below 8'.		-	6 11 12									
	- 10	SPT				-	7 10 17 18									
	_	SPT	<u></u>		3302.3	-	10 15 19 29									
	15 -	U		SAND, with SILT, trace clay, intermixed, dry, non-plastic to low plasticity when moistened, medium dense, no visible	3301.3											
_		А		CALICHE, with SAND, intermixed, dry, non-plastic when												10
י <u>קטו 8/ט/</u> בי.	_	SPT		moistened, medium dense, no visible bedding, light-gray & pinkish-white.	3298.3	-	15 17 27 35									
	-	SPT		SAND, with SILT, with caliche gravel, intermixed, dry, non-plastic to low plasticity when moistened, medium dense to dense, no visible bedding, light-reddish-brown & pinkish-white.		-	11 13 29 38									
	20 -	SPT			2204.2		13 22 50/2"									
	_	SPT		CALICHE, sandy, dry, non-plastic when moistened, medium dense to very dense, no visible bedding, white, light-gray &	3294.3		27 50/6"									
	25 -	AR		pinkish-white.		- 3.0									-	

	Weave	r	LOG OF BORING NO. PWCG-1	S	Supe	ervising	Geolo	gist:	Aaroi	ı K.	Evai	ns, P.	G.	2.54
	Consu	ltants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Logg Drill	ging Geo ing Firn	ologist i:	:	CGM Envir	otec	h		Pa	ige 2 of 4
	Group		Project No: 0120-809-11-05	1	Field	d Tests			La	lbora	tory	Test	8	
Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date: 3/14/2023       Northing (State Plane): 7182024.7         Boring End Date: 3/20/2023       Easting (State Pane): 836913.78         Ground Elevation at Time of Drilling: 3316.30 ft-msl         Top of Well Casing Datum Elevation: 3319.34 ft-msl         Remarks: Borehole drilled and continuously sampled via dry auger and air rotary techniques. Static groundwater elevation gauged September 2023.         ▼       = First Water Encountered at Time of Drilling: 3231.3 ft-msl         ▼       = Second Water Encountered at Time of Drilling: Not Observed         ▼       = Static Potentiometric Surface Elevation: 3253.26 ft-msl         Description       Fm	F T SL	Hand Penetrometer I est (tst)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer Construction Detail (with contact depths posted in ft-bgs)
	AR	، دور دو دو	CALICHE, sandy, dry (continued).											
- 35	AR		- with calcite seams from 33'-38'.	- - - - - - - - - - - - - - - - - - -	.5+									
- 40 	AR		327	- - - - - - - - - - - - - - - - - - -	.5+									-
- 45 - 45	AR		SAND, with CALICHE, intermixed, dry to moist, non-plastic, loose to medium dense, no visible bedding, light-gray & white.	+ + + + + + + + + + + + + + + + + + + +										-
MPLA	SPT			+		6 8								- 88
≝   50			CALICHE condu with coloite day non-cluster about	6.3		11 21								- 88
	AR		CALICHE, sandy, with calcite, dry, non-plastic when moistened, hard, no visible bedding, white, light-gray & pinkish-white.	4.	.5+									

	Weaver Consul	: tants	LOG OF BORING NO. PWCG-1 Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supe Logg	ervising ging Geo	Geolo logist	gist: . t:	Aaror CGM	n K.	Evar	ns, P.C	J. Pa	ge 3 of 4
	Group		Project No: 0120-809-11-05		Drill	ing Firm	1: 		Envir La	otecl bora	h itorv	Tests		
Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date: 3/14/2023       Northing (State Plane): 71820         Boring End Date: 3/20/2023       Easting (State Pane): 83691         Ground Elevation at Time of Drilling: 3316.30 ft-msl         Top of Well Casing Datum Elevation: 3319.34 ft-msl         Remarks: Borehole drilled and continuously sampled via dry aug and air rotary techniques. Static groundwater elevation gauged September 2023.         ♥ = First Water Encountered at Time of Drilling: ■ Second Water Encountered at Time of Drilling: ■ Static Potentiometric Surface Elevation: Description	24.79 3.78 er nsl ved -msl FT MSL	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer Construction Detail (with contact depths posted in ft-bgs)
	AR		CALICHE, sandy, dry (continued).	-	- 4.5+ -									-
- 65 -  	AR		- becomes pinkish-white & light-reddish-brown belwo 65'.		- - - -									
- 70 -  	AR				- - 4.5+ - -								•	
	AR		SAND, with SILT, moist, non-plastic, medium dense to very dense, no visible bedding, light-reddish-brown.	-	- - - -									
	AR				-	15 25 28 27							•	+ 80.0 + + + + + + + + + + + + + + + + + +
- 85 -	SPT		<ul> <li>becomes moist to wet below 85'.</li> <li>becomes interbedded, laminated to thinly bedded, pinkish-white &amp; light-reddish-brown below 86.5'.</li> </ul>	.   .	-	13 21 24 24								- 86.0
	AR		- 3" calcite seam at 89.5'.	-	-									

	Weaver Consultants Group LOG OF BORING NO. PWCG-1 Project Title: Meadow Landfill - 2023 Subsurface Investigation Project No: 0120-809-11-05						ervising ( ging Geo	Geolo logist	gist:	Aaror CGM	n K.	Evai	ns, P.	G. Pa	ge 4 of 4
		Group		Project No: 0120-809-11-05		Drill	d Tests			Envir La	otec.	h itorv	Test		
D (8)	Uteput (11)	Sample Type and Interval	Graphic Log	Boring Start Date: 3/14/2023       Northing (State Plane): 718202         Boring End Date: 3/20/2023       Easting (State Pane): 836913         Ground Elevation at Time of Drilling: 3316.30 ft-msl         Top of Well Casing Datum Elevation: 3319.34 ft-msl         Remarks: Borehole drilled and continuously sampled via dry auge and air rotary techniques. Static groundwater elevation gauged September 2023.	e4.79 .78 er sl ed msl FT MSL	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piczometer Construction Detail (with contact depths posted in ft-bgs)
		ODT	• • • • • • • • • • • •	- with caliche seams below 90'.			17								
-	-	AR			- - 3222.3	-	28 50/2.5"								
- 9	95 -			SAND, with SILT, trace caliche gravel, interbedded, dry to moist, non-plastic, hard, laminated to thinly bedded, light-reddish-brown, with iron staining.		-									- ···
-		AR	• • • • • • • • • • • • • • • • • • •	- 6" caliche seam at 97'.	-	- 4.5+ - -									- 96.0
		AR		- 6" caliche seam at 105'.	-	- 4.5+ - -									
TTEMPLATE.GDT 8/5/24		AR		<ul> <li>- 6" clayey sand seam at 105.5'.</li> <li>- with trace clay below 105'.</li> </ul>	- - - 3206.3	-		0.0	16.1	95.6	40		41	2.8x10 ⁻³	-
ERMIT (2023).GPJ MLF - 2024 PERM	- - - 15-			Total Borehole Drill Depth = 110'	-	-									-
	- - - -	RICL	IT © ?	024 WEAVER CONSULTANTS GROUP LLC ALL PICHTS P	- - - -	- - -									+ - -

		Weaver Consul	r Itants	LOG OF BORING NO. PWCG-2 Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supervising Geologist: Aaron K. Evans, P.G.Logging Geologist:CGMDrilling Firm:Envirotech								G. Pa	ge 1 of <b>3</b>
		Group		Project No: 0120-809-11-05		Fiel	d Tests			La	bora	atory	Test	;	
	Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date: 3/29/2023       Northing (State Plane): 71818         Boring End Date: 3/31/2023       Easting (State Pane): 84208         Ground Elevation at Time of Drilling: 3314.83 ft-msl         Top of Well Casing Datum Elevation: 3317.74 ft-msl         Remarks: Borehole drilled and continuously sampled via dry aug and air rotary techniques. Static groundwater elevation gauged September 2023.            ¥ = First Water Encountered at Time of Drilling: 3239.8 ft-r            ¥ = Second Water Encountered at Time of Drilling: Not Obser            ¥ = Static Potentiometric Surface Elevation: 3249.28 ft-r            Description	29.44 1.66 er msl ved -msl	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer Construction Detail (with contact depths posted in ft-bgs)
				SAND, with SILT, dry, non-plastic when moistened, loose to	MSL		4								
	 	SPT SPT		- with caliche seams below 4'.		- - -	5 4 5 7 19 21 5							· · ·	2.0
-	- 5 -	SPT	° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° ° °		-	-	7 12								
	· -	SPT		CALICHE, with SAND, clayey, interbedded, dry, non-plastic to low plasticity when moistened, very loose to medium dense, laminated, pinkish-white & light-gray.	3308.8	-	19 8 9 7 7 4								-
	 - 10 -	SPT			-	-	3 4 3								-
-		SPT				-	13 18 25 30 10								-
		SPT				-	15 18 21 14								-
24	- 15 -	SPT				-	15 28 21								-
E.GDT 8/5/2		SPT				-	12 22 27 37								-
IT TEMPLAT		SPT				-	18 22 22 28	35.3	11.6		44	22	22	-	
123).GPJ MLF - 2024 PERM	20 -   	AR		CALICHE, sandy, intermixed, dry, non-plastic when moistened, medium dense to dense, no visible bedding, light-gray & white.	-	4.5+									-
11T (20	- 25 -				3289.8	4.5+									- 88
1LF - PERN		SPT		CALICHE, with SAND, intermixed, dry, non-plastic when moistened, dense to very dense, no visible bedding, pinkish-white & light-gray.		-	18 50/4.5"								
MLF - PIEZO LOG N	 	AR			-	- - 4.5+									-

	Weave	r Itanta	Ants Resident Title: Meadow Landfill 2023 Subcurface Investigation Supervising Geologist: Aaron K. Evans Logging Geologist: CGM									ns, P.	G. Pa	ige 2 of 3
	Groun	naiilS	Project 11tle: Meadow Landfill - 2023 Subsurface Investigation		Drill	ing Firm	:		Envir	otecl	h	-		1
	Group	1			Field	d Tests			La	lbora	itory	Test	S	
Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date: 3/29/2023       Northing (State Plane): 7181829         Boring End Date: 3/31/2023       Easting (State Plane): 842081.6         Ground Elevation at Time of Drilling: 3314.83 ft-msl         Top of Well Casing Datum Elevation: 3317.74 ft-msl         Remarks: Borehole drilled and continuously sampled via dry auger and air rotary techniques. Static groundwater elevation gauged September 2023.         ▼       = First Water Encountered at Time of Drilling: 3239.8 ft-msl         ▼       = Static Potentiometric Surface Elevation: 3249.28 ft-msl         ■       Description	.44 56	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer Construction Detail (with contact depths posted in ft-bgs)
			CALICHE, with SAND, dry (continued).	VISL			34.6	95		48	27	21		
- 25	AR		32 CALICHE, sandy, dry, non-plastic when moistened, hard, light-gray & white.		- 4.5+		34.0	9.5		70	21	21		-
- 35 - - - - - -	AR		32	- - - 274.8	- - - -									- - -
- 40	AR		CALICHE, with calcite, dry, non-plastic when moistened, hard, no visible bedding, light-gray & white.	-	4.5+									-
	AR			-	-									-
1 (2023).GFJ MLF - 2024 FER	AR			-	- - - -									-
	AR			-	- - - 4.5+									-

Consultants     Project Nie: 0120: 800-11-60     Project Nie: 0120: 800-11-60     Project Nie: 0120: 800-11-60       Project Nie: 0120: 800-11-60     Project Nie: 0120: 800-11-60     Factoria     Laboratory Tests       Project Nie: 0120: 800-11-60     Project Nie: 0120: 800-11-60     Factoria     Laboratory Tests       Project Nie: 0120: 800-11-60     Project Nie: 0120: 800-11-60     Factoria     Laboratory Tests       Project Nie: 0120: 800-11-60     Project Nie: 0120: 800-11-60     Factoria     Project Nie: 0120: 800-11-60       Project Nie: 0120: 800-11-60     Project Nie: 0120: 800-11-60     Project Nie: 0120: 800-11-60     Project Nie: 0120: 800-11-60       Project Nie: 0120: 800-11-60     Project Nie: 0120: 800-11-60     Project Nie: 0120: 800-11-60     Project Nie: 0120: 800-11-60       Project Nie: 0120: 800-11-60     Project Nie: 0120: 800-11-60     Project Nie: 0120: 800-11-60     Project Nie: 0120: 800-11-60       Project Nie: 0120: 800-11-60     Project Nie: 0120: 800-11-60     Project Nie: 0120: 800-11-60     Project Nie: 0120: 800-11-60       Project Nie: 0120: 800-11-60     Project Nie: 0120: 800-11-60     Project Nie: 0120: 800-11-60     Project Nie: 0120: 800-11-60       Project Nie: 0120: 800-11-60     Project Nie: 0120: 800-11-60     Project Nie: 0120: 800-11-60     Project Nie: 0120: 800-11-60       Project Nie: 0120: 800-11-60     Project Nie: 0120: 800-11-60     Project Nie: 0120: 800-11-60     Project Nie: 0120: 800-			Weave	[	LOG OF BORING NO. PWCG-2		Supe	ervising	Geolo	gist:	Aaror	ıK.	Evar	ns, P.G		2 (	
GOUD         Project No. 0120-0409-11-05         Field Tests         Laboratory Tests           rg         Boring Star Date: 3,202.023         Northing (State Plane): X08.024.06         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G         G			Consul	tants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Log _g Drill	ging Geo ling Firm	ologisi 1:	t: (	CGM Envir	otec	h		Pa	ge 3 of	3
Image: Start Date: 32:90:23         Northing (State Plane): 71:N1:29:44         (a)         (b)         (b)         (c)			Group		Project No: 0120-809-11-05		Fiel	d Tests			La	lbora	tory	Tests			
AR       CALICHE, dry (continued).         AR       3231.8         AR       SAND, with SIL T, trace caliche, dry to moist, non-plastic, lipit.jub.showite.         -       AR         -       AR         -       AR         -       SAND, with SIL T, trace caliche, dry to moist, non-plastic, lipit.jub.showite.         -       -         -       AR         -       -         -       -         -       -         -       -         -       -         -       -         -       -         -       -         -       -         -       -         -       -         -       -         -       -         -       -         -       -         -       -         -       -         -       -         -       -         -       -         -       -         -       -         -       -         -       -         -       -         -       -		Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date: 3/29/2023       Northing (State Plane): 71818;         Boring End Date: 3/31/2023       Easting (State Pane): 84208         Ground Elevation at Time of Drilling: 3314.83 ft-msl         Top of Well Casing Datum Elevation: 3317.74 ft-msl         Remarks: Borehole drilled and continuously sampled via dry aug and air rotary techniques. Static groundwater elevation gauged September 2023.         ♥ = First Water Encountered at Time of Drilling:       3239.8 ft-m         ♥ = Second Water Encountered at Time of Drilling:       3239.8 ft-m         ♥ = Static Potentiometric Surface Elevation:       3249.28 ft-m	29.44 1.66 er nsl ved •msl	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer Construction Detail	(with contact depths posted in ft-bgs)
AR       AR       AND, with SILT, trace caliche, dy to moist, non-plastic, burd, no sist, non-plastic, burd, no sist, non-plastic, burd, no sist, non-plastic, d, 5+       4.5+         AR       4.5+       4.5+         AR       4.5+       4.5+         AR       50°       700         AR       17       700	F			<u>,                                     </u>	CALICHE, dry (continued).	MSL											
AR       4.5+         70       SAND, with SILT, gravely, intermixed, moist, non-plastic, medium dense to very dense, no visible bedding, light-reddish-brown & pinkish-white.       3244.8         75       SAND, with SILT, gravely, intermixed, moist, non-plastic, medium dense to very dense, no visible bedding, light-reddish-brown & pinkish-white.       75         75       SAND, with SILT, gravely, intermixed, moist, non-plastic, medium dense to very dense, no visible bedding, light-reddish-brown & pinkish-white.       76         75       AR       SST         80       SPT       502°         81       SPT       73         82       SPT       73         84       SPT       17         85       SPT       50°°         85       SPT       50°°         84       SPT       50°°         85       SPT       50°°         86       SPT       50°°         87       AR       50°°         88       SPT       - becomes moist below 85°.       50°°         87       AR       50°°       87.3         98       Total Borehole Depth = 90°       3229.8       50°°		   - 65 -	AR		SAND, with SILT, trace caliche, dry to moist, non-plastic, hard, no visible bedding, light-reddish-brown & pinkish-white.	3251.8	-										
AR       SAND, with SLT, gravelly, intermixed, moist, non-plastic, medium dense to very dense, no visible bedding, light-reddish-brown & pinkish-white.       75         AR       - becomes wet below 75'.       3229.8         SPT       - becomes wet below 75'.       3239.8         AR       - becomes moist below 75'.       3239.8         AR       - becomes moist below 75'.       3239.8         AR       - becomes moist below 75'.       - becomes moist below 75'.         SPT			AR				- 4.5+ - 4.5+										
75       • becomes wet below 75'.       3239.8       75.0         80       SPT       502"       77.3         80       SPT       17       77.3         80       SPT       17       77.3         80       SPT       36       77.3         85       SPT       17       17         85       SPT       3229.8       10         86       SPT       506"       87.3         87.3       3229.8       506"       87.3         87.3       Total Borchole Depth = 90'       3224.8       10       87.3		- 70 -   	AR		SAND, with SILT, gravelly, intermixed, moist, non-plastic, medium dense to very dense, no visible bedding, light-reddish-brown & pinkish-white.	-	-										
AR       AR       17         80       SPT       17         AR       17         AR       3229.8         SPT       506"         AR       506"         AR       506"         Total Borehole Depth = 90'       3224.8	8/5/24	- 75 -	SPT		- becomes wet below 75'.	3239.8	-	28 50/2"							;	- 75.0	
$85 - \frac{\text{SPT}}{\text{AR}} + \frac{17}{25} + \frac{17}{36} + \frac{17}{25} + \frac{17}{36} + \frac{17}{25} + \frac{17}{36} + 17$		  - 80 -	AR			-	-									77.3	
AR =	2024 PERN		SPT	• • • • • • • • • • • •		-	-	17 25 36								-	
SPT - becomes moist below 85'. AR AR Total Borehole Depth = 90' Total Borehole Depth = 90'	T (2023).GPJ MLF		AR			3229.8	-								-	-	
AR = AR =	PERMI	- 05	SPT		- becomes moist below 85'.			50/6"									
	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -		AR		Total Borehole Depth = 90'		-									87.3	

	Weave	r	LOG OF BORING NO. PWCG-3		Supe	ervising (	Geolo	gist:	Aaror	n K.	Evai	ns, P.C	Pa	gelof/
	Consul	ltants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Drill	ling Firm	nogisi i:	L. [	Envir	otec	h		Id	ge 1 01 4
	Group		Project No: 0120-809-11-05		Fiel	d Tests			La	lbora	atory	Tests		
Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date: 3/21/2023       Northing (State Plane): 71792         Boring End Date: 3/29/2023       Easting (State Plane): 84199         Ground Elevation at Time of Drilling: 3295.86 ft-msl       7000         Top of Well Casing Datum Elevation: 3298.84 ft-msl       84199         Remarks: Borehole drilled and continuously sampled via dry aug and air rotary techniques. Static groundwater elevation gauged September 2023.       3240.9 ft-msl         Y = First Water Encountered at Time of Drilling:       3240.9 ft-msl         Y = Second Water Encountered at Time of Drilling:       Not Obsert         Y = Static Potentiometric Surface Elevation:       3257.66 ft-msl	90.62 9.62 er msl ved -msl FT MSL	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer Construction Detail (with contact depths posted in ft-bgs)
		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	SAND, with SILT, dry, non-plastic when moistened, loose, no visible bedding, reddish-brown.			4								
	SPT		6,			44								
_	SPT		SAND with CALICHE silty day non plastic when	3291.9	-	4 9 10								- 2.0
- 5	SPT		moistened, very loose to medium dense, laminated,		-	3 5								
_	511		lignt-readisn-brown & white.		_	7 8								
				3288.9		4								
	SPT		CALICHE, sandy, dry, non-plastic when moistened, loose to very dense, no visible bedding, white & pale-yellowish-pink.			20 18								
_	SPT				-	10 14 15								-
- 10 - - -	AR				- - -									-
- 15	SPT				-	50/6"								
	- - AR		CALICHE, dry, non-plastic when moistened, hard, no visible bedding, white & pinkish-white. - low angle fracture at 17'.	3279.4	- 4.5+		33.0	6.4		NL	NP			
- 20					4.5+									
			- high angle fracture at 21.5'.		-									
	AR		- high angle fracture at 23'.		-									
			- high angle fracture at 24'.											
- 25					ļ									
	AR		CALICHE with SANDSTONE intropoddod dwy non algoria	3267.4	4.5+									-
	1		when moistened, hard, very thinly bedded, white.	3265.9										

	Weave Consul	r Itants	LOG OF BORING NO. PWCG-3 Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supe Logg Drill	ervising ging Geo ling Firm	Geolo ologist n:	gist: .	Aaroı CGM Envir	n K. otec	Evar h	ns, P.C	h. Pa	ge 2 of 4
	Group		Project No: 0120-809-11-05		Fiel	d Tests			La	lbora	tory	Tests		
Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date: 3/21/2023       Northing (State Plane): 717929         Boring End Date: 3/29/2023       Easting (State Plane): 841999         Ground Elevation at Time of Drilling: 3295.86 ft-msl       70 of Well Casing Datum Elevation: 3298.84 ft-msl         Remarks: Borehole drilled and continuously sampled via dry auge and air rotary techniques. Static groundwater elevation gauged September 2023.       ¥ = First Water Encountered at Time of Drilling: 3240.9 ft-m         ¥ = Second Water Encountered at Time of Drilling: Not Observer       3257.66 ft-r         Encountered at Time of Drilling: 3257.66 ft-r       3257.66 ft-r	0.62 .62 r sl ed nsl FT MSL	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer Construction Detail (with contact depths posted in ft-bgs)
			SANDSTONE with CALICHE, silty, with calcite, dry,	WISE	4.5+		22.9	2.7		NL	NP			
- 35	AR		pale-yellowish-pink & white.	-	- 4.5+								- - - -	
40 -	AR			-	-	50/0.5"								-
	- AR			-	-								· · ·	-
	AR		- high angle fracture at 48'.	-	- - -									-
(2023).GPJ MLF - 2024 FER 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	AR			-	- - -									-
55	CDT		SAND, with SILT, clayey, with caliche gravel, wet, low	5240.9		17								55.0
Ш  	or I	• • • • • • • • • • • •	plasticity, medium dense to very dense, no visible bedding, light-reddish-brown & white, calcareous.	-	-	50/6"								
	AR	•     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     • <td></td> <td>-</td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>57.4</td>		-	-									57.4

		Weave	r	LOG OF BORING NO. PWCG-3	S	upe	rvising (	Geolo	gist: .	Aaror	ı K.	Evar	ns, P.O	G.	2-64
		Consul	ltants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		.ogg )rilli	ing Geo ng Firm	logisi :	:	CGM Envir	otec	h		Pa	ge 5 01 4
		Group		Project No: 0120-809-11-05	F	ield	Tests			La	lbora	tory	Tests	5	
	Jepth (ft)	ample Type and Interval	iraphic Log	Boring Start Date: 3/21/2023       Northing (State Plane): 7179290.62         Boring End Date: 3/29/2023       Easting (State Pane): 841999.62         Ground Elevation at Time of Drilling: 3295.86 ft-msl         Top of Well Casing Datum Elevation: 3298.84 ft-msl         Remarks: Borehole drilled and continuously sampled via dry auger and air rotary techniques. Static groundwater elevation gauged September 2023.	Hand Penetrometer Test (tsf)		Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer Construction Detail (with contact depths posted in ft-bgs)
-		S		SAND, with SILT, clayey, wet (continued).			18								
_	· _	SPT			+		36 50/6"								- · · · · · · · · · · · · · · · · · · ·
		AR			+			57.3	12.1		55	26	29		
	- 65 -	SPT					15 20 50/4"							-	
		AR			+									-	- 67.4
	70 -	SPT			t		34							-	
-		511		2002	1		50/4"								
	· _	AR		SAND, with SILT, trace clay, trace gravel, dry to moist, non-plastic to low plasticity, medium dense to very dense, no visible bedding, light-reddish-brown & brown, calcareous.	-										-
124	- 75 -	SPT		SAND, silty, moist, non-plastic, medium dense to very dense, no visible bedding, brown.	-		18 37 50/5"								-
EMPLATE.GDT 8/	· _	AR			+ + +										-
	80 -			3215 CLAY, moist, medium plasticity, very stiff to hard, laminated,	.9	-	9								-
LF - 2024 PEI	· _	SPT		light-greenish-gray & brown, with iron stains.	-		15 18 22								-
[ (2023).GPJ M		AR			ł									-	-
	· 85 - 	SPT					10 16 20 26	93.9	24.5	101.2	74	31	43	- 8.1x10 ⁻⁹ -	
		AR			-									-	-

		Weave Consu	r ltants	LOG OF BORING NO. PWCG-3 Project Title: Meadow Landfill - 2023 Subsurface Investigation	OF BORING NO. PWCG-3 itle: Meadow Landfill - 2023 Subsurface Investigation Supervising Geologist: Aaron K. Evans, P.G. Logging Geologist: CGM Drilling Firm: Envirotech									Pa	ge 4 of 4
	(	Group		Project No: 0120-809-11-05		Fiel	d Tests			Liivii	bora	tory	Tests		
Darth (A)	Deptn (III)	Sample Type and Interval	Graphic Log	Boring Start Date: 3/21/2023       Northing (State Plane): 71792         Boring End Date: 3/29/2023       Easting (State Pane): 84199         Ground Elevation at Time of Drilling: 3295.86 ft-msl         Top of Well Casing Datum Elevation: 3298.84 ft-msl         Remarks: Borehole drilled and continuously sampled via dry aug and air rotary techniques. Static groundwater elevation gauged September 2023.            ¥ = First Water Encountered at Time of Drilling: ¥ = Second Water Encountered at Time of Drilling: Not Obser ¥ = Static Potentiometric Surface Elevation: 3257.66 ft- Description	90.62 9.62 er msl ved -msl FT MSL	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer Construction Detail (with contact depths posted in ft-bgs)
				CLAY, moist (continued).	IVIDE		9								
-	-	SPT			3203.9	-	12								
-	-		///	Total Borehole Depth = 92'	5205.9		18								92.0
-	_			1	-	-									-
						_									-
- 9	95 -				-	-									-
-	-				-	-									-
-	_				-	-									-
F	-				-	-								-	-
-1	00-				-	-									-
-	_				-	-									-
						_									-
	-				-	-								-	-
F	-				-	-									-
-1	05-				-	-									-
4-					-	_									-
8/5/2															
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2024															
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MLF.															
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		Neave	r	LOG OF BORING NO. PWCG-4A		Supe	ervising	Geolo	gist:	Aaror	n K.	Evar	ns, P.C	j.	1	
		Consul	ltants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Log _g Drill	ging Geo ling Firm	ologist i:	t: _	AE/D Envir	S onm	enta	l Wor	Pa ks	ge I of	:2
		Jroup		Project No: 0120-809-11-05		Field	d Tests			La	bora	tory	Tests			
	Depth (ft)	ample Type and Interval	iraphic Log	Boring Start Date:       7/12/2023       Northing (State Plane):       71775         Boring End Date:       7/12/2023       Easting (State Plane):       84101         Ground Elevation at Time of Drilling:       3267.07 ft-msl         Top of Well Casing Datum Elevation:       3270.51 ft-msl         Remarks:       Borehole drilled and continuously sampled via dry sor drilling techniques.       Static groundwater elevation gauge September 2023.            ✓ = First Water Encountered at Time of Drilling:       3238.1 ft-ft            ✓ = Second Water Encountered at Time of Drilling:       3229.6 ft-ft            ✓ = Static Potentiometric Surface Elevation:       3248.75 ft	irt.27 4.12 inic ed msl msl msl FT	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer	(with contact depths posted in ft-bgs)
┢	Ц	S		SAND, silty, dry, non-plastic when moistened, loose, no	MSL											
_	-	SC		visible bedding, pinkish-white. - becomes brown below 1'.	-	-									- 2.0	
	5 -	SC			-	-									+ + +	
	-				3261.1											
_	_	SC		SAND, silty, clayey, dry, non-plastic to low plasticity when moistened, loose to poorly consolidated, no visible bedding, light-gray, calcareous.	3259.6	-										
_	_	SC		SAND, silty, trace gravel, dry, non-plastic when moistened, loose, no visible bedding, white, calcareous.	3257.6	-									+	
_	10 -	SPT		SAND, trace silt, dry to moist, non-plastic, loose to medium dense, no visible bedding, very-pale-brown.	3255.6	-	8 9 21								-	
_	_	SC		SAND, silty, trace clay, dry to moist, non-plastic when moistened, hard, no visible bedding, reddish-brown. - becomes loose to poorly consolidated, friable, pinkish-white, and calcareous below 12.5'.	-	-		40.0	16.5		37	19	18		+	
_	- 15 -	SC		SILT, sandy, dry to moist, hard, non-plastic, no visible bedding, pinkish-white, friable, calcareous.	3253.1										+	
+	_	~~~		CALICUE conductivity colorize and conditions accurs	3251.1										ļ	
1 8/5/	_	sc		interbedded, dry, non-plastic when moistened, very dense, laminated to thinly bedded, white & pinkish-white.	-	-										
	_	SC			-	-									+	
	20 -	SPT		CALICHE, silty, with calcite seams, trace sand, interbedded.	3246.8		50/2.5"								ł	
1 - 1 - 1	_	SC		dry to moist, non-plastic, very dense, very thinly bedded to thinly bedded, pinkish-white & white.	-	-									+	
(ZUZ3).GPJ N	-	SC			3242 1	-									+ +	
	25 -			SANDSTONE, silty, moist, non-plastic, hard, no visible bedding, light-brown & pinkish-brown, friable, calcareous,											+ +	
	_	SC			3238 1	-									+ +	
	-			- becomes wet from 29' to 31'.											t	

	Weave Consu Group	r ltants	LOG OF BORING NO. PWCG-4A Project Title: Meadow Landfill - 2023 Subsurface Investigation Project No: 0120 800 11 05		Supe Logg Drill	ervising ( ging Geo ling Firm	Geolo ologist 1:	gist: . :	Aaror AE/D Envir	n K. S onm	Evai enta	ns, P.C l Wor	G. Paj ks	ge 2 of	f 2
_	loroup	1			Field	d Tests			La	lbora	itory	Tests			
bepth (ft)	ample Type and Interval	iraphic Log	<ul> <li>Boring Start Date: 7/12/2023 Northing (State Plane): 7177577.2</li> <li>Boring End Date: 7/12/2023 Easting (State Pane): 841014.12</li> <li>Ground Elevation at Time of Drilling: 3267.07 ft-msl</li> <li>Top of Well Casing Datum Elevation: 3270.51 ft-msl</li> <li>Remarks: Borehole drilled and continuously sampled via dry sonic drilling techniques. Static groundwater elevation gauged September 2023.</li> <li> <b>Y</b> = First Water Encountered at Time of Drilling: 3238.1 ft-msl         </li> <li> <b>Y</b> = Second Water Encountered at Time of Drilling: 3229.6 ft-msl</li> </ul> <li> <b>Static Potentiometric Surface Elevation:</b> 3248.75 ft-msl</li>	27 2 T	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer	(with contact depths posted in ft-bgs)
	- N		SANDSTONE, silty, wet (continued).	SL		28									
-	SPT		223	6.1		50/3.0"								-	
-	SC		- becomes moist and very suit with trace ciay below 51.	-	-									-	
- 35	SC				-									-	
_	SC		- becomes moist to wet below 37.5'	.9.6	-								-	- 37.0	
- 40	sc			-	- 4.5+									- 39.9	
	SPT		322	6.1		23 50/5 0'									
_	- SC - SC		SAND, silty, trace caliche, moist to wet, non-plastic, loose to very stiff, laminated to moderately bedded, light-brown, friable, calcareous.		-								-	-	
- 45	SC		- becomes wet and loose with black mottling below 47.5'.		-		53.8	17.7		29		30		-	
	SC			-	-	50/5.0"								- 49.9	
	SPT		321	6.1										-	
	- SC		SAINDS I UNE, sitty, moist, non-plastic, hard, no visible bedding, brown, friable, calcareous.	-	-								-	-	
19.0			321	3.1									-		
	SC		SANDSTONE, with siltstone, trace clay, dry, non-plastic when moistened, hard, laminated to very thinly bedded, dark-reddish-brown, light-brown, white, dark-red & light-gray, calcareous.	2.1	-								-	- 55.0	
	-			-	-								-	-	

		Veave Consu	r Itants	LOG OF BORING NO. PWCG-4B Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supervising Geologist: Aaron K. Evans, P.GLogging Geologist:DSDrilling Firm:Environmental Work									ge 1 of	2
		Group		Project No: 0120-809-11-05		Field	d Tests			La	bora	tory	Tests	5		
	Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date:       8/25/2023       Northing (State Plane): 71775         Boring End Date:       8/25/2023       Easting (State Pane):       84099         Ground Elevation at Time of Drilling:       3267.09 ft-msl         Top of Well Casing Datum Elevation:       3270.11 ft-msl         Remarks:       Borehole drilled and continuously sampled via dry som drilling techniques. Static groundwater elevation gauge September 2023.            ✓ = First Water Encountered at Time of Drilling:       3238.1 ft-n            ✓ = Static Potentiometric Surface Elevation:       3248.83 ft-Description	79.69 6.83 ic xd nsl ved -msl FT MST	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer	(with contact depths posted in ft-bgs)
		SC		SAND, silty, dry, non-plastic when moistened, loose, no visible bedding, pinkish-white. - becomes brown below 1'.		-									- 2.0	
-	-			SAND, silty, clayey, dry, non-plastic to low plasticity when moistened, loose to poorly consolidated, no visible bedding, light-gray, calcareous. SAND, silty, trace gravel, dry, non-plastic when moistened, loose, no visible bedding, white, calcareous.	3261.1 3259.6 3257.6	-									-	
-	10 -			SAND, trace silt, dry to moist, non-plastic, loose to medium dense, no visible bedding, very-pale-brown. SAND, silty, trace clay, dry to moist, non-plastic when moistened, hard, no visible bedding, reddish-brown. - becomes loose to poorly consolidated, friable, pinkish-white, and calcareous below 12.5'.	3255.6	-		40.0	16.5		37	19	18		-	
EMPLAIE.GUI 8/5/24		SC		SILT, sandy, dry to moist, hard, non-plastic, no visible bedding, pinkish-white, friable, calcareous. CALICHE, sandy, with calcite and sandstone seams, interbedded, dry, non-plastic when moistened, very dense, laminated to thinly bedded, white & pinkish-white.	3251.1	-									-	
(2023).GPJ MLF - 2024 PERMIT I	20 -			CALICHE, silty, with calcite seams, trace sand, interbedded, dry to moist, non-plastic, very dense, very thinly bedded to thinly bedded, pinkish-white & white.	3246.8	-								- - - -	- - -	
		SC		SANDSTONE, silty, moist, non-plastic, hard, no visible bedding, light-brown & pinkish-brown, friable, calcareous,	3238.1	-									26.0	
				- becomes wet from 29' to 31'.												

		Weave Consu	r ltants	LOG OF BORING NO. PWCG-4B Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supe Log	ervising ( ging Geo	Geolo ologist	gist: t:	Aaror DS	ı K.	Eva	ns, P.C	ð. Pa	ge 2 of 2
1		Group		Project No: 0120-809-11-05		Drill	d Tests	1: 		Envir La	onm Ibora	enta atorv	Tests	KS	
	Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date:       8/25/2023       Northing (State Plane): 71775         Boring End Date:       8/25/2023       Easting (State Plane): 84099         Ground Elevation at Time of Drilling:       3267.09 ft-msl         Top of Well Casing Datum Elevation:       3270.11 ft-msl         Remarks:       Borehole drilled and continuously sampled via dry son drilling techniques. Static groundwater elevation gauge September 2023.            ✓       = First Water Encountered at Time of Drilling:       3238.1 ft-r            ✓       = Second Water Encountered at Time of Drilling:       Not Obser            ✓       = Static Potentiometric Surface Elevation:       3248.83 ft	79.69 6.83 ic ed nsl ved -msl FT MSL	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer Construction Detail (with contact depths posted in ft-bgs)
				SANDSTONE, silty, wet (continued).	3236.1										
-	-			- becomes moist and very stiff with trace clay below 31'.	2225.1										
-	-		•]•[•[•	Total Borehole Depth = 32'	3235.1										32.0
3 MLF - PERMIT (2023).GPJ MLF - 2024 PERMIT TEMPLATE.GDT 8/5/24	- - - - - - - - - - - - - - - - - - -														
MLF - PIEZO LO	_				-	-									-

		Neave Consu	r ltants	LOG OF BORING NO. PWCG-5A Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supe Logg Drill	ervising ( ging Geo ling Firm	Geolo logist	gist: .	Aaron DS Envir	n K.	Evar enta	ns, P.C l Wor	i. Pa	Page 1 of 4		
	/ (	Group		Project No: 0120-809-11-05		Field Tests Laboratory Tests											
Denth (ft)	(11) Inder	Sample Type and Interval	Graphic Log	Boring Start Date: 7/12/2023       Northing (State Plane): 717938         Boring End Date: 7/13/2023       Easting (State Plane): 839309.         Ground Elevation at Time of Drilling: 3309.07 ft-msl       Top of Well Casing Datum Elevation: 3312.19 ft-msl         Remarks: Borehole drilled and continuously sampled via dry sonic drilling techniques. Static groundwater elevation gauged September 2023.       ¥ = First Water Encountered at Time of Drilling: 3235.1 ft-ms.         ¥ = Second Water Encountered at Time of Drilling: 3219.1 ft-ms.       ¥ = Static Potentiometric Surface Elevation: 3262.55 ft-m         Description       Description	1.82 .31 sl sl sl FT MSL	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer	Course uction Detail (with contact depths posted in ft-bgs)	
				SAND, silty, moist, non-plastic, loose, no visible bedding, brown & light-brown, calcareous.													
		SC		3	- 307.1									-			
	5 -	SC		SAND, silty, with caliche, dry to moist, non-plastic, loose, no visible bedding, pinkish-gray & white. - becomes light-gray, pinkish-gray & reddish-orange below 3.5'.	-	- 1.5									- 2.0		
_	_	SC		- becomes laminated to very thinly bedded below 7'.	-	-											
	-	SC		CALICHE, with SILTSTONE, sandy, dry to moist, non-plastic, soft to hard, no visible bedding, light gray, reddish-yellow, & pinkish-white, with iron stains.		-									-		
-	-	SC		SILTSTONE, with CALICHE, sandy, dry to moist, non-plastic, soft to hard, no visible bedding, light-gray, reddish-yellow & pinkish-white, with iron stains. - becomes laminated to thinly bedded and crossbedded below 12'.	-	-								-	-		
- 1		SC			-	-								- -	-		
1 0/0/24	_	SC		3 SAND, silty, dry, non-plastic when moistened, medium dense, no visible bedding, reddish-brown	292.6	-									-		
	-	SC		6,	-	-											
		SPT		3	3287.6	_	25 22 19										
V   - 	-	SC		CALICHE, sandy, dry, non-plastic when moistened, very dense, no visible bedding, pinkish-white & pale-red.		-									ł		
	- - :5 -	SC			-	-								-	+ + +		
	_	SC		3	3282.1	-								-			
	-	SC		CALICHE, with SAND, interbedded, dry, non-plastic when moistened, very dense, moderately bedded, pinkish-white & pale-red.	-	-									-		

		Weave Consul	r ltants	LOG OF BORING NO. PWCG-5A Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supe Logg Drill	ervising ging Geo ling Firm	Geolo ologist 1:	gist: .	Aaror DS Envir	n K. I	Evar ental	is, P.C Worl	Э. Ра ks	age 2 of 4
		Gloup		Project No: 0120-809-11-05		Fiel	d Tests			La	ibora	tory	Tests		
	Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date: 7/12/2023       Northing (State Plane): 717938         Boring End Date: 7/13/2023       Easting (State Plane): 839309         Ground Elevation at Time of Drilling: 3309.07 ft-msl         Top of Well Casing Datum Elevation: 3312.19 ft-msl         Remarks: Borehole drilled and continuously sampled via dry sonid drilling techniques. Static groundwater elevation gauged September 2023.            ✓ = First Water Encountered at Time of Drilling: 3235.1 ft-m            ✓ = Second Water Encountered at Time of Drilling: 3219.1 ft-m            ✓ = Static Potentiometric Surface Elevation: 3262.55 ft-         Description	S1.82 D.31 c d ssl msl FT MSL	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer Construction Detail (with contact depths posted in ft-bgs)
		SC		CALICHE, with SAND, dry (continued).	-										-
	  	SC			-	-									- -
-		SC			-	-									-
-		SC			-	-	50/2 0"								-
	- 40 -	SPT			-	-	50/2.0"								
-		SC			-	-									-
		SC			3265.1	-									T AA
-	- 45 -	SC		SILTSTONE, with CALICHE, sandy, dry, non-plastic when moistened, hard, no visible bedding, pinkish-white.	3263.1	_									+
TE.GDT 8/5/24		SC		SAND, with CALICHE, silty, interbedded, crossbedded, dry, non-plastic when moistened, hard, laminated to very thinly bedded, white, pinkish-white & light-reddish-brown.	-	4.5+									- -
ERMIT TEMPLA		SC		SAND, silty, dry to moist, non-plastic, soft to firm, no visible	3259.1	-									-
_F - 2024 PE		SC		bedding, brown.	3256.6	-									+
IT (2023).GPJ MI	  - 55 -	SC		SAND, with SILTSTONE, gravelly, interbedded, crossbedded, dry, non-plastic when moistened, medium dense to dense, laminated, light-gray & reddish-brown, calcareous.	-	-									-
DG MLF - PERM		SC		- with trace clay below 56'.	-	-									-
MLF - PIEZO LC		SC			-	-									-

	Weave	r	LOG OF BORING NO. PWCG-5A		Supe Log	ervising ( ging Geo	Geolo logis	ogist: t:	Aaror DS	n K.	Evai	ns, P.	G. Pa	ige 3 of	ge 3 of 4					
	Group	llants	Project Title: Meadow Landfill - 2023 Subsurface Investigation Project No: 0120-809-11-05 Project No: 0120-809-11-05						Envir	onm	enta	-								
	T				Fiel	d Tests			La	bora	tory	Test	S	-						
	und Interval		Boring Start Date:       7/12/2023       Northing (State Plane):       717938         Boring End Date:       7/13/2023       Easting (State Plane):       839309         Ground Elevation at Time of Drilling:       3309.07 ft-msl         Top of Well Casing Datum Elevation:       3312.19 ft-msl         Remarks:       Borehole drilled and continuously sampled via dry sonid drilling techniques.       Static groundwater elevation gauged	31.82 9.31 c d	meter Test (tsf)	llows/6-inches	ng No. 200	ture Content	(pcf)			ex	(cm/sec)	er Piezometer n Detail	epths posted in ft-bgs					
epth (ft)	ample Type a	raphic Log	September 2023. $\Psi$ = First Water Encountered at Time of Drilling: 3235.1 ft-m $\Psi$ = Second Water Encountered at Time of Drilling: 3219.1 ft-m $\Psi$ = Static Potentiometric Surface Elevation: 3262.55 ft-m	ısl ısl msl	Hand Penetro	enetration B	Percent Passi	Percent Mois	Dry Density (	Liquid Limit	Plastic Limit	Plasticity Ind	Permeability	Groundwate Constructio	with contact d					
<u> </u>	Ň		Description	MSL	Η		-			<b>–</b>	-	-	н							
	SPT		SAND, with SILTSTONE, ary (continued).	3247.6		21 28 31								-						
	SC		CLAY, silty, sandy, trace gravel, dry to moist, low to medium plasticity, hard, laminated to very thinly bedded, reddish-brown.																	
- 65 -	SC			-	4.5+									-						
	SC			-			99.0	22.7		84	42	42		+ +						
	SC			-										+						
	SC			-			70.6	24.7	99.2	33		34	2.3x10 ⁻⁷	+						
	sc			3235.1	4.5+									- 73.0						
- 75 -			SAND, silty, trace clay, moist to wet, non-plastic to low plasticity, soft to firm, no visible bedding, light-reddish-brown with black mottling.	-	2.5									- 75.0						
	SC			+										+ -						
	sc				2.5									- -						
	SPT		SAND, silty, trace clay, dry to moist, non-plastic, dense to very dense, no visible bedding, reddish-brown.	3229.1		40 50/3.0"								-						
J MLF - 2024	SC		- becomes clayey and non-plastic to low plasticity below 82.5'.	-	4.5+									-						
- 85 ·	SC			-										+						
	sc		- becomes moist below 87'.	-	4.5+									-						
	sc			-	4.5+									+						
				3219.1	2.75															

Weaver				LOG OF BORING NO. PWCG-5A		Supe	ervising (	Geolo	gist: .	Aaror	n K.	Evar	ns, P.O	G. Po	Page 4 of 4				
Consultants			ltants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Drill	ing Firm	:	.: ]	DS Envir	onm	enta	l Wor	ks ra	ge 4 0I 4				
		roup		Project No: 0120-809-11-05		Field	d Tests			La	lbora	itory	Tests	5					
Denth (ft)		Sample Type and Interval	Graphic Log	Boring Start Date: 7/12/2023       Northing (State Plane): 717938         Boring End Date: 7/13/2023       Easting (State Plane): 839309         Ground Elevation at Time of Drilling: 3309.07 ft-msl       7000000000000000000000000000000000000	31.82 0.31 c d ssl ssl msl FT MSL	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer Construction Detail (with contact depths posted in ft-bgs)				
	1		•••••	SAND, wet, non-plastic, medium dense to dense, no visible	WIGE										90.0				
-	-	SC		bedding, brown.	-	-								-	- - 92.9				
- 9:	5 -	SC			-	3.5								-	- • • • • • • • • • • • • • • • • • • •				
-	_	SC	× • • • • • • • • • • • • • • • • • • •		-	-								-	- · · · · · · · · · · · · · · · · · · ·				
-10		SC			-	-								-					
_	_	SPT SC			-	- 0.5	21 33 42							-					
-	_	SC		CLAY, shaley, dry to moist, medium to high plasticity, hard, laminated, gray & brown, with iron stains.	3206.1	-4.5+									- 102.9 103.0				
- 10	-	SC			-	- - 4.5+ -								-	-				
	-	SC		- with dark red mottling below 108.0'.	- - 3199.1	4.5+		99.3	22.2 21.6	104.0	71	32	39 ]	1.5x10 ⁻⁸ -	-				
	0+			Total Borehole Depth = 110'											- 110.0				
ILF - 2024	_				-	-								-	-				
123).GPJ N	_				-	-								-	-				
	5-				-	-								-	-				
					-	-								-	-				
	-				-	-								-	-				
								-		•		-							

		Weave Consu	r Itants	LOG OF BORING NO. PWCG-5B Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supervising Geologist: Aaron K. Evans, P.           Logging Geologist:         DS           Drilling Firm:         Environmental Wo						ns, P.G. I Work	Pa	Page 1 of 3				
		Jroup		Project No: 0120-809-11-05		Fiel	d Tests			La	bora	ıtory	Tests					
	Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date:       8/24/2023       Northing (State Plane): 71793;         Boring End Date:       8/24/2023       Easting (State Pane):       83929;         Ground Elevation at Time of Drilling:       3308.99 ft-msl         Top of Well Casing Datum Elevation:       3312.08 ft-msl         Remarks:       Borehole drilled and continuously sampled via dry sonidrilling techniques.       Static groundwater elevation gauge September 2023.            ✓ = First Water Encountered at Time of Drilling:       3235.0 ft-n            ✓ = Static Potentiometric Surface Elevation:       3263.43 ft-Description	89.37 8.83 ic d nsl ved msl	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer	Consultation Detail (with contact depths posted in ft-bgs)		
ŀ	Π	•1		SAND, silty, moist, non-plastic, loose, no visible bedding,	MSL													
	  - 5 - 	SC		SAND, silty, with caliche, dry to moist, non-plastic, loose, no visible bedding, pinkish-gray & white. - becomes light-gray, pinkish-gray & reddish-orange below 3.5'.		-								- - - - -	- 2.0			
-	 		<u>ררריייי</u>	CALICHE, with SILTSTONE, sandy, dry to moist, non-plastic, soft to hard, no visible bedding, light gray, reddish-yellow, & pinkish-white, with iron stains. SILTSTONE, with CALICHE, sandy, dry to moist,	3301.0 3299.0	-									-			
5/24		SC		non-plastic, soft to hard, no visible bedding, light-gray, reddish-yellow & pinkish-white, with iron stains. - becomes laminated to thinly bedded and crossbedded below 12'.	- - - 3292.5	-								-	-			
24 PERMIT TEMPLATE.GDT 8/	  - 20 -			SAND, silty, dry, non-plastic when moistened, medium dense, no visible bedding, reddish-brown.	3287.5	-								· · ·	-			
-F - PERMIT (2023).GPJ MLF - 20	  - 25 -	SC		CALICHE, sandy, dry, non-plastic when moistened, very dense, no visible bedding, pinkish-white & pale-red.		-								-	- - - -			
MLF - PIEZO LOG MI				CALICHE, with SAND, interbedded dry, non-plastic when moistened, very dense, moderately bedded, pinkish-white & pale-red.		-									+ + +			
		Veave	r Itants	LOG OF BORING NO. PWCG-5B Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supe Logg Drill	ervising ging Geo ling Firm	Geolo ologist 1:	gist: / : ]	Aaron DS Envir	n K. I	Evar	ns, P.C I Wor	ð. Pa	ge 2 of 3			
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		Group		Project No: 0120-809-11-05		Field	d Tests			La	bora	tory	Tests					
	Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date:       8/24/2023       Northing (State Plane): 717938         Boring End Date:       8/24/2023       Easting (State Pane):       839298         Ground Elevation at Time of Drilling:       3308.99 ft-msl       3312.08 ft-msl         Top of Well Casing Datum Elevation:       3312.08 ft-msl         Remarks:       Borehole drilled and continuously sampled via dry sonid drilling techniques. Static groundwater elevation gauged September 2023.            ¥ = First Water Encountered at Time of Drilling:       3235.0 ft-msl            ¥ = Second Water Encountered at Time of Drilling:       Not Observ            ¥ = Static Potentiometric Surface Elevation:       3263.43 ft-r	s9.37 3.83 c d sl ed msl FT MSI	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer Construction Detail (with contact depths posted in ft-bgs)			
╞		*1		CALICHE, with SAND, dry (continued).	WISL													
		SC			- - - - - - - - - - - - - - - - - - -	-												
				SILTSTONE, with CALICHE, sandy, dry, non-plastic when														
╞	- 45 -	SC		morsteneu, naru, no visiore ocuding, pinkisn-winte.	3263 0	-									†			
T TEMPLATE.GDT 8/5/24				SAND, with CALICHE, silty, interbedded, crossbedded, dry, non-plastic when moistened, hard, laminated to very thinly bedded, white, pinkish-white & light-reddish-brown.	3259.0	-									+			
ERMI	- 50 -			SAND, silty, dry to moist, non-plastic, soft to firm, no visible bedding, brown.											1 88			
2024 F			• • • • • • • • • • • • •	-0,	1	-												
MLF				SAND with SII TSTONE gravelly interhedded	3256.5	-												
	• -		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	crossbedded, dry, non-plastic when moistened, medium dense to dense, laminated, light-grav & reddish-brown, calcareous		-									† 88			
1 (2023	۔ . چ		* * * * * * * * * * * * * * * * * *	, , , , , , , , , , , , , , , , , , ,	1	-									1 88			
	- 55 -	SC		- with trace clay below 56'.	Ì	-												
			<pre></pre>	,	1	-												
- DG			0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			-												
					1	-												
			0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			-												

	Weave	r	LOG OF BORING NO. PWCG-5B		Supe	ervising ( ving Geo	Geolo	gist: .	Aaron	1 K. I	Evan	ns, P.G	Pa	ge 3 of 3
	Consu	ltants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Drill	ing Firm	10513	]	Envir	onme	ental	l Worl	s	
	Gloup		Project No: 0120-809-11-05		Field	d Tests			La	bora	tory	Tests		
Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date: 8/24/2023       Northing (State Plane): 717936         Boring End Date: 8/24/2023       Easting (State Plane): 839296         Ground Elevation at Time of Drilling: 3308.99 ft-msl       3308.99 ft-msl         Top of Well Casing Datum Elevation: 3312.08 ft-msl       839296         Remarks: Borehole drilled and continuously sampled via dry somidrilling techniques. Static groundwater elevation gauge September 2023.       3235.0 ft-m         ♥ = First Water Encountered at Time of Drilling:       3235.0 ft-m         ♥ = Second Water Encountered at Time of Drilling:       Not Observ         ♥ = Static Potentiometric Surface Elevation:       3263.43 ft-m	89.37 8.83 c d msl /ed msl FT MSL	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer Construction Detail (with contact depths posted in ft-bgs)
			SAND, with SILTSTONE, dry (continued).											
- - - 65 - -	SC		CLAY, silty, sandy, trace gravel, dry to moist, low to medium plasticity, hard, laminated to very thinly bedded, reddish-brown.	3247.5	-									
- 70 - -	-			3235.0	-									- 73.0
- 75 - 75 - 75 - 75 - 75 - 75 - 75 - 75	SC		SAND, silty, trace clay, moist to wet, non-plastic to low plasticity, soft to firm, no visible bedding, light-reddish-brown with black mottling.		-									- 75.0 
- 80		 	Total Borehole Depth = 80'											+ 80.0 • • • •
-06 MLF - PEKMII (2023).6PJ MLF - 2024 PE	-			-	-									-
		ит © 3	024 WE AVED CONSULTANTS CROUD LLC. ALL DICUTS D											-

		Weave Consu	r ltants	LOG OF BORING NO. PWCG-6 Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supe Log	ervising ( ging Geo ling Firm	Geolo ologist	gist: t:	Aaroi DS Envir	ı K.	Evai	ns, P.O	G. Pa	ge 1 o	f4
	/ (	Group		Project No: 0120-809-11-05		Fiel	d Tests			La	ibora	atory	Tests	8		
Denth (ft)		Sample Type and Interval	Graphic Log	Boring Start Date: 7/14/2023       Northing (State Plane): 71807         Boring End Date: 7/14/2023       Easting (State Pane): 83804         Ground Elevation at Time of Drilling: 3311.70 ft-msl         Top of Well Casing Datum Elevation: 3314.86 ft-msl         Remarks: Borehole drilled and continuously sampled via dry son drilling techniques. Static groundwater elevation gauge September 2023.            ✓ = First Water Encountered at Time of Drilling: 3242.7 ft-r            ✓ = Second Water Encountered at Time of Drilling: Not Obser            ✓ = Static Potentiometric Surface Elevation: 3261.66 ft Description	56.96 9.09 ic ed msl ved -msl FT MSL	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer	Construction Detail (with contact depths posted in ft-bgs)
_	_	SC		SAND, silty, moist, non-plastic, loose, no visible bedding, brown.		-									-	
-	-				3309.2	_									2.0	
	- - 5 -	SC		SAND, silty, with caliche, dry to moist, non-plastic, very stiff, no visible bedding, pinkish-white, friable, calcareous.		-									+	
-	_	SC		<ul> <li>becomes hard and white, light-red, &amp; pinkish-white below</li> <li>6.5'.</li> <li>with iron stains below 7.5'.</li> </ul>		4.5+									-	
- 1		SC		SAND, with SILTSTONE, gravelly, dry, non-plastic when moistened, hard, no visible bedding, pinkish-white, red, &	3302.7	4.5+									+	
-	_	SC		yenowish-red, calcareous.		-									-	
- 1	- 5 -	SC				-									+	
5DT 8/5/24	_	SC			3294.2	-									+	
IT TEMPLATE.G	-	SC		CALICHE, sandy, dry, non-plastic when moistened, hard, no visible bedding, white.	3291.7	-									+	
		SPT	ſŢŢ	CALICHE, silty, dry, non-plastic when moistened, dense to very dense, no visible bedding, pinkish-white & pink.			46 50/5"								T	
-F - 2024 -	-	SC					2013								Į	
2023).GPJ ML	_	SC				-									-	
	5 -	SC		SAND, with CALICHE, dry, non-plastic when moistened, dense to very dense, no visible bedding, pinkish-white & pink.	3286.7										ł	
OG MLF -	_	SC				_									-	
MLF - PIEZU L	_	SC			3281.7	+									+	

	Weave	r	LOG OF BORING NO. PWCG-6		Supe Log	ervising ( ging Geo	Geolo	gist: .	Aaror DS	n K.	Evar	ns, P.C	Э. Ра	ige 2 of 4
	Group	Itants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Drill	ing Firm	:		Envir	onm	enta	Wor	ks	
	Group		Project No: 0120-809-11-05		Fiel	d Tests			La	bora	tory	Tests		
Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date:       7/14/2023       Northing (State Plane):       7180756         Boring End Date:       7/14/2023       Easting (State Plane):       838049.         Ground Elevation at Time of Drilling:       3311.70 ft-msl         Top of Well Casing Datum Elevation:       3314.86 ft-msl         Remarks:       Borehole drilled and continuously sampled via dry sonic drilling techniques. Static groundwater elevation gauged September 2023.            ✓ = First Water Encountered at Time of Drilling:       3242.7 ft-mss            ✓ = Static Potentiometric Surface Elevation:       3261.66 ft-m         Description       Description	5.96 09 sl sd nsl FT MSL	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer Construction Detail (with contact depths posted in ft-bgs)
-	1		SAND, silty, with caliche, trace sandstone and calcite, dry,	MBL										
-	sc		light-reddish-brown, friable.	-	-									-
- 35	- SC			-	- -									-
-	sc		- 12" calcitic siltstone seam at 36.5'.	274 2	-									-
	- SC		SAND, silty, trace caliche, dry to moist, non-plastic, medium dense to very dense, no visible bedding, pinkish-white & light-reddish-brown.	-	-									-
- 40	SC			-	-	26 46 50/5"	23.4	19.9		NL	NP			+
-	- SPT			-	-									-
F				-	-									
- 45	SC			-	-									
	sc		- 6" caliche seam at 47.5'.	-	-									-
- 50	sc		- caliche content increasing with depth below 49'.	-	-									-
	SC		- 3" caliche seam at 52'.	-	-									-
	sc			-	-									
	SC		- 1" caliche seam at 56'.	-	-									-
	sc			-	-									
				-	-									

		Weave	[	LOG OF BORING NO. PWCG-6		Supe Logs	ervising ( ging Geo	Geolo	gist:	Aaron DS	n K.	Evai	ns, P.	G. Pa	ge 3 o	f4
		Consul Group	itants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Drill	ing Firm	n:		Envir	onm	enta	l Wo	rks		
-		Group		Project No: 0120-809-11-05		Field	d Tests			La	ibora	tory	Test	S	-	
	Jepth (ft)	ample Type and Interval	iraphic Log	Boring Start Date: 7/14/2023       Northing (State Plane): 71807         Boring End Date: 7/14/2023       Easting (State Plane): 83804         Ground Elevation at Time of Drilling: 3311.70 ft-msl         Top of Well Casing Datum Elevation: 3314.86 ft-msl         Remarks: Borehole drilled and continuously sampled via dry son drilling techniques. Static groundwater elevation gauge September 2023.         ¥       = First Water Encountered at Time of Drilling: 3242.7 ft-r         ¥       = Second Water Encountered at Time of Drilling: Not Obser         ¥       = Static Potentiometric Surface Elevation: 3261.66 ft	56.96 9.09 ic cd nsl ved -msl FT	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer	Construction Detail (with contact depths posted in ft-bgs)
-		SPT		SAND, silty, dry to moist (continued).	MSL		50/2"									
-	_	sc	ٵ؞ٳ؞ٳ؞ ؈ۛ؞؈ۛ ۪؞ؚ۫؈۫؞۪۫	CALICHE, sandy, dry, non-plastic when moistened, very	3250.7										ł	A-A
_	-	SC		dense, no visible bedding, white.		-									63.0	
- (	65 -	SC			3246.2	_									-	
_	-	SC		SAND, with SILTSTONE, with caliche, dry to moist, non-plastic when moistened, hard, no visible bedding, reddish-brown, calcareous.		-									+	
_	- 70	SC	• • • • • • • • • • • • • • • • • • •	SAND, silty, clayey, trace gravel, wet, non-plastic to low plasticity, very stiff to hard, no visible bedding,	3242.7										70.0	<b>⊻</b>
_	-	SC		reddish-brown, calcareous.		-									-	
_	-	SC				4.5+									72.3	
4	75 -	SC				-									+	
E.GDT 8/5/2	-	SC				4.5+										
IPLATE	_	SPT					20 50/3"									
	80 -	SC				3.0									ļ	
2024 PERN	-	SC		- becomes dry to moist below 82'.	3229.7	-										
T (2023).GPJ MLF	-	SC				- 4.5+									82.3 + 83.0	
		SC			3224.7	_										
	_	SC		SAND, silty, clayey, dry, plastic when moistened, hard, no visible bedding, reddish-brown, calcareous.		- 4.5+									+	

	Weav Cons	ver sult	tants	LOG OF BORING NO. PWCG-6 Project Title: Meadow Landfill - 2023 Subsurface Investigation		Sup Log Dril	ervising ( ging Geo ling Firm	Geolo logis	gist: t:	Aaroi DS	ı K.	Evar	ns, P	P.G. Pa	ge 4 of 4
	Grou	р		Project No: 0120-809-11-05		Fiel	d Tests			La	bora	tory	Tes	ts	
Depth (ft)	Sample Type and Interval		Graphic Log	Boring Start Date: 7/14/2023       Northing (State Plane): 71807         Boring End Date: 7/14/2023       Easting (State Pane): 83804         Ground Elevation at Time of Drilling: 3311.70 ft-msl         Top of Well Casing Datum Elevation: 3314.86 ft-msl         Remarks: Borehole drilled and continuously sampled via dry son drilling techniques. Static groundwater elevation gauge September 2023.         ¥ = First Water Encountered at Time of Drilling: 3242.7 ft-r         ¥ = Second Water Encountered at Time of Drilling: Not Obser         ¥ = Static Potentiometric Surface Elevation: 3261.66 ft         Description	56.96 9.09 ic ed msl ved -msl	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer Construction Detail (with contact depths posted in ft-bgs)
	SC	•		SAND, silty, clayey, dry to moist (continued).	2220.5	4.5+									
-	- SC	•		CLAY, silty, dry to moist, medium to high plasticity, hard, no visible bedding, weak-red with black mottling.	3220.7	4.5+									-
- 95	- sc					+		80.2	24.0	102.1	60	22	20	2 110-9	-
-	- SC 					-		69.2	24.0	102.1	00	52	20	2.1110	-
-10				- succenside at 99.		+	17								-
	- 511		HZ.	Total Borehole Depth = 101 5'	3210.2		50/5"								101.5
F - PIEZO LOG MLF - PERMIT (2023).GPJ MLF - 2024 PERMIT TEMPLATE.GDT 8/5/24 11 11 11 11 11 11 11 11 11 1				Total Borehole Depth = 101.5'											
	-														

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	Weav Cons	er ultant	LOG OF BORING NO. PWCG-7A Project Title: Meadow Landfill - 2023 Subsurface Investigation	Sup Log	ervising ( ging Geo	Geolo logist	gist: . t:	Aaror DS	1 K.	Evar	ns, P.C	ł. Pa	ge 1 of 4
	Grou	0	Project No: 0120-809-11-05	Fiel	d Tests			Envir La	onm Ibora	enta. itory	Tests	(S	
Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date: 7/15/2023       Northing (State Plane): 7181315.52         Boring End Date: 8/2/2023       Easting (State Pane): 840014.52         Ground Elevation at Time of Drilling: 3311.71 ft-msl         Top of Well Casing Datum Elevation: 3314.70 ft-msl         Remarks: Borehole drilled and continuously sampled via dry sonic drilling techniques. Static groundwater elevation gauged September 2023.         ¥       = First Water Encountered at Time of Drilling: 3256.7 ft-msl         ¥       = Second Water Encountered at Time of Drilling: 3233.7 ft-msl         ¥       = Static Potentiometric Surface Elevation: 3259.52 ft-msl         B       Description	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer Construction Detail (with contact depths posted in ft-bgs)
_	SC		SAND, silty, dry to moist, non-plastic, loose, no visible bedding, brown.	-									2.0
- 5	- SC			+									-
	sc		3305.2         CALICHE, sandy, silty, dry, non-plastic when moistened, dense to very dense, no visible bedding, pinkish-white.	-								· · · · · · · · · · · · · · · · · · ·	
- 10	- SC		3301.7	,									-
-	SC	• • • • • • • • • • • • • • • • • • •	bedding, dense to very dense, light-reddish-brown, calcareous.	+									-
- 15	- SC			-									-
	sc		<ul> <li>CALICHE, with SAND, dry, non-plastic when moistened, medium dense to very dense, no visible bedding, white.</li> </ul>	-									-
	sc												
	- SPT			+	12 43 50/3"								-
	- sc			+									-
	sc			+									-
				+ + +									+
		م فر فر و م	<u>ن</u>										

		Weave Consu	r ltants	LOG OF BORING NO. PWCG-7A Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supe Logg	ervising ( ging Geo	Geolo logist	gist: /	Aaron DS	n K. 1	Evar	ns, P.G.	Pa	age 2 of 4
		Group		Project No: 0120-809-11-05		Field	ing rinn 1 Tests			Envir	onm bora	enta. itory	Tests	s	
	Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date: 7/15/2023       Northing (State Plane): 718131         Boring End Date: 8/2/2023       Easting (State Pane): 840014         Ground Elevation at Time of Drilling: 3311.71 ft-msl         Top of Well Casing Datum Elevation: 3314.70 ft-msl         Remarks: Borehole drilled and continuously sampled via dry sonid drilling techniques. Static groundwater elevation gauged September 2023.         ¥ = First Water Encountered at Time of Drilling: 3256.7 ft-m         ¥ = Second Water Encountered at Time of Drilling: 3233.7 ft-m         ¥ = Static Potentiometric Surface Elevation: 3259.52 ft-Description	c d msl msl FT MSL	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer Construction Detail (with contact depths posted in ft-bgs)
_	_	SC		CALICHE, with SAND, dry (continued).	-	-									-
_	-	SC			3277.7										-
_	- 35 -	SC		SILTSTONE, with SANDSTONE, dry, non-plastic when moistened, very dense, no visible bedding, white & reddish-brown, with iron stains.		-									-
_	-	SC			3273.7										+
_	-	SC		CALICHE, dry, non-plastic when moistened, very dense, no visible bedding, white.											+
	40 -	SPT			3270.7	-	50/3"								
_	_	SC		CALICHE, with SAND, dry, non-plastic when moistened, very dense, no visible bedding, white & pinkish-white.	3269.2	-									
_	- 45 -	SC		SAND, with CALICHE, dry, non-plastic when moistened, medium dense to very dense, no visible bedding, pinkish-white & white.	-										-
1 8/5/24	-	SC		SANDSTONE and SILTSTONE, dry, non-plastic when moistened, hard, no visible bedding, pinkish-white.	3265.7										+
AIE.GL	_	SC			-										
	_	SC	* * * * * * * * * * * * * * * * * *		-										+
	50 -	SC			-										+
	-	SC			3257.7	4.5+									
		50		CALICHE, dry, non-plastic when moistened, hard, no visible bedding, medium dense to very dense, white.	3256.7	-									
	-	SC		SAND, silty, clayey, trace gravel, moist to wet, medium plasticity, no visible bedding, medium dense to very dense, white to light gray, calcareous.	-			48.0	15.9						-
ZULUL	-														+
	_	SC		CALICHE, sandy, dry, non-plastic when moistened, very dense, no visible bedding, white & pinkish-white, calcareous,	3252.7										+

		Neave	r Itanta	LOG OF BORING NO. PWCG-7A		Supe Log	ervising ging Geo	Geolo ologist	gist:	Aaror DS	n K.	Evar	ns, P.G	Pa	ge 3 of	`4
		Group	llants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Dril	ling Firm	ı:	]	Envir	onm	enta	l Work	s		
F		oroup		Project No. 0120-009-11-03	5.50	Fiel	d Tests			La	bora	itory	Tests			s)
Denth (ft)	(ii) indoc	Sample Type and Interval	Graphic Log	Boring Start Date: 7/15/2023       Northing (State Plane): 718131         Boring End Date: 8/2/2023       Easting (State Plane): 840014         Ground Elevation at Time of Drilling: 3311.71 ft-msl         Top of Well Casing Datum Elevation: 3314.70 ft-msl         Remarks: Borehole drilled and continuously sampled via dry soni drilling techniques. Static groundwater elevation gauge September 2023.         V       = First Water Encountered at Time of Drilling: 3256.7 ft-m         V       = Second Water Encountered at Time of Drilling: 3233.7 ft-m         V       = Static Potentiometric Surface Elevation: 3259.52 ft-Description	15.52 4.52 c d msl msl FT MSL	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer Construction Detail	(with contact depths posted in ft-bgs)
		SPT	૾ૢ૽૾૾૾૾	CALICHE, sandy, dry (continued).	WIGE		50/0"									
	-	SC			-	-									_	
-	_	SC		SAND, silty, trace clay, dry to moist, non-plastic when moistened, no visible bedding, medium dense,	3248.7										-	
- 6	5 -	SC		light-reddish-brown, calcareous.	-	-									-	
-	_	SC			-	-									-	
_	_	SC		CALICHE, sandy, with calcrete, dry, non-plastic when	3242.7	-									-	
- 7 -	0 -	SC		moistened, no visible bedding, medium dense to very dense, white & pinkish-white, calcareous.	- - 3239.7	-									-	
_	-	SC		SAND, silty, clayey, moist, medium plasticity, no visible bedding, dense to medium dense, white, light-reddish-brown, calcareous.	-	-									-	
- 7	5 - - -	SC		SAND, silty, trace clay, dry, non-plastic when moistened, medium dense to very dense, no visible bedding, light-reddish-brown, calcareous.		-								 - -	- 75.0	
	_	SC		- becomes moist below 78.0'.	3233.7	-									-	
2024 PEKMII	0 -	SC			-	-		37.4	20.8					•	-	
	_	SPT			-	-	27 50/3"								-	
LF - PEKMII (20	5 -	SC			-	-									-	
	-	SC		SAND, silty, clayey, moist, low to medium plasticity, no visible bedding, medium dense to very dense, light reddish brown.	- 3223.7 - - 3221.7	4.5+									87.2	

		Weave Consu	r ltants	LOG OF BORING NO. PWCG-7A Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supe Logg Drill	ervising ging Geo ling Firm	Geolo ologis n:	gist: t:	Aaroı DS Envir	n K. ronm	Eva ienta	ns, P 1 Wo	.G. Pagorks	ge 4 of 4
		JIOUP		Project No: 0120-809-11-05		Field	d Tests			La	abora	itory	Tes	ts	
-	Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date: 7/15/2023       Northing (State Plane): 71813         Boring End Date: 8/2/2023       Easting (State Pane): 84001         Ground Elevation at Time of Drilling: 3311.71 ft-msl         Top of Well Casing Datum Elevation: 3314.70 ft-msl         Remarks: Borehole drilled and continuously sampled via dry som drilling techniques. Static groundwater elevation gauge September 2023.	15.52 4.52 ic d nsl nsl ·msl FT MSL	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer Construction Detail (with contact depths posted in ft-bgs)
				CLAY, silty, moist, medium to high plasticity, no visible	MSL			43.5	18.9	104.4	60	33	27	5 1x10 ⁻⁹	90.0
-	  - 95 -	SC		bedding, very stiff to hard, light-reddish-brown with black mottling.		4.5+				104.4			21	-	
						t								-	
						t								-	
					3211 7	,								-	
	-100-			Total Borehole Depth = 100'											- 100.0
MLF - PERMIT (2023).GPJ_MLF - 2024 PERMIT TEMPLATE.GDT_8/5/24															-
MLF - PIEZO LOG						+								-	-

	Weaver Consul	: tants	LOG OF BORING NO. PWCG-7B Project Title: Meadow I andfill - 2023 Subsurface Investigation		Supe Logg	ervising ( ging Geo	Geolo ologist	gist: t:	Aaror DS	1 K.	Evar	ns, P.G.	Pa	ge 1 of	2
	Group	turro	Project No: 0120-809-11-05		Drill	ling Firm	n: 		Envir La	onm	enta	l Works	5		
epth (ft)	ample Type and Interval	raphic Log	Boring Start Date:       8/25/2023       Northing (State Plane):       71813         Boring End Date:       8/25/2023       Easting (State Plane):       84000         Ground Elevation at Time of Drilling:       3311.89 ft-msl         Top of Well Casing Datum Elevation:       3315.00 ft-msl         Remarks:       Borehole drilled and continuously sampled via dry sonidrilling techniques.         Static groundwater elevation gauge September 2023.         ¥       = First Water Encountered at Time of Drilling:       3256.9 ft-m         ¥       = Second Water Encountered at Time of Drilling:       Not Observer         ¥       = Static Potentiometric Surface Elevation:       3259.18 ft-m	15.96 1.46 ic d msl ved msl FT	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer Construction Detail	(with contact depths posted in ft-bgs)
Ď	Sa	5	Description SAND, silty, dry to moist, non-plastic, loose, no visible	MSL							-		<u>н</u>		, ু স্থা
  - 5 -	SC		CALICHE sandy silty dry non plastic when moistaned		-									- 2.0	
 - 10 - 			SAND, silty, dry, non-plastic when moistened, no visible bedding, dense to very dense, light-reddish-brown, calcareous.	- - 3301.9 -	-									+ , , , , , , , , , , , , , , , , , , ,	
- 15 - - 15 -  	SC		CALICHE, with SAND, dry, non-plastic when moistened, medium dense to very dense, no visible bedding, white.	3295.9	-									- · · · · · · · · · · · · · · · · · · ·	
≝ ≡ - 20 -				-	_										
	SC	<u> </u>			-										

	Weave	r Itants	LOG OF BORING NO. PWCG-7B		Supe Logg	ervising ( ging Geo	Geolo ologist	gist: .	Aaror DS	n K.	Evar	ns, P.G	Pa	ge 2 of	2
	Group	ituiito	Project No: 0120-809-11-05		Drill	ling Firm	1: 		Envir La	onm	enta	l Work	s		
Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date:       8/25/2023       Northing (State Plane): 7181315         Boring End Date:       8/25/2023       Easting (State Pane): 840001.4         Ground Elevation at Time of Drilling:       3311.89 ft-msl         Top of Well Casing Datum Elevation:       3315.00 ft-msl         Remarks:       Borehole drilled and continuously sampled via dry sonic drilling techniques. Static groundwater elevation gauged September 2023.         ♥       = First Water Encountered at Time of Drilling:       3256.9 ft-ms         ♥       = Static Potentiometric Surface Elevation:       3259.18 ft-m         Description       Description       1000000000000000000000000000000000000	i.96 46 l d sl FT MSL	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer Construction Detail	(with contact depths posted in ft-bgs)
	SC		CALICHE, with SAND, dry (continued). SILTSTONE, with SANDSTONE, dry, non-plastic when moistened, very dense, no visible bedding, white & reddish-brown, with iron stains. CALICHE, dry, non-plastic when moistened, very dense, no visible bedding, white.	277.9	-										
- 40 -   - 45 - 	sc		33         CALICHE, with SAND, dry, non-plastic when moistened, very dense, no visible bedding, white & pinkish-white.         31         SAND, with CALICHE, dry, non-plastic when moistened, medium dense to very dense, no visible bedding, pinkish-white & white.         32         SANDSTONE and SILTSTONE, dry, non-plastic when moistened, hard, no visible bedding, pinkish-white.	270.9 269.4 - - 265.9	-										
	sc	0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0     0 <td>33 CALICHE, dry, non-plastic when moistened, hard, no visible bedding, medium dense to very dense, white. SAND, silty, clayey, trace gravel, moist to wet, medium plasticity, no visible bedding, medium dense to very dense, white to light gray, calcareous.</td> <td>257.9</td> <td>- - - - -</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>· · · · · · · · · · · · · · · · · · ·</td> <td>- 53.0</td> <td></td>	33 CALICHE, dry, non-plastic when moistened, hard, no visible bedding, medium dense to very dense, white. SAND, silty, clayey, trace gravel, moist to wet, medium plasticity, no visible bedding, medium dense to very dense, white to light gray, calcareous.	257.9	- - - - -								· · · · · · · · · · · · · · · · · · ·	- 53.0	
 i			3. CALICHE, sandy, dry, non-plastic when moistened, very dense no visible bedding white & pinkish-white calcareous	252.9 251.9										60.0	

		Neaver		LOG OF BORING NO. WCG-8		Supe	ervising (	Geolo	gist: 4	Aaror	n K. 1	Evar	ns, P.G		1 62
		Consul	tants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Logg Drill	ging Geo ling Firm	logist :		DS Envir	onm	ental	l Work	s Pa	ge 1 of 3
		Group		Project No: 0120-809-11-05		Field	d Tests			La	bora	tory	Tests		
	Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date:       8/2/2023       Northing (State Plane): 71819         Boring End Date:       8/2/2023       Easting (State Pane):       837939         Ground Elevation at Time of Drilling:       3318.63 ft-msl         Top of Well Casing Datum Elevation:       ft-msl         Remarks:       Borehole drilled and continuously sampled via dry sond drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023.         ▼       = First Water Encountered at Time of Drilling:       3258.6 ft-m         ▼       = Second Water Encountered at Time of Drilling: Not Observ         Description       Description	88.89 9.73 ic nsl ved FT MSI	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
F				SAND, with SILT, dry, non-plastic when moistened, loose, no	MBL										
		SC		SAND, with CALICHE, silty, dry, non-plastic when moistened, loose, laminated, white & pinkish-white.	- - - 3312.Í	-								- - - - - - - - - - - - - 	-
_	10 -				-	-									-
-ERMIT TEMPLATE.GDT 8/5/24		SC		CALICHE, sandy, silty, dry to moist, non-plastic, medium dense to very dense, no visible bedding, white & light-greenish-gray, with iron stains.	3307. [ 	- - - - - -									- - - -
F - 2024 F	20 -	SPT			3297.1	-	19 34 50/6"								-
MLF - BOREHOLE LOG MLF - PERMIT (2023).GPJ ML		SC		SAND, with CALICHE, silty, dry, non-plastic when moistened, medium dense to very dense, laminated, white & pinkish-white. CALICHE, sandy, silty, dry, non-plastic when moistened, poorly consolidated, laminated, white & pinkish-white.	3295.6	-									- - - - -

		Neaver		LOG OF BORING NO. WCG-8		Supe	ervising	Geolo	gist: 4	Aaror	n K. 1	Evan	s, P.G.		0.00
		Consul	tants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Logg Drill	ging Geo ing Firm	ologist 1:	: ]	DS Envir	onm	ental	Work	Pa;	ge 2 of 3
		Group		Project No: 0120-809-11-05		Field	d Tests			La	bora	tory	Tests		
	bepth (ft)	ample Type and Interval	iraphic Log	Boring Start Date: 8/2/2023       Northing (State Plane): 71819         Boring End Date: 8/2/2023       Easting (State Pane): 83793         Ground Elevation at Time of Drilling: 3318.63 ft-msl         Top of Well Casing Datum Elevation: ft-msl         Remarks: Borehole drilled and continuously sampled via dry son drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023.         ♥ = First Water Encountered at Time of Drilling: 3258.6 ft-rt         ♥ = Second Water Encountered at Time of Drilling: Not Obsert	88.89 9.73 ic nsl ved FT	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
-	Д	Ñ	<del>ن</del> ه کې ص	CALICHE, sandy, silty, dry (continued).	MSL										
	- – - – - 35 – - – - –	SC	<u>૾ૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢ</u>	SAND, with CALICHE, interbedded, dry, non-plastic when moistened, medium dense, moderately bedded, pinkish-white & light-reddish-brown.	3283.6	- - - - -								- - - - - - - - - - - - - - - - - - -	-
	- 40 -	SPT		- 12" moist silty sand seam at 41.5'.		-	14 25 25								-
ERMIT TEMPLATE.GDT 8/5/24		SC		CALICHE, with SAND, silty, trace gravel, dry, non-plastic when moistened, poorly consolidated, laminated, pinkish-white & light-reddish-brown.		-								-	
024 Pt	- 50 -				3267.6	-								-	†
PERMIT (2023).GPJ MLF - 20	   - 55 -	SC		CALICHE, with SAND, silty, dry to moist, non-plastic, poorly consolidated, no visible bedding, white & pinkish-white.		-									+ - - -
MLF - BOREHOLE LOG MLF -					3258.6	-								-	- - - -

	V C	Veavei Ionsul	: tants	LOG OF BORING NO. WCG-8 Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supe Logg Drill	ervising ging Geo ling Firm	Geolo logist :	gist: / :: ]	Aaror DS Envir	n K. I onm	Evar ental	is, P.G Work	Paj	ge 3 of 3
	G	froup		Project No: 0120-809-11-05		Field	d Tests			La	bora	tory	Tests		
Denth (ft)		ample Type and Interval	jraphic Log	Boring Start Date:       8/2/2023       Northing (State Plane): 71819         Boring End Date:       8/2/2023       Easting (State Pane): 83793         Ground Elevation at Time of Drilling:       3318.63 ft-msl         Top of Well Casing Datum Elevation:       ft-msl         Remarks:       Borehole drilled and continuously sampled via dry son drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023.         ♥       = First Water Encountered at Time of Drilling:       3258.6 ft-rt         ♥       = Second Water Encountered at Time of Drilling:       Not Obsert	88.89 9.73 ic nsl ved FT	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
	+	N SPT		SAND, silty, moist to wet, non-plastic, very dense, no visible	MSL		50/3"								
- - - 65 - -	5	SC		bedding, light-reddish-brown.		-								-	-
- 7( - - - - - - - - - - - - - - - - - - -	0	SC			3243.6	-								-	-
47/C/	, T			Total Borehole Depth = $75'$											
														-	

		Neaver		LOG OF BORING NO. WCG-9		Supe	ervising	Geolo	gist: 4	Aaror	n K.	Evar	ns, P.	G.	1.04
		Consul	tants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Logg Drill	ging Geo ling Firm	ologist 1:	: ]	DS Envir	onm	enta	l Wo	rks Pag	ge 1 of 4
		Group		Project No: 0120-809-11-05	-	Field	d Tests			La	bora	tory	Test	s	
	epth (ft)	ample Type and Interval	raphic Log	Boring Start Date: 8/3/2023       Northing (State Plane): 71819         Boring End Date: 8/4/2023       Easting (State Pane): 83896         Ground Elevation at Time of Drilling: 3316.84 ft-msl         Top of Well Casing Datum Elevation: ft-msl         Remarks: Borehole drilled and continuously sampled via dry som drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023.         ♥ = First Water Encountered at Time of Drilling:       3257.8 ft-m         ♥ = Second Water Encountered at Time of Drilling:       Not Observer	65.13 8.07 ic nsl ved	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Fime of Drilling
-	Δ	Š	<u> </u>	SAND, silty, moist, non-plastic, loose, no visible bedding.	MSL								_		
		SC	<u>૾ૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢ</u>	SAND, silty, moist, non-plastic, loose, no visible bedding, brown, calcareous. CALICHE, with SANDSTONE, silty, trace gravel, dry, non-plastic when moistened, poorly consolidated, no visible bedding, white & pinkish-white.	3313.8	-								- - - - - - - - - - - - - - - - - - -	-
RMIT TEMPLATE.GDT 8/5/24		SC		CALICHE, dry, non-plastic when moistened, dense to very dense, no visible bedding, white & pinkish-white.	3298.8	-									-
24 PE	20 -	SDT				-	35							-	-
		SC			3290.8	-	50/3"							-	-
				CALICHE, with SAND, dry, non-plastic when moistened, poorly consolidated, no visible bedding, white & pinkish-white.	3286.8	-								-	-

	Weave	r	LOG OF BORING NO. WCG-9		Supe	ervising (	Geolo	gist:	Aaror	n K.	Evai	ns, P.G	Pa	ge 2 of 4
	Consul	ltants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Drill	ing Firm	nogisi 1:	·• .	DS Envir	onm	enta	l Work	s	
	Gloup		Project No: 0120-809-11-05		Fiel	d Tests			La	bora	tory	Tests		
Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date: 8/3/2023       Northing (State Plane): 71819         Boring End Date: 8/4/2023       Easting (State Pane): 83896         Ground Elevation at Time of Drilling: 3316.84 ft-msl         Top of Well Casing Datum Elevation: ft-msl         Remarks: Borehole drilled and continuously sampled via dry son drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023.         ♥ = First Water Encountered at Time of Drilling: 3257.8 ft-r         ♥ = Second Water Encountered at Time of Drilling: Not Obser         Description	65.13 8.07 ic nsl ved FT MSL	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
			CALICHE, dry, non-plastic when moistened, poorly consolidated no visible bedding white & pinkish-white		_									
	SC		consolidated, no visible bedding, white et plitkish-white.	3284.8	-									+
	-		CALICHE, with SANDSTONE, silty, trace gravel, dry, non-plastic when moistened, dense to very dense, no visible bedding, white & pinkish-white.	-	- - -									- - - -
	sc			-	-		38.7	11.8						+ - -
	SPT	<u>૾ૺૼૼૼૼૼૼૼૼૼૼૼૼૼૼૼૼૼૼૼૼૼૼૼૼૼૼૼૼૼૼૼૼૼૼૼૼ</u>		-	-	40 50/2"								
+ 45 -	SC			-	-								- - - -	-
1 - 50 -					-									Į į
	sc		CALICHE, sandy, silty, dry, non-plastic when moistened, poorly consolidated, very stiff, no visible bedding, white & pinkish-white.	3264.8	-									-
E COG MEL- 155 -			SAND, with SILT, dry, non-plastic when moistened, dense to very dense, no visible bedding, light-reddish-brown & light-brown.	3261.8	3.25									-
	SC		- becomes moist below 58'.	2757 0	4.5+									
			- becomes moist to wet below 59'.	5257.8										- ⊻

		Weaver	r	LOG OF BORING NO. WCG-9		Supe	ervising	Geolo	gist: 1	Aaror	n K.	Evar	ns, P.C	Ĵ.	
		Consul	tants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Log _g Drill	ging Geo ling Firm	logisi i:	: ]	DS Envir	onm	ental	Wor	ks Pa	ge 5 01 4
		Jroup		Project No: 0120-809-11-05		Field	d Tests			La	bora	tory	Tests		
	Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date: 8/3/2023       Northing (State Plane): 718194         Boring End Date: 8/4/2023       Easting (State Plane): 838965         Ground Elevation at Time of Drilling: 3316.84 ft-msl       7000000000000000000000000000000000000	65.13 8.07 ic red FT MSI	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
		SPT	* * * * * * * * * * * * * * *	SAND, with SILT, moist to wet (continued).	WIGE		50/6"								
		SC	• • • • • • • • • • • • • • • • • • •		- - - - - - - - - -	· 3.0 · · · · · · · · · · · · · · · · · · ·		27.2	18.5					-	- - - - -
-					-	-									-
GDT 8/5/24	· 70 -   · 75 - 	SC			3239.8	4.25								-	- - - - -
LATE			* * * * * * * * * * * * * * * * * *	- becomes dry below 77'.		_									
	· _			CALICHE silty dry non-plastic when moistened very	3237.3	-								-	-
2024 PE	· 80 -	SPT		dense, no visible bedding, white.			50/1"								+
I (2023).GPJ MLF	 	SC			3232.8									-	-
	85 -			SAND, with SILT, gravelly, dry, non-plastic when moistened, hard, no visible bedding, light-reddish-brown & pinkish-white, calcareous.	+	4.3+ -								-	-
MLF - BOREHOLE LUG	· _	SC	<pre></pre>		3226.8	2.0								-	-

	Weaver			LOG OF BORING NO. WCG-9		Supe	ervising (	Geolo	gist: A	Aaror	n K. 1	Evar	ns, P.C	ř. Da	~~ 4 of 4
		Consul	tants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Logg Drill	ging Geo ling Firm	logist :	: ]	DS Envir	onm	ental	l Worl	rag rs	ge 4 01 4
		foup		Project No: 0120-809-11-05		Field	d Tests			La	bora	tory	Tests		
	epth (ft)	umple Type and Interval	raphic Log	Boring Start Date:       8/3/2023       Northing (State Plane): 718196         Boring End Date:       8/4/2023       Easting (State Plane): 838968         Ground Elevation at Time of Drilling:       3316.84 ft-msl         Top of Well Casing Datum Elevation:       ft-msl         Remarks:       Borehole drilled and continuously sampled via dry sonid drilling techniques.         Borehole plugged with high solids bentonite grout upon completion of drilling.       Static groundwater elevation gauged September 2023. <ul> <li>First Water Encountered at Time of Drilling:</li> <li>3257.8 ft-m</li> <li>Second Water Encountered at Time of Drilling:</li> <li>Not Observ</li> </ul>	55.13 3.07 c ssl red	Hand Penetrometer Test (tsf)	enetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
-	Ā	š	<del>ک</del> م م م	Description CLAY with SAND dry to moist low to medium plasticity	MSL	I		I	H	I	Ι	I		H	
	  - 95 -	SC		firm to hard, no visible bedding, light-reddish-brown, calcareous.	-	- 4.5+ - -								-	-
					-	-								-	-
	· -				-	4.5+								-	-
	-				3216.8	-								-	-
	· _			CLAY, trace sand, trace gravel, dry to moist, medium to high plasticity, hard, no visible bedding, light-reddish-brown & white.	-	- - - -		86.3	19.1	105.8		16	25 4	.4x10 ⁻⁹ - - -	-
1 1 8/5/24	- 105	SC			-	- 4.5+					41			-	-
TEMPLAI					-	-								-	-
	110				3206.8	-								-	-
- 2024 P	- 110			Total Borehole Depth = 110'	-	-									-
					-	-								-	-
1023).GF					-	-								-	-
					-	-								-	-
	115-				-	-								-	-
					-	-								-	-
					-	-								-	-
					-	-								-	-
≥															L

	Weave	r	LOG OF BORING NO. WCG-10		Supe	ervising (	Geolo	gist: A	Aaror	n K.	Evar	ns, P.G		1 60
	Consu	ltants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Logg Drill	ging Geo ling Firm	logist :	: ]	DS Envir	onm	ental	l Work	s Pa	ge 1 of 3
	Group		Project No: 0120-809-11-05	-	Field	d Tests			La	bora	itory	Tests		
Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date:       8/4/2023       Northing (State Plane): 718192;         Boring End Date:       8/4/2023       Easting (State Pane): 839995;         Ground Elevation at Time of Drilling:       3308.24 ft-msl         Top of Well Casing Datum Elevation:       ft-msl         Remarks:       Borehole drilled and continuously sampled via dry sonic drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023.         ♥       = First Water Encountered at Time of Drilling:       3252.7 ft-msg         ♥       = Second Water Encountered at Time of Drilling:       Not Observer         Description       Description	5.41 75 sl sd FT MSL	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
			SAND, with SILT, dry, non-plastic when moistened, poorly consolidated, no visible bedding, red.										-	
- 5	- - - SC		3 SAND, with SILT, dry, non-plastic when moistened, poorly consolidated, no visible bedding, light-reddish-brown & white.	- 									-	-
- 10	-		SAND, with SILT, clayey, intermixed, dry, low plasticity when moistened, poorly consolidated, no visible bedding, reddish-yellow & yellowish-red. - 6" caliche seam at 10'.	+										-
	- - - - - - - - - -		3 CALICHE, sandy, dry to moist, non-plastic, medium dense, no visible bedding, very-pale-yellow & white.										- - - - - - - - - - - - - - - - - - -	-
2024	SPT			ļ		12 20								-
1 (2023).GPJ MLF -			3	284.2		22								-
MIL - 25	- SC 		CALICHE, with SAND, dry, non-plastic when moistened, poorly consolidated, no visible bedding, white & pinkish-white.											-

		Weaver Consul Group	r tants	LOG OF BORING NO. WCG-10 Project Title: Meadow Landfill - 2023 Subsurface Investigation Project No: 0120-809-11-05		Supe Logg Drill	ervising ging Geo ling Firm	Geolo logist 1:	gist: . :	Aaror DS Envir	n K.	Evar enta	ns, P.e	G. Paş ks	ge 2 of 3
	Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date:       8/4/2023       Northing (State Plane): 718192         Boring End Date:       8/4/2023       Easting (State Plane): 839992         Ground Elevation at Time of Drilling:       3308.24 ft-msl         Top of Well Casing Datum Elevation:       ft-msl         Remarks:       Borehole drilled and continuously sampled via dry sonid drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023. <ul> <li>First Water Encountered at Time of Drilling:</li> <li>3252.7 ft-m</li> <li>Escond Water Encountered at Time of Drilling: Not Observer</li> </ul>	25.41 5.75 c red FT MSI	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
		SC	7 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	SAND, with SILT, dry to moist, non-plastic, medium dense, no visible bedding, light-reddish-brown.		-	10 18								-
IE.GDT 8/5/24	  - 45 - 	SC		CALICHE, sandy, dry, non-plastic when moistened, medium dense, no visible bedding, white.	3260.7	-	26								- - - -
GPJ MLF - 2024 PERMIT TEMPLA		SC		SAND, with CALICHE, dry, non-plastic when moistened, poorly consolidated, no visible bedding, pinkish white. SAND, with SILT, dry to moist, non-plastic, hard, no visible bedding, pinkish-white & pink, calcareous.	3257.2	-								- - 	-
HOLE LOG MLF - PERMIT (2023).	 - 55 -  			- becomes wet below 55.5'. CALICHE, dry, non-plastic when moistened, very dense, no	3252.7	- 4.5+ - - -								- - - - -	- - - -
MLF - BOREI				visible bedding, white.		-								-	-

		Weave	r Itants	LOG OF BORING NO. WCG-10 Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supe Logg Drill	ervising ( ging Geo ling Firm	Geolo logist	gist: /	Aaron DS Envire	n K.	Evar ental	ns, P.G I Work	Paj	ge 3 of 3
		Jroup		Project No: 0120-809-11-05		Field	d Tests			La	bora	tory	Tests		
	Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date:       8/4/2023       Northing (State Plane): 71819         Boring End Date:       8/4/2023       Easting (State Pane): 83999         Ground Elevation at Time of Drilling:       3308.24 ft-msl         Top of Well Casing Datum Elevation:       ft-msl         Remarks:       Borehole drilled and continuously sampled via dry sont drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023.         ▼       = First Water Encountered at Time of Drilling:       3252.7 ft-m         ▼       = Second Water Encountered at Time of Drilling: Not Observ         Description       Description	25.41 5.75 c rc ved FT MSL	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
		SC		CALICHE, dry (continued).											
-					-	- 4.5+								-	- - -
		SPT	U U	Total Borehole Depth = 65.5'	5242.7		50/1"								
-	- - 70 -				· · ·	-								-	-
-	-				· ·	-									-
GDT 8/5/24	75 -					-									-
2024 PERMIT TEMPLATE	- 80 -				· · ·	-								-	-
PERMIT (2023).GPJ MLF -	- - 85 -				.   .   .	-								-	-
	-				.	-								-	-
MLF															

		Veaver		LOG OF BORING NO. WCG-11		Supe	ervising	Geolo	gist: 4	Aaror	n K.	Evar	ns, P.	G.	1.64
		Consul	tants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Logg Drill	ging Geo ling Firm	ologist i:	: ]	DS Envir	onm	enta	l Woi	ks Pa	ge I of 4
3		Broup		Project No: 0120-809-11-05		Field	d Tests			La	bora	tory	Tests	8	
÷.	Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date:       8/4/2023       Northing (State Plane): 71818         Boring End Date:       8/5/2023       Easting (State Pane): 84102         Ground Elevation at Time of Drilling:       3309.96 ft-msl         Top of Well Casing Datum Elevation:       ft-msl         Remarks:       Borehole drilled and continuously sampled via dry son drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023.         ♥       = First Water Encountered at Time of Drilling:       3240.0 ft-m         ♥       = Second Water Encountered at Time of Drilling: Not Observation         Description       Description	89.76 4.05 ic nsl ved FT MSL	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
		•		SAND, with SILT, dry, non-plastic when moistened, loose, no	WISE										
		SC		CALICHE, sandy, dry, non-plastic when moistened, poorly consolidated, no visible bedding, white & pinkish-white. CALICHE, with SAND, dry to moist, non-plastic, poorly consolidated, no visible bedding, light-greenish-gray.	3306.0	-									-
	10 -					_									
		•			3298.0	-									
	- - 15 - -	SC		CALICHE, sandy, dry, non-plastic when moistened, poorly consolidated, no visible bedding, white & pinkish-white. SAND, with SILT, intermixed, dry, non-plastic when moistened, poorly consolidated, light-greenish-gray, pinkish-white & light-reddish-brown, calcareous.	3296.5	-									-
	-	•			-	-									-
	- - 20 -	•		CALICHE, sandy, dry, non-plastic when moistened, poorly consolidated, no visible bedding, white & pinkish-white.	3292.0	-									-
MLF - 2024	-	SPT	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	SAND, with SILT, intermixed, dry, non-plastic when moistened, medium dense to dense, light-greenish-gray, pinkish-white & light-reddish-brown, calcareous.	-	-	19 37 32	37.9	8.9						-
	- 25 - -	SC		CALICHE, sandy, dry, non-plastic when moistened, poorly consolidated, no visible bedding, white & pinkish-white.	3285.0	-									-
	-	• • • • •		SAND, with SILT, intermixed, dry, non-plastic when moistened,medium dense, no visible bedding, light-greenish-gray, pinkish-white & light-reddish-brown, calcareous.		-									+ - -

		Weaver Consul	: tants	LOG OF BORING NO. WCG-11 Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supe Logg Drill	ervising ging Geo ling Firm	Geolo ologist 1:	gist: 1 :: ]	Aaror DS Envir	n K. I	Evar ental	ns, P.G l Work	Pa s	ge 2 of 4
		JIOUD		Project No: 0120-809-11-05		Field	d Tests			La	bora	itory	Tests		
	Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date:       8/4/2023       Northing (State Plane): 718188         Boring End Date:       8/5/2023       Easting (State Plane): 841024         Ground Elevation at Time of Drilling:       3309.96 ft-msl         Top of Well Casing Datum Elevation:       ft-msl         Remarks:       Borehole drilled and continuously sampled via dry sonid drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023.         ▼       = First Water Encountered at Time of Drilling:       3240.0 ft-m         ▼       = Second Water Encountered at Time of Drilling: Not Observ         Description       Description	9.76 .05 sl ed	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
ŀ				SAND, with SILT, dry (continued).	MSL										
		SC		- becomes light-reddish-brown & pinkish-white with trace caliche below 33'.	-	-	17							-	-
/24	- 40 -   - 45 -	SPT			- - - -	-	20 22							-	-
ERMIT TEMPLATE.GDT 8/5				CALICHE, gravelly, dry, non-plastic when moistened, very dense, no visible bedding, white.		-									- - -
024 P	- 50 -				-	-								-	
ERMIT (2023).GPJ_MLF - 2		SC			-	-								-	-
4 - 4	55-				-										
⊠- 00					-	-								-	†
				- with trace sand below 57.5'.	-	-									
MLF - BOREHC		SC			-	-									-

	Weave Consul	r Itants	LOG OF BORING NO. WCG-11 Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supe Logg Drill	ervising ging Geo ling Firm	Geolo ologist	gist: /	Aaron DS Envir	n K. I	Evar	ns, P.G	Pa	ge 3 of 4
	Group		Project No: 0120-809-11-05		Field	d Tests			La	bora	tory	Tests		
Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date:       8/4/2023       Northing (State Plane): 718188         Boring End Date:       8/5/2023       Easting (State Pane): 841024         Ground Elevation at Time of Drilling:       3309.96 ft-msl         Top of Well Casing Datum Elevation:       ft-msl         Remarks:       Borehole drilled and continuously sampled via dry sonid drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023.         ▼       = First Water Encountered at Time of Drilling:       3240.0 ft-m         ▼       = Second Water Encountered at Time of Drilling: Not Observ         Description       Description	89.76 1.05 c ssl red FT MSL	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
	SPT		CALICHE, gravelly, dry (continued).			50/1"								
	sc		SAND, with SILT, trace caliche, moist, non-plastic, poorly consolidated, no visible bedding, light-reddish-brown &		-								· · ·	-
	sc		SAND with SILT moist to wet non-plastic medium dense.	3240.0	-									- - - -
  	SC	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	to very dense, poorly consolidated, no visible bedding, light-reddish-brown.	-	-									- - - -
	-	<pre></pre>		-	-	24								-
	SPT	<pre></pre>		-	-	38 50/1"								+ + + +
MLF - DOREFICLE LOG WILT - 1	-			-	-									-

	Weave	r	LOG OF BORING NO. WCG-11		Supe	ervising (	Geolo	gist: .	Aaror	n K. 1	Evar	ns, P.O	J.	4 64
	Consu	ltants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Logg Drill	ging Geo ling Firm	logist :	: ]	DS Envire	onm	ental	l Wor	ks Pag	ge 4 of 4
	Group		Project No: 0120-809-11-05	Ī	Field	d Tests			La	bora	itory	Tests	5	
Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date:       8/4/2023       Northing (State Plane): 7181889.1         Boring End Date:       8/5/2023       Easting (State Pane): 841024.05         Ground Elevation at Time of Drilling:       3309.96 ft-msl         Top of Well Casing Datum Elevation:       ft-msl         Remarks:       Borehole drilled and continuously sampled via dry sonic drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023.         ▼       = First Water Encountered at Time of Drilling:       3240.0 ft-msl         ▼       = Second Water Encountered at Time of Drilling: Not Observed         Description       M	76 5	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
<u> </u>			SAND, with SILT, moist to wet (continued).	ISL										
	SC	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		+									-	-
	-			+									-	-
	-	• • • • • • • • • • • • • • • • • • •	22	11 0									-	-
-100-	SC		CLAY, moist, low to medium plasticity, firm to hard, no visible bedding, light-reddish-brown.	-			04.1	16.6	110.0				-	-
			320	07.0	4.5+		94.1	16.6	110.9		20	33	/.5x10	
			Total Borehole Depth = 103'											-
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- 2024	-			ļ									-	-
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		Weaver		LOG OF BORING NO. WCG-12		Supe	ervising	Geolo	gist: 4	Aaror	n K. 1	Evar	ns, P.	G.	1 62
		Consul	tants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Logg Drill	ging Geo ing Firm	ologist 1:	: ]	DS Envir	onm	ental	Woi	rks Pa	ge 1 of 3
1		Group		Project No: 0120-809-11-05	F	Field	d Tests			La	bora	itory	Test	s	
		e and Interval		Boring Start Date:8/10/2023Northing (State Plane): 7181384.7Boring End Date:8/10/2023Easting (State Pane):837940.66Ground Elevation at Time of Drilling:3316.49 ft-mslTop of Well Casing Datum Elevation:ft-mslRemarks:Borehole drilled and continuously sampled via dry sonic drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static	4	rometer Test (tsf)	Blows/6-inches	sing No. 200	isture Content	y (pcf)	it	it	ndex	y (cm/sec)	ter Observed rilling
	Jepth (It)	Sample Type	Graphic Log	groundwater elevation gauged September 2023. ♥ = First Water Encountered at Time of Drilling: 3259.0 ft-msl ♥ = Second Water Encountered at Time of Drilling: Not Observed Description	Г	Hand Penet	Penetration	Percent Pas	Percent Mo	Dry Densit	Liquid Lim	Plastic Lim	Plasticity Ir	Permeabilit	Groundwa Time of D
-	-	S		SAND, with SILT, dry, non-plastic when moistened, loose, no	SL	-									
-		SC	ۏۏڎۿۯ؈ۮۿۯٷڗ <del>ڵڂڂڂڂڂڂڂڂڂڂڂڂڂڂڂ</del> ڹؽڒڡؽٷۮۑٷۮۑ <del>ٳڂڂڂڂڂڂڂڂڂڂڂڂڂڂ</del> ڂ <del>ڂ</del>	visible bedding, light-reddish-brown. 331 SAND, with CALICHE, dry, non-plastic when moistened, poorly consolidated, no visible bedding, pinkish-gray & pinkish-white.											-
-	- - - - - - - -	SC		330 SAND, with SILT, gravelly, intermixed, dry, non-plastic when moistened, medium dense, light-greenish-gray & reddish-yellow mottling, calcareous.	- - - - -										-
		SC			+			40.9							-
MLF - 2024 I	_	SPT		CALICHE, dry, non-plastic when moistened, medium dense to dense, white.	5.5 4.5		12 23 42								-
		SC	૾ૺૡૼ૾ૺ૾૾ૡૼ૾ૡૼ૽ૡૼ૽ૡૺ ૡૼ૽ૡૼ૽ૡૺ૱ૡૡ૽ૡ૽ૡ૽ૡ૽	SAND, with CALICHE, dry, non-plastic when moistened, dense to very dense, no visible bedding, pinkish-gray & pinkish-white.	+										*  
	_	4													-

	V	Veaver Consul	: tants	LOG OF BORING NO. WCG-12 Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supe Logg Drill	ervising ging Geo ling Firm	Geolo ologist 1:	gist: t:	Aaror DS Envir	n K. ronm	Evar enta	ns, P.C I Worl	ð. Paj	ge 2 of 3
		noup		Project No: 0120-809-11-05		Field	d Tests			La	ıbora	atory	Tests		
H)		Type and Interval	Log	Boring Start Date: 8/10/2023       Northing (State Plane): 718133         Boring End Date: 8/10/2023       Easting (State Plane): 837944         Ground Elevation at Time of Drilling: 3316.49 ft-msl       3316.49 ft-msl         Top of Well Casing Datum Elevation: ft-msl       ft-msl         Remarks: Borehole drilled and continuously sampled via dry sonid drilling techniques. Borehole plugged with high solids bentonite groundwater elevation gauged September 2023.         V       = First Water Encountered at Time of Drilling: 2250.0.0	84.74 0.66	Penetrometer Test (tsf)	ation Blows/6-inches	t Passing No. 200	t Moisture Content	ensity (pcf)	Limit	Limit	ity Index	ability (cm/sec)	idwater Observed of Drilling
) th		nple	aphic	$\mathbf{Y}$ = Second Water Encountered at Time of Drilling: Not Observ	ved	and	snetr	ercer	ercer	D D	quic	astic	astic	srme	rout
Dei	5	Sar	Gra	Description	FT MSL	Η	Pe	Pe	Pe	D	Li	ΡΙ	Ρl	Pe	Ц.С.
-	-	SC		SAND, with CALICHE, dry (continued).	-	-								-	-
- 3	5 +				-	-								-	-
_	-	SC			-	-								-	-
- 40	- 0				-	-	31							-	-
	7	SPT			-	-	50/3"							-	-
.GDT 8/5/24	5 -	SC			-	-								-	-
					-	-								-	-
1 - 20 1 - 20	"			CAND with CHT amountly during maintering the	3266.0	-									-
Т - Т	+			salud, with Sill i, gravelly, dry to moist, non-plastic, medium dense to very dense, pinkish-gray, calcareous.		-								-	-
	-				-	-								-	-
3).GP	_		× • • • • • • • • • • • • • • • • • • •		-	-								-	-
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⊒   5: ⊥	°					-								-	-
⊒⊢ ט	-		• • • • • • • • • • • • • • • • • •		2250.5	-								-	-
-1 -	+			- becomes wet below 57.5'.	5259.5										- <u>v</u>
Ë D	-				-	-								-	
- BC	-		• • • • • • • • • • • • • • • • • • •		-	-								-	-
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		Weaver Consul	r tants	LOG OF BORING NO. WCG-12 Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supe Logg Drill	ervising ( ging Geo ling Firm	Geolo ologist 1:	gist: /	Aaror DS Envir	n K. I	Evar ental	ns, P.C I Worl	r. Pa	ge 3 of 3
	/ (	Jroup		Project No: 0120-809-11-05		Field	d Tests			La	bora	tory	Tests		
Denth (ft)		Sample Type and Interval	Graphic Log	Boring Start Date:       8/10/2023       Northing (State Plane): 718133         Boring End Date:       8/10/2023       Easting (State Pane): 837940         Ground Elevation at Time of Drilling:       3316.49 ft-msl         Top of Well Casing Datum Elevation:       ft-msl         Remarks:       Borehole drilled and continuously sampled via dry sonidrilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023.         ▼       = First Water Encountered at Time of Drilling:       3259.0 ft-m         ▼       = Second Water Encountered at Time of Drilling: Not Observer         Description       Description	34.74 0.66 c red FT MSI	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
				SAND, with SILT, wet (continued).	MOL										
-	-	SC		- becomes dry to moist below 61.5'.	3255.0	-									
- - - 6 - -		SPT			-	-	14 26 50/5"	33.9	10.4						-
- 7	0	SC	· • • • • • • • • • • • • • • • • • • •		- - - - 3241.5	-								· · ·	-
1 /	- د ا			Total Borehole Depth = 75'											
0KEHOLE LOG MLF - PEKMIT (2023).GPJ MLF - 2024 PEKMIT TEMPLATE.GDT 8.					-	-								•	-
	-				-	-									+
					_										

	Weave	ſ	LOG OF BORING NO. WCG-13		Supe	ervising	Geolo	gist: 4	Aaron	n K. 1	Evan	s, P.G		
	Consul	tants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Logg Drill	ging Geo ling Firm	ologist 1:	: ] 	DS Envire	onme	ental	Work	s Pa	ge 1 of 3
	Group		Project No: 0120-809-11-05		Field	d Tests			La	bora	tory	Tests	-	
Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date:       8/9/2023       Northing (State Plane):       718134         Boring End Date:       8/10/2023       Easting (State Pane):       838968         Ground Elevation at Time of Drilling:       3314.18 ft-msl         Top of Well Casing Datum Elevation:       ft-msl         Remarks:       Borehole drilled and continuously sampled via dry sonid drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023.         ▼       = First Water Encountered at Time of Drilling:       3247.2 ft-m         ▼       = Second Water Encountered at Time of Drilling:       Not Observ         Description       Description	k8.32 3.07 c ssl ed FT MSL	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
			SAND, with SILT, clayey, dry to moist, non-plastic, loose, no	MOL										
	sc		<ul> <li>Visible bedding, light-reddish-brown.</li> <li>CALICHE, with SAND, dry, non-plastic, poorly consolidated, no visible bedding, pinkish white, white.</li> <li>SAND, with SILT, gravelly, dry, non-plastic when moistened, poorly consolidated, no visible bedding, light-reddish-brown &amp; pinkish-gray, calcareous.</li> <li>- 6" caliche seam at 11.5'.</li> </ul>	- - - - - - - - - - - - - - - - - - -	-		48.5	7.9				25	- - - - - - - - - - - - - - - - - - -	
	SC		CALICHE, with SAND, dry, non-plastic when moistened, poorly consolidated, no visible bedding, pinkish white, white. SAND, with SILT, gravelly, dry, non-plastic when moistened, loose to dense, no visible bedding, light-reddish-brown & pinkish-gray, calcareous.	3297.7	-								- - - - -	- - - -
- 20 -	- SPT			3292.2		9 19 32								-
	sc		CALICHE, with SAND, dry, non-plastic when moistened, dense, no visible bedding, pinkish-white & white.		-									-
Z			CALICHE, with SAND, clayey, dry, non-plastic to low											1

		Neaver	(	LOG OF BORING NO. WCG-13		Supe	ervising	Geolo	gist: /	Aaron	n K. 1	Evar	ns, P.O	G.	0.00
		Consul	tants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Log ₂ Drill	ging Geo ling Firm	ologist 1:	: ] 	DS Envir	onm	ental	l Wor	ks Pa	ge 2 of 3
3	(	Group		Project No: 0120-809-11-05		Fiel	d Tests			La	bora	tory	Tests	5	
		erval		Boring Start Date:8/9/2023Northing (State Plane): 7181348Boring End Date:8/10/2023Easting (State Pane): 838968.Ground Elevation at Time of Drilling:3314.18 ft-mslTop of Well Casing Datum Elevation:ft-msl	8.32 .07	Test (tsf)	ó-inches	. 200	ontent					sc)	erved
	tt)	Type and Int	: Log	<ul> <li>Remarks: Borehole drilled and continuously sampled via dry sonic drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023.</li> <li>First Water Encountered at Time of Drilling: 2247.2 ft mediates and the second se</li></ul>	;	Penetrometer	ation Blows/6	tt Passing No.	t Moisture C	ensity (pcf)	Limit	: Limit	ity Index	ability (cm/se	ndwater Obs of Drilling
	spth (	mple	aphic:	$\Psi$ = Second Water Encountered at Time of Drilling: Not Observe	ed	Iand	enetr	ercer	ercer	Jry D	iquic	lastic	lastic	erme	iroui ime
,	ă _	SC SC	<u>द्याद</u>	Description	MSL	<u>і</u>	Ч	Р	Р	Г	Ι	Р	Р	Ч	
_	_	50		bedding, pink & pinkish-white.	-	-									-
						-		40.3	4.8			14	16		_
						_									
Ē.,						-									
	55 -				1	-									+
-	-	SC			1	-									+
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-	-				-	-									+
-	-		૾ૢ૽ૼ૾ૣ૾૾ૢ૽૾૽ૺ			-									-
- 4	40 -			3 SAND, with SILT, gravelly, dry, non-plastic when moistened,	3274.2		22								+
-	_	SPT	• • • • • • • • • • • • • • • • • • •	medium dense, no visible bedding, light-reddish-brown & pinkish-gray, calcareous.	3272.2	-	20 30								-
-	-			CALICHE, with SAND, dry, non-plastic when moistened,		_									+
-	-			poorty consolidated, no visible bedding, plink & plinkish-winte.	-	-									-
-	-	SC			-	-									+
54	45 -				-	-									-
T 8/5/	-			3 SAND, with SILT, gravelly, dry to moist, non-plastic, poorly	3268.2										-
	_			consolidated, no visible bedding, light-reddish-brown & pinkish-gray, calcareous.	-	-									-
MPLA	_		• • • • • • • • • • • • • • • • • • • •		-	-									-
	_				-	-									-
PERN :	50 -	SC			-	-									-
2024		30				_									
MLF			• • • • • • • • • • • •			_									
GPJ															
(2023)				3	3260.2	-									T I
	-			SAND, with SILT, moist, non-plastic, firm to hard, no visible				31.4	15.6						†
₩- : 	55 -			ocoung, phikish-gray.	1	-									†
- ⊾ 2	-				+	-									†
	-				+	-									+
REF0	-	SC			-	-									+
9 	-	20			+	-									+
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	V	Veave	r	LOG OF BORING NO. WCG-13		Supe	ervising	Geolo	gist:	Aaror	ı K.	Evai	ns, P.C	. D	2 62
	C	lonsu	ltants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Logg Drill	ging Geo ling Firm	ologisi i:	t: ] ]	DS Envir	onm	enta	l Worl	s Pa	ge 3 of 3
	/ G	broup		Project No: 0120-809-11-05		Fiel	d Tests			La	lbora	atory	Tests		
	6	Type and Interval	Log	Boring Start Date:       8/9/2023       Northing (State Plane): 718134         Boring End Date:       8/10/2023       Easting (State Plane): 838968         Ground Elevation at Time of Drilling:       3314.18 ft-msl         Top of Well Casing Datum Elevation:       ft-msl         Remarks:       Borehole drilled and continuously sampled via dry sonid drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023.	8.32 .07	enetrometer Test (tsf)	ttion Blows/6-inches	t Passing No. 200	t Moisture Content	insity (pcf)	Limit	Limit	ty Index	bility (cm/sec)	dwater Observed of Drilling
th (f		ple '	phic	$\Psi$ = First Water Encountered at Time of Drilling: 3247.2 ft-m $\Psi$ = Second Water Encountered at Time of Drilling: Not Observe	sl ed	nd P	netra	rcent	rcent	y De	quid	astic	astici	rmea	o onn
Let L	3	San	Gra	Description	FT MSL	Ηε	Pe	Pe	Pe	Dr	Li	Pla	Pla	Pe	1; C
			0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	SAND, with SILT, gravelly, dry to moist (continued).	3253.7										
	1		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	visible bedding, light reddish brown, pinkish gray.	-	-									-
-					-	-									-
-	$\uparrow$	SPT	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		-	-	50/5"								-
-	-		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		-	-									-
- 6	5 -		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		-	-									-
-	-		* * * * * * * * * * * * * * * * * * *		-	-									-
-	-			- becomes wet from 67' to 71'.	-	-									- <b>⊻</b>
-	-				-	-									-
-	-	SC			-	-									-
- 7	0 -				-	-									-
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_	_			CALICITE with CAND ware the day and short only a	3241.2										-
			ڹ۫ۅڵڹ۫ۜۜۜۜۜ ؈ؚۛٵۛۑ ؆۞	moistened, poorly consolidated, no visible bedding, pinkish	_	-									-
- 7	5			white, white.	3239.2										
3/5/24				Total Borehole Depth = 75'											
	1				-	-									-
					-	-									-
MA M	1				-	-									-
54 F 7	0 -				-	-									-
20	-				-	-									-
24 2	-				-	-									-
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8 – 8	5 -				-	-									-
- MLF	_				-	_									-
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BORE	]				-										
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<u>د</u> کے ا	)PY	RIGH	IT © 2	024 WEAVER CONSULTANTS GROUP LLC. ALL RIGHTS R	ESER	VED	1		L	I	I	I			L]

		Weaver		LOG OF BORING NO. WCG-14		Supe	ervising (	Geolo	gist: 1	Aaror	n K.	Evar	ns, P.C	J. Pa	gelof3
		Consul	tants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Drill	ing Firm	:	]	Envir	onm	enta	l Wor	ks	ge 1 01 5
		Jioup		Project No: 0120-809-11-05		Field	d Tests			La	bora	tory	Tests		-
	Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date:       8/6/2023       Northing (State Plane): 71812'         Boring End Date:       8/7/2023       Easting (State Plane): 84102'         Ground Elevation at Time of Drilling:       3308.16 ft-msl         Top of Well Casing Datum Elevation:       ft-msl         Remarks:       Borehole drilled and continuously sampled via dry sonidrilling techniques.         Borehole plugged with high solids bentonite grout upon completion of drilling.       Static groundwater elevation gauged September 2023. <ul> <li>First Water Encountered at Time of Drilling:</li> <li>3247.2 ft-m</li> <li>gescription</li> </ul>	72.86 3.95 c red FT MSL	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
				SAND, with SILT, trace clay, dry, non-plastic when moistened, loose, no visible bedding, light-reddish-brown.											
		SC		SAND, with SILT, trace clay, trace caliche, dry, non-plastic when moistened, loose, no visible bedding, light-reddish-brown.	3303.2	- - - 									- - -
				CALICHE, with SAND, dry to moist, non-plastic, poorly consolidated, no visible bedding, white & light-greenish-gray.	3298.2	-									-
4	- 10 -   - 15 -	SC	ૼ૽ૼૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢ	SAND, with SILT, with caliche, dry, non-plastic when moistened, poorly consolidated, no visible bedding, light-reddish-brown & light-gray.	-	-									-
EMPLATE.GDT 8/5/2				CALICHE, sandy, dry to moist, non-plastic, medium dense to very dense, no visible bedding, white & pinkish-white.	3291.7	-									-
					-	-									-
24 PEF	- 20 -	CDT			-	-	21	61.2	10.8			18	22		+
2023).GPJ MLF - 20	 	Sr1			3284 2	-	50/5"	. 01.2	10.0		40	10			-
MLF - PERMIT (.	- 25 -			CALICHE, with SAND, silty, dry, non-plastic when moistened, poorly consolidated, no visible bedding, white & pinkish-white.		-									+
MLF - BOREHOLE LOG					-	-									-

		Weave Consul Froun	r tants	LOG OF BORING NO. WCG-14 Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supe Logg Drill	ervising ( ging Geo ling Firm	Geolo logist :	gist: .	Aaror DS Envir	n K. onm	Evar enta	ns, P.( I Wor	G. Pa ks	ge 2 of 3
		Jioup		Project No: 0120-809-11-05		Field	d Tests			La	bora	tory	Tests		
	Depth (It)	Sample Type and Interval	Graphic Log	Boring Start Date: 8/6/2023       Northing (State Plane): 71812'         Boring End Date: 8/7/2023       Easting (State Plane): 84102'         Ground Elevation at Time of Drilling: 3308.16 ft-msl         Top of Well Casing Datum Elevation: ft-msl         Remarks: Borehole drilled and continuously sampled via dry sonid drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023. <ul> <li>First Water Encountered at Time of Drilling: 3247.2 ft-m</li> <li>Escond Water Encountered at Time of Drilling: Not Observation</li> </ul>	72.86 3.95 c rc rc rc FT MSI	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
		50		CALICHE, with SAND, silty, dry (continued).	MSL										
	- - - 35 -	sc		CALICHE, sandy, gravelly, dry to moist, non-plastic, very dense, no visible bedding, white & pinkish-white.	3276.2	-									-
-	,,,														
_	-	SC			-	- 4.5+ - -		52.4	2.7						+ - -
- 4	40 -					-		32.4	5.7						-
_	_	SPT				-	50/1"								-
	_	SC				-									-
TTEMPLATE.GDT 8/5/24	- 45 - - -	SC	૾૾ૡૺ૾ૡૺ૾ૡૺૢૡૺૢૡૺૢૡૺૢૡૺૡ ૡૺ૽ૡ૽ૡૡૡૡૡૡૡૡૡૡૡ ૱ૡૡૡૡૡૡૡૡૡ		-	-									- - -
MLF - 2024 PERMI	50 -				-	-									-
PERMIT (2023).GPJ F T T T T T	- - - 55 -	SC			3253.2	-								-	-
	-	SC		SAND, with SILT, moist, non-plastic, very dense, no visible bedding, light-reddish-brown.	-	-									-
MLF - BOREF	_				-	-									-

		Neave	r	LOG OF BORING NO. WCG-14		Supe	ervising	Geolo	gist: 1	Aaror	n K.	Evar	ns, P.C	J. Pa	ge 3 of 3
		Consu	ltants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Drill	ling Firm	nogisi i:	. ]	Envir	onm	enta	l Wor	ks	ge 5 61 5
		JIOUD		Project No: 0120-809-11-05		Fiel	d Tests			La	lbora	atory	Tests		
	Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date:       8/6/2023       Northing (State Plane): 71812'         Boring End Date:       8/7/2023       Easting (State Plane): 84102'         Ground Elevation at Time of Drilling:       3308.16 ft-msl         Top of Well Casing Datum Elevation:       ft-msl         Remarks:       Borehole drilled and continuously sampled via dry sonid drilling techniques.         Boring End Date:       ground Elevation:         #       First Water Encountered at Time of Drilling:         3247.2 ft-n         #       = Second Water Encountered at Time of Drilling:         Not Observ         Description	72.86 3.95 ic ic ved FT MSL	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
		SPT	* * * * * * * * * * * * * * * * *	SAND, with SILT, moist (continued).			50/6"								7
	-		• • • • •	- becomes wet from 61' to 62.5'.		3.5									- ¥
			。。。。。。。 。。。。。。。 。。。。。。。		3245.7										-
	- - 55 -	sc	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		3243.2	- 4.5+									-
				Total Borehole Depth = 65'											
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8/5/24	/3 ]														
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PJ ML	-					_									-
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		Veaver		LOG OF BORING NO. WCG-15		Supe	ervising (	Geolo	gist: .	Aaror	n K. 1	Evar	ıs, P.G		1 62
		Consul	tants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Log _g Drill	gıng Geo ling Firm	logist :	: ]	DS Envire	onm	ental	Work	s Pag	ge 1 of 3
1	(	Group		Project No: 0120-809-11-05		Fiel	d Tests			La	bora	tory	Tests		
	Depth (II)	Sample Type and Interval	Graphic Log	Boring Start Date:       8/5/2023       Northing (State Plane): 718122         Boring End Date:       8/5/2023       Easting (State Pane):       842039         Ground Elevation at Time of Drilling:       3310.43 ft-msl         Top of Well Casing Datum Elevation:       ft-msl         Remarks:       Borehole drilled and continuously sampled via dry sonid drilling techniques.       Borehole plugged with high solids bentonite grout upon completion of drilling.         Static       groundwater elevation gauged September 2023.         Y       = First Water Encountered at Time of Drilling:       3249.9 ft-m         Y       = Second Water Encountered at Time of Drilling:       Not Observ         Description       Description	39.21 9.92 c rsl ved FT MSL	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
		•		SAND, SILT, dry, non-plastic when moistened, loose, no visible bedding reddish-brown		-		<u> </u>							
		SC		CALICHE, with SAND, dry, non-plastic when moistened, poorly consolidated, no visible bedding, white & pinkish-white.		- - - -								- - - - - - - - - - - - - - - - - - -	- - - -
- - 1 - 1				CALICHE, with SAND, silty, intermixed, dry, non-plastic when moistened, poorly consolidated, light-greenish-gray,	3300.4	-								- - 	-
- - -	- - -	SC		CALICHE, with SAND, dry, non-plastic when moistened.	3295.4	-								-	
	- - - 20 -	- - - - - - - - - - - - - - - - - - -		poorly consolidated, no visible bedding, white & very-pale-yellow.	-	-								-	-
	-	SPT		CALICHE, sandy, dry, non-plastic when moistened, dense to	3289.9		34 50/6"								
		SC		very dense, no visible bedding, white.	-	-								-	-
	_	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4			-	-									-
	Weave	[	LOG OF BORING NO. WCG-15		Supe Logg	ervising ( ging Geo	Geolo	gist: 4	Aaron DS	n K. 1	Evan	ıs, P.G.	Pa	ge 2 of 3	
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	Consul Group	tants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Drill	ing Firm	1: 	]	Envir	onm	ental	Works			
	Group		Project No: 0120-809-11-05	0.01	Field	d Tests			La	bora	tory	Tests			
Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date:       8/5/2023       Northing (State Plane): 718123;         Boring End Date:       8/5/2023       Easting (State Plane): 842039;         Ground Elevation at Time of Drilling:       3310.43 ft-msl         Top of Well Casing Datum Elevation:       ft-msl         Remarks:       Borehole drilled and continuously sampled via dry sonic         drilling techniques.       Borehole plugged with high solids         bentonite grout upon completion of drilling.       Static         groundwater elevation gauged September 2023.       ¥         = First Water Encountered at Time of Drilling:       3249.9 ft-ms         ¥       = Second Water Encountered at Time of Drilling:       Not Observer         Description       Description	9.21 .92 sl ed FT MSL	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling	
	SC		CALICHE, sandy, dry (continued).	-	- - -								-	-	
- 35 -				-									-	-	
	SC			-									-	-	
- 40 -		v v v v v v		3270.4										-	
	SC	••••••••••••••••••••••••••••••••••••••	- becomes moist below 48'.	-		50/1"							-	-	
	-	• • • • • • • • • • • • • • • • • •		-	-								-	-	
- 50 -	SC		- becomes dry below 49.5'.	-									-	-	
			- becomes moist below 52'.	-									-	-	
- 55 -	SC			-									-	-	
	SPT			-		50/4"							-	-	
		• • • • • • • • • • • • • • • • • • •	- becomes dry below 59.5'.	-	-								-	-	

		N 1				Log	ring Cas	logici	. 1			1	,	Do	ra 2 of 2
		consul	tants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Drill	ing Firm	iogisi :	.: ] ]	DS Envir	onm	ental	l Wor	ks ra	ge 5 01 5
		froup		Project No: 0120-809-11-05		Field	d Tests			La	lbora	itory	Tests		
Denth (ft)		Sample Type and Interval	Graphic Log	Boring Start Date:       8/5/2023       Northing (State Plane): 71812         Boring End Date:       8/5/2023       Easting (State Pane): 84203         Ground Elevation at Time of Drilling:       3310.43 ft-msl         Top of Well Casing Datum Elevation:       ft-msl         Remarks:       Borehole drilled and continuously sampled via dry son drilling techniques.         Bortonite groundwater elevation gauged September 2023.         ¥       = First Water Encountered at Time of Drilling:         3249.9 ft-r         Encountered at Time of Drilling:         Not Obser	39.21 9.92 ic nsl ved FT MSL	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
				SAND, with SILT, dry (continued).	3249.9										<b>⊥</b>
-	-	SC		- becomes moist to wet below 60.5'.	-	2.25									-
- 6	55 -			SAND, with SILT, gravelly, dry, non-plastic to low plasticity when moistened, hard, no visible bedding, light-reddish-brown, calcareous.	3245.4	- 4.5+									-
_	-	SC	, , , , , , , , , , , , , , , , , , ,		-	-									-
- 7	- 0 -			Total Barabala Danth - 70'	3240.4	4.5+									+
64) MLF - 2024 PERMII 1 EMPLAI E.601 86)24 1 1 1 1 1 1 1 1 1 1 2 8 8 2 2						-									
					-	-									- - - -

		Neaver		LOG OF BORING NO. WCG-16		Supe	ervising	Geolo	gist: 4	Aaror	n K.	Evar	ns, P.O	J.	1 60
		Consul	tants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Logg Drill	ging Geo ing Firm	ologist i:	: ]	DS Envir	onm	enta	l Wor	ks Pa	ge 1 of 3
	/ (	Group		Project No: 0120-809-11-05		Field	d Tests			La	bora	tory	Tests		
(#) there	(11) Indac	sample Type and Interval	Graphic Log	Boring Start Date:       8/24/2023       Northing (State Plane):       718079         Boring End Date:       8/24/2023       Easting (State Pane):       836895         Ground Elevation at Time of Drilling:       3318.28 ft-msl         Top of Well Casing Datum Elevation:       ft-msl         Remarks:       Borehole drilled and continuously sampled via dry sonid drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023.         ♥       = First Water Encountered at Time of Drilling:       3254.3 ft-msl         ♥       = Second Water Encountered at Time of Drilling:       Not Observ	ed FT	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
-	-	<i>v</i> ₁		SAND, with SILT, intermixed, dry, non-plastic when	MSL										
		SC		moistened, poorly consolidated, light-greenish-gray, pinkish-white & light-reddish-brown. CALICHE, with SAND, dry, non-plastic when moistened, loose, no visible bedding, pinkish-white. - 4" sandstone seam with iron stains at 8'.		-									-
					3308.3	-									-
- 1	- 0			SAND, with SILT, intermixed, dry, non-plastic when moistened, poorly consolidated, light-greenish-gray, pinkish-white & light-reddish-brown. SAND, with SILT, dry, non-plastic when moistened, loose, reddish-brown.	3305.8	-									- - - -
ERMIT TEMPLATE.GDT 8/5/24		SC	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	SAND, with SILT, intermixed, dry, non-plastic when moistened, loose, light-greenish-gray, pinkish-white & light-reddish-brown. - 6" caliche seam at 18'.	-	-									- - -
ld = 2	20 -	CDT			- 3297.3	-	9								-
JERMIT (2023).GPJ MLF - 2 		SC		SAND, with SILT, dry, non-plastic when moistened, dense, no visible bedding, light-reddish-brown.	-	-	49								- - -
					3292.3										
	-			CALICHE, with SAND, dry, non-plastic when moistened, poorly consolidated, no visible bedding, pinkish-white & white.		-									-
	_			- becomes moist below 28.5'.	-	-									-

	Weaver	ſ	LOG OF BORING NO. WCG-16		Supe	ervising oing Geo	Geolo	gist: /	Aaror	n K. I	Evar	ıs, P.G.	Pa	ge 2 of 3
	Consul	tants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Drill	ing Firm	1:	. ]	Envir	onme	ental	Works		502015
	Gloup		Project No: 0120-809-11-05		Field	d Tests			La	bora	tory	Tests		
Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date: 8/24/2023       Northing (State Plane): 718079         Boring End Date: 8/24/2023       Easting (State Plane): 836895         Ground Elevation at Time of Drilling: 3318.28 ft-msl       7000         Top of Well Casing Datum Elevation: ft-msl       8000         Remarks: Borehole drilled and continuously sampled via dry sonid drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023. <ul> <li> </li> <li> </li> <li> </li> <li> </li> <li> </li> </ul> <li> <li> </li> </li> <li> <li> <ul> <li> </li> <li> </li> </ul> </li> <li> <li> </li> <li> </li> </li> <li> <li> </li> </li> <li> <li> <li> </li> <li> <li> </li> <li> </li> <li> </li> <li> </li> <li> </li> <li> <li> </li> <li> </li> <li> </li> <li> <li> </li> <li> </li> <li> <li> </li> </li> <li> <li> <li> <li> </li> </li> <li> <li> </li> </li> <li> <ul> <li></li></ul></li></li></li></li></li></li></li></li></li>	6.59 .87 sl ed	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
			CALICHE, with SAND, moist (continued).	MSL	-									
	sc		- becomes dry below 33.5'.	- - - 3281 8	-								-	-
			SAND, with SILT, with caliche, dry, non-plastic when	5261.6										
			moistened, dense to very dense, very thinly bedded, pinkish-white to light-reddish-brown.	-	-									-
	SC			-	-								-	-
1 1	SPT			-	_	43 50/2"								_
	4			3271.3										
	sc		CALICHE, with SAND, gravelly, dry, non-plastic when moistened, poorly consolidated, no visible bedding, white.	-	-								-	-
	-			-	-									-
(2023).GF	_		- becomes moist below 53'.	3264.3	-								-	
		* * * * * * * * * * * * * * * * * *	SAND, with SILT, trace clay, moist, non-plastic to low plasticity, medium dense, no visible bedding, light-brown.											
	_	• • • • • • • • • • • • • • • • • • •	- becomes dry, with trace caliche below 56'.	-	-								-	-
MLF - BOI	SC			-	-									_

	Wea	aver		LOG OF BORING NO. WCG-16		Supe Logg	ervising ( ging Geo	Geolo	gist: /	Aaron DS	<b>K.</b> ]	Evar	is, P.G	Pa	ge 3 of 3
	Gro	nsuli מווכ	tants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Drill	ing Firm	:	]	Enviro	onm	ental	Work	s	
_		Jup		Project No: 0120-809-11-05		Field	d Tests			La	bora	tory	Tests		
oth (ft)		aple Type and Interval	phic Log	Boring Start Date: 8/24/2023       Northing (State Plane): 7180796.         Boring End Date: 8/24/2023       Easting (State Plane): 836895.8         Ground Elevation at Time of Drilling: 3318.28 ft-msl         Top of Well Casing Datum Elevation:       ft-msl         Remarks: Borehole drilled and continuously sampled via dry sonic drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023.	59 7	and Penetrometer Test (tsf)	netration Blows/6-inches	rcent Passing No. 200	rcent Moisture Content	y Density (pcf)	quid Limit	astic Limit	asticity Index	rmeability (cm/sec)	oundwater Observed me of Drilling
Det	5	San	Gra	Description	FT ISL	Η	Pe	Pe	Pe	Dı	Li	βl	Pl	Pe	Ξï
_	-	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		SAND, with SILT, dry (continued). - becomes moist below 61'.	-	-	23							-	-
+	- SI	PT		- becomes wet below 64'.	54.3		21 24								- <b>⊻</b>
- 65	; -	•			+	-	21								-
- 70	- - - - ) - S	6C		22 CALICHE, with SAND, silty, dry, non-plastic when	48.3	-								-	- - -
- 75	-	• 9 • 9 • 9 • 9 • 9 • • 9 • • • • • •		moistened, poorly consolidated, no visible bedding, white & pinkish-white.	43.3	-								-	-
42/0/	,			Total Borehole Depth = $75'$											
	-				-	-								-	-
2074 LEX	) -				-	-								-	-
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		Neaver	ſ	LOG OF BORING NO. WCG-17		Supe	ervising	Geolo	gist: 4	Aaror	n K.	Evar	ns, P.	G.	1 . 00
		Consul	tants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Logg Drill	ging Geo ling Firm	logist :	: ]	DS Envir	onm	enta	l Wo	rks Pa	ge 1 of 3
		Group		Project No: 0120-809-11-05		Field	d Tests			La	bora	tory	Test	s	
		and Interval		Boring Start Date:       8/10/2023       Northing (State Plane): 71807.         Boring End Date:       8/11/2023       Easting (State Pane): 83897.         Ground Elevation at Time of Drilling:       3313.38 ft-msl         Top of Well Casing Datum Elevation:       ft-msl         Remarks:       Borehole drilled and continuously sampled via dry somi drilling techniques.         Borehole plugged with high solids here to the product of the plugged with the product of the plugged with the plugged withe plugged with the plugged with the plugged wi	31.85 2.24	ometer Test (tsf)	slows/6-inches	ing No. 200	ture Content	(pcf)			lex	(cm/sec)	er Observed lling
	(ft)	le Type	ic Log	groundwater elevation gauged September 2023. ▼ = First Water Encountered at Time of Drilling: Not Observ	ved	l Penetro	tration H	ent Passi	ent Mois	Density	id Limit	ic Limit	icity Ind	leability	indwate e of Dri
	epth	ampl	iraph	I = Second Water Encountered at Time of Drilling: Not Observ Description	ved FT	Hanc	Pene	Perc	Perc	Dry	Liqu	Plast	Plast	Pern	Lim
-		Ň		SAND, with SILT, dry, non-plastic when moistened, poorly	MSL				_				_		
	· -	50		consolidated, no visible bedding, brown to light-reddish-brown. SAND, with CALICHE, dry, non-plastic when moistened, poorly consolidated, no visible bedding, light-reddish-brown	3309.4	-									-
	· · - · - · - · · - · · - · · · · ·	sc		& white.	3303.4	-								-	-
5DT 8/5/24		SC	• • • • • • • • • • • • • • • • • • •	when moistened, light-greenish-gray, yellowish-red & pinkish-white, calcareous.	-	-								•	-
MPLATE.C	· -			CALICHE, sandy, dry, non-plastic when moistened, medium	3295.9	-								· · · ·	+
	-			pinkish-white.	-	_									-
2024 PE	20 -	SPT			-	ŀ	26								+
PJ MLF - 2	· -				-	-	30/3								-
T (2023).G	· -				-	-									
- PERMI	25 -	SC		SAND, with CALICHF. drv. non-plastic when moistened	3288.4										+
				poorly consolidated, no visible bedding, pink.	-	-									+
	· -				-	_									+
- BOREH						-								•	
MLF															

		Weaver Consul	r tants	LOG OF BORING NO. WCG-17 Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supe Logg	ervising ging Geo	Geolo logist	gist: /	Aaror DS	n K. 1	Evar	ns, P.C	3. Pa	ge 2 of 3
		Group		Project No: 0120-809-11-05		Field	d Tests			La	bora	tory	Tests	KS	
	Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date: 8/10/2023       Northing (State Plane): 71807.         Boring End Date: 8/11/2023       Easting (State Pane): 83897.         Ground Elevation at Time of Drilling: 3313.38 ft-msl         Top of Well Casing Datum Elevation: ft-msl         Remarks: Borehole drilled and continuously sampled via dry som drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023.         ▼ = First Water Encountered at Time of Drilling: Not Observ         ▼ = Second Water Encountered at Time of Drilling: Not Observ         Description	31.85 2.24 ic ved FT MSL	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
		SC		SAND, with CALICHE, dry (continued).	MDL	_									
	- - - 35 -	SC		CALICHE, with SAND, dry, non-plastic when moistened,	3278.4	-									-
	- - - 40 -	SC		very douse, no visiole ocdanig, pinkish winte, winte ee pinki		-	50/5"	43.6	12.2					•	- - -
	-	SC		<ul> <li>SAND, with CALICHE, dry, non-plastic when moistened, very dense, no visible bedding, pinkish-white.</li> <li>- becomes moist below 42.5'.</li> <li>- becomes dry to moist below 44'.</li> </ul>	-	-									-
TEMPLATE.GDT 8/5/24	45 - - -	SC			-	-									-
2024 PERMIT	- 50 -				-	-									-
- PERMIT (2023).GPJ MLF	- - 55 -	SC				-									-
DG MLF	-			CALICHE, cherty, with calcrete, dry, non-plastic when moistened, no visible bedding, white.	-	-							T		+
	_	SC			3255.4	-									†
MLF - BOREH	_			SAND, with SILT, gravelly, moist, non-plastic, poorly consolidated, no visible bedding, white, calcareous.	-	-									+

	V	Veave	ſ	LOG OF BORING NO. WCG-17		Supe	ervising	Geolo	gist:	Aaror	n K.	Evar	ns, P.G	- D	2 62
		Consul	tants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Logg Drill	ging Geo ing Firm	logist :		DS Envir	onm	ental	l Work	s Pa	ge 3 of 3
	/ (	Fronb		Project No: 0120-809-11-05		Field	d Tests			La	bora	tory	Tests		
Ű.	(11)	Type and Interval	c Log	Boring Start Date: 8/10/2023       Northing (State Plane): 71807         Boring End Date: 8/11/2023       Easting (State Pane): 83897         Ground Elevation at Time of Drilling: 3313.38 ft-msl         Top of Well Casing Datum Elevation: ft-msl         Remarks: Borehole drilled and continuously sampled via dry son drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023.            ✓ = First Water Encountered at Time of Drilling: Not Observation: Not Observation: Time of Drilling: Time of Dr	31.85 2.24 ic	Penetrometer Test (tsf)	ation Blows/6-inches	nt Passing No. 200	nt Moisture Content	ensity (pcf)	l Limit	: Limit	sity Index	ability (cm/sec)	ndwater Observed of Drilling
nth (	h	mple	aphic	$\mathbf{Y}$ = Second Water Encountered at Time of Drilling: Not Obser	ved	and	enetr	ercer	ercer	IJ D	iquic	lastic	lastic	erme	ime
Ŭ	3	Sa	Ū.	Description	FT MSL	H	ď	P	P		Г	Р	Р	d.	-10
	-	SC		- 6" caliche seam at 61.5'.	2250 0										-
		SPT		CALICHE, with Chert, dry, non-plastic when moistened, very	3250.9		50/1"								
				dense, no visible bedding, white.											
Γ.						-									+
- 6:	5 -			SAND with CALICUE day non plastic when projectioned	3247.9										+
-	-	SC		poorly consolidated, no visible bedding, light-reddish-brown & white.	-									•	-
+	-														+
- 70	0 +			Total Borahola Denth = 70'	3243.4										+
DT 8/5/24 1 1 1 1 1 1 1 :	- - 5 -				-										-
	-														-
EMPL	+														+
	-														+
4 PER	0 -														-
- 202	-				-										+
	_														-
3).GP.	_														ļ
1 (202)															
	_														
⊑ – 8: ⊑	5 -					-									Ī
₩- 9															†
	4														†
	-														+
- BC	-														+
⊒ CC	 )PY	RIGH	T © 2	 024 WEAVER CONSULTANTS GROUP LLC ALL RIGHTS F	RESER	VED									

		Neave		LOG OF BORING NO. WCG-18		Supe	ervising ( ving Geo	Geolo	gist:	Aaror	n K. I	Evar	is, P.G.	Pa	gelof3
		Consul	tants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Drill	ing Firm	1:	1	Envir	onme	ental	Works	5	
_		Jioup		Project No: 0120-809-11-05		Field	d Tests			La	bora	tory	Tests		
( <del>0</del> )	(11) under	sample Type and Interval	jraphic Log	Boring Start Date: 8/9/2023       Northing (State Plane): 71806         Boring End Date: 8/9/2023       Easting (State Pane): 83997         Ground Elevation at Time of Drilling: 3311.80 ft-msl         Top of Well Casing Datum Elevation: ft-msl         Remarks: Borehole drilled and continuously sampled via dry som drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023.         ♥ = First Water Encountered at Time of Drilling: 3250.8 ft-m         ♥ = Second Water Encountered at Time of Drilling: Not Observer	93.17 6.36 ic ic nsl ved FT	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
-	-	S		SAND, with SILT, dry to moist, non-plastic, poorly	MSL										
		SC	(°°, (°°, (°°, °°, (°°, °°, °°, °°, °°,	<ul> <li>consolidated, no visible bedding, dark-reddish-brown.</li> <li>becomes moist to wet, clayey below 5'.</li> <li>becomes dry to moist, non-clayey below 6'.</li> <li>CALICHE, with SAND, dry to moist, non-plastic, medium dense to very dense, no visible bedding, white &amp; pinkish-white.</li> </ul>	3304.3	- - - - - - - - -								- - - - - - - - - - - - - - - - - - -	-
- 1	0 +					-								-	-
		SC				-								-	-
PERMIT TEMPLATE.GDT 8/5/2		SC	૾ૺ૾૾ૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢ			-								-	-
2024 F		SPT					50/1"							-	
		SC	<b>ૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢ</b>			+ + + - -								-	-
MLF								40.6	3.2						

		Neaver	ſ	LOG OF BORING NO. WCG-18		Supe	ervising	Geolo	gist:	Aaror	ı K.	Evar	ns, P.	G. Pa	ra 2 of 3
		Consul	tants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Drill	ling Firm	nogisi n:		DS Envir	onm	enta	l Woi	ks ra	ge 2 01 5
		JIOUD		Project No: 0120-809-11-05		Fiel	d Tests			La	lbora	ıtory	Test	5	
	Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date:       8/9/2023       Northing (State Plane):       718069         Boring End Date:       8/9/2023       Easting (State Plane):       839976         Ground Elevation at Time of Drilling:       3311.80 ft-msl       3311.80 ft-msl         Top of Well Casing Datum Elevation:       ft-msl         Remarks:       Borehole drilled and continuously sampled via dry sonid drilling techniques.       Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023. <ul> <li>First Water Encountered at Time of Drilling:</li> <li>Stort Store Store</li></ul>	93.17 5.36 c red FT MSL	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
Ī				CALCHE, with SAND, dry to moist (continued).	MDL										
	 	SC			-	- - -								- - -	-
	- 35 - 				-	-									-
-		SC			-	-									-
-					-	-									-
-					-	-								-	-
-	- 40 -	SDT			-	-	22							-	-
	 	511			-	-	50/2"							-	-
8/5/24	 - 45 - 	SC			-	-									-
IE.GD					-	-								-	-
EMPLA					-	-									-
			9 • • • • • • • • • • • • • • • • • • •		-	-									-
24 PEF	- 50 -				-	-								-	-
-F - 20			؈۫ ؈ٛ ۞		-	-									-
					-	-									-
2023).6					2757 0	-									-
	- 55 -	SC		SAND, with CALICHE, silty, dry to moist, non-plastic, very loose to medium dense, no visible bedding, pinkish-gray.											-
- W						-								-	-
					-	-									-
OREH		CDT				-	1							-	-
		SPT		- 8" caliche seam at 60'.		-	5								-

	Wea	aver		LOG OF BORING NO. WCG-18		Sup	ervising	Geolo	gist: .	Aaror	ı K.	Evar	ıs, P.G.	n	2 62
	Con	nsuli	tants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Log Dril	ging Geo ling Firm	ologisi 1:	t: ] ]	DS Envir	onm	ental	Works	Pa	ge 3 of 3
	Gro	oup		Project No: 0120-809-11-05		Fiel	d Tests			La	bora	atory	Tests		
pth (ft)	unle Tyme and Interval	nple 1 ype and Interval	phic Log	Boring Start Date: 8/9/2023       Northing (State Plane): 71806         Boring End Date: 8/9/2023       Easting (State Pane): 83997         Ground Elevation at Time of Drilling: 3311.80 ft-msl         Top of Well Casing Datum Elevation: ft-msl         Remarks: Borehole drilled and continuously sampled via dry son drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023.         ¥       = First Water Encountered at Time of Drilling: 3250.8 ft-m         ¥       = Second Water Encountered at Time of Drilling: Not Observing	93.17 6.36 ic	and Penetrometer Test (tsf)	metration Blows/6-inches	crcent Passing No. 200	rcent Moisture Content	ry Density (pcf)	quid Limit	astic Limit	asticity Index	srmeability (cm/sec)	roundwater Observed me of Drilling
Del	Co.	Sar	Gr	Description	FT MSL	Ĥ	Pe	Pe	Pe	D	E	PI	Id	Pe	Β̈́Ξ
		\$ \$		SAND, with CALICHE, silty, dry (continued).	3250.8										V
		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	• • • • • • • • • • • • • • • • • • •	SAND, with SILT, wet, non-plastic when moistened, no visible bedding, pinkish-gray becomes dry to moist below 62.5'.	3249.3	-								-	-
- - 65 - -	- S( 		· • • • • • • • • • • • • • • • • • • •		-	-								-	-
-	-	•			-	-								-	-
- 70	-	<b>^</b>	<u>°⊾°₄</u>	Total Borehole Depth = 70'	-	-									-
TEMPLATE.GDT 8/5/24	-				-	-								-	-
	-				-	-								-	-
LF - PERMIT (2023) 					-	-								-	-
					-	-								-	-
		IGH	T©?	024 WEAVER CONSULTANTS GROUP LLC ALL RIGHTS F	ESER	VFD									

		Neaver	( tanta	LOG OF BORING NO. WCG-19		Supe Logg	ervising ( ging Geo	Geolo ologist	gist:	Aaror DS	n K. 1	Evar	is, P.G	Pa	ge 1 of 4
		-onsul Froun	lants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Drill	ling Firm	1:	]	Envir	onm	ental	Work	s	
		JIOUP		Project No: 0120-809-11-05		Fiel	d Tests			La	bora	tory	Tests		
	pth (ft)	nple Type and Interval	ıphic Log	Boring Start Date:       8/7/2023       Northing (State Plane):       71806         Boring End Date:       8/7/2023       Easting (State Plane):       84100         Ground Elevation at Time of Drilling:       3304.96 ft-msl       84100         Top of Well Casing Datum Elevation:       ft-msl         Remarks:       Borehole drilled and continuously sampled via dry som drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023.         ▼       = First Water Encountered at Time of Drilling:       3242.5 ft-r         ▼       = Second Water Encountered at Time of Drilling:       3212.5 ft-r	57.57 4.45 ic nsl	and Penetrometer Test (tsf)	enetration Blows/6-inches	srcent Passing No. 200	srcent Moisture Content	ry Density (pcf)	quid Limit	astic Limit	asticity Index	ermeability (cm/sec)	roundwater Observed ime of Drilling
	De	Saı	Ğ	Description	FT MSL	Н	Pe	P(	P(	D	Ξ	PI	Id	ď	3E
		SC		SAND, with SILT, dry, non-plastic when moistened, hard, no visible bedding, red. CALICHE, with SAND, dry, non-plastic when moistened, dense to very dense, no visible bedding, white & pinkish-white. - becomes moist, light-greenish-gray below 7.5'.	3300.5	- 4.5+									-
	· 10 -				-	-								· · ·	- - -
ERMIT TEMPLATE.GDT 8/5/24		SC	ᠸᠧᠧᠧ᠅ᢏ᠅ᢏ᠅ᢏ᠅ᢏ᠅ᢏ᠅ᢏ᠅ᢏ᠅ᢏ᠅ᢏ᠅ᢏ᠅ᢏ᠅ ᡶᡄᠧᠧᠧᠧᠧᠧᠧᠧᠧᠧ᠅ᢏ᠅ᢏ᠅ᢏ᠅ᢏ᠅ᢏ᠅ᢏ᠅ ᠅ᢏ᠅ᢏ᠅ᢏ᠅ᢏ᠅ᢏ᠅ᢏ᠅ᢏ᠅ᢏ	- becomes pinkish-white below 12.5'.		-								•	-
24 PE	20 -	SDT	؞۫ٛڛٵ؞۫ ؈ۛ ؞؇ٵ؞ٛۄ		· ·	-	37								-
- PERMIT (2023).GPJ MLF - 20		SC			-	-	50 - 2"							•	- - - -
MLF - BOREHOLE LOG MLF -	· _				-	-		36.7	6.9						-

	Weave	r	LOG OF BORING NO. WCG-19		Supe	ervising (	Geolo	gist:	Aaror	n K. 1	Evar	ıs, P.G	Pa	ne 2 of 4
	Consu	ltants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Drill	ling Firm	nogisi i:		DS Envir	onm	ental	Work	s	ge 2 01 4
	Group		Project No: 0120-809-11-05		Field	d Tests			La	bora	tory	Tests		
oth (ft)	nple Type and Interval	phic Log	Boring Start Date:8/7/2023Northing (State Plane): 71806.Boring End Date:8/7/2023Easting (State Pane):84100.Ground Elevation at Time of Drilling:3304.96 ft-mslTop of Well Casing Datum Elevation:ft-mslRemarks:Borehole drilled and continuously sampled via dry som drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023.¥= First Water Encountered at Time of Drilling:3242.5 ft-n¥= Second Water Encountered at Time of Drilling:3212.5 ft-n	57.57 4.45 ic nsl	und Penetrometer Test (tsf)	netration Blows/6-inches	rcent Passing No. 200	rcent Moisture Content	y Density (pcf)	quid Limit	astic Limit	asticity Index	rmeability (cm/sec)	oundwater Observed me of Drilling
Dep	San	Gra	Description	FT MSL	Η̈́	Pe	Pe	Pe	D	Li	Pla	Pl	Pe	ΞË
	SC		CALICHE, with SAND, dry (continued).	-	-								-	-
	SC	ڔ؞ۦڔ؞ۦڔ؞ۦڔ؞ۦڔ؞ۦ؞ڔ؞ۦڔ؞ ؞ڔ؞ۦڔ؞ۦڔ؞ۦڔ؞ۦڔ؞ۦڔ؞ ۮ؞ۣڋ؞؞ؚڋ؞؞؞؞؞؞؞؞؞؞؞؞؞ <u>؞</u>		- - - -	-	50 - 4"							-	-
	SC			-	-								-	-
	-			3256.0	-								-	-
MLF - 2024 PERMI	SC		SAND, with SILT, trace clay, gravelly, dry to moist, non-plastic, medium dense to very dense, no visible bedding, light-reddish-brown & white, calcareous.		4.5+								-	-
			- becomes moist below 53'.	-	+ 4.5+		30 6	20.0					-	-
- 55 -	-		- becomes dry to moist below 55'.	.   .	- 1.0		57.0	20.0					-	-
	SC	•     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     • <td></td> <td>  .   .</td> <td>4.5+</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>-</td> <td>-</td>		.   .	4.5+								-	-
≥∟	1						L			I				L

	Weave	r	LOG OF BORING NO. WCG-19		Supe	ervising	Geolo	gist:	Aaror	n K.	Evar	is, P.G	. Da	~~ 2 of 4
	Consul	ltants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Drill	ling Firm	nogisi n:	1.	DS Envir	onm	ental	Work	s ra	ge 5 01 4
	Group		Project No: 0120-809-11-05		Fiel	d Tests			La	bora	tory	Tests		
spth (ft)	mple Type and Interval	aphic Log	Boring Start Date:       8/7/2023       Northing (State Plane): 71806         Boring End Date:       8/7/2023       Easting (State Plane): 84100         Ground Elevation at Time of Drilling:       3304.96 ft-msl         Top of Well Casing Datum Elevation:       ft-msl         Remarks:       Borehole drilled and continuously sampled via dry son drilling techniques.         Bortonite grout upon completion of drilling.       Static groundwater elevation gauged September 2023. <ul> <li>First Water Encountered at Time of Drilling:</li> <li>3242.5 ft-r</li> <li>Second Water Encountered at Time of Drilling:</li> <li>3212.5 ft-r</li> </ul>	57.57 4.45 ic nsl nsl	Iand Penetrometer Test (tsf)	enetration Blows/6-inches	ercent Passing No. 200	ercent Moisture Content	Dry Density (pcf)	iquid Limit	lastic Limit	lasticity Index	ermeability (cm/sec)	broundwater Observed Time of Drilling
Ă	Sa	G. 	Description SAND with SILT dry to maist (continued)	MSL	H	<u>н</u>			ч		F	<u> </u>	<u>н</u>	- OF
	SPT		- becomes moist to wet from 62.5' to 65.5'.	3242.5	-	43 50 - 6"							-	- - -
- 65	SC	•     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     •     • <td>- becomes dry to moist below 65.5'.</td> <td>3239.5</td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>-</td> <td>-</td>	- becomes dry to moist below 65.5'.	3239.5	-								-	-
- 70 -	_	• • • • • • • • • • • • • • • • • • •	- becomes moist below 71.5'.	-	- 1.0								-	-
-	_	• • • • • • • • • • • • • • • • • • •	- becomes dry to moist below 73'.	-	- - 4.5+								-	-
	SC			-	- - - - -								-	-
1 00	SPT	× • • • • • • • • • • • • • • • • • • •				19 50 - 5"							-	-
	- SC			-	3.0								-	-
	_	• • • • • • • • • • • • • • • • • • •		-	4.5+								-	-

		Weave	r	LOG OF BORING NO. WCG-19		Supe	ervising ( ging Geo	Geolo	gist:	Aaror	n K.	Evar	ns, P.C	J. Pag	ge 4 of 4
		Consu	ltants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Drill	ling Firm	1:		Envir	onm	ental	Wor	ks	50 1 01 1
		Jioup	1	Project No: 0120-809-11-05		Field	d Tests		1	La	bora	tory	Tests		
	bepth (ft)	ample Type and Interval	iraphic Log	Boring Start Date: 8/7/2023       Northing (State Plane): 71806         Boring End Date: 8/7/2023       Easting (State Pane): 84100         Ground Elevation at Time of Drilling: 3304.96 ft-msl         Top of Well Casing Datum Elevation: ft-msl         Remarks: Borehole drilled and continuously sampled via dry som drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023.            ✓ = First Water Encountered at Time of Drilling: 3242.5 ft-r            ✓ = Second Water Encountered at Time of Drilling: 3212.5 ft-r	57.57 4.45 ic nsl nsl FT	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
┝	Δ	S		SAND, with SILT, dry to moist (continued).	MSL										
	95 -	SC		- becomes moist to wet from 92.5' to 96.5'.	3212.5	- 2.25								- - - - - - - - - - - - - - - - - - -	- - - -
	100-			CLAY, dry to moist, medium to high plasticity, very stiff to hard, no visible bedding, dark-reddish-brown & gray.	3202.0	- 4.5+								-	-
	105-				3200.0	4.3		98.5	17.6	110.4		32	43 4	.2x10 ⁻⁹	_
-F - BUREHULE LUG MLF - PERMII (2023).GPJ MLF - 2024 PERMII IEMPLAIE.GUT 8/3/24				Total Borehole Depth = 105'		-								- - - - - - - - - - - - - - - - - - -	- - - - - - - - -
					<u> </u>										

		Neaver	ſ	LOG OF BORING NO. WCG-20		Supe	ervising (	Geolo	gist: .	Aaror	ı K.	Evar	ns, P.G		1.04
		Consul	tants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Logg Drill	ging Geo ling Firm	logist :	: ]	DS Envir	onm	enta	l Work	s Pag	ge 1 of 4
		Group		Project No: 0120-809-11-05		Field	d Tests			La	bora	tory	Tests	-	
	Depth (III)	Sample Type and Interval	Graphic Log	Boring Start Date: 8/6/2023       Northing (State Plane): 71806.         Boring End Date: 8/6/2023       Easting (State Pane): 84203.         Ground Elevation at Time of Drilling: 3305.36 ft-msl       71806.         Top of Well Casing Datum Elevation: ft-msl       84203.         Remarks: Borehole drilled and continuously sampled via dry som drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023.         ▼       = First Water Encountered at Time of Drilling: 3215.4 ft-m         ■       Description	36.28 6.62 ic nsl sl FT MSI	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
				SAND, with SILT, gravelly, dry, non-plastic when moistened,	INDE _										
F	-		。。。。。。。。。。。。。。。。。。。。。。。。。。。。。。。。。。。。。。	& white, calcareous.	2202 4	-								-	-
		SC	ڔ؞؞ڔ؞؞ڔ؞؞ڔ؞؞ڔ؞؞ڔ؞؞ڔ؞؞ڔ؞؞ڕ؞؞ڕ؞؞ڕ؞؞ڕ؞؞ڕ؞ ^و ؞ڔ؞؞ڔ؞؞ڔ؞؞ڔ؞؞ڔ؞؞ڔ؞؞ڔ؞؞ڔ؞؞ڔ؞؞ڕ؞؞ڕ؞؞ڕ؞؞ڕ؞؞	CALICHE, with SAND, dry to moist, non-plastic, poorly consolidated, no visible bedding, white & light-greenish-gray.	3303.4	-									-
PLATE.GDT 8/5/24		SC	<u>૾ૢૢૢૼ૾ૺૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢ</u>		-	-								-	-
	_	SC		CALICHE, dry, non-plastic when moistened, very dense, no	3286.4	-									-
24 PER	20 -	SPT		visible bedding, white.	-	-	50/1"							-	-
PERMIT (2023).GPJ MLF - 202	- - - 25 -				-	-								-	-
MLF - BOREHOLE LOG MLF -	_	SC			3275.4	-								-	-

		Weave Consul	r Itants	LOG OF BORING NO. WCG-20 Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supe Logg Drill	ervising ( ging Geo ling Firm	Geolo logist	gist: 1	Aaror DS Envir	n K.	Evar	ns, P.G	i. Paj	ge 2 of 4
		Group		Project No: 0120-809-11-05		Fiel	d Tests			La	lbora	tory	Tests		
	Jepth (ft)	sample Type and Interval	Graphic Log	Boring Start Date:       8/6/2023       Northing (State Plane): 71806.         Boring End Date:       8/6/2023       Easting (State Pane):       842036         Ground Elevation at Time of Drilling:       3305.36 ft-msl         Top of Well Casing Datum Elevation:       ft-msl         Remarks:       Borehole drilled and continuously sampled via dry som         drilling techniques.       Borehole plugged with high solids         bentonite grout upon completion of drilling.       Static         groundwater elevation gauged September 2023.       ¥         = First Water Encountered at Time of Drilling:       3237.9 ft-m         ¥       = Second Water Encountered at Time of Drilling:       3215.4 ft-m	36.28 6.62 ic nsl nsl	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
-	-	01		CALICHE, with SAND, dry to moist, non-plastic, very dense,	MSL										
-	-	SC		no visible bedding, white & light-greenish-gray.	-	-								-	-
- ;	35 -				-	-									-
_	-	SC			-	-									-
-	- 40 -				-	-	50/21								-
_	-	SPT	<u></u>		-	-	50/3"								-
_	-	SC			-	-								•	-
15/24	45 -				-	-								-	-
	-	SC				-									-
	_				-	-									-
2024 PER	50 -		۵ ۵ ۵ ۵ ۵ ۵ ۵ ۵ ۵ ۵			-									
).GPJ_MLF -	_				3252.4	- 4.5+								-	-
MIT (2023	-	SC		SAND, with SILT, gravelly, dry to moist, non-plastic, medium dense to very dense, no visible bedding, light-reddish-brown & white, calcareous.		-									+
	55 -		>		-	-									-
	-	SC	<pre></pre>			- - 4.5+								-	-
MLF - BOR	_	50	<pre></pre>		-	-		53.5	17.4					-	-

1		Weave	r	LOG OF BORING NO. WCG-20		Supe	ervising	Geolo	gist:	Aaror	ı K.	Evai	ns, P.C	Ĵ. De	~~ 2 of 4
		Consu	ltants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Logg Drill	ging Geo ling Firm	ologist i:		DS Envir	onm	enta	l Wor	ks Pa	ge 3 of 4
		Jroup		Project No: 0120-809-11-05		Fiel	d Tests			La	lbora	tory	Tests		
	Depth (ft)	ample Type and Interval	iraphic Log	Boring Start Date: 8/6/2023       Northing (State Plane): 71806         Boring End Date: 8/6/2023       Easting (State Pane): 84203         Ground Elevation at Time of Drilling: 3305.36 ft-msl         Top of Well Casing Datum Elevation: ft-msl         Remarks: Borehole drilled and continuously sampled via dry son drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023.         ♥ = First Water Encountered at Time of Drilling: 3237.9 ft-r         ♥ = Second Water Encountered at Time of Drilling: 3215.4 ft-r	36.28 6.62 ic nsl sl	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
+	<u>п</u> _	S		SAND, with SILT, gravelly, dry to moist (continued).	MSL		20								
+	_	SPT	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		-	-	46								-
		SC				-	30/3							-	-
-	_		* • • • • • • • • • • •	SAND, with SILT, trace clay, moist to wet, non-plastic to low	-	_								-	
-	_			plasticity, soit, no visiole bedding, nght-readisi-brown.	-	-									-
	70 -				3235.4										-
ATE.GDT 8/5/24	- - 75 - -	SC		non-plastic, poorly consolidated, no visible bedding, light-reddish-brown & white, calcareous.		-								-	-
- PL	-	CDT	●		3226.9		34								-
	-	581		SAND, with SILT, trace clay, dry to moist, non-plastic to low plasticity, dense to very dense, no visible bedding,	-	-	50/2"							-	-
24 PER	80 -	SC		light-reddish-brown. SAND, with SILT, clavey, dry to moist, non-plastic to low	3225.4	2.25									-
F - 202	-		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	plasticity, hard, no visible bedding, light-reddish-brown.	-	-								-	-
	-		* • • • • • • • • • • • • • • • • •		-	-									-
23).GF	-		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		-	_									-
11 (20	-				-	-								-	-
- PERN	85 -	SC	* * * * * * * * * * * * * * * *		-	4.5+									-
MLF.	-				-	-									-
	_		* * * * * * * * * * * * * * * * *		-	-								-	-
HOLE	_		* * * * * * * * * * * * * * *			-									-
BORE	_				.	-								-	-
MLF			* * * * * * * * * * * * * * * * * *		3215.4										Ţ
(	COPY	/RIGE	T © 2	024 WEAVER CONSULTANTS GROUP LLC. ALL RIGHTS F	RESER	VED									

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	Weave Consu	r ltants	LOG OF BORING NO. WCG-20 Project Title: Meadow Landfill - 2023 Subsurface Investigation	Geolo logist ::	gist: . t:	Aaroı DS Envir	n K.	Evar enta	ns, P. l Wo	G. Pa rks	ge 4 of 4			
	Group		Project No: 0120-809-11-05		Field	d Tests			La	lbora	tory	Test	s	
	iterval		Boring Start Date:8/6/2023Northing (State Plane): 71806Boring End Date:8/6/2023Easting (State Pane): 84203Ground Elevation at Time of Drilling:3305.36 ft-mslTop of Well Casing Datum Elevation:ft-msl	36.28 6.62	r Test (tsf)	/6-inches	o. 200	Content					sec)	served
(t)	Type and In	: Log	<ul> <li>Remarks: Borehole drilled and continuously sampled via dry son drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023.</li> <li>V = First Water Encountered at Time of Drilling: 2227.0 A.</li> </ul>	10	Penetromete	ation Blows	tt Passing No	t Moisture C	ensity (pcf)	Limit	Limit	ity Index	ability (cm/s	idwater Ob of Drilling
pth (	nple	aphic	$\mathbf{Y}$ = Second Water Encountered at Time of Drilling: 3215.4 ft-r	nsl	and ]	enetr	ercen	ercen	Ŋ	biup	astic	astic	srme	rour
De	Sar	Ğ	Description	FT MSL	Н	P(	Pe	Pe	D	Ξ	ΡI	PI	Pe	36
			SAND, with SILT, trace clay, moist to wet, non-plastic to low plasticity, soft, no visible bedding, light-reddish-brown.											
	7			-	1.5									Ī
-	1			3212.9	-									+
-	-		plasticity, hard, no visible bedding, light-reddish-brown.	-	-									+
-	-			-	-									-
- 95	-			-	-									-
_				-	-									-
				3208.4										-
			CLAY, trace sand, intermixed, dry to moist, medium plasticity, firm to hard, dark-reddish-brown, gray &											
	7		reddish-yellow, with iron stains.		-									
-	1			-	4.5+		84.2	26.2	93.3		30	51	$5.2 \times 10^{-9}$	†
-100	-			-	-									+
-	-			-	-									+
_			Total Borehole Depth = 102'	3203.4										-
_	_			-	-									+
					_									
105														
201	7				-									
	1			-	-									†
	1			-	-									+
	-			-	-									-
	-			-	-									-
ਸ –110	-			-	-									-
2024	_			-	-									-
MLF					_									
GPJ.														
2023)	1			-	-									†
	1			-	-									†
#-115	-			-	-									+
MLF -	-			-	-									+
	-			-	-									
HOLE				-	_									
BORE														
1 1 1	7				-									T I
∠ COF	YRIGH	IT © 2	1 2024 WEAVER CONSULTANTS GROUP LLC. ALL RIGHTS F	ESER	VED		1	I	I	I				L

	Weave	r	LOG OF BORING NO. WCG-21		Supe	ervising (	Geolo	gist: .	Aaror	n K. 1	Evar	is, P.G	D	1 62
	Consu	ltants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Log Drill	ging Geo ling Firm	logist i:	: ]	DS Envire	onm	ental	Work		ge 1 of 3
	Group		Project No: 0120-809-11-05		Fiel	d Tests			La	bora	tory	Tests		
Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date:       8/11/2023       Northing (State Plane): 71800         Boring End Date:       8/11/2023       Easting (State Pane):       83896         Ground Elevation at Time of Drilling:       3311.73 ft-msl         Top of Well Casing Datum Elevation:       ft-msl         Remarks:       Borehole drilled and continuously sampled via dry son drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023.         ♥ = First Water Encountered at Time of Drilling:       Not Observertion         Description       Description	40.83 6.21 ic ved ved FT MSL	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
			SAND, with SILT, dry, non-plastic when moistened, poorly consolidated, no visible bedding, brown.		_									
	SC	۵ ۵ ۵ ۵ ۵ ۵ ۵ ۵ ۵ ۵ ۵ ۵ ۵ ۵ ۵ ۵ ۵ ۵ ۵	CALICHE, with SAND, dry, non-plastic when moistened, poorly consolidated, no visible bedding, pinkish-white.	3308.7	-								-	-
- 5			SAND, with SILT, gravelly, dry, non-plastic when moistened,	5500.7										-
	_		no visible bedding, light-reddish-brown & pinkish-white, calcareous.	3304.7	-									-
- 10	SC		SAND, with CALICHE, silty, dry, non-plastic when moistened, no visible bedding, pinkish-white, light-greenish-gray & reddish-yellow.		-								-	-
+7/00	-	, , , , , , , , , , , , , , , , , , ,	SAND, with SILT, gravelly, dry, non-plastic when moistened, no visible bedding, light-reddish-brown & pinkish-white, calcareous.	3295.7	-								-	-
	SC		CALICHE, sandy, dry, non-plastic when moistened, hard, no visible bedding, white & pinkish white.	3291.7	-								-	-
	SPT		SAND, with CALICHE, dry to moist, non-plastic, dense to very dense, no visible bedding, pinkish-white to pink.			41 50/2"								
	-		,,	-	- - -	50/2							-	-
- 25 - 25 - 100 MILL -	SC			-	-									-
				-	-								-	-

		Weaver		LOG OF BORING NO. WCG-21		Supe	ervising	Geolo	gist: A	Aaron	n K.	Evar	ns, P.G		
		Consul	tants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Log Drill	ging Geo ing Firm	ologist 1:	: ]	DS Envire	onm	enta	Work	s Pa	ge 2 of 3
		Group		Project No: 0120-809-11-05		Fiel	d Tests			La	bora	tory	Tests		
	Jepth (ft)	ample Type and Interval	Jraphic Log	Boring Start Date: 8/11/2023       Northing (State Plane): 71800-         Boring End Date: 8/11/2023       Easting (State Pane): 838960         Ground Elevation at Time of Drilling: 3311.73 ft-msl         Top of Well Casing Datum Elevation: ft-msl         Remarks: Borehole drilled and continuously sampled via dry somidrilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023.         ♥ = First Water Encountered at Time of Drilling: Not Observ         ♥ = Second Water Encountered at Time of Drilling: Not Observ	40.83 5.21 c /ed FT	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
╞		<u>v</u>		SAND, with CALICHE, dry to moist (continued).	MSL										
		SC		CALICHE, with SAND, dry, non-plastic when moistened, hard, no visible bedding, pinkish-white.	3279.2	-								-	-
	- 33 -														
		SC		CALICHE, sandy, with Chert, dry, non-plastic when moistened, hard, no visible bedding, white & pinkish-white.	3275.2 - - 3272.7	-								-	-
	10			CALICHE, with SAND, dry, non-plastic when moistened, loose to very dense, no visible bedding, pinkish-white.											
0T 8/5/24		SPT SC			-	-	7 50/3"							-	-
ERMIT TEMPLATE.GC		SC			-	-									-
AIT (2023).GPJ MLF - 2024 PI	- 50 -  				-	-								-	-
LOG MLF - PEKN	- 55 -	SC			- 3254.7	-								-	-
MLF - BOREHOLE				SAND, with SILT, trace clay, trace gravel, dry, non-plastic to low plasticity when moistened, no visible bedding, light-reddish-brown & pinkish-white, calcareous.	-	-									-

		Weaver Consul	r Itants	LOG OF BORING NO. WCG-21 Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supe Logg Drill	ervising ( ging Geo ling Firm	Geolo logist	gist: .	Aaror DS Envir	n K. I	Evar	ns, P.G I Work	Pa	ge 3 of 3
		Group		Project No: 0120-809-11-05		Fiel	d Tests			La	bora	tory	Tests		
	Depth (It)	Sample Type and Interval	Graphic Log	Boring Start Date: 8/11/2023       Northing (State Plane): 71800         Boring End Date: 8/11/2023       Easting (State Pane): 83896         Ground Elevation at Time of Drilling: 3311.73 ft-msl         Top of Well Casing Datum Elevation: ft-msl         Remarks: Borehole drilled and continuously sampled via dry son drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023.         ♥ = First Water Encountered at Time of Drilling: Not Obser         ♥ = Second Water Encountered at Time of Drilling: Not Obser         Description	40.83 6.21 ic ved ved FT MSL	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
				SAND, with SILT, dry (continued).											
	- - 55 -	SC		SAND, with SILT, clayey, gravelly, dry, non-plastic to low plasticity when moistened, medium dense to very dense, no visible bedding, light-reddish-brown & pinkish-white, calcareous.	3248.2	- - - -								- - - - -	-
_	_	SPT	<pre></pre>		-	-	20 40 50/3"								-
-	-	SC	• • • • • • • • • • • • • • • • • • •		-	-									-
- 7	70 -			Total Borehole Depth = 70'	3241.7										-
23).GPJ MLF - 2024 PEKNII I EMPLATE.GDT 8/3/24						-								•	- - - - - - -
	_				-	-									-
¦⊢ 8	35 -					-									+
⊒ ⊑ 						-									
	_					-									-
	_				-	-								-	-

	Weave	r	LOG OF BORING NO. WCG-22		Supe	ervising	Geolo	gist:	Aaror	n K. 1	Evan	ıs, P.G.	n	1 64
	Consul	tants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Logg Drill	ging Geo ling Firm	ologist i:	:	DS Envir	onm	ental	Work		ge I of 4
	Group		Project No: 0120-809-11-05		Field	d Tests		-	La	bora	tory	Tests		
Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date:       8/8/2023       Northing (State Plane): 718001         Boring End Date:       8/8/2023       Easting (State Pane):       839980         Ground Elevation at Time of Drilling:       3309.41 ft-msl         Top of Well Casing Datum Elevation:       ft-msl         Remarks:       Borehole drilled and continuously sampled via dry sonid drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023. <ul> <li>First Water Encountered at Time of Drilling:</li> <li>3210.9 ft-m</li> <li>Description</li> </ul>	17.37 ).11 c nsl nsl FT MSL	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
		* * * * * * * * * * * * * * * * * * * *	SAND, with SILT, dry to moist, non-plastic, poorly consolidated, no visible bedding, light-reddish-brown											
  - 5 - 	SC		CALICHE, with SAND, trace clay, dry, non-plastic when	- - - 3302.9	-								- - - - -	- - - -
	_		moistened, medium dense to very dense, no visible bedding, pinkish-white & white.	-	-								-	-
- 10 -  	-			-	-								-	- - -
	sc	<u>૾ૢૼ૾૾ૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢ</u>		-	-								-	-
t - 20 -	SPT			-	-	25							-	-
	SC				-	50/2"	46.1	8.2			19	31	-	+ + + +
				-	-								-	-

		Weaver	ſ	LOG OF BORING NO. WCG-22		Supe	ervising	Geolo	gist:	Aaror	n K.	Evar	ns, P.	G.	2.54
		Consul	tants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Logg Drill	ging Geo ling Firm	ologisi 1:	:	DS Envir	onm	enta	l Woi	ks Pa	ge 2 of 4
		Group		Project No: 0120-809-11-05		Field	d Tests			La	bora	tory	Test	5	
	Jepth (ft)	ample Type and Interval	iraphic Log	Boring Start Date: 8/8/2023       Northing (State Plane): 718001         Boring End Date: 8/8/2023       Easting (State Pane): 839980         Ground Elevation at Time of Drilling: 3309.41 ft-msl         Top of Well Casing Datum Elevation: ft-msl         Remarks: Borehole drilled and continuously sampled via dry sonid drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023. <ul> <li>First Water Encountered at Time of Drilling: 3239.4 ft-msl</li> <li>Second Water Encountered at Time of Drilling: 3210.9 ft-msl</li> </ul>	.7.37 ).11 c sl sl FT	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
-		SC SC		CALICHE, with SAND, dry (continued).	MSL										
	· 35 - · · · · · · · · · · · · · · · · · ·	SC	<u> </u>		-	-								-	- - - - -
	- 40 -	SPT			-	-	20							-	-
ATE.GDT 8/5/24	  - 45 - 	SC		SAND, with SILT, gravelly, dry, non-plastic when moistened, medium dense to very dense, no visible bedding, light-reddish-brown & pinkish-white, calcareous.	3267.9 - - - -	-	50.4*							- - - - - - - - -	- - - -
J MLF - 2024 PERMIT LEMPL		SC			- - - 3256.9	-								-	- - -
	 - 55 - 	SC		CALICHE, dry, non-plastic when moistened, poorly consolidated, no visible bedding, white.	- - 3252.9	-								-	-
	 			SAND, with SILT, trace clay, trace gravel, dry to moist, non-plastic, medium dense to very dense, no visible bedding, light-reddish-brown & pinkish-white, calcareous.	-	-								-	-

	Weave Consu	r ltants	LOG OF BORING NO. WCG-22 Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supe Logg Drill	ervising ( ging Geo ling Firm	Geolo logis 1:	gist: t:	Aaror DS Envir	n K. onm	Evai ienta	ns, P.C 1 Work	Pa	ge 3 of 4
	Group		Project No: 0120-809-11-05		Field	d Tests			La	lbora	atory	Tests		
	ype and Interval	go	Boring Start Date:8/8/2023Northing (State Plane): 718001Boring End Date:8/8/2023Easting (State Pane): 839980Ground Elevation at Time of Drilling:3309.41 ft-mslTop of Well Casing Datum Elevation:ft-mslRemarks:Borehole drilled and continuously sampled via dry soniddrilling techniques.Borehole plugged with high solidsbentonite grout upon completion of drilling.Staticgroundwater elevation gauged September 2023.	7.37 0.11	netrometer Test (tsf)	ion Blows/6-inches	Passing No. 200	Moisture Content	sity (pcf)	imit	imit	y Index	ility (cm/sec)	water Observed ? Drilling
h (ft)	ole T	hic I	▼ = First Water Encountered at Time of Drilling: 3239.4 ft-m ▼ = Second Water Encountered at Time of Drilling: 3210.9 ft-m	sl	nd Pe	etrati	cent ]	cent ]	Den	uid L	stic L	sticity	meab	ound ne of
Dept	Samj	Grap	Description	FT MSL	Har	Pen	Per	Per	Dry	Liq	Plas	Plas	Pen	Grc Tin
	-		SAND, with SILT, dry to moist (continued).	MDL		17								
-				-	-	43 50/3"								+
-	_			-	- - 4.5+ -									-
- 65		• • • • • • • • • • • • • • • • • • • •		-	-4.5+									+
		<pre></pre>		-										-
_	-			-	- - 4.5+ -									-
- 70			becomes majet to wet from 70' to 72'	3239.4										<b>₽</b>
_	_			-	-									-
-	-	• • • • • • •	becomes maint below 72'	3237.4										+
_	_	<ul> <li>○</li> <li>○</li>&lt;</ul>	- becomes moist below 72.	-	-									-
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			024 WEAVER CONSULTANTS GROUP LLC ALL RIGHTS R	FSFR	VFD									

		Weaver Consul	r tants	LOG OF BORING NO. WCG-22 Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supe Logg Drill	ervising ( ging Geo ing Firm	Geolo logist	gist: /	Aaror DS Envir	n K.	Evar enta	ns, P.o	G. Pag	ge 4 of 4
		Fronb		Project No: 0120-809-11-05		Field	d Tests			La	bora	ıtory	Tests	s	
	Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date:       8/8/2023       Northing (State Plane): 71800         Boring End Date:       8/8/2023       Easting (State Pane):       839980         Ground Elevation at Time of Drilling:       3309.41 ft-msl         Top of Well Casing Datum Elevation:       ft-msl         Remarks:       Borehole drilled and continuously sampled via dry sonidrilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023. <ul> <li>First Water Encountered at Time of Drilling:</li> <li>3229.4 ft-m</li> <li>Escond Water Encountered at Time of Drilling:</li> <li>3210.9 ft-m</li> </ul>	17.37 ).11 c nsl nsl	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
-		•1		SAND, with SILT, moist (continued).	MSL										
	  - 95 - 				-	-								-	- - - -
	· 100- · ·	SC		SAND, with SILT, clayey, moist to wet, non-plastic, poorly consolidated, no visible bedding, light-reddish-brown & pinkish-white.	3210.9	- - - - - - -		42.2	15.0						· · · · · · · · · · · · · · · · · · ·
APLATE.GDT 8/5/24	· _				- - 3200 Q	4.5+								-	-
MLF - 2024 PERMIT TEN	- 110-	SC		CLAY, dry to moist, medium to high plasticity, very stiff to hard, no visible bedding, gray, yellowish-red, strong-red & light-reddish-brown.	-	4.5+		99.5	22.0	105.9		20	53	- - 1.1x10 ⁻⁹	-
PERMIT (2023).GPJ	  - 115-			Total Borahola Danth = 115'	3194.4	- 4.5+									-
MLF - BOREHOLE LOG MLF -	 				-	-								-	-

	W	leaver	ſ	LOG OF BORING NO. WCG-23		Supe	ervising	Geolo	gist:	Aaror	n K. 1	Evar	ns, P.G	.	1 60
	Co	onsul	tants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Logg Drill	ging Geo ling Firm	ologist i:	: ]	DS Envir	onm	ental	Work	s Pa	ge 1 of 2
	G	roup		Project No: 0120-809-11-05		Field	d Tests			La	bora	itory	Tests	5	
				Boring Start Date: 8/8/2023 Northing (State Plane): 717999	95.47										
				Boring End Date: 8/8/2023 Easting (State Pane): 84101	2.85	(tsf)	es								-53
		rval		Ground Elevation at Time of Drilling: 3297.27 ft-msl Top of Well Casing Datum Elevation: ft-msl		ſest (	inch	200	ntent						IVec
		Inte		Remarks: Borehole drilled and continuously sampled via dry soni	ic	ter ]	-9/sv	No.	c Col	G				u/sec	)bse 1g
		and		drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static		rome	Blov	sing	istur	/ (bc	it	it	dex	y (cr	ter ( rillin
Ę.		Type	Log	groundwater elevation gauged September 2023.		enet	tion	t Pas	t Mo	insity	Lim	Lim	ity In	abilit	dwa of D
th (f		nple	phic	$\Psi$ = First water Encountered at Time of Drilling: Not Observ $\Psi$ = Second Water Encountered at Time of Drilling: Not Observ	ved ved	I put	netra	rcen	rcen	y De	quid	astic	astic	rmea	o onn
Det		San	Gra	Description	FT MSL	Η	Pe	Pe	Pe	D	Li	Ρl	Pl	Pe	Ξï
			。。。。。。。。。。 。。。。。。。。。。。。。。。。。。。。。。。。。。。	SAND, with SILT, dry to moist, non-plastic, loose, no visible bedding, dark-reddish-brown & red.											
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-			× • • • • • • • • • • • • • • • • • • •		3294 3	-								-	-
-	1			CALICHE, sandy, trace clay, dry, non-plastic when	5271.5										-
-	-			white.		-									-
- 5	-	SC			-	-									-
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	Weave	ſ	LOG OF BORING NO. WCG-23		Supe	ervising (	Geolo	gist: /	Aaror	n K. 1	Evar	ıs, P.G	Pa	ge 2 of 2
	Consul	ltants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Drill	ing Firm	1:	. ]	Envir	onm	ental	Work	s	502012
	Gloup		Project No: 0120-809-11-05		Field	d Tests			La	bora	tory	Tests		
Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date:       8/8/2023       Northing (State Plane): 717999         Boring End Date:       8/8/2023       Easting (State Plane): 841012         Ground Elevation at Time of Drilling:       3297.27 ft-msl         Top of Well Casing Datum Elevation:       ft-msl         Remarks:       Borehole drilled and continuously sampled via dry sonid drilling techniques.         Borehole drilled and continuously sampled via dry sonid groundwater elevation gauged September 2023.         ¥       = First Water Encountered at Time of Drilling:       Not Observer         ¥       = Second Water Encountered at Time of Drilling:       Not Observer         Description       Description	ed ed FT MSL	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
			CALICHE, sandy, dry (continued).											
- - - 35	SC -			-	-								- - - -	- - -
-	-		SAND with SILT with caliche dry to moist non-plastic	3261.3										-
40	SC		medium dense, no visible bedding, light-reddish-brown & white.	-	-									-
-	– SPT	• • • • • • • • • • • • • • • • • • •		-	-	12 17 23	41.2	15 1						-
	- - - SC -			-	-		41.2	13.1					- - - - - - - - - -	-
H - 50	-	• • • • • • • • • • • • • • • • •		-	-									-
	SC		- becomes moist below 53'.	- - - 3240.3	-								-	- - - -
Ę			Total Borehole Depth = 57'											
20Ker	]			-										
	]													

		Neaver		LOG OF BORING NO. WCG-24		Supe Logg	ervising ( ging Geo	Geolo	gist: .	Aaror DS	n K.	Evar	ns, P.G	Pa	ge 1 of 3
		Consul	tants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Drill	ing Firm	1:		Envir	onm	enta	l Worl	is is	501010
		JIOUP		Project No: 0120-809-11-05		Field	d Tests			La	lbora	tory	Tests		
	Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date: 7/11/2023       Northing (State Plane): 71799         Boring End Date: 7/11/2023       Easting (State Plane): 84200         Ground Elevation at Time of Drilling: 3302.23 ft-msl       Top of Well Casing Datum Elevation: ft-msl         Remarks: Borehole drilled and continuously sampled via dry son drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023.	87.21 2.01 ic nsl ved FT MSL	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
				SAND, silty, moist, non-plastic, poorly consolidated, no	WISL										
				visible bedding, brown to light brown, calcareous, friable.	-	-								-	-
	  - 5 -	SC		CALICHE, silty, trace sand, dry, non-plastic when moistened, loose, no visible bedding, pinkish-white to white.	3300.2	-									-
				SANDSTONE, silty, gravelly, dry, non-plastic when		-								-	-
				calcareous.		-								-	-
			• ] • [ • ] • • ] • [ • ] • • ] • [ • ] • • ] • [ • ] •		-	-								-	-
					-	-								-	-
LATE.GDT 8/5/24	 - 15 - 	SC				-								-	-
IT TEMP						-								-	-
ERN-	- 20 -					-								-	-
PJ MLF - 2024					-	-								-	-
T (2023).G		SC			·	-								-	-
	- 25 -				3277.2										
3 MLF - F				CALICHE, dry, non-plastic when moistened, very dense, white.		-								-	-
ЫЧ					.	-								-	-
OREHOL						-								-	-
MLF - B						_								-	-

		Neaver		LOG OF BORING NO. WCG-24		Supe	ervising	Geolo	gist:	Aaror	ı K.	Evar	ns, P.	G	2.52
		Consul	tants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Logg Drill	ging Geo ling Firm	ologisi i:	t: ]	DS Envir	onm	enta	l Woi	ks Pa	ge 2 of 3
		Group		Project No: 0120-809-11-05		Fiel	d Tests			La	bora	tory	Test	5	
	epth (ft)	ample Type and Interval	raphic Log	Boring Start Date: 7/11/2023       Northing (State Plane): 71799         Boring End Date: 7/11/2023       Easting (State Pane): 84200         Ground Elevation at Time of Drilling: 3302.23 ft-msl         Top of Well Casing Datum Elevation: ft-msl         Remarks: Borehole drilled and continuously sampled via dry soni         drilling techniques. Borehole plugged with high solids         bentonite grout upon completion of drilling. Static         groundwater elevation gauged September 2023. <ul> <li>First Water Encountered at Time of Drilling: 3254.2 ft-m</li> <li>Second Water Encountered at Time of Drilling: Not Observer</li> </ul>	87.21 2.01 c nsl /ed FT	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
+		SC	000	CALICHE, dry (continued).	MSL										
_		SPT SC				-	50/2"								-
				CALICHE, trace sand, dry, non-plastic when moistened, poorly consolidated, pinkish-white & white.											
-	- 40 -			SAND, with SILT, trace clay, trace gravel, moist, non-plastic,	3262.2	-									-
	-	SC		poorly consolidated, no visible bedding, brown, calcareous.	- 3259.2	-									-
-	-			SILTSTONE, trace clay, trace sand, trace gravel, dry, non-plastic to low plasticity when moistened, hard, no visible bedding, brown, calcareous.	3258.2	4.5+								-	F
8/5/24	45 -			SILTSTONE, clayey, sandy, gravelly, intermixed, moist to dry, non-plastic to low plasticity, hard, brown, calcareous.	- 3256.2	4.5+									-
LATE.GDT	-	SC		SAND, silty, trace clay, moist, non-plastic, loose, no visible bedding, brown.	- 3254.2	-									-
PERMIT TEMF	- 50 -			SAND, trace silt, wet, non-plastic, poorly consolidated, no visible bedding, brown.	-	-									-
3).GPJ MLF - 2024	-				3249.2	-									-
OREHOLE LOG MLF - PERMIT (2025	- 55 - - -	SC		SAND, silty, trace clay, trace gravel, dry, non-plastic when moistened, loose to very dense, no visible bedding, brown & white, calcareous.	-	- 4.5 								· · ·	-
MLF - B	_				-	_									-

	Weave Consu Group	er ltants	LOG OF BORING NO. WCG-24 Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supe Logg Drill	ervising ( ging Geo ing Firm	Geolog logist: :	gist: / : I I	Aaron DS Enviro	K. H	Evan ental	is, P.G. Works	Pa	ge 3 of 3
Depth (ft)	Sample Type and Interval	Graphic Log	Project No: 0120-809-11-05         Boring Start Date: 7/11/2023       Northing (State Plane): 717998'         Boring End Date: 7/11/2023       Easting (State Plane): 842002.         Ground Elevation at Time of Drilling: 3302.23 ft-msl         Top of Well Casing Datum Elevation: ft-msl         Remarks: Borehole drilled and continuously sampled via dry sonic drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023.	7.21 .01	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit Kio	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
_	SPT		SAND, silty, dry (continued).	3241.2	- 4.5	8 50/5"								-
- 65	-			-	-								-	-
- 70	-			-	-								-	-
2/54  2/54	-			-	-								-	-
ERMIT TEMPLATE.GDT 8	-			-	-								-	-
2023).GPJ MLF - 2024 PE	-			-	-								-	-
- E LOG MLF - PEKMIT (2	-			+ + + +	-								-	-
MLF - BOREHOL	_			-	-								-	-

		Neave	r	LOG OF BORING NO. WCG-25		Supe	ervising (	Geolo	gist:	Aaror	<b>K</b> . 1	Evan	is, P.C	J.	1 62
		Consul	ltants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Logg Drill	ging Geo ing Firm	logist :	:	DS Envir	onm	ental	Wor	raj raj	ge 1 of 3
		Group		Project No: 0120-809-11-05		Field	d Tests			La	bora	tory	Tests		
	pth (ft)	mple Type and Interval	aphic Log	Boring Start Date: 7/11/2023       Northing (State Plane): 71793;         Boring End Date: 7/11/2023       Easting (State Pane): 84101;         Ground Elevation at Time of Drilling: 3293.34 ft-msl         Top of Well Casing Datum Elevation: ft-msl         Remarks: Borehole drilled and continuously sampled via dry sonidrilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023. <ul> <li>First Water Encountered at Time of Drilling: 3233.3 ft-m</li> <li>Second Water Encountered at Time of Drilling: 3220.3 ft-m</li> </ul>	54.45 2.89 ic nsl	(and Penetrometer Test (tsf)	enetration Blows/6-inches	ercent Passing No. 200	ercent Moisture Content	ry Density (pcf)	iquid Limit	lastic Limit	lasticity Index	ermeability (cm/sec)	iroundwater Observed ime of Drilling
	Ď	Sa	5 • • • • •	Description	F1 MSL	H	d	Р	Р	D	Γ	Р		<u>а</u>	- 10
	  - 5 -  	SC		SAND, silty, dry, non-plastic when moistened, loose, no visible bedding, brown to dark-brown, calcareous. SAND, silty, gravelly, dry to moist, non-plastic, poorly consolidated, no visible bedding, very-pale-brown, calcareous.		-								-	-
	- 10 -			CALICHE, with calcite seams, interbedded, dry, non-plastic when moistened, hard, very thinly to moderately bedded, white.	3282.8	-									-
ERMIT TEMPLATE.GDT 8/5/24	- 15 - - 15 -  	SC		SAND, with CALICHE, with calcite seams, interbedded, dry, non-plastic when moistened, poorly consolidated, very thinly to moderately bedded, white to pinkish-white.	3279.8	-								- - - - - - -	- - - -
PERMIT (2023).GPJ MLF - 2024 PE	- 20	SC		CALICHE, trace calcite, dry, non-plastic when moistened, hard, no visible bedding, white.	-	-								-	- - -
				SAND with SIIT day non-plastic when resistened as the	3265.8	-								-	-
MLF - BOREHC			• • • • • • • • • • • • • • • • • • •	consolidated, no visible bedding, light-brown to brown & white, calcareous.	-	-								-	-

	Weaver		to LOG OF BORING NO. WCG-25			ervising (	Geolo	gist:	Aaror	n K. 1	Evar	ıs, P.G		0
	Consul	tants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Logg Drill	ging Geo ing Firm	logist :	: ]	DS Envir	onm	ental	Work	s Pag	ge 2 of 3
	Group		Project No: 0120-809-11-05		Field	d Tests			La	bora	tory	Tests	-	
epth (ft)	ample Type and Interval	raphic Log	Boring Start Date:       7/11/2023       Northing (State Plane):       7/179354         Boring End Date:       7/11/2023       Easting (State Pane):       841012.         Ground Elevation at Time of Drilling:       3293.34 ft-msl         Top of Well Casing Datum Elevation:       ft-msl         Remarks:       Borehole drilled and continuously sampled via dry sonic drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023.         ♥       = First Water Encountered at Time of Drilling:       3233.3 ft-mss         ♥       = Second Water Encountered at Time of Drilling:       3220.3 ft-mss	4.45 89 \$1 \$1	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Fime of Drilling
<u> </u>	Ň		- becomes dry to moist below 30.5'	MSL				_			_	_		<b>.</b>
- 35	SC	••••••••••••••••••••••••••••••••••••••	3 SAND, with SILT, dry (continued). SAND, silty, moist, non-plastic, hard, no visible bedding, brown, calcareous.		- - - 2.5 - - - - - -		63.1	24.4					- - - - - - - - - - - - - - - - - 	- - - -
	sc		3 SAND, with CALICHE, dry, non-plastic when moistened,	- - - - - - - - - - - - - - - - - - -	- 4.0 								-	-
	-		hard, no visible bedding, brown, calcareous.	-	-								-	-
300KEHOLE LOG MLF - PEKMII (2023).6PJ MLF - 2024 PEK	sc		3 SAND, silty, trace clay, moist, non-plastic, firm to hard, no visible bedding, light-reddish-brown.		- - - - - -								- - - - - - - - - - - - - - - - - - -	- - - -
					4.0									V

		Weave	r	LOG OF BORING NO. WCG-25		Supe	ervising	Geolo	gist:	Aaror	n K.	Evai	ns, P	.G.	2 62
		Consul	ltants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Log Drill	ging Geo ling Firm	ologist n:	t: ]	DS Envir	onm	enta	l Wo	rks Pag	ge 3 of 3
		Group		Project No: 0120-809-11-05		Fiel	d Tests			La	bora	tory	Test	ts	
	Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date: 7/11/2023       Northing (State Plane): 717935         Boring End Date: 7/11/2023       Easting (State Pane): 841012         Ground Elevation at Time of Drilling: 3293.34 ft-msl         Top of Well Casing Datum Elevation:       ft-msl         Remarks: Borehole drilled and continuously sampled via dry soni         drilling techniques. Borehole plugged with high solids         bentonite grout upon completion of drilling. Static         groundwater elevation gauged September 2023. <ul> <li>First Water Encountered at Time of Drilling: 3223.3 ft-m</li> <li>gescend Water Encountered at Time of Drilling: 3220.3 ft-m</li> </ul>	54.45 2.89 c nsl sl	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
	-	01		SAND, silty, moist (continued).	MSL										
		SC	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	<ul> <li>becomes dry to moist below 62.5'.</li> <li>7" siltstone seam at 63.5'.</li> </ul>	-	- 2.75								-	- - - -
-	/0 = - -			- becomes moist to wet from 73' to 75.5'.	3220.3	-									- - - <u>¥</u>
EKMII IEMPLAIE.GUI 8/5/24	75 - - - - - - -	SC			3217.8	- 4.5+ -									-
PU MLF - 2024 P	- 80				3210.8	- 4.5+								-	-
PERMIT (2023).(	- 85 -	SC		- becomes wet below 82.5'.	- - 3207.8	- 3.5								-	-
- BOREHOLE LOG MLF	-			CLAY, moist, medium to high plasticity, hard, laminated, gray, dusky-red & yellow.	-   - -	-		98.6	19.2	109.3		27	36	- - 4.0x10 ⁻¹⁰ -	- -
۲ ۲				Total Borehole Depth = 90'	3203.3										

	V	Veaver		LOG OF BORING NO. WCG-26		Supe	ervising (	Geolo	gist:	Aaror	n K. 1	Evar	is, P.C	J.	
	C	onsul	tants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Logg Drill	ging Geo ling Firm	logist i:	t: ]	DS Envir	onm	ental	Wor	Pag ks	ge 1 of 3
	G	froup		Project No: 0120-809-11-05		Field	d Tests			La	bora	itory	Tests		
Depth (ft)		Sample Type and Interval	Graphic Log	Boring Start Date: 7/10/2023       Northing (State Plane): 717760         Boring End Date: 7/10/2023       Easting (State Plane): 840044         Ground Elevation at Time of Drilling: 3288.27 ft-msl         Top of Well Casing Datum Elevation: ft-msl         Remarks: Borehole drilled and continuously sampled via dry sonid drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023.         ▼       = First Water Encountered at Time of Drilling: 3230.3 ft-m         ▼       = Second Water Encountered at Time of Drilling: Not Observ         Description       Page 1	9.79 40 c sl ed FT MSI	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling
		•1		SILT, sandy, gravelly, with caliche, dry, non-plastic when	MSL										
- - - - - - - - - - - - - - - - - - -	- - - - - - - - - - -	SC		moistened, loose, no visible bedding, pinkish-white & pink, calcareous.	-	-								-	-
11 IEMPLAIE.GUI 8/8/24	;	SC	(*************************************	<ul> <li>- 6" caliche seam at 12.5'.</li> <li>- 6" caliche seam at 17.5'.</li> </ul>		-								-	- - - -
	,⊥			CALICHE, dry, non-plastic when moistened, hard, no visible bedding, white.		_								-	-
PEKMII (2023).GPJ MLF - 2024.		SC		SILT, sandy, gravelly, dry, non-plastic when moistened, hard, thinly bedded, pinkish-white, calcareous.	3267.3	-		38.3	8.3						-
MLF	_	~~		moistened, hard, very thinly bedded, white.		-								-	-
	_			SILT sandy with calcita sooms day non plastic when	3261.3										-
	-			moistened, loose, very thinly bedded, pinkish-white, calcareous.	3260.3										-
	-			CALICHE, with calcite seams, dry, non-plastic when moistened, hard, very thinly bedded, white. - 6" siltstone seam at 29.5'.	3258.8	-								-	-

	We	eaver		LOG OF BORING NO. WCG-26		Supe	ervising	Geolo	gist:	Aaror	n K.	Evai	ns, P.C	J.	2 62	
	Co	onsul	tants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Log _g Drill	ging Geo ling Firm	ologisi i:	: ]	DS Envir	onm	enta	l Wor	ks Pag	ge 2 of 3	
	Gr	roup		Project No: 0120-809-11-05		Fiel	d Tests			La	bora	ıtory	Tests			
epth (ft)		umple Type and Interval	raphic Log	Boring Start Date:7/10/2023Northing (State Plane):71776Boring End Date:7/10/2023Easting (State Pane):84004Ground Elevation at Time of Drilling:3288.27 ft-mslTop of Well Casing Datum Elevation:ft-mslRemarks:Borehole drilled and continuously sampled via dry son drilling techniques.Borehole drilled and completion of drilling.Static groundwater elevation gauged September 2023.♥= First Water Encountered at Time of Drilling:3230.3 ft-n♥= Second Water Encountered at Time of Drilling:Not Obser	09.79 4.40 ic nsl ved	I and Penetrometer Test (tsf)	enetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Jiquid Limit	Plastic Limit	Plasticity Index	ermeability (cm/sec)	Broundwater Observed	
Ā	+	Š	0	Description	MSL	- H				I	-	1		H		
	-			SAND, clayey, lace shi, face canche, moist, tow plasticity, soft to firm, no visible bedding, light-reddish-brown, calcareous. SILTSTONE, sandy, with calcite seams, dry, non-plastic when moistened, very stiff to hard, very thinly to moderately bedded, pinkish-white, calcareous.	3256.3	-									-	
- 35		SC			-	_								-	-	
					3252.3										-	
				CALICHE, dry, non-plastic when moistened, hard, no visible bedding, white.	3251.3	_									_	
-	-	- - - - -		SILTSTONE, sandy, with caliche, dry to moist, non-plastic, firm to hard, no visible bedding, pink to white, calcareous.	-	-								-	-	
						-									-	
- 40	1				3247.3	-								-	-	
_		SC		SAND, trace silt, trace caliche, dry to moist, low plasticity, soft to firm, no visible bedding, light-reddish-brown, calcareous.	-	-								-	-	
EMPLATE.GUT 8/5/24		SC	<ul> <li> <ul> <li></li></ul></li></ul>		-	- - - 4.5								-	-	
= = =	-	•			-	4.5+								-	-	
- 50	+				-	-								-	-	
	-	- - - - -			-	-								-	-	
1.0	+	•		SAND, silty, dry, non-plastic when moistened, firm, verv	3235.3								$\vdash$		-	
	+	•		thinly bedded to laminated, pinkish-white, calcareous.	3234.3									,	-	
- 55 55		SC		visible bedding, light-reddish-brown, calcareous.	-	-								-	-	
	+				-	_								-	-	
Ê H Ú	+	•		- becomes wet and reddish-brown below 58'.	3230.3										- <b>¥</b>	
	-	• • •			-	-								-	-	
		Weaver		LOG OF BORING NO. WCG-26		Supe	ervising (	Geolo	gist:	Aaror	n K. 1	Evar	ns, P.	G.		
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		Consul	tants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Logg Drill	ging Geo ling Firm	logisi	:	DS Envir	onm	ental	l Wo	rks Pag	Page 3 of 3	
		Jroup		Project No: 0120-809-11-05		Field	d Tests			La	bora	tory	Test	s		
	Depth (ft)	Sample Type and Interval	Graphic Log	ring Start Date: 7/10/2023 Northing (State Plane): 7177609.79 ring End Date: 7/10/2023 Easting (State Pane): 840044.40 ound Elevation at Time of Drilling: 3288.27 ft-msl p of Well Casing Datum Elevation: ft-msl marks: Borehole drilled and continuously sampled via dry sonic drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023. = First Water Encountered at Time of Drilling: 3230.3 ft-msl = Second Water Encountered at Time of Drilling: Not Observed Description		Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling	
Ī				SAND, silty, wet (continued).												
		SC			-	- 4.5+ - 4.5+ - 4.5+ 								- - - - - - - -	- - - -	
			• • • • • • • • • • • • • • • • • •			-								-	-	
				CLAY sandy moist low to medium plasticity very stiff to	3218.3	- 4.5+									-	
		SC		hard, laminated, pale-brown & gray.	-	- 4.5+ 		45.8	16.2	124.2		17	10	8.1x10 ⁻⁹	- - -	
PERMIT LEMPLATE.GDT 8/5/24	   - 80 -	SC				-		98.5	22.4	26.0		26	42	8.5x10 ⁻⁹ -	-	
- 2024		sc	]]]  ]]]	CLAY, shaley, moist, medium to high plasticity, very stiff to hard, laminated, gray.		4 5+								-	-	
	 				3203.3	4.5+		95.6	23.3	101.7		32	39	1.3x10 ⁻⁸	-	
				Total Borehole Depth = $85'$	-											
						-								-		
HOLF					-	-								-		
- BORE						-								+	-	
MLT																

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		Neaver		LOG OF BORING NO. WCG-27		Supe	ervising	Geolo	gist: 1	Aaror	n K.	Evar	ns, P.G		1.62	
		Consul	tants	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Logg Drill	ging Geo ling Firm	ologist 1:	: ]	DS Envir	onm	enta	l Work	s Pag	Page 1 of 2	
		Group		Project No: 0120-809-11-05		Fiel	d Tests			La	bora	tory	Tests	-		
	Jepth (ft)	ample Type and Interval	jraphic Log	Boring Start Date: 7/10/2023       Northing (State Plane): 71775;         Boring End Date: 7/10/2023       Easting (State Plane): 841930;         Ground Elevation at Time of Drilling: 3264.52 ft-msl         Top of Well Casing Datum Elevation:       ft-msl         Remarks: Borehole drilled and continuously sampled via dry somidrilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023.	<ul> <li>Northing (State Plane): 7177537.70</li> <li>Easting (State Pane): 841930.42</li> <li>f Drilling: 3264.52 ft-msl</li> <li>Elevation: ft-msl</li> <li>and continuously sampled via dry sonic</li> <li>s. Borehole plugged with high solids</li> <li>bon completion of drilling. Static</li> <li>ation gauged September 2023.</li> <li>ed at Time of Drilling: Not Observed</li> <li>tered at Time of Drilling: Not Observed</li> </ul>		Hand Penetrometer Test (tsf) Penetration Blows/6-inches		Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Observed Time of Drilling	
╞	<u>п</u>	S		SILT, sandy, with caliche gravel, dry, non-plastic when	MSL											
	 		~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	moistened, loose, no visible bedding, pinkish-white, calcareous. SAND, silty, moist, non-plastic, loose, no visible bedding, brown.	3262.5	-								-		
	- 5 -	SC			-	-								-		
				CALLCHE with coloits scores day non plastic when	3257.5											
				moistened, hard, very thinly bedded, white.	-	-								-		
	- 10 -				3254.5											
PERMIT TEMPLATE.GDT 8/5/24		SC		SAND, silty, with caliche gravel, moist, non-plastic, poorly consolidated, thinly bedded to laminated, pinkish-white, calcareous.	-	-		37.3	15.2			NP		-	-	
- 2024					3243.5											
DERMIT (2023).GPJ MLF -		50		CALICHE, with calcite seams, dry, non-plastic when moistened, hard, white & pinkish-white.	3239.5	-								-		
		SC		SAND, with SILT, interbedded, dry, non-plastic when moistened, hard, pinkish-white, calcareous.	3234.5	-								-	-	

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		Veave		LOG OF BORING NO. WCG-27		Supe	ervising (	Geolo	gist:	Aaror	n K.	Eva	ns, P.	G.	2 62
		Consul	tants	Project Title: Meadow Landfill - 2023 Subsurface Investigation	burface Investigation Dilling Firm: Environmental Works			ge 2 of 2							
		Group		Project No: 0120-809-11-05		Fiel	d Tests			La	bora	atory	Test	s	
		erval		Boring Start Date:7/10/2023Northing (State Plane):71775Boring End Date:7/10/2023Easting (State Pane):84193Ground Elevation at Time of Drilling:3264.52 ft-mslTop of Well Casing Datum Elevation:ft-msl	37.70 0.42	Test (tsf)	ó-inches	. 200	ontent					sc)	served
	()	Type and Int	Log	Remarks: Borehole drilled and continuously sampled via dry son. drilling techniques. Borehole plugged with high solids bentonite grout upon completion of drilling. Static groundwater elevation gauged September 2023.	ic	enetrometer	ttion Blows/	t Passing No	t Moisture C	insity (pcf)	Limit	Limit	ty Index	bility (cm/se	dwater Obs of Drilling
	epth (f	umple	raphic	$\mathbf{Y}$ = First water Encountered at Time of Drilling: Not Observ $\mathbf{Y}$ = Second Water Encountered at Time of Drilling: Not Observ	ved ved	Hand F	enetra	ercen	Percen		iquid	lastic	lastic	ermea	Broun Time o
+	Ā	ŝ	U U	Description	MSL		<u> </u>	I	H		I	-		н	
+	_			interbedded, dry, non-plastic when moistened, hard, thinly bedded, white to pinkish-white.	-	-									-
F	-				3232.0	-								-	-
	-			SANDSTONE, silty, trace caliche, dry, non-plastic when moistened, hard, laminated to thinly bedded, pinkish-white to pink.	-	-									-
	25	~~	•]•[•[• •]•[•]•		3229.5										
-	-	SC		SAND, silty, moist, non-plastic, very stiff, no visible bedding, brown & white, calcareous.	-	-									-
	-			- becomes brown & white below 37.5'.	-	-									-
-	_				-	-								-	-
┝	40 -			CLAY, silty, trace sand, trace gravel, intermixed and	3224.5	4.5+									-
	_			interbedded, moist, medium to high plasticity, hard, laminated, light-gray, yellowish-red & dark-red-mottling, trace calcareous nodules.	-	4.5+									-
-	_				-	-									-
	45				-	4.5+		90.3	17.6	108.8		31	36	7.3x10 ⁻⁹	-
8/5/24	45 -	SC				4.5+								-	-
-IGDI	_					4.5+									_
	_					4.5+									-
	_				-	4.5+		97.5	18.4	104.4				3.3x10 ⁻⁸	-
PER	50 -		XX	Tetel Develop Develop 501	3214.5										-
- 2024	_			1 otal Borenole Deptn = 50°	-	_									-
MLF M	_				-	-									-
().GPJ						_								-	-
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ERM	5.5														
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**RELICT PIEZOMETER DRILLERS REPORT** 

STATE OF TEXAS WELL REPORT for Tracking #115590							
Owner:	City of Meadow	Owner Well #:	NE Corner #1				
Address:	P.O. Box 156 Meadow, TX 79345	Grid #:	24-47-5				
Well Location:	City Landfill	Latitude:	33° 17' 47" N				
	Meadow, TX 79345	Longitude:	102° 12' 05" W				
Well County:	Terry	Elevation:	No Data				
Type of Work:	New Well	Proposed Use:	Monitor				

Drilling Start Date: 6/11/2007

Drilling End Date: 6/18/2007

	Diameter (	(in.)	Top Depth (ft.)	Bottom Dep	oth (ft.)			
Borehole:	18		0	30				
Drilling Method:	Air Rotary							
Borehole Completion:	Filter Packed							
	Top Depth (ft.)	Bottom Depth (ft.)	F	ilter Material	Size			
Filter Pack Intervals:	3.5	30		Gravel				
	Top Depth (ft.)	Bottom Depth	(ft.)	Description (number of s	of sacks & material)			
Annular Seal Data:	0	2.5		27 Cemer	nt			
	2.5	3.5		2 Bentoni	te			
Seal Method: Ce	ement & Bentoni	te Chips	Distance t	to Property Line (ft.):	No Data			
Sealed By: Dr	iller		Distance to S concentrated	Septic Field or other d contamination (ft.):	No Data			
			Distance	e to Septic Tank (ft.): I	No Data			
			Me	ethod of Verification:	No Data			
Surface Completion:	Surface Slab Ir	stalled						
Water Level:	No Data							
Packers:	No Data							
Type of Pump:	No Data							
Well Tests:	No Test Data	Specified						

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	Strata Depth (ft.)	Water Type	
Water Quality:	No Data No Data		
	Did the driller	Chemical Analysis Made: knowingly penetrate any strata which contained injurious constituents?:	Unknown Unknown
Certification Data:	The driller certified th driller's direct superv correct. The driller u the report(s) being re	nat the driller drilled this well (or the well rision) and that each and all of the state inderstood that failure to complete the re eturned for completion and resubmittal.	II was drilled under the ements herein are true and required items will result in
Company Information:	B & B Construction P.O. Box 1281 Brownfield, TX 79	on 9316	
Driller Name:	Dwane Ward	License N	Number: <b>54415</b>
Comments:	No Data		
Lith DESCRIPTION & COLOR	ology: OF FORMATION M	C ATERIAL BLANK PIPE & V	Casing: WELL SCREEN DATA

Top (ft.)	Bottom (ft.)	Description
0	1	Caliche
1	7	Brown Sand
7	10	Red Sand
24	28	Rock
28	30	Sand
110	24	Tan Sand

Dia. (in.) New/Used Type Setting From/To (ft.)
4 New PVC Blank 000-004

### 4 New PVC Screen 004-030 .020

### IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

#### Texas Department of Licensing and Regulation P.O. Box 12157 Austin, TX 78711 (512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #115591							
Owner:	City of Meadow	Owner Well #:	SW Corner #2				
Address:	P.O. Box 156 Meadow. TX  79345	Grid #:	24-47-5				
Well Location:	City Landfill	Latitude:	33° 17' 58" N				
	Meadow, TX 79345	Longitude:	102° 11' 40" W				
Well County:	Terry	Elevation:	No Data				
Type of Work:	New Well	Proposed Use:	Monitor				

Drilling Start Date: 6/18/2007

Drilling End Date: 6/19/2007

	Diameter	(in.)	Top Depth (ft.)	Bottom Depth (ft.)			
Borehole:	18		0	30			
Drilling Method:	Air Rotary						
Borehole Completion:	Filter Packed						
	Top Depth (ft.)	Bottom Depth (ft.)	Filter l	Material	Size		
Filter Pack Intervals:	3.5	30	Gra	vel			
	Top Depth (ft.)	Bottom Depth	(ft.) De	escription (number of sa	of sacks & material)		
Annular Seal Data:	0	2.5		27 Cement	t		
	2.5	3.5		2 Bentonite	e		
Seal Method: Ce	ement & Bentoni	te Chips	Distance to P	roperty Line (ft.): <b>N</b>	o Data		
Sealed By: Dr	iller	Distance to Septic Field or other concentrated contamination (ft.): <b>No Data</b>					
			Distance to	Septic Tank (ft.): <b>N</b>	o Data		
			Metho	d of Verification: <b>N</b>	o Data		
Surface Completion:	Surface Slab Ir	nstalled					
Water Level:	No Data						
Packers:	No Data						
Type of Pump:	No Data						
Well Tests:	No Test Data	Specified					

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		Strata Depth (ft.)	Water Type		
Water Q	uality:	No Data	No Data		
			Chemical Analysis Made:	Unknown	
		Did the driller	knowingly penetrate any strata which contained injurious constituents?:	Unknown	
Certifica	ation Data:	The driller certified th driller's direct superv correct. The driller u the report(s) being re	nat the driller drilled this well (or the well ision) and that each and all of the state nderstood that failure to complete the re eturned for completion and resubmittal.	l was drilled under the ments herein are true and equired items will result in	
Compar	y Information	n: <b>B &amp; B Constructio</b>	on		
		P.O. Box 1281 Brownfield, TX 79	9316		
Driller N	ame:	Dwane Ward	License N	lumber: 54415	
Comme	nts:	No Data			
DESCRIPT	I ION & COLO	_ithology: DR OF FORMATION M	C ATERIAL BLANK PIPE & V	Casing: WELL SCREEN DATA	
Top (ft.)	Top (ft.)         Bottom (ft.)         Description         Dia. (in.)         New/Used         Type         Setting From/To (ft.)				
0	3	Top Soil	4 New PVC Blank 000-00	94	
3	7	Red Sand	4 New PVC Screen 004-0	030 .020	

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

### Texas Department of Licensing and Regulation P.O. Box 12157 Austin, TX 78711 (512) 334-5540

7

20

28

Caliche

Rock

Sand

20

28

30

# IIIG-B-103

STATE OF TEXAS WELL REPORT for Tracking #168957							
Owner:	City of Meadow	Owner Well #:	B116				
Address:	Mondow TY	Grid #:	24-47-5				
Well Location:	S.E.C. Fm 250 @ FM 545	Latitude:	33° 18' 32" N				
	Meadow, TX	Longitude:	102° 11' 36" W				
Well County:	Terry	Elevation:	No Data				
Type of Work:	New Well	Proposed Use:	Monitor				

Drilling Start Date: 9/20/2008 Drilling End Da

Drilling End Date: 12/19/2008

	Diameter (in.	) Top De	oth (ft.)	Bottom Depth (ft.)				
Borehole:	6	C		110				
Drilling Method:	Mud (Hydraulic)	Rotary						
Borehole Completion:	16/30 Silica Sand	ł						
	Top Depth (ft.)	Bottom Depth (ft.)	Des	Description (number of sacks & material) Concrete				
Annular Seal Data:	0	5						
	5	89		Grout				
	89	98		Bentonite				
Seal Method: Tr	remmie	Dis	stance to Pr	operty Line (ft.): <b>No Data</b>				
Sealed By: D	riller	Distar conce	nce to Septi entrated cor	c Field or other ntamination (ft.): <b>No Data</b>				
		Distance to Septic Tank (ft.): No Data						
			Method	d of Verification: <b>No Data</b>				
Surface Completion:	Alternative Proce	edure Used						
Water Level:	No Data							
Packers:	No Data							
Type of Pump:	No Data							
Well Tests:	No Test Data Sp	ecified						

	Strata Depth (ft.)	Water Type		
Water Quality:	No Data	No Data		
		Chemical Analysis Made:	Unkno	wn
	Did the driller I	knowingly penetrate any strata which contained injurious constituents?:	Unkno	wn
Certification Data:	The driller certified th driller's direct supervi correct. The driller ur the report(s) being re	at the driller drilled this well (or the well sion) and that each and all of the state nderstood that failure to complete the r turned for completion and resubmittal.	I was drille ments her equired ite	ed under the rein are true and ems will result in
Company Information:	Total Support Serv	vices		
	P.O. Box 81621 Austin, TX 78708			
Driller Name:	Brian Kern	License N	lumber:	54611
Comments:	No Data			

# Lithology: DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	1	Red Brown Sand
1	2	Red Brown Sandy Clay
2	4	Red Brown Clayey Sand
4	25	Brown Silty Sand
25	52.5	Caliche
52.5	65	Brown Silty Sand
65	81	Brown Clayey Sand
81	92	Brown Sandy Clay
92	109	Brown Sand
109	110	Gray Clay

# Casing: BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Туре	Setting From/To (ft.)			
2 New PVC Riser 0/100 Sched. 40						
2 New I	PVC Scree	en 100/1	10 0.010 Slotted			

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Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation P.O. Box 12157 Austin, TX 78711 (512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #168949			
Owner:	City of Meadow	Owner Well #:	B134
Address:	Maadaw TY	Grid #:	24-47-5
Well Location:	Meadow, 1X S.E.C. Fm 250 @ FM 545	Latitude:	33° 18' 32" N
	Meadow, TX	Longitude:	102° 11' 52" W
Well County:	Terry	Elevation:	No Data
Type of Work:	New Well	Proposed Use:	Monitor

Drilling Start Date: 9/30/2008 Drilling End I

Drilling End Date: 12/19/2008

	Diameter (in.	) Top Dept	h (ft.)	Bottom Depth (ft.)
Borehole:	6	0		110
Drilling Method:	Mud (Hydraulic)	Rotary		
Borehole Completion:	16/30 Silica Sand	ł		
	Top Depth (ft.)	Bottom Depth (ft.)	Desc	cription (number of sacks & material)
Annular Seal Data:	0	4		Concrete
	4	91		Grout
	91	98		Bentonite
Seal Method: <b>Tr</b>	emmie	Dist	ance to Pro	perty Line (ft.): <b>No Data</b>
Sealed By: Dr	riller	Distanc	ce to Septic ntrated cont	Field or other tamination (ft.): <b>No Data</b>
		Dis	stance to Se	eptic Tank (ft.): <b>No Data</b>
			Method	of Verification: No Data
Surface Completion:	Alternative Proce	edure Used		
Water Level:	No Data			
Packers:	No Data			
Type of Pump:	No Data			
Well Tests:	No Test Data Sp	ecified		

	Strata Depth (ft.)	Water Type		
Water Quality:	No Data	No Data		
		Chemical Analysis Made:	Unknow	wn
	Did the driller	knowingly penetrate any strata which contained injurious constituents?:	Unknov	wn
Certification Data:	The driller certified th driller's direct superv correct. The driller u he report(s) being re	hat the driller drilled this well (or the well ision) and that each and all of the state nderstood that failure to complete the n eturned for completion and resubmittal.	l was drille ments her equired ite	ed under the rein are true and ems will result in
Company Information:	Total Support Ser	vices		
	P.O. Box 81621 Austin, TX 78708			
Driller Name:	Brian Kern	License N	lumber:	54611
Comments:	No Data			

# Lithology: DESCRIPTION & COLOR OF FORMATION MATERIAL

Top (ft.)	Bottom (ft.)	Description
0	1.5	Red Brown Silty Sand
1.5	2.2	Red Brown Clayey Sand
2.2	5.5	Red Brown Clayey Sandy Silt
5.5	14	Brown Silty Sand
14	16	Red Brown Clayey Silt
16	23	Caliche
23	26	Brown Sandy Clay
26	61	Caliche
61	65	Brown Silty Sand
65	93	Caliche
93	110	Brown Sand

## Casing: BLANK PIPE & WELL SCREEN DATA

Dia. (in.)	New/Used	Туре	Setting From/To (ft.)
2 New I	PVC Riser	0/100 S	Sched. 40
2 New I	PVC Scree	n 100/1	10 0.010 Slotted

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Texas Department of Licensing and Regulation P.O. Box 12157 Austin, TX 78711 (512) 334-5540

STATE OF TEXAS WELL REPORT for Tracking #168964			
Owner:	City of Meadow	Owner Well #:	MW2-B117
Address:	Maadaw TV	Grid #:	24-47-5
Well Location:	S.E.C. Fm 250 @ FM 545	Latitude:	33° 18' 32" N
	Meadow, TX	Longitude:	102° 11' 20" W
Well County:	Terry	Elevation:	No Data
Type of Work:	New Well	Proposed Use:	Monitor

Drilling Start Date: 12/15/2008 Drilling End Date: 12/19/2008

	Diameter (in.	) Top Dept	h (ft.)	Bottom Depth (ft.)
Borehole:	6	0		70
Drilling Method:	Mud (Hydraulic)	Rotary		
Borehole Completion:	16/30 Silica Sand			
	Top Depth (ft.)	Bottom Depth (ft.)	Descri	otion (number of sacks & materia
Annular Seal Data:	0	4		Concrete
	4	59		Grout
	59	63		Bentonite
Seal Method: Tr	emmie	Dista	ance to Prop	erty Line (ft.): <b>No Data</b>
Sealed By: Dr	iller	Distanc concer	e to Septic F trated conta	Field or other mination (ft.): <b>No Data</b>
		Dis	stance to Sep	otic Tank (ft.): <b>No Data</b>
			Method o	f Verification: No Data
Surface Completion:	Alternative Proce	edure Used		
Water Level:	No Data			
Packers:	No Data			
Type of Pump:	No Data			

		Strata Depth (ft.)	Water Type	
Water C	Quality:	No Data	No Data	
			Chemical Analysis Made:	Unknown
		Did the driller kno	owingly penetrate any strata which contained injurious constituents?:	Unknown
Certifica	ation Data:	The driller certified that driller's direct supervisio correct. The driller under the report(s) being retur	the driller drilled this well (or the well on) and that each and all of the state erstood that failure to complete the re rned for completion and resubmittal.	l was drilled under the ments herein are true and equired items will result in
Compar	ny Informatio	n: Total Support Servic	es	
		P.O. Box 81621 Austin, TX 78708		
Driller N	lame:	Brian Kern	License N	lumber: 54611
Comme	nts:	No Data		
DESCRIPT		Lithology: OR OF FORMATION MAT	C ERIAL BLANK PIPE & \	Casing: WELL SCREEN DATA
Top (ft.)	Bottom (ft.)	Description	Dia. (in.) New/Used Type	Setting From/To (ft.)
0	2	Red Brown Silty Sand	2 New PVC Riser 0/65 Sc	ched. 40
2	6.5	Red Brown Silty Sand	2 New PVC Screen 65/75	0.010 Slotted
6.5	7.5	Brown Clayey Silt		

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7.5

8.5

13

62.5

65

8.5

13

62.5

65

75

**Brown Silty Sand** 

**Brown Sandy Silt** 

**Brown Silty Sand** 

**Brown Sand** 

Caliche

STATE OF TEXAS WELL REPORT for Tracking #168976			
Owner:	City of Meadow	Owner Well #:	MW6-B128
Address:	Maadaw TV	Grid #:	24-47-5
Well Location:	S.E.C. Fm 250 @ FM 545	Latitude:	33° 18' 16" N
	Meadow, TX	Longitude:	102° 11' 26" W
Well County:	Terry	Elevation:	No Data
Type of Work:	New Well	Proposed Use:	Monitor

Drilling Start Date: 10/9/2008 Drilling End Date: 12/19/2008

	Diameter (in.	) Top De	pth (ft.)	Bottom Depth (ft.)
Borehole:	6	(	)	75
Drilling Method:	Mud (Hydraulic)	Rotary		
Borehole Completion:	16/30 Silica Sand	ł		
	Top Depth (ft.) Bottom Depth (ft.)		Description (number of sacks & material)	
Annular Seal Data:	0	4	Concrete	
	4	55		Grout
	55	55 63 Be		Bentonite
Seal Method: Tre	emmie	Di	stance to Pr	operty Line (ft.): No Data
Sealed By: Dri	iller	Dista conc	nce to Septi entrated cor	c Field or other ntamination (ft.): <b>No Data</b>
		C	Distance to S	Septic Tank (ft.): <b>No Data</b>
			Method	d of Verification: No Data
Surface Completion:	Alternative Proce	edure Used		
Water Level:	No Data			
Packers:	No Data			
Type of Pump:	No Data			

Well Tests: No Test Data Specified

		Strata Depth (ft.)	Water Type	
Water Quality:		No Data No Data		
			Chemical Analysis Made:	Unknown
		Did the driller knowingly conta	y penetrate any strata which ained injurious constituents?:	Unknown
Certifica	ation Data:	The driller certified that the dri driller's direct supervision) and correct. The driller understood the report(s) being returned fo	ller drilled this well (or the well d that each and all of the state d that failure to complete the re r completion and resubmittal.	was drilled under the ments herein are true and equired items will result in
Compar	ny Information	n: Total Support Services		
		P.O. Box 81621 Austin, TX  78708		
Driller N	lame:	Brian Kern	License N	umber: 54611
Comme	nts:	No Data		
DESCRIPT		Lithology: OR OF FORMATION MATERIAL	C BLANK PIPE & \	Casing: WELL SCREEN DATA
Top (ft.)	Bottom (ft.)	Description	Dia. (in.) New/Used Type	Setting From/To (ft.)
0	12	Fill Material	2 New PVC Riser 0/65 Sc	ched. 40
12	17	Brown Sand	2 New PVC Screen 65/75	0.010 Slotted
17	55	Caliche		

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55

63

63

75

**Red Brown Silty Sand** 

**Brown Sandy Silt** 

	STATE OF TEXAS WELL	_ REPORT for Trac	king #168968
Owner:	City of Meadow	Owner Well #:	MW9-B130
Address:	Meadow, TX S.E.C. Fm 250 @ FM 545 Meadow, TX	Grid #:	24-47-5
Well Location:		Latitude:	33° 18' 15" N
		Longitude:	102° 11' 45" W
Well County:	Terry	Elevation:	No Data
Type of Work:	New Well	Proposed Use:	Monitor

Drilling Start Date: 12/10/2008 Drilling End Date: 12/19/2008

	Diameter (in.	.) Top Dept	n (ft.)	Bottom Depth (ft.)
Borehole:	6	0		70
Drilling Method:	Mud (Hydraulic)	Rotary		
Borehole Completion:	16/30 Silica Sano	d		
	Top Depth (ft.)	Bottom Depth (ft.)	Desc	cription (number of sacks & materia
Annular Seal Data:	0	3		Concrete
	4	54		Grout
	54	57		Bentonite
Seal Method: Tr	emmie	Dista	ance to Pro	perty Line (ft.): <b>No Data</b>
Sealed By: Dr	iller	Distanc concer	e to Septic trated cont	Field or other tamination (ft.): <b>No Data</b>
		Dis	tance to S	eptic Tank (ft.): No Data
			Method	of Verification: No Data
Surface Completion:	Alternative Proce	edure Used		
Water Level:	No Data			
Packers:	No Data			
Type of Pump:	No Data			
Well Tests:	No Test Data Sp	pecified		

		Strata Depth (ft.)	Water Type	
Water Quality:		No Data	No Data	
			Chemical Analysis Made:	Unknown
		Did the driller	knowingly penetrate any strata which contained injurious constituents?:	Unknown
Certifica	ation Data:	The driller certified th driller's direct supervi correct. The driller u the report(s) being re	at the driller drilled this well (or the well ision) and that each and all of the state nderstood that failure to complete the re- turned for completion and resubmittal.	was drilled under the ments herein are true and equired items will result in
Compar	y Informatio	n: Total Support Ser	vices	
		P.O. Box 81621 Austin, TX 78708		
Driller N	ame:	Brian Kern	License N	umber: <b>54611</b>
Comme	nts:	No Data		
DESCRIPT		Lithology: OR OF FORMATION M/	C ATERIAL BLANK PIPE & N	Casing: VELL SCREEN DATA
Top (ft.)	Bottom (ft.)	Description	Dia. (in.) New/Used Type	Setting From/To (ft.)
0	2	Red Brown Sand	2 New PVC Riser 0/60 Sc	hed. 40
2	3.5	Red Brown Silty Sand	2 New PVC Screen 60/70	0.010 Slotted
3.5	6	Caliche		
6	8	Brown Silty Sand		

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8

19.5

50

55

19.5

50

55

70

**Brown Sandy Silt** 

**Brown Clayey Sand** 

Caliche

**Brown Sand** 

STATE OF TEXAS WELL REPORT for Tracking #168948				
Owner:	City of Meadow	Owner Well #:	MW16-B107	
Address:	Meadow, TX S.E.C. Fm 250 @ FM 545 Meadow, TX	Grid #:	24-47-5	
Well Location:		Latitude:	33° 18' 42" N	
		Longitude:	102° 12' 12" W	
Well County:	Terry	Elevation:	No Data	
Type of Work:	New Well	Proposed Use:	Monitor	

Drilling Start Date: 10/4/2008 Drilling End Date: 12/19/2008

	Diameter (in.	.) Top De	epth (ft.)	Bottom Depth (ft.)		
Borehole:	6		0	120		
Drilling Method:	Mud (Hydraulic) Rotary 16/30 Silica Sand					
Borehole Completion:						
	Top Depth (ft.)	Bottom Depth (ft.)	Des	scription (number of sacks & material,		
Annular Seal Data:	0	4		Concrete		
	4	100		Grout		
	100	108		Bentonite		
Seal Method: Tre	emmie	Di	stance to Pro	operty Line (ft.): <b>No Data</b>		
Sealed By: Dr	iller	Dista conc	nce to Septie entrated cor	c Field or other htamination (ft.): <b>No Data</b>		
		[	Distance to S	Septic Tank (ft.): No Data		
			Method	d of Verification: No Data		
Surface Completion:	Alternative Proce	edure Used				
Water Level:	No Data					
Packers:	No Data					
Type of Pump:	No Data					

Well Tests: No Test Data Specified

		Strata Depth (ft.)	Water Type	
Water C	uality:	No Data	No Data	
			Chemical Analysis Made:	Unknown
		Did the driller	knowingly penetrate any strata which contained injurious constituents?:	Unknown
Certifica	ation Data:	The driller certified th driller's direct supervi correct. The driller u the report(s) being re	at the driller drilled this well (or the well sion) and that each and all of the state nderstood that failure to complete the re turned for completion and resubmittal.	was drilled under the ments herein are true and equired items will result in
Compar	ny Informatio	n: Total Support Serv	vices	
		P.O. Box 81621 Austin, TX 78708		
Driller N	ame:	Brian Kern	License N	umber: 54611
Comme	nts:	No Data		
DESCRIPT		Lithology: DR OF FORMATION M/	C ATERIAL BLANK PIPE & N	Casing: WELL SCREEN DATA
Top (ft.)	Bottom (ft.)	Description	Dia. (in.) New/Used Type	Setting From/To (ft.)
0	2	Red Brown Sand	2 New PVC Riser 0/110 S	iched. 40
2	6	Red Brown Clayey Sil	t 2 New PVC Screen 110/1	20 0.010 Slotted
6	9	Red Brown Clayey Sa	indy Silt	
9	13	Brown Silty Sand		
13	21	Light Brown Silty San	d	

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21

113

113

120

Caliche

**Brown Sand** 

STATE OF TEXAS WELL REPORT for Tracking #168960				
Owner:	City of Meadow	Owner Well #:	MW21-B103	
Address:	Maadaw TY	Grid #:	24-47-5	
Well Location:	meadow, TX n: S.E.C. Fm 250 @ FM 545 Meadow, TX	Latitude:	33° 18' 42" N	
		Longitude:	102° 11' 38" W	
Well County:	Terry	Elevation:	No Data	
Type of Work:	New Well	Proposed Use:	Monitor	

Drilling Start Date: 12/8/2008 Drilling End Date: 12/19/2008

	Diameter (in.	) Top Dept	th (ft.)	Bottom Depth (ft.)	
Borehole:	6	0		85	
Drilling Method: Mud (Hydraulic)		Rotary			
Borehole Completion:	16/30 Silica Sano	Ł			
	Top Depth (ft.) Bottom Depth (ft.)		Desc	Description (number of sacks & material)	
Annular Seal Data:	0	5	Concrete		
	5	65 Grout		Grout	
	65	73	Bentonite		
Seal Method: Tr	emmie	Dist	ance to Pro	perty Line (ft.): <b>No Data</b>	
Sealed By: Driller		Distance to Septic Field or other concentrated contamination (ft.): <b>No Data</b>			

Distance to Septic Tank (ft.): No Data

Method of Verification: No Data

Surface Completion:	Alternative Procedure Used	
Water Level:	No Data	
Packers:	No Data	
Type of Pump:	No Data	
Well Tests:	No Test Data Specified	

		Strata Depth (ft.)	Water Type	
Water Quality:		No Data	No Data	
			Chemical Analysis Made:	Unknown
		Did the driller k	nowingly penetrate any strata which contained injurious constituents?:	Unknown
Certifica	ation Data:	The driller certified that driller's direct supervist correct. The driller un the report(s) being ret	at the driller drilled this well (or the well sion) and that each and all of the state iderstood that failure to complete the re urned for completion and resubmittal.	was drilled under the ments herein are true and equired items will result in
Compar	ny Informatio	n: Total Support Serv	vices	
		P.O. Box 81621 Austin, TX 78708		
Driller N	lame:	Brian Kern	License N	umber: 54611
Comme	nts:	No Data		
DESCRIPT	FION & COL	Lithology: OR OF FORMATION MA	C TERIAL BLANK PIPE & V	Casing: WELL SCREEN DATA
Top (ft.)	Bottom (ft.)	Description	Dia. (in.) New/Used Type	Setting From/To (ft.)
0	2	Red Brown Claey San	d 2 New PVC Riser 0/75 Sc	:hed. 40
2	4.5	Red Brown Sandy Cla	y 2 New PVC Screen 75/85	0.010 Slotted
4.5	20	Red Brown Clayey Sa	nd	
20	21	Caliche		
21	28	Brown Clayey Sand		
28	74	Caliche		

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74

85

**Brown Sand** 

# 2000 SOIL INVESTIGATION BY TERRA ENGINEERS



## IIIG-B-121

STR 1460

# SOIL INVESTIGATION

Meadow Landfill Meadow, Texas

PREPARED FOR Mr. Che Shadle OJD Engineering, Inc. P. O. Box 543 804 East Avenue Wellington, Texas 79095

October 10, 2000

TERRA ENGINEERS, INC.

03/02/01

LUBBOCK

15

Part III

HO: 5208 34 th STREET • P.O. BOX 16605 • LUBBOCK • TEXAS 79490-6605 • (806) 793 4767 • FAX (806) 793 4768

Part III



# TERRA ENGINEERS, INC.

5208 - 34TH STREET

P.O. BOX 16605 · LUBBOCK, TEXAS 79490-6605 · (806) 793-4767 · FAX (806) 793-4768

October 10, 2000

OJD Engineering, Inc. P. O. Box 543 804 East Avenue Wellington, TX 79095

Re: Additional Geotechnical Soil Investigation for the proposed Meadow Landfill, Meadow, Texas

Dear Mr. Shadle:

Submitted herein is STR No. 1460 on the additional soil investigation for the above referenced project. Included in this report are our analysis and recommendations for foundation design.

We appreciate the opportunity to be of service to you on this project. If we may answer any questions or be of any additional assistance, please call us.

Sincerely, TERRA ENGINEERS, INC

Góvirldan, Ph.D.

General Manager

AJ/ld

SOIL INVESTIGATION • MATERIAL TESTING • ENVIRONMENTAL SERVICES • PROFESSIONAL ENGINEERING SERVICES • NDT 16
03/02/01

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TERRA ENGINEERS, INC.

# IIIG-B-124

## SOIL INVESTIGATION

Meadow Landfill Meadow, Texas

# **1.0 INTRODUCTION**

This report contains the results of additional soil investigation recently done for the proposed Meadow Landfill, Meadow, Texas. This investigation was conducted according to the instructions from Mr. Che Shadle, OJD Engineering, Inc., Wellington, Texas. The objectives of this investigation were to conduct subsurface exploration, fieldtesting and laboratory testing.

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> > 03/02/01

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# 2.0 EXPLORATION, SAMPLING AND FIELD TESTING

At the request of the client, the sub-surface conditions were explored by five (5) test holes, four (4) drilled to a depth of 30.0 feet and one (1) drilled to a depth of 47 feet at locations shown in the boring location plan (Figure 1). The drilling was performed using CME-75 Drilling Rig with hollow stem augers in order to secure reliable data on the natural moisture content of the soil and ground water, if any. Standard penetration tests were made at depths of 2.5, 5.0 feet and at 5.0 feet interval thereafter. The number of blows per foot of the split spoon sampler (in 6-inch increment) is shown in the boring logs and in Figure 2. The sampling was performed in accordance with the ASTM D-1586; however we limit the number of blows on the split spoon sampler to a maximum of 25 for the first 6 inches of penetration and if the penetration of the sampler for the first or the second 6 inches increment is less than 6 inches, we report the actual penetration obtained for the respective increment in the boring logs.

The changes in soil strata as observed during drilling operations were carefully determined and are shown in the boring logs. All soil samples were kept in moistureproof plastic bags to preserve the in-situ moisture content, identified by the hole number and the depth of the hole, and transported to the laboratory for additional tests and evaluation.

The boring was monitored during and immediately after drilling for the presence and level of groundwater. The groundwater table was observed during drilling only in test hole #2 at 29 feet below ground level.

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## **3.0 LABORATORY TESTING**

All samples have been classified following the procedures outlined in ASTM D-2487 based on the Unified Soil Classification System. Soils are described in the boring logs using the methods prescribed in ASTM D-2488, using a Munsell Soil Color Chart, published by Macbeth Division of Kollmorgen Corporation, Baltimore, Maryland, 1975 edition.

Soil samples, which indicated maximum plasticity characteristics, were selected and Atterberg Limit tests were performed on these samples according to procedures outlined in ASTM D-4318. Percentage by weight of material passing sieve # 200 was determined by ASTM D-1140 for the same samples. Moisture content for all samples were determined by the procedures outlined in ASTM D-2216.

All soil samples collected with reference to this project will be stored for a period of six (6) months from the date when this report is submitted. The samples will be discarded after elapse of this time period, unless this office is instructed.

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# 4.0 GENERAL SOILS AND DESIGN CONDITIONS

## 4.1 Site Description

The site is physically located south of Meadow, Texas and the general site topography is plain land covered with mesquite and brush.

#### 4.2 Description of Soils

The topsoil in all the four holes is reddish brown silty sand (SM) while in hole #5, the top soil is silt and is classified as gravelly silt (ML). The topsoil exists for approximately 2.5 feet below the surface. The topsoil is nonplastic. Below the topsoil, in holes #2 and #4, there are layers of either silty sand (SM) which are overconsolidated and cemented with some caliche soil. In the other holes, there are layers caliche soil/rock and some of the formations are so hard that that the Standard Penetration tests were not performed. Instead, it had to be cored using diamond core barrels. The respective boring logs indicate the hardness of the strata using SPT counts where the penetration tests were performed. Where they were cored, the RQD values are indicated in the respective boring logs.

These hard soil layers are very common in West Texas area and they form an excellent stratum for bearing foundations. However, some of these soil layers can be hard to cut during excavations compared to other types of soils normally encountered here in West Texas. Since the soil layers were nonplastic in nature, there is no problem due to expansion or contraction of the soil layers as is found among clayey type soils.

During drilling, water table was found at a depth of 29.0 feet below the ground level in hole #2. Water table was not observed in any of the other holes as the bottom of

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the holes was perhaps close to the probable water table in the area. More tests are required to establish the water table in the area.

Some of the hard soil/rock layers are not completely hard rock as they could be drilled using augers even though it was very hard to do so. These hard layers can be considered as conglomerates, which are compacted mixtures of soil and hard rock pieces. But those strata, which were cored, were indeed very hard.

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## **5.0 QUALITY CONTROL**

Construction inspection and quality control tests shall be planned and scheduled to verify materials and placement is in accordance with the specifications. Subgrade preparation, field density tests, and concrete strength are very important and therefore shall be monitored and recorded. It is recommended that Terra Engineers, Inc. shall perform quality control services in order to ensure quality construction inspection and material testing for the project. Terra Engineers, Inc. would be pleased to provide these services and can also assist with construction inspection, planning and scheduling. We also recommend that Terra Engineers, Inc. be retained, to review the final design document to verify that the recommendations made in this report have been interpreted as intended.

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### 6.0 LIMITATIONS

Every effort has been made to accurately evaluate the subsurface conditions at the above referenced site in accordance with the standard engineering principles and practices. No other warranty or guarantee, expressed or implied, is made other than that the work was performed in a proper and workmanlike manner. However, it must be recognized that the SPT sampling tube cannot be retrieve boulders or gravel of sizes larger than 1.5 inches.

The results stated in this report is based on only five (5) borings, four (4) test holes were drilled to a depth of 30 feet and one (1) to a depth of 47 feet at locations shown in the boring location plan (Figure 1). The conclusions reached in this report are exclusively for engineering design and were based on the field tests and results of laboratory tests conducted on samples recovered from five (5) test holes drilled to a depth specified by the client. Further, the recommendations presented herein are based on analyses, which presume the conditions of soil properties in the areas between the borings to have a reasonably uniform variation as revealed by the exploratory borings. Consequently, careful observations must be made during construction to detect significant deviations of actual conditions throughout the construction area from those inferred from the exploratory boring. Should any unusual conditions be encountered during construction, this office should be notified immediately so that further investigations and supplemental recommendations can be made to suit the new existing conditions.

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The Terra Engineers, Inc. shall not accept the responsibility for all the adequacies of the recommendations given in this report if another party is retained for QA/QC to perform the construction material testing during the construction phase.

Due to changes in the current technology, changes to the project site conditions, changes in project specification etc., this report and the recommendations made in here shall be outdated with in a period of one (1) year from the date of the report. We strongly recommend that the client should contact Terra Engineers, Inc. to determine whether this report is valid after the expiration of the above mentioned time period.

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#### 7.0 REPORT DISTRIBUTION

This report was prepared by Terra Engineers, Inc. for the sole and exclusive use by its client, based on specific and limited objectives. All reports, boring logs, field data, laboratory test results and other documents prepared by Terra Engineers, Inc. as instruments of service shall remain the property of Terra Engineers, Inc., and reuse of these documents is not permitted without written approval from Terra Engineers, Inc. The client may release the information to third parties, who may use and rely upon the information at their discretion. However, any use of or reliance upon the information by a party other than specifically named above shall be solely at the risk of such third party and without legal recourse against Terra Engineers, Inc., its parent company, or its subsidiaries and affiliates, or their respective employees, officers or directors, regardless of whether the action in which recovery of damages is sought is based upon contract, tort (including the sole, concurrent or other negligence and strict liability of Terra Engineers, Inc.), statute, or otherwise. This information shall not be used or relied upon by a party that does not agree to be bound by the above statement. Terra Engineers, Inc. assumes no responsibility or obligation for the unauthorized use of this report by a third party.

We appreciate the opportunity to be of assistance on this project. If you should have any questions, please feel free to call us.

Very truly yours, TERRA ENGINEERS, INC.

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C. V. G. Vallabhan, Ph.D., P. E. Geotechnical Engineer



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Acadow Landfill		Locatio Meado	n: w, Texas					Date o 08-21-	f Drillin 00	g:	
Client:		· ·	,					Depth	of GWI	<b>:</b>	
····face Elevation:	Diameter: 7 7/8"	De 30	pth: ft.		Boring HSA -	g Method:		STRN	ło.:		
th, ft	Description	USC	Moisture Content, %	Liquid Limit, %	Plastic Limit, %	Plasticity Index	Passing # 200, %	SPT, N 1st	o. of Blow 2nd	's per 6" 3rd	Remark
Silty Sand w/	trace of caliche, Reddish	SM	1.6	Non-	Plastic		26.1			<u> </u>	
.5 + Hard Caliche								*25		<u> </u>	*1 0"
+ Hard Caliche								*07			Penetrati
						•		*25	-		*3.5" Penetrati
+   +		. 1				•					
+								. *			
0 $+$ Hard Caliche								*25			*1.0"
+					4						
Ŧ		-									
5 + Clayey Sand	w/hard caliche rock, Pink	SC	13.6	51	25	26	28.6	*25			*6.0"
+											Penetrati
+ +											10 5 0/
0 Hard Caliche	Rock w/fractures, Pink			RQE	) value f	or a core	run from		ł		40.3 % *Auger
) [				18.5	tt. to 22.0	0ft.	-ll				Refusal
+				RQE	value f	or a core	run from				Coring
5 — Hard Caliche	Rock w/fractures, Pink			. 22.01	ft. to 27.	Oft.	.				46.7 %
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Toject: 1eadow Client:	Landfill	, 	Locatio Meador	on: w, Texas					Date o 08-30-	f Drilling	g: .	
JD Eng	gineering								Depth 2	9 ft.	:	-
vrface I	Elevation: n	Diameter: 7 7/8"	De 30	epth: ft.		Boring HSA	g Method :		STR N 1460	<b>∛o.:</b>		•
∫_⁄th, ft	-	Description	USC	Moisture Content, %	Liquid Limit, %	Plastic Limit, %	Plasticity Index	Passing # 200, %	SPT, N 1st	o. of Blow 2nd	's per 6" 3rd	Remark
`s +	Silty Sand w/o	rganics, Reddish Brown	SM							T	<u> </u>	1
.5 _	Clayey Sand w	v/caliche, Pink	SC	3.3	31	21	10	23.4	7	7	8	
	Silty Sand w/h	ard caliche, Pink	SM	5.9	45	29	16	13.3	12	*25		*5.0"
	Hard Caliche F	Rock w/fractures. Pink			RQE 5.0ft	) value fo . to 10.0	or a core : ft.	 run from 				6' Auger Refusal Core 6'-2
+					RQE 10.01	value fo ft. to 15.0	or a core : Oft.	run from				33.3 %
5	Hard Caliche F	lock w/fractures, Pink										
+					RQD 15.01	value fo	or a core i	run from			-	89.2 %
Ţ							· - •					
	Hard Caliche R	lock w/fractures, Pink					· · ·					21'-25'
)					RQD 20.0f	value fo t. to 25.0	or a core i Oft.	run from		1		17.5 %
; +,	Hard Caliche R	ock w/fractures, Pink							*25			*3.0"
+					ا RQD 25.0f	value fo t. to 30.0	or a core 1 Oft.	run from				Penetrati Core
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Project: Meadow I	Landfill		Locatio Meador	m: w, Texas					Date of 08-25-0	f Drillin 00	g:	
Client: OJD Engi	neering	· · · ·							Depth	of GW	ſ:	_ <b>_</b>
Turface E	levation:	Diameter: 7 7/8"	De 47	epth: ft.		Boring HSA -	Method: Coring	•	STR N 1460	ło.:		
) .h, ft	D	escription	USC	Moisture Content, %	Liquid Limit, %	Plastic Limit, %	Plasticity Index	Passing # 200, %	SPT, N 1st	o. of Blov 2nd	vs per 6" 3rd	Remar
rs +	Silty Sand w/org	anics, Reddish Brown	SM	· ·						T		1
2.5	No Recovery		-						*25	-		*4.0"
5	Silty Sand w/har	d caliche, Pink	SM	4.9					*25		•	*5.0" Penetrat
+ ]												
	Clayey Sand w/h	ard caliche, White	SC	5.1	· .				*25	•		*5.5" Penetrat
+	<b>1</b>	· · · · ·	•		· .		· · · ·					
15 <u>-</u>	Clayey Sand w/h fractures, Pink	ard caliche rock w/	SC	13.8	45	24	21	38.7	*25			0.0" Penetrat
+					RQI 15.0	) value f ft. to 20. I	or a core Oft.	run from I				*Start Coring
20	Hard Caliche Ro	ck w/fractures, Pink										
	•				RQI 20.0	) value f ft. to 25. 	or a core Oft.	run from I		ł	-	92.5 %
.5	Hard Caliche Ro	ck w/fractures, Pink										
	•				RQI 25.0	 0 value f ft. to 30. 	or a core : Oft.	l run from	1	1		69.2 %
so ±	Hard Caliche Ro	ck w/fractures, Pink						-				
 	~		-		RQI 30.0	Value f ft. to 35.	or a core Oft.	run from		· ·		74.1 %
5 +	Hard Caliche Ro	ck w/fractures, Pink								<b>.</b>		
+					RQI 35.0	l value f ft. to 40.	or a core Oft.	run from				80.0 %
ŧ0 —	Hard Caliche Ro	ck w/fractures, Pink										-
+++++++++++++++++++++++++++++++++++++++					RQI 40.0	D value f ft. to 45.	or a core Oft.	run from	1	1	-	84.6 %
15 —	Hard Caliche Ro	ck w/fractures, Pink										
) [ ]	Hard Caliche Ro	ck w/fractures, Pink	-		·.							-
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- Top S	oil		J		L		L <u></u>		L	TERRA	ENGIN	EERS, IN

foject: Meadow	Landfill		Locatio Meadow	n: v, Texas					Date o 08-22-	f Drillin 00	g:	
Client: DJD Eng	ineering								Depth	of GWI	:	
rface le	Clevation:	Diameter: 7 7/8"	De 30'	pth:		Borin HSA -	g Method: - Air Rotar	v & Coring	STR N	ło.:		
, th, ft		Description	USC	Moisture Content, %	Liquid Limit, %	Plastic Limit, %	Plasticity Index	Passing # 200, %	SPT, N 1st	o. of Blow 2nd	's per 6" 3rd	Remark
s +	Silty Sand w/o	rganics, Reddish Brown	SM	1.6	Non-	Plastic		42.1		T T	[	  ·
.5	Clayey Sand w Brown	/hard caliche, Strong	SC	8.1	30	15	15	30.5	8	15	*25	*0.5"
	No Recovery	•	•					· •	*25			*5.75" Penetrati
-												
0	No Recovery								*25			*1.0 Penetrati
+ -		•			RQI	) value f	or a core	 run from				*Start Coring
5	Hard Caliche F	Cock w/fractures, Pink			12.0	ft. to 17.	Oft.					85.0 %
+ +					ROT	) value f		un from				69.1 %
	Hard Caliche R	lock w/fractures, Pink			17:0	ft. to 22.	Oft.					
) + + + 5	Hard Caliche R	ock w/fractures, Pink	· · ·		RQE 22.01	) value f ft. to 27.	or a core 1 Oft.	run from				83.0 %
	Hard Caliche R	ock w/fractures Pink			RQE 27.01	value f ft. to 30.	or a core 1 Oft.	run from				38.0 %
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Top Sc	bil	1		L		I	· · · · · · · · · · · · · · · · · · ·	I	Т	ERRA E		ERS, INC

Meadow I	Landfill		Locatio Meador	on: w, Texas					Date o 08-31-	f Drillin 00	g:	
OJD Engi	neering								Depth 	of GW7	ſ:	
°yrface E `nown	levation:	Diameter: 7 7/8"	De 30'	pth:		Boring	g Method:		STRN	lo.:		
, th, ft		Description	USC	Moisture Content, %	Liquid Limit, %	Plastic Limit, %	Plasticity Index	Passing # 200, %	1460 SPT, N	o. of Blov 2nd	vs per 6" 3rd	Remark
TS +	Sandy Elastic	Silt, Brown	ML	2.1	Non-	Plastic		54.2	130			1
2.5	Hard Caliche,	Rock		2.9					*25			*5.5" Penetratio
5	Hard Caliche,	Rock		15.2			•		*25			*3.0" Penetratio
	Hard Caliche I	Rock w/fractures, Pink			RQI 9.0ft	) value fo . to 12.0:	or a core 1 ft.	run from		    -		*Start Coring 18.8 %
+ + 15	Hard Caliche F	Rock w/fractures, Pink			RQI 12.0	) value fe ft. to 17.0	or a core 1 Oft.	run from				52.6 %
20 ;	Hard Caliche F	Rock w/fractures, Pink			RQI 17.0	) value fo ft. to 22.0	or a core i Oft.	run from				85.0 %
	Hard Caliche F	Rock w/fractures, Pink			RQE 22.01	value fo	or a core r Oft.	un from			-	55.5 %
	Hard Caliche R	Rock w/fractures, Pink										
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5 +					•							
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- Top So	il		•									

Part III Site Development Plan

### ATTACHMENT 5 GROUNDWATER CHARACTERIZATION REPORT

Part III Site Development Plan

Applicants for Type I-AE facility are exempt from the Groundwater Characterization Report (330.56(e)) pursuant to 330.51(a).

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## **APPENDIX IIIG-C**

# SITE GEOLOGIC DATA



## CONTENTS

FIGURE IIIG-C-1 – Geologic Cross Section Index Map FIGURE IIIG-C-2 – Geologic Cross Section A-A' FIGURE IIIG-C-3 – Geologic Cross Section B-B' FIGURE IIIG-C-4 – Geologic Cross Section C-C' FIGURE IIIG-C-5 – Geologic Cross Section D-D' FIGURE IIIG-C-6 – Geologic Cross Section E-E' FIGURE IIIG-C-7 – Geologic Cross Section F-F' FIGURE IIIG-C-8 – Geologic Cross Section G-G' FIGURE IIIG-C-9 – Geologic Cross Section H-H' FIGURE IIIG-C-10 – Geologic Cross Section I-I' FIGURE IIIG-C-11 – Geologic Cross Section J-J' FIGURE IIIG-C-12 – Geologic Cross Section K-K'





0 300 600 SCALE IN FEET	AARON K. EVANS 11143 08/05/2024						
	00/00/2024						
LEGEND         PROPOSED PERN         PERMITTED PERN         PROPOSED LIMIT         PROPOSED LIMIT         PROPOSED LIMIT         PROPOSED LIMIT         STATE PLANE CO         350         EXISTING CONTO         PB-116 (3308.5)         CMP-1 (3297.8)         PWCG-4A (3267.1)         PWCG-4B (3267.1)         QWCG-4B (3267.27)         EXISTING PERCHED (WITH SURFACE         VCG-27 (3264.5)         CEOLOGIC CROS	WIT BOUNDARY MIT BOUNDARY OF WASTE OF WASTE DORDINATE SYSTEM UR GROUNDWATER PIEZOMETER LOCATION ELEVATION POSTED IN FT-MSL) IONITOR PROBE LOCATION ELEVATION POSTED IN FT-MSL) N PIEZOMETER LOCATION ELEVATION POSTED IN FT-MSL) ZONE EXPANSION PIEZOMETER ELEVATION POSTED IN FT-MSL) REHOLE LOCATION ELEVATION POSTED IN FT-MSL) SS SECTION LOCATION						
OURS ARE CREATED FROM UNMANNED AERIAL SURVEY DATA COLLECTED INSULTANTS GROUP, LLC ON OCTOBER 20, 2022. THE GRID SYSTEM IS TEXAS COORDINATE SYSTEM OF 1983, NORTH CENTRAL ZONE, NAD83 I 2010.00 AND HAS BEEN SCALED TO SURFACE COORDINATES BY 4E COMBINED SCALE FACTOR OF 0.99972824 FROM AN ORIGIN OF 0,0. IOWN RELATIVE TO NORTH AMERICAN VERTICAL DATUM OF 1988. ACE ELEVATIONS POSTED AT EACH BOREHOLE LOCATION IN FT-MSL. REHOLE LOCATION COORDINATES AND SURFACE ELEVATIONS OBTAINED AKING SURVEY BY WEAVER CONSULTANT GROUP PRIOR TO INITIATION DOCATION COORDINATES AND SURFACE ELEVATIONS OBTAINED FROM AS-BUILT SURVEY BY WEAVER CONSULTANTS GROUP. ETERS NOT SHOWN ON CROSS SECTION DRAWINGS DUE TO LACK OF HOLOGIC AND CONSTRUCTION INFORMATION.							
TEPARED FOR TEADOW LANDFILL, LLC  REVISIONS DATE DESCRIPTION	MAJOR PERMIT AMENDMENT GEOLOGIC CROSS-SECTION LOCATION MAP CITY OF MEADOW LANDFILL						

WWW.WCGRP.COM

FIGURE IIIG-C-1



/EADC	PREPARED FOR DW LANDFILL, LLC	MAJOR PE	RMIT AMENDMENT				
REVISIONS		GEOLOGIC CROSS-SECTION A-A					
DATE	DESCRIPTION	CITY OF I TERRY	MEADOW LANDFILL COUNTY, TEXAS				
		WWW.WCGRP.COM	FIGURE IIIG-C-2				





1. EXISTING CONTOURS ARE CREATED FROM UNMANNED AERIAL SURVEY DATA COLLECTED BY WEAVER CONSULTANTS GROUP, LLC ON OCTOBER 20, 2022. THE GRID SYSTEM IS TIED TO THE TEXAS COORDINATE SYSTEM OF 1983, NORTH CENTRAL ZONE, NAD83 (2011) EPOCH 2010.00 AND HAS BEEN SCALED TO SURFACE COORDINATES BY DIVIDING BY THE COMBINED SCALE FACTOR OF 0.99972824 FROM AN ORIGIN OF 0,0.

CROSS SECTION LOCATION INDICATED ON SECTION LOCATION MAP INSET AND FIGURE IIIG-C-1.
 BOREHOLE AND PIEZOMETER DATA OBTAINED FROM 2023/2024 SUBSURFACE INVESTIGATIONS

BOREHOLE AND PIEZOMETER DATA OBTAINED FROM 2023/2024 SUBSURFACE INVESTIGATIONS BY WEAVER CONSULTANTS GROUP.

4. STATIC POTENTIOMETRIC GROUNDWATER DATA FROM GAUGING CONDUCTED BY WEAVER CONSULTANTS GROUP IN SEPTEMBER 2023.

5. HYDRAULIC CONDUCTIVITY VALUES FROM SLUG TESTING (K_H) AND GEOTECHNICAL LABORATORY MEASUREMENTS (K_V) LISTED IN CM/S.

6. CROSS SECTION CORRELATIONS ARE INTERPOLATED BETWEEN BORINGS. ACTUAL CONDITIONS MAY VARY FROM THOSE DEPICTED.

7. BOREHOLE GRAPHICS ARE HORIZONTALLY EXAGGERATED FOR ILLUSTRATION PURPOSES AND MAY BE OFFSET FROM ONE ANOTHER TO PREVENT OVERLAP IN SECTION SPACE.

IEADC	PREPARED FOR DW LANDFILL, LLC	MAJOR PE	RMIT AMENDMENT			
	REVISIONS	GEOLOGIC CF	ROSS-SECTION B-B'			
DATE	DESCRIPTION	CITY OF MEADOW LANDFILL TERRY COUNTY, TEXAS				
		WWW.WCGRP.COM	FIGURE IIIG-C-3			



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	REVISIONS	J GEOL
DATE	DESCRIPTION	
		www.wc



IEADOW LANDFILL, LLC MAJOR PERMIT	MAJOR PERMIT AMENDMENT			
REVISIONS GEOLOGIC CROSS	S-SECTION D-D			
DATE DESCRIPTION				
CITY OF MEADO	DW LANDFILL			
IERRI COUN	IT, IEXAS			
	HOOKE INO C 5			



PREPARED FOR	MAJOR PE	RMIT AMENDMENT					
REVISIONS	GEOLOGIC CROSS-SECTION E-E						
DATE DESCRIPTION							
	TERRY COUNTY, TEXAS						
	WWW.WCGRP.COM	FIGURE IIIG-C-6					



PREPARED FOR	MAJOR PE	RMIT AMENDMENT			
REVISIONS	GEOLOGIC CROSS-SECTION F-F				
DATE DESCRIPTION	- CITY OF MEADOW LANDFILL - TERRY COUNTY, TEXAS				
	WWW.WCGRP.COM	FIGURE IIIG-C-7			



IEADC	PREPARED FOR DW LANDFILL, LLC	MAJOR PE	RMIT AMENDMENT
	REVISIONS	GEOLOGIC CF	ROSS-SECTION G-G'
DATE	DESCRIPTION	CITY OF MEADOW LANDFILL TERRY COUNTY, TEXAS	
		WWW.WCGRP.COM	FIGURE IIIG-C-8



PREPARED FOR	MAJOR PE	RMIT AMENDMENT
REVISIONS		GEOLOGIC CROSS-SECTION H-H
DATE DESCRIPTION	CITY OF MEADOW LANDFILL TERRY COUNTY, TEXAS	
	WWW.WCGRP.COM	FIGURE IIIG-C-9



PREPARED FOR MEADOW LANDFILL, LLC	MAJOR PERMIT AMENDMENT	
REVISIONS	GEOLOGIC C	RUSS-SECTION I-I
DATE DESCRIPTION	CITY OF MEADOW LANDFILL TERRY COUNTY, TEXAS	
	WWW.WCGRP.COM	FIGURE IIIG-C-10



IEADO	PREPARED FOR DW LANDFILL, LLC	MAJOR PERMIT AMENDMENT	
	REVISIONS	GEOLOGIC CI	RUSS-SECTION J-J
DATE	DESCRIPTION	CITY OF MEADOW LANDFILL TERRY COUNTY, TEXAS	
		WWW.WCGRP.COM	FIGURE IIIG-C-11



PREPARED FOR ADOW LANDFILL, LLC		MAJOR PERMIT AMENDMENT GEOLOGIC CROSS-SECTION K-K'	
REVISIONS			
E	DESCRIPTION		
		CITY OF MEADOW LANDFILL TERRY COUNTY, TEXAS	
		WWW.WCGRP.COM	FIGURE IIIG-C-12

# **APPENDIX IIIG-D**

# SITE HYDROGEOLOGIC DATA



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2023/2024 Weaver Consultants Group Data Logger Groundwater Potentiometric Head Elevation Readings

IIIG-D-14





0 30 SCALE	AARON K. EVANS AARON K. EVANS 11143 11143 08/05/2024
LEG	END
	PROPOSED PERMIT BOUNDARY
	PERMITTED PERMIT BOUNDARY
	PROPOSED LIMIT OF WASTE
<b>X</b> 7100000	PERMITED LIMIT OF WASTE
N /180000	
	EXISTING CONTOUR
▲ PWCG-1 (3232.3)	2023 EXPANSION PIEZOMETER (WITH TOP OF FIRST SATURATED STRATA ELEVATION POSTED IN FT—MSL)
WCG-8 (3258.6)	2023 EXPANSION BOREHOLE (TOP OF FIRST SATURATED STRATA ELEVATION POSTED IN FT—MSL)
	TOP OF UPPERMOST AQUIFER HYDROSTRATIGRAPHIC STRUCTURAL CONTOUR IN FT-MSL (SEE NOTES 4 AND 5)

1. EXISTING CONTOURS ARE CREATED FROM UNMANNED AERIAL SURVEY DATA COLLECTED BY WEAVER CONSULTANTS GROUP, LLC ON OCTOBER 20, 2022. THE GRID SYSTEM IS TIED TO THE TEXAS COORDINATE SYSTEM OF 1983, NORTH CENTRAL ZONE, NAD83 (2011) EPOCH 2010.00 AND HAS BEEN SCALED TO SURFACE COORDINATES BY DIVIDING BY THE COMBINED SCALE FACTOR OF 0.99972824 FROM AN ORIGIN OF 0,0.

2. ELEVATIONS SHOWN HEREON ARE RELATIVE TO THE NORTH AMERICAN VERTICAL DATUM

3. PERMIT BOUNDARY WAS PREPARED BY WEAVER CONSULTANTS GROUP IN APRIL 2023.

4. TOP OF UPPERMOST AQUIFER HYDROSTRATIGRAPHIC STRUCTURAL CONTOUR REPRESENTS HIGHEST GROUNDWATER ELEVATION WITHIN THE UPPERMOST AQUIFER ZONE OF SATURATION AS OBSERVED AT TIME OF DRILLING AT EACH EXPANSION BOREHOLE LOCATION.

5. TOP OF UPPERMOST AQUIFER HYDROSTRATIGRAPHIC STRUCTURAL CONTOURS DO NOT REPRESENT GROUNDWATER POTENTIOMETRIC HEAD OR GROUNDWATER FLOW.

6 DRY = NO SATURATED SEDIMENTS OBSERVED AT TIME OF DRILLING. DRY BOREHOLES NOT INCLUDED IN HYDROSTRATIGRAPHIC STRUCTURAL CONTOUR MODELING.

PREPARED FOR			
MEADOW		LANDFILL,	LLC
REVISIONS			
DATE		DESCRIPTI	ON

### MAJOR PERMIT AMENDMENT TOP OF UPPERMOST AQUIFER CONTOUR MAP

CITY OF MEADOW LANDFILL TERRY COUNTY, TEXAS

WWW.WCGRP.COM

FIGURE IIIG-D-1A



MAJOR PERMIT AMMENDMENT HIGHEST MEASURED GROUNDWATER	PREPARED FOR	
	REVISIONS	
	DESCRIPTION	
WWW.WCGRP.COM FIGURE IIIG-D-1B		



PREPARED FOR		MAJOR PERMIT AMMENDMENT AUGUST 2023	
REVISIONS		GROUNDWA	TER CONTOUR MAP
DATE	DESCRIPTION	CITY OF MEADOW LANDFILL TERRY COUNTY, TEXAS	
		WWW.WCGRP.COM	FIGURE IIIG-D-2A



PREPARED FOR	MAJOR PERMIT AMMENDMENT SEPTEMBER 2023	
REVISIONS DESCRIPTION	GROUNDWATER CONTOUR MAP CITY OF MEADOW LANDFILL TERRY COUNTY, TEXAS	
	WWW.WCGRP.COM FIGURE IIIG-D-2B	



PREPARED FOR	MAJOR PERMIT AMMENDMENT OCTOBER 2023	
REVISIONS	GROUNDWATER CONTOUR MAP	
DESCRIPTION	CITY OF MEADOW LANDFILL TERRY COUNTY, TEXAS	
	WWW.WCGRP.COM FIGURE IIIG-D-2C	



EADOW LANDFILL, LLC	MAJOR PERMIT AMMENDMENT NOVEMBER 2023	
REVISIONS	GROUNDWATER CONTOUR MAP	
DESCRIPTION	CITY OF MEADOW LANDFILL TERRY COUNTY, TEXAS	
wv	/ww.wcgrp.com FIGURE IIIG-D-2D	



PREPARED FOR MEADOW LANDFILL, LLC	MAJOR PE JANU	RMIT AMMENDMENT JARY 2024
REVISIONS DATE DESCRIPTION	GROUNDWA CITY OF I TERRY	TER CONTOUR MAP MEADOW LANDFILL COUNTY, TEXAS
	WWW.WCGRP.COM	FIGURE IIIG-D-2E



PREPARED FOR EADOW LANDFILL, LLC	MAJOR PERMIT AMMENDMENT APRIL 2024	
REVISIONS ATE DESCRIPTION	GROUNDWATER CONTOUR MAP CITY OF MEADOW LANDFILL TERRY COUNTY, TEXAS	
	WWW.WCGRP.COM FIGURE IIIG-D-2F	



PREPARED FOR	MAJOR PERMIT AMMENDMENT JUNE 2024 GROUNDWATER CONTOUR MAP	
REVISIONS		
	CITY OF MEADOW LANDFILL TERRY COUNTY, TEXAS	
	WWW.WCGRP.COM FIGURE IIIG-D-2G	



IEADC	PREPARED FOR DW LANDFILL, LLC	MAJOR PERMIT AMMENDMENT JULY 2024	
	REVISIONS	GROUNDWATER CONTOUR MAP CITY OF MEADOW LANDFILL TERRY COUNTY, TEXAS	
DATE	DESCRIPTION		
		WWW.WCGRP.COM	FIGURE IIIG-D-2H
# 2023 WEAVER CONSULTANTS GROUP SLUG TEST REPORT





















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# 2023/2024 WEAVER CONSULTANTS GROUP DATA LOGGER GROUNDWATER POTENTIMERIC HEAD ELEVATION READINGS

#### 2023 / 2024 Weaver Consultants Group Data Logger Groundwater Potentiometric Head Elevation Readings City of Meadow Landfill - Permit No. MSW-2293C

Date of		C	aily Datalog	ger Static Gro	undwater Pote	entiometric Hea	ad Elevation Da	ata by Piezon	neter	
Reading	PWCG-1	PWCG-2	PWCG-3	PWCG-4A	PWCG-4B	PWCG-5A	PWCG-5B	PWCG-6	PWCG-7A	PWCG-7B
10/14/2023	3253.67	3249.65	3259.38	3249.57	3249.43	3262.73	3263.74	3261.81	3261.09	3260.29
10/15/2023	3253.67	3249.67	3259.50	3249.59	3249.42	3262.82	3263.82	3261.86	3261.02	3260.38
10/16/2023	3253.68	3249.69	3259.67	3249.62	3249.37	3262.82	3263.85	3261.88	3260.99	3260.44
10/17/2023	3253.68	3249.67	3259.77	3249.62	3249.40	3262.79	3263.99	3261.98	3260.91	3260.47
10/18/2023	3253.70	3249.53	3259.67	3249.63	3249.40	3262.70	3264.13	3262.05	3260.87	3260.51
10/19/2023	3253.73	3249.75	3259.82	3249.69	3249.31	3262.77	3264.02	3261.95	3261.00	3260.53
10/20/2023	3253.73	3249.74	3259.89	3249.70	3249.30	3262.80	3264.02	3261.98	3260.97	3260.55
10/21/2023	3253.74	3249.73	3259.90	3249.71	3249.32	3262.75	3264.14	3262.04	3260.93	3260.61
10/22/2023	3253.75	3249.77	3259.93	3249.74	3249.27	3262.77	3264.15	3262.05	3260.96	3260.62
10/23/2023	3253.76	3249.79	3259.95	3249.75	3249.24	3262.77	3264.16	3262.04	3261.00	3260.63
10/24/2023	3253.76	3249.75	3259.90	3249.77	3249.24	3262.76	3264.18	3262.06	3260.99	3260.63
10/25/2023	3253.84	3249.80	3259.91	3249.83	3249.14	3262.80	3264.14	3261.98	3261.09	3260.62
10/26/2023	3253.81	3249.78	3259.89	3249.83	3249.15	3262.86	3264.10	3261.99	3261.10	3260.65
10/27/2023	3253.87	3249.93	3259.95	3249.77	3249.21	3262.91	3264.07	3261.92	3261.16	3260.64
10/28/2023	3253.88	3249.76	3259.95	3249.53	3249.39	3263.00	3264.00	3261.91	3261.17	3260.68
10/29/2023	3253.93	3249.76	3259.88	3249.33	3249.56	3262.98	3264.04	3261.90	3261.18	3260.65
10/30/2023	3253.99	3249.85	3260.00	3249.26	3249.62	3263.18	3263.82	3261.71	3261.32	3260.60
10/31/2023	3254.05	3249.83	3260.03	3249.16	3249.70	3263.20	3263.87	3261.76	3261.25	3260.58
11/1/2023	3254.03	3249.86	3260.15	3249.06	3249.80	3263.21	3263.88	3261.77	3261.26	3260.62
11/2/2023	3254.02	3249.85	3260.15	3248.95	3249.90	3263.14	3264.00	3261.85	3261.19	3260.67
11/3/2023	3254.03	3249.86	3260.16	3248.90	3249.94	3263.12	3264.03	3261.86	3261.22	3260.68
11/4/2023	3254.04	3249.91	3260.19	3248.89	3249.96	3263.09	3264.07	3261.87	3261.25	3260.71
11/5/2023	3254.05	3249.97	3260.28	3248.92	3249.94	3263.12	3264.02	3261.86	3261.29	3260.73
11/6/2023	3254.06	3249.95	3260.27	3248.90	3249.94	3263.09	3264.12	3261.92	3261.23	3260.75
11/7/2023	3254.08	3250.02	3260.32	3248.93	3249.92	3263.08	3264.13	3261.90	3261.27	3260.76
11/8/2023	3254.09	3249.97	3260.24	3248.96	3249.88	3263.07	3264.15	3261.91	3261.29	3260.79
11/9/2023	3254.12	3250.03	3260.21	3249.04	3249.81	3263.14	3264.06	3261.83	3261.41	3260.78
11/10/2023	3254.18	3249.95	3260.17	3249.14	3249.72	3263.28	3263.93	3261.71	3261.50	3260.75
11/11/2023	3254.22	3249.99	3260.19	3249.18	3249.66	3263.34	3263.91	3261.70	3261.51	3260.75
11/12/2023	3254.21	3250.01	3260.16	3249.21	3249.64	3263.34	3263.93	3261.71	3261.52	3260.76
11/13/2023	3254.26	3250.06	3260.20	3249.24	3249.58	3263.41	3263.86	3261.65	3261.59	3260.77
11/14/2023	3254.26	3250.07	3260.25	3249.27	3249.58	3263.43	3263.91	3261.69	3261.56	3260.78
11/15/2023	3254.28	3250.11	3260.25	3249.26	3249.56	3263.35	3263.97	3261.74	3261.53	3260.78
11/16/2023	3254.31	3250.06	3260.26	3249.30	3249.51	3263.38	3263.96	3261.72	3261.61	3260.78
11/17/2023	3254.33	3250.15	3260.19	3249.29	3249.54	3263.31	3264.07	3261.78	3261.56	3260.81
11/18/2023	3254.40	3250.17	3260.26	3249.38	3249.45	3263.43	3263.88	3261.64	3261.73	3260.79
11/19/2023	3254.38	3250.10	3260.28	3249.36	3249.48	3263.38	3264.02	3261.72	3261.65	3260.81
11/20/2023	3254.40	3250.05	3260.03	3249.35	3249.47	3263.30	3264.09	3261.77	3261.66	3260.82
11/21/2023	3254.46	3250.23	3260.11	3249.45	3249.34	3263.51	3263.78	3261.52	3261.90	3260.78
11/22/2023	3254.44	3250.16	3260.18	3249.46	3249.28	3263.61	3264.44	3262.17	3261.82	3261.31
11/23/2023	3254.42	3250.05	3260.12	3249.41	3249.31	3263.47	3264.62	3262.32	3261.68	3261.32
11/24/2023	3254.43	3250.25	3260.10	3249.39	3249.30	3263.38	3264.66	3262.33	3261.70	3261.35
11/25/2023	3254.40	3250.06	3260.05	3249.40	3249.25	3263.44	3264.54	3262.27	3261.73	3261.35
11/26/2023	3254.42	3250.24	3260.04	3249.37	3249.25	3263.37	3264.64	3262.29	3261.70	3261.38
11/27/2023	3254.51	3250.08	3259.94	3249.49	3249.11	3263.53	3264.45	3262.15	3261.81	3261.28
11/28/2023	3254.45	3250.17	3260.04	3249.44	3249.13	3263.50	3264.51	3262.19	3261.75	3261.33
11/29/2023	3254.48	3250.21	3260.11	3249.39	3249.14	3263.44	3264.58	3262.26	3261.67	3261.34
11/30/2023	3254.50	3250.02	3259.97	3249.32	3249.20	3263.29	3264.78	3262.39	3261.55	3261.37

NOTES: Groundwater elevations listed in feet above mean sea level.

Data recorded continuously at 24-hour intervals via dedicated In-Situ[™] RuggedTroll 100 and Rugged BaroTROLL tranducer data loggers.

Raw data compensated for barometric pressure utilizing In-Situ™ BaroTROLL daily barometric readings and Baro-Merge software.

#### 2023 / 2024 Weaver Consultants Group Data Logger Groundwater Potentiometric Head Elevation Readings (continued) City of Meadow Landfill - Permit No. MSW-2293C

Date of		[	Daily Datalog	ger Static Gro	undwater Pote	entiometric Hea	ad Elevation Da	ata by Piezon	neter	
Reading	PWCG-1	PWCG-2	PWCG-3	PWCG-4A	PWCG-4B	PWCG-5A	PWCG-5B	PWCG-6	PWCG-7A	PWCG-7B
12/1/2023	3254.57	3250.22	3260.01	3249.33	3249.14	3263.25	3264.72	3262.32	3261.64	3261.37
12/2/2023	3254.57	3250.18	3259.94	3249.31	3249.12	3263.27	3264.71	3262.31	3261.63	3261.38
12/3/2023	3254.61	3250.13	3259.88	3249.35	3249.08	3263.35	3264.61	3262.22	3261.68	3261.36
12/4/2023	3254.63	3250.24	3259.91	3249.34	3249.05	3263.30	3264.62	3262.20	3261.68	3261.37
12/5/2023	3254.66	3250.22	3259.81	3249.33	3249.01	3263.35	3264.59	3262.18	3261.66	3261.37
12/6/2023	3254.68	3250.27	3259.94	3249.37	3248.94	3263.45	3264.48	3262.10	3261.73	3261.35
12/7/2023	3254.59	3250.21	3259.98	3249.25	3249.04	3263.30	3264.67	3262.26	3261.54	3261.40
12/8/2023	3254.58	3250.21	3259.90	3249.19	3249.04	3263.16	3264.82	3262.37	3261.48	3261.41
12/9/2023	3254.63	3250.25	3259.69	3249.23	3248.99	3263.16	3264.70	3262.25	3261.59	3261.39
12/10/2023	3254.68	3250.25	3259.84	3249.33	3248.85	3263.47	3264.39	3262.02	3261.79	3261.34
12/11/2023	3254.64	3250.20	3259.77	3249.24	3248.92	3263.33	3264.61	3262.20	3261.56	3261.34
12/12/2023	3254.61	3250.26	3259.78	3249.20	3248.91	3263.30	3264.60	3262.17	3261.60	3261.38
12/13/2023	3254.57	3250.30	3259.76	3249.18	3248.90	3263.29	3264.60	3262.18	3261.58	3261.42
12/14/2023	3254.59	3250.27	3259.79	3249.19	3248.87	3263.31	3264.55	3262.13	3261.59	3261.39
12/15/2023	3254.60	3250.27	3259.68	3249.19	3248.85	3263.25	3264.59	3262.15	3261.56	3261.38
12/16/2023	3254.61	3250.31	3259.75	3249.20	3248.79	3263.29	3264.52	3262.08	3261.61	3261.35
12/17/2023	3254.59	3250.17	3259.64	3249.15	3248.83	3263.27	3264.60	3262.17	3261.51	3261.37
12/18/2023	3254.61	3250.41	3259.73	3249.15	3248.79	3263.23	3264.57	3262.12	3261.58	3261.36
12/19/2023	3254.60	3250.23	3259.68	3249.12	3248.79	3263.26	3264.58	3262.14	3261.52	3261.36
12/20/2023	3254.56	3250.29	3259.64	3249.05	3248.81	3263.18	3264.67	3262.19	3261.48	3261.41
12/21/2023	3254.55	3250.35	3259.64	3249.05	3248.79	3263.19	3264.61	3262.12	3261.53	3261.41
12/22/2023	3254.57	3250.38	3259.67	3249.05	3248.76	3263.22	3264.59	3262.10	3261.51	3261.40
12/23/2023	3254.56	3250.31	3259.69	3248.99	3248.78	3263.17	3264.64	3262.16	3261.46	3261.40
12/24/2023	3254.56	3250.25	3259.52	3248.94	3248.81	3263.05	3264.76	3262.23	3261.42	3261.41
12/25/2023	3254.63	3250.39	3259.59	3249.02	3248.68	3263.22	3264.55	3262.03	3261.60	3261.34
12/26/2023	3254.64	3250.20	3259.47	3249.00	3248.66	3263.24	3264.56	3262.07	3261.54	3261.33
12/27/2023	3254.64	3250.34	3259.52	3248.97	3248.68	3263.22	3264.56	3262.05	3261.55	3261.35
12/28/2023	3254.60	3250.26	3259.42	3248.94	3248.67	3263.23	3264.52	3262.03	3261.55	3261.37
12/29/2023	3254.66	3250.31	3259.46	3248.98	3248.59	3263.32	3264.41	3261.92	3261.61	3261.32
12/30/2023	3254.62	3250.33	3259.50	3248.93	3248.62	3263.29	3264.47	3262.00	3261.53	3261.34
12/31/2023	3254.61	3250.24	3259.37	3248.86	3248.65	3263.20	3264.55	3262.05	3261.48	3261.35
1/1/2024	3254.65	3250.40	3259.45	3248.89	3248.60	3263.25	3264.43	3261.94	3261.59	3261.34
1/2/2024	3254.63	3250.28	3259.41	3248.86	3248.60	3263.28	3264.45	3261.96	3261.51	3261.34
1/3/2024	3254.65	3250.38	3259.44	3248.86	3248.57	3263.25	3264.49	3261.98	3261.51	3261.33
1/4/2024	3254.62	3250.31	3259.45	3248.81	3248.58	3263.22	3264.52	3262.01	3261.47	3261.34
1/5/2024	3254.60	3250.34	3259.39	3248.75	3248.63	3263.11	3264.62	3262.07	3261.42	3261.36
1/6/2024	3254.62	3250.34	3259.32	3248.76	3248.56	3263.16	3264.53	3262.01	3261.49	3261.32
1/7/2024	3254.65	3250.50	3259.54	3248.77	3248.55	3263.21	3264.46	3261.94	3261.52	3261.32
1/8/2024	3254.56	3250.19	3259.28	3248.60	3248.67	3263.03	3264.76	3262.15	3261.29	3261.38
1/9/2024	3254.66	3250.56	3259.45	3248.70	3248.51	3263.17	3264.47	3261.93	3261.56	3261.32
1/10/2024	3254.62	3250.38	3259.32	3248.63	3248.57	3263.16	3264.55	3262.02	3261.41	3261.34
1/11/2024	3254.63	3250.35	3259.34	3248.62	3248.54	3263.12	3264.53	3262.01	3261.45	3261.34
1/12/2024	3254.61	3250.58	3259.40	3248.54	3248.58	3263.02	3264.63	3262.02	3261.39	3261.38
1/13/2024	3254.66	3250.26	3259.08	3248.63	3248.48	3263.22	3264.41	3261.90	3261.51	3261.30
1/14/2024	3254.72	3250.30	3259.10	3248.68	3248.38	3263.35	3264.23	3261.74	3261.65	3261.24
1/15/2024	3254.79	3250.09	3258.92	3248.70	3248.33	3263.39	3264.22	3261.71	3261.65	3261.17
1/16/2024	3254.82	3250.34	3259.12	3248.73	3248.27	3263.47	3264.07	3261.59	3261.76	3261.17
1/17/2024	3254.76	3250.29	3259.19	3248.62	3248.35	3263.41	3264.22	3261.76	3261.56	3261.20

NOTES: Groundwater elevations listed in feet above mean sea level.

Data recorded continuously at 24-hour intervals via dedicated In-Situ™ RuggedTroll 100 and Rugged BaroTROLL tranducer data loggers.

Raw data compensated for barometric pressure utilizing In-Situ™ BaroTROLL daily barometric readings and Baro-Merge software.

#### 2023 / 2024 Weaver Consultants Group Data Logger Groundwater Potentiometric Head Elevation Readings (continued) City of Meadow Landfill - Permit No. MSW-2293C

Date of		[	Daily Datalog	ger Static Gro	undwater Pote	entiometric Hea	ad Elevation D	ata by Piezon	neter	
Reading	PWCG-1	PWCG-2	PWCG-3	PWCG-4A	PWCG-4B	PWCG-5A	PWCG-5B	PWCG-6	PWCG-7A	PWCG-7B
1/18/2024	3254.72	3250.40	3259.16	3248.53	3248.41	3263.24	3264.40	3261.85	3261.46	3261.22
1/19/2024	3254.47	3250.79	3259.35	3248.29	3248.59	3263.04	3264.50	3261.96	3261.35	3261.49
1/20/2024	3254.62	3250.48	3259.17	3248.44	3248.41	3263.35	3264.23	3261.79	3261.50	3261.32
1/21/2024	3254.76	3250.37	3259.10	3248.54	3248.30	3263.42	3264.17	3261.71	3261.56	3261.17
1/22/2024	3254.72	3250.44	3259.13	3248.46	3248.37	3263.31	3264.29	3261.81	3261.48	3261.20
1/23/2024	3254.64	3250.48	3259.14	3248.36	3248.42	3263.19	3264.40	3261.87	3261.43	3261.29
1/24/2024	3254.63	3250.51	3259.15	3248.31	3248.43	3263.18	3264.37	3261.86	3261.41	3261.31
1/25/2024	3254.63	3250.53	3259.14	3248.29	3248.42	3263.20	3264.33	3261.84	3261.43	3261.31
1/26/2024	3254.67	3250.44	3259.03	3248.31	3248.38	3263.23	3264.32	3261.83	3261.43	3261.25
1/27/2024	3254.52	3250.67	3259.13	3248.15	3248.49	3263.14	3264.35	3261.87	3261.39	3261.42
1/28/2024	3254.60	3250.60	3259.07	3248.23	3248.37	3263.29	3264.21	3261.75	3261.44	3261.31
1/29/2024	3254.66	3250.55	3259.07	3248.26	3248.33	3263.35	3264.17	3261.72	3261.47	3261.24
1/30/2024	3254.66	3250.56	3259.05	3248.24	3248.32	3263.32	3264.20	3261.72	3261.44	3261.25
1/31/2024	3254.65	3250.63	3259.10	3248.19	3248.33	3263.29	3264.22	3261.75	3261.42	3261.26
2/1/2024	3254.62	3250.56	3259.11	3248.14	3248.40	3263.23	3264.59	3262.13	3261.37	3261.63
2/2/2024	3254.64	3250.50	3259.08	3248.13	3248.42	3263.15	3264.68	3262.19	3261.33	3261.63
2/3/2024	3254.64	3250.45	3259.01	3248.10	3248.41	3263.04	3264.72	3262.21	3261.33	3261.61
2/4/2024	3254.68	3250.57	3258.88	3248.12	3248.38	3263.02	3264.72	3262.17	3261.33	3261.61
2/5/2024	3254.72	3250.64	3258.96	3248.20	3248.27	3263.26	3264.42	3261.97	3261.49	3261.59
2/6/2024	3254.69	3250.68	3259.04	3248.18	3248.29	3263.29	3264.43	3262.02	3261.40	3261.57
2/7/2024	3254.68	3250.53	3258.96	3248.13	3248.33	3263.20	3264.55	3262.11	3261.28	3261.59
2/8/2024	3254.72	3250.64	3258.95	3248.15	3248.32	3263.16	3264.55	3262.08	3261.33	3261.56
2/9/2024	3254.70	3250.61	3258.90	3248.17	3248.29	3263.19	3264.49	3262.04	3261.33	3261.55
2/10/2024	3254.70	3250.54	3258.87	3248.15	3248.27	3263.21	3264.47	3262.02	3261.33	3261.55
2/11/2024	3254.72	3250.54	3258.75	3248.14	3248.29	3263.16	3264.50	3262.05	3261.30	3261.54
2/12/2024	3254.78	3250.59	3258.82	3248.21	3248.18	3263.26	3264.31	3261.89	3261.39	3261.48
2/13/2024	3254.76	3250.62	3258.86	3248.18	3248.22	3263.27	3264.37	3261.93	3261.31	3261.50
2/14/2024	3254.74	3250.59	3258.80	3248.16	3248.23	3263.21	3264.39	3261.98	3261.26	3261.50
2/15/2024	3254.76	3250.78	3258.92	3248.18	3248.19	3263.23	3264.35	3261.93	3261.28	3261.48
2/16/2024	3254.71	3250.62	3258.75	3248.11	3248.27	3263.18	3264.42	3262.03	3261.14	3261.50
2/17/2024	3254.77	3250.68	3258.76	3248.18	3248.17	3263.27	3264.29	3261.90	3261.26	3261.46
2/18/2024	3254.84	3250.58	3258.79	3248.24	3248.09	3263.39	3264.15	3261.79	3261.32	3261.39
2/19/2024	3254.78	3250.65	3258.77	3248.13	3248.20	3263.22	3264.37	3261.97	3261.14	3261.44
2/20/2024	3254.75	3250.72	3258.80	3248.13	3248.17	3263.19	3264.29	3261.93	3261.17	3261.45
2/21/2024	3254.75	3250.72	3258.88	3248.11	3248.19	3263.19	3264.31	3261.95	3261.12	3261.47
2/22/2024	3254.71	3250.71	3258.75	3248.04	3248.25	3263.07	3264.43	3262.03	3261.02	3261.48
2/23/2024	3254.80	3250.80	3258.78	3248.11	3248.16	3263.16	3264.27	3261.90	3261.14	3261.42
2/24/2024	3254.78	3250.78	3258.84	3248.10	3248.15	3263.20	3264.24	3261.90	3261.10	3261.42
2/25/2024	3254.74	3250.70	3258.74	3248.04	3248.20	3263.14	3264.32	3261.97	3261.01	3261.45
2/26/2024	3254.74	3250.76	3258.80	3248.05	3248.18	3263.10	3264.30	3261.93	3261.04	3261.43
2/27/2024	3254.73	3250.64	3258.69	3248.01	3248.22	3263.03	3264.40	3262.01	3260.94	3261.43
2/28/2024	3254.78	3250.99	3258.75	3248.04	3248.19	3263.00	3264.35	3261.95	3261.00	3261.40
2/29/2024	3254.86	3250.73	3258.69	3248.15	3248.07	3263.29	3264.05	3261.73	3261.12	3261.32
3/1/2024	3254.81	3250.74	3258.69	3248.06	3248.13	3263.14	3264.23	3261.89	3260.97	3261.33
3/2/2024	3254.81	3250.81	3258.75	3248.03	3248.16	3263.09	3264.26	3261.92	3260.95	3261.35
3/3/2024	3254.77	3250.77	3258.71	3247.98	3248.19	3263.02	3264.32	3261.98	3260.87	3261.37
3/4/2024	3254.81	3250.81	3258.67	3247.99	3248.17	3262.99	3264.32	3261.96	3260.90	3261.34
3/5/2024	3254.81	3250.84	3258.63	3248.02	3248.13	3263.05	3264.22	3261.88	3260.94	3261.31

NOTES: Groundwater elevations listed in feet above mean sea level.

#### 2023 / 2024 Weaver Consultants Group Data Logger Groundwater Potentiometric Head Elevation Readings (continued) City of Meadow Landfill - Permit No. MSW-2293C

Date of		[	Daily Datalog	ger Static Gro	undwater Pote	entiometric Hea	ad Elevation D	ata by Piezon	neter	
Reading	PWCG-1	PWCG-2	PWCG-3	PWCG-4A	PWCG-4B	PWCG-5A	PWCG-5B	PWCG-6	PWCG-7A	PWCG-7B
3/6/2024	3254.84	3250.84	3258.69	3248.02	3248.12	3263.08	3264.19	3261.87	3260.94	3261.32
3/7/2024	3254.80	3250.85	3258.66	3247.95	3248.18	3263.01	3264.28	3261.95	3260.82	3261.32
3/8/2024	3254.84	3250.86	3258.51	3247.97	3248.14	3262.97	3264.26	3261.92	3260.86	3261.28
3/9/2024	3254.89	3250.86	3258.51	3248.07	3248.03	3263.19	3263.97	3261.69	3261.03	3261.24
3/10/2024	3254.89	3250.87	3258.51	3248.05	3248.04	3263.20	3263.99	3261.72	3260.93	3261.22
3/11/2024	3254.87	3250.88	3258.51	3248.02	3248.05	3263.16	3264.03	3261.77	3260.88	3261.22
3/12/2024	3254.88	3250.88	3258.51	3247.98	3248.10	3263.10	3264.09	3261.83	3260.83	3261.22
3/13/2024	3254.87	3250.89	3258.50	3247.92	3248.14	3262.98	3264.18	3261.90	3260.75	3261.23
3/14/2024	3254.86	3250.83	3258.60	3247.93	3248.13	3262.95	3264.21	3261.89	3260.75	3261.22
3/15/2024	3254.89	3250.88	3258.51	3247.98	3248.05	3263.04	3264.06	3261.76	3260.85	3261.20
3/16/2024	3254.89	3250.95	3258.53	3247.98	3248.06	3263.12	3264.00	3261.74	3260.82	3261.16
3/17/2024	3254.90	3250.84	3258.49	3247.95	3248.06	3263.06	3264.03	3261.77	3260.78	3261.16
3/18/2024	3254.93	3250.84	3258.43	3247.99	3248.01	3263.12	3263.92	3261.69	3260.84	3261.13
3/19/2024	3254.91	3250.97	3258.50	3247.97	3248.03	3263.15	3263.88	3261.72	3260.78	3261.12
3/20/2024	3254.92	3250.89	3258.52	3247.91	3248.07	3263.04	3264.01	3261.81	3260.67	3261.11
3/21/2024	3254.92	3250.89	3258.52	3247.90	3248.07	3262.99	3264.03	3261.80	3260.69	3261.11
3/22/2024	3254.93	3250.89	3258.46	3247.91	3248.06	3263.00	3264.01	3261.78	3260.71	3261.09
3/23/2024	3254.94	3250.85	3258.36	3247.92	3248.01	3263.07	3263.90	3261.69	3260.76	3261.09
3/24/2024	3254.90	3251.10	3258.62	3247.81	3248.14	3262.94	3264.11	3261.90	3260.52	3261.10
3/25/2024	3254.95	3250.80	3258.49	3247.80	3248.11	3262.83	3264.15	3261.86	3260.58	3261.06
3/26/2024	3255.03	3250.83	3258.29	3247.92	3247.98	3262.99	3263.92	3261.68	3260.75	3260.99
3/27/2024	3255.02	3250.95	3258.38	3247.90	3247.99	3263.00	3263.91	3261.68	3260.72	3260.99
3/28/2024	3255.01	3250.88	3258.27	3247.90	3247.95	3263.10	3263.78	3261.59	3260.73	3260.98
3/29/2024	3254.99	3251.00	3258.43	3247.84	3248.03	3263.02	3263.92	3261.72	3260.58	3260.99
3/30/2024	3254.99	3250.90	3258.38	3247.82	3248.02	3262.95	3263.95	3261.73	3260.58	3260.97
3/31/2024	3254.98	3251.03	3258.41	3247.81	3248.02	3262.94	3263.93	3261.73	3260.55	3260.98
4/1/2024	3254.99	3250.98	3258.40	3247.78	3248.08	3262.90	3263.98	3261.77	3260.53	3260.98
4/2/2024	3255.03	3250.88	3258.31	3247.82	3248.00	3262.93	3263.88	3261.69	3260.58	3260.93
4/3/2024	3255.09	3251.04	3258.30	3247.89	3247.94	3263.10	3263.70	3261.55	3260.66	3260.88
4/4/2024	3255.03	3250.97	3258.29	3247.82	3248.00	3263.01	3263.78	3261.64	3260.53	3260.90
4/5/2024	3255.03	3251.01	3258.32	3247.79	3248.01	3263.02	3263.81	3261.66	3260.53	3260.89
4/6/2024	3255.08	3251.06	3258.37	3247.77	3248.02	3262.95	3263.85	3261.69	3260.47	3260.87
4/7/2024	3255.08	3250.94	3258.23	3247.80	3247.97	3262.96	3263.77	3261.60	3260.53	3260.84
4/8/2024	3255.08	3251.05	3258.29	3247.78	3248.00	3262.97	3263.80	3261.65	3260.47	3260.83
4/9/2024	3255.05	3251.06	3258.32	3247.74	3248.01	3262.93	3263.81	3261.67	3260.45	3260.84
4/10/2024	3255.10	3251.04	3258.23	3247.79	3247.95	3262.98	3263.70	3261.58	3260.51	3260.79
4/11/2024	3255.07	3251.00	3258.17	3247.80	3247.92	3263.01	3263.82	3261.87	3260.54	3260.93
4/12/2024	3255.03	3251.11	3258.26	3247.79	3247.92	3263.02	3263.80	3261.89	3260.49	3260.94
4/13/2024	3255.02	3251.05	3258.22	3247.77	3247.95	3263.00	3263.82	3261.90	3260.46	3260.94
4/14/2024	3255.02	3251.02	3258.24	3247.75	3247.96	3262.95	3263.89	3261.93	3260.42	3260.92
4/15/2024	3254.99	3251.09	3258.27	3247.74	3247.95	3262.93	3263.88	3261.93	3260.40	3260.90
4/16/2024	3254.93	3250.99	3258.24	3247.68	3248.02	3262.79	3263.96	3262.00	3260.35	3260.95
4/17/2024	3254.98	3251.10	3258.25	3247.75	3247.93	3262.89	3263.85	3261.91	3260.43	3260.90
4/18/2024	3254.96	3251.08	3258.23	3247.74	3247.93	3262.89	3263.85	3261.90	3260.39	3260.88
4/19/2024	3254.99	3251.06	3258.13	3247.79	3247.87	3262.95	3263.71	3261.81	3260.46	3260.85
4/20/2024	3254.94	3251.06	3258.17	3247.78	3247.89	3262.94	3263.74	3261.83	3260.41	3260.84
4/21/2024	3254.98	3250.98	3258.08	3247.84	3247.81	3263.01	3263.61	3261.74	3260.48	3260.79
4/22/2024	3254.92	3251.10	3258.15	3247.78	3247.87	3262.99	3263.67	3261.83	3260.38	3260.80

NOTES: Groundwater elevations listed in feet above mean sea level.

#### 2023 / 2024 Weaver Consultants Group Data Logger Groundwater Potentiometric Head Elevation Readings (continued) City of Meadow Landfill - Permit No. MSW-2293C

Date of		[	Daily Datalog	ger Static Gro	undwater Pote	entiometric Hea	ad Elevation D	ata by Piezon	neter	
Reading	PWCG-1	PWCG-2	PWCG-3	PWCG-4A	PWCG-4B	PWCG-5A	PWCG-5B	PWCG-6	PWCG-7A	PWCG-7B
4/23/2024	3254.89	3251.02	3258.22	3247.72	3247.94	3262.84	3263.82	3261.93	3260.28	3260.81
4/24/2024	3254.88	3250.98	3258.14	3247.72	3247.94	3262.79	3263.80	3261.89	3260.33	3260.81
4/25/2024	3254.87	3251.13	3258.20	3247.73	3247.92	3262.82	3263.78	3261.89	3260.29	3260.80
4/26/2024	3254.84	3251.03	3258.20	3247.67	3247.96	3262.68	3263.89	3261.96	3260.24	3260.79
4/27/2024	3254.87	3251.06	3258.18	3247.71	3247.91	3262.72	3263.84	3261.90	3260.28	3260.76
4/28/2024	3254.84	3251.01	3258.11	3247.72	3247.90	3262.68	3263.84	3261.88	3260.27	3260.74
4/29/2024	3254.83	3251.09	3258.11	3247.76	3247.87	3262.76	3263.71	3261.80	3260.32	3260.73
4/30/2024	3254.82	3251.04	3258.10	3247.74	3247.86	3262.74	3263.72	3261.82	3260.27	3260.72
5/1/2024	3254.82	3251.04	3258.11	3247.74	3247.88	3262.73	3263.75	3261.81	3260.26	3260.71
5/2/2024	3254.80	3251.01	3258.10	3247.73	3247.86	3262.70	3263.76	3261.82	3260.25	3260.69
5/3/2024	3254.78	3251.00	3258.04	3247.75	3247.86	3262.72	3263.69	3261.75	3260.26	3260.68
5/4/2024	3254.78	3251.02	3258.03	3247.77	3247.82	3262.76	3263.64	3261.75	3260.28	3260.66
5/5/2024	3254.79	3251.05	3258.01	3247.79	3247.80	3262.77	3263.60	3261.73	3260.27	3260.61
5/6/2024	3254.74	3251.08	3258.10	3247.72	3247.87	3262.70	3263.68	3261.78	3260.17	3260.65
5/7/2024	3254.74	3250.91	3258.02	3247.72	3247.84	3262.63	3263.69	3261.77	3260.21	3260.62
5/8/2024	3254.71	3251.13	3258.12	3247.69	3247.87	3262.58	3263.75	3261.82	3260.13	3260.64
5/9/2024	3254.69	3251.03	3258.05	3247.72	3247.84	3262.59	3263.70	3261.77	3260.18	3260.61
5/10/2024	3254.78	3251.01	3257.91	3247.81	3247.73	3262.75	3263.46	3261.57	3260.31	3260.55
5/11/2024	3254.69	3251.03	3257.97	3247.76	3247.78	3262.73	3263.50	3261.66	3260.19	3260.56
5/12/2024	3254.68	3251.00	3258.01	3247.72	3247.82	3262.66	3263.59	3261.71	3260.12	3260.55
5/13/2024	3254.70	3250.93	3257.96	3247.76	3247.77	3262.64	3263.57	3261.66	3260.18	3260.51
5/14/2024	3254.65	3251.02	3257.94	3247.75	3247.79	3262.64	3263.54	3261.67	3260.16	3260.53
5/15/2024	3254.65	3251.04	3258.00	3247.72	3247.80	3262.59	3263.59	3261.70	3260.10	3260.52
5/16/2024	3254.62	3250.99	3257.98	3247.71	3247.81	3262.56	3263.58	3261.69	3260.08	3260.53
5/17/2024	3254.64	3251.00	3257.93	3247.75	3247.75	3262.61	3263.50	3261.62	3260.11	3260.48
5/18/2024	3254.61	3250.98	3257.93	3247.73	3247.77	3262.59	3263.49	3261.64	3260.09	3260.48
5/19/2024	3254.59	3251.00	3257.91	3247.74	3247.75	3262.60	3263.47	3261.61	3260.10	3260.47
5/20/2024	3254.55	3251.06	3257.99	3247.69	3247.79	3262.54	3263.55	3261.67	3260.01	3260.49
5/21/2024	3254.56	3251.06	3257.98	3247.71	3247.77	3262.54	3263.52	3261.64	3260.01	3260.46
5/22/2024	3254.60	3251.05	3257.93	3247.75	3247.75	3262.55	3263.46	3261.59	3260.05	3260.44
5/23/2024	3254.61	3251.08	3257.94	3247.72	3247.73	3262.56	3263.46	3261.59	3260.02	3260.43
5/24/2024	3254.68	3250.99	3257.92	3247.73	3247.74	3262.51	3263.48	3261.60	3259.99	3260.40
5/25/2024	3254.71	3251.08	3257.89	3247.74	3247.72	3262.56	3263.42	3261.54	3260.01	3260.40
5/26/2024	3254.71	3250.98	3257.90	3247.72	3247.73	3262.50	3263.47	3261.60	3259.97	3260.40
5/27/2024	3254.78	3251.00	3257.83	3247.75	3247.68	3262.55	3263.35	3261.51	3260.03	3260.37
5/28/2024	3254.81	3251.04	3257.83	3247.74	3247.71	3262.56	3263.34	3261.47	3259.98	3260.37
5/29/2024	3254.91	3250.93	3257.74	3247.80	3247.63	3262.59	3263.27	3261.41	3260.05	3260.31
5/30/2024	3254.87	3251.03	3257.86	3247.73	3247.70	3262.54	3263.35	3261.51	3259.93	3260.35
5/31/2024	3254.89	3251.00	3257.85	3247.72	3247.71	3262.45	3263.38	3261.52	3259.92	3260.33
6/1/2024	3254.92	3250.97	3257.77	3247.78	3247.62	3262.49	3263.28	3261.37	3260.01	3260.31
6/2/2024	3254.87	3250.98	3257.78	3247.70	3247.70	3262.46	3263.35	3261.49	3259.88	3260.32
6/3/2024	3254.87	3251.00	3257.85	3247.68	3247.72	3262.41	3263.40	3261.50	3259.86	3260.29
6/4/2024	3254.85	3251.00	3257.83	3247.64	3247.77	3262.33	3263.42	3261.52	3259.83	3260.30
6/5/2024	3254.86	3250.93	3257.74	3247.65	3247.75	3262.38	3263.33	3261.43	3259.91	3260.27
6/6/2024	3254.84	3251.08	3257.78	3247.64	3247.76	3262.42	3263.27	3261.40	3259.86	3260.28
6/7/2024	3254.87	3250.99	3257.73	3247.63	3247.73	3262.42	3263.25	3261.38	3259.87	3260.24
6/8/2024	3254.81	3251.01	3257.76	3247.60	3247.76	3262.39	3263.28	3261.40	3259.81	3260.26
6/9/2024	3254.80	3250.96	3257.74	3247.61	3247.75	3262.37	3263.27	3261.37	3259.82	3260.24

NOTES: Groundwater elevations listed in feet above mean sea level.

#### 2023 / 2024 Weaver Consultants Group Data Logger Groundwater Potentiometric Head Elevation Readings (continued) City of Meadow Landfill - Permit No. MSW-2293C

Date of		[	aily Datalog	ger Static Gro	undwater Pote	entiometric Hea	ad Elevation Da	ata by Piezon	neter	
Reading	PWCG-1	PWCG-2	PWCG-3	PWCG-4A	PWCG-4B	PWCG-5A	PWCG-5B	PWCG-6	PWCG-7A	PWCG-7B
6/10/2024	3254.82	3250.92	3257.65	3247.66	3247.70	3262.41	3263.17	3261.27	3259.87	3260.18
6/11/2024	3254.78	3250.98	3257.70	3247.59	3247.74	3262.35	3263.23	3261.35	3259.79	3260.20
6/12/2024	3254.76	3250.95	3257.67	3247.64	3247.75	3262.39	3263.29	3261.31	3259.79	3260.19
6/13/2024	3254.70	3251.03	3257.71	3247.55	3247.84	3262.34	3263.36	3261.45	3259.69	3260.23
6/14/2024	3254.66	3251.00	3257.69	3247.48	3247.91	3262.34	3263.33	3261.43	3259.66	3260.24
6/15/2024	3254.65	3251.01	3257.69	3247.39	3247.99	3262.34	3263.30	3261.41	3259.62	3260.22
6/16/2024	3254.61	3250.99	3257.73	3247.25	3248.14	3262.25	3263.39	3261.48	3259.53	3260.22
6/17/2024	3254.57	3251.02	3257.72	3247.20	3248.20	3262.25	3263.36	3261.46	3259.51	3260.21
6/18/2024	3254.57	3250.96	3257.72	3247.13	3248.28	3262.20	3263.37	3261.45	3259.47	3260.21
6/19/2024	3254.56	3250.97	3257.64	3247.15	3248.27	3262.26	3263.27	3261.35	3259.49	3260.19
6/20/2024	3254.53	3251.04	3257.59	3247.19	3248.24	3262.37	3263.15	3261.27	3259.47	3260.17
6/21/2024	3254.47	3251.05	3257.64	3247.17	3248.27	3262.33	3263.18	3261.33	3259.37	3260.19
6/22/2024	3254.46	3251.02	3257.66	3247.21	3248.26	3262.28	3263.20	3261.34	3259.31	3260.17
6/23/2024	3254.43	3250.98	3257.64	3247.22	3248.26	3262.25	3263.22	3261.34	3259.27	3260.17
6/24/2024	3254.40	3251.03	3257.64	3247.25	3248.25	3262.20	3263.22	3261.34	3259.19	3260.17
6/25/2024	3254.37	3251.03	3257.66	3247.27	3248.25	3262.17	3263.23	3261.35	3259.14	3260.17
6/26/2024	3254.33	3251.01	3257.65	3247.30	3248.23	3262.15	3263.21	3261.33	3259.11	3260.16
6/27/2024	3254.31	3251.01	3257.62	3247.35	3248.18	3262.14	3263.19	3261.28	3259.10	3260.17
6/28/2024	3254.28	3251.06	3257.67	3247.36	3248.19	3262.11	3263.24	3261.33	3259.01	3260.14
6/29/2024	3254.24	3251.01	3257.64	3247.39	3248.17	3262.07	3263.21	3261.31	3258.98	3260.16
6/30/2024	3254.24	3251.08	3257.59	3247.49	3248.09	3262.17	3263.05	3261.19	3259.00	3260.14
7/1/2024	3254.24	3251.08	3257.61	3247.53	3248.05	3262.18	3263.05	3261.22	3258.92	3260.12
7/2/2024	3254.26	3251.04	3257.62	3247.56	3248.06	3262.10	3263.12	3261.25	3258.84	3260.12
7/3/2024	3254.29	3251.03	3257.62	3247.57	3248.05	3262.07	3263.13	3261.24	3258.81	3260.12
7/4/2024	3254.34	3251.11	3257.63	3247.65	3247.98	3262.09	3263.10	3261.20	3258.76	3260.12
7/5/2024	3254.45	3251.03	3257.55	3247.72	3247.93	3262.13	3263.03	3261.15	3258.76	3260.09
7/6/2024	3254.44	3251.04	3257.52	3247.76	3247.90	3262.17	3262.97	3261.11	3258.73	3260.11
7/7/2024	3254.45	3251.07	3257.59	3247.75	3247.92	3262.08	3263.05	3261.19	3258.62	3260.10
7/8/2024	3254.51	3250.96	3257.52	3247.78	3247.90	3262.08	3263.00	3261.15	3258.60	3260.09

NOTES: Groundwater elevations listed in feet above mean sea level.

# **APPENDIX IIIG-E**

# 2023 SOIL BORING PLAN AND TCEQ APPROVAL LETTER



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TCEQ 2023 Soil Boring Plan Approval Letter 2023 Soil Boring Plan (Excerpts Only)

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TCEQ 2023 SOIL BORING PLAN APPROVAL LETTER

Jon Niermann, *Chairman* Emily Lindley, *Commissioner* Bobby Janecka, *Commissioner* Kelly Keel, *Interim Executive Director* 



## TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

July 28, 2023

Mr. Brian Danko Environmental Manager Meadow Landfill 1408 N. Martin Luther King Blvd. Lubbock, Texas 79403

Via email

Subject: City of Meadow Landfill – Terry County Municipal Solid Waste – Permit No. 2293 Proposed Site Investigation – Soil Boring Plan Tracking No. 28905176; RN101570976/CN 606025534

Dear Mr. Danko:

On July 17, 2023, we received a soil boring plan (SBP) dated July 14, 2023, for a proposed expansion of the referenced MSW Type IAE and IVAE landfill facility. The SBP was submitted on your behalf by Aaron Evans, PG of Weaver Consultants in Fort Worth, TX. Our review of the plan indicates that it complies with the MSW regulations. This letter constitutes approval of your plan.

The SBP proposes 27 borings in an approximately 215-acre waste footprint area. Twelve of the borings will be drilled to an elevation of 3,243 feet above sea level, corresponding to depths at least 5 feet below the elevation of the deepest excavation (EDE). The proposed EDE is 3,250 feet above sea level. Fifteen borings will be drilled to an elevation of 3,218 feet above sea level, corresponding to depths at least 30 feet below the EDE.

If you should find it necessary to modify this approved plan, another plan detailing any proposed modifications must be submitted for approval before implementation of the modifications.

Thank you for the submittal. If you have questions regarding this letter, please contact me at (512) 239-1270 or **Sector** When addressing written correspondence, please use mail code MC 124.

Sincerely,

Eric Clegg, P.G. Municipal Solid Waste Permits Section Waste Permits Division

EJC/tw

cc: Aaron Evans, PG, Weaver Consultants Group, LLC, Fort Worth

P.O. Box 13087 • Austin, Texas 78711-3087 • 512-239-1000 • tceq.texas.gov

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2023 SOIL BORING PLAN (EXCERPTS ONLY)

# CITY OF MEADOW LANDFILL TERRY COUNTY, TEXAS TCEQ PERMIT NO. MSW-2293A

**SOIL BORING PLAN** 

Prepared for Meadow Landfill, LLC July 2023



Prepared by

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

Project No. 0120-809-14-01



Sustainability in Action

July 14, 2023

Megan Henson 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 Meadow Landfill – Permit No. MSW-2293A Terry County, Texas

Dear Ms. Henson:

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 City of Meadow Landfill. The SBP has been prepared to support the proposed expansion of the facility's existing permitted waste disposal footprint area.

The proposed expansion includes a horizontal increase of the disposal waste footprint by approximately 142-acres, an increase in the maximum final cover elevation to 3425 ft-msl, and an increase in the elevation of deepest excavation (EDE) to 3,250 feet above mean sea level (ft-msl).

The regional and site-specific geology area 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.

A hardcopy of this Soil Boring Plan has been provided for your use and distribution. One copy has been sent to the TCEQ Region 2 office. An electronic copy of this submittal has been sent to mswper@tceq.texas.gov. A copy of this report has been placed in the facility's Site Operating Record.

18500 N. Allied Way Phoenix, AZ 85054 | RepublicServices.com | Environmental Services, Recycling & Waste

During the course of your review, if you need additional information or have any questions, please call.

Sincerely, Meadow Landfill, LLC

Brian Danko

Brian Danko Environmental Manager

Attachment: Soil Boring Plan

cc: TCEQ Region 2 Office Site Operating Record, City of Meadow Landfill Adam Hart, Republic Waste Services of Texas, Ltd. Aaron Evans, P.G., Weaver Consultants Group

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#### **APPENDIX B – GEOLOGY FIGURES**

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- Figure B-2 Regional Geologic Cross Sections
- Figure B-3 Regional Aquifer Potentiometric Surface Maps
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### **APPENDIX C – EXISTING SITE EXPLORATION DATA**

2000 Soil Investigation Report by Terra Engineers State of Texas Well Reports



iii

# 1 INTRODUCTION

## 1.1 Purpose

Republic Services is in the process of developing a Major Permit Amendment (MPA) application for the City of Meadow Landfill (Texas Commission on Environmental Quality [TCEQ] proposed Permit No. MSW-2293A) which will include a horizontal and vertical expansion of the existing permitted waste disposal footprint area. The proposed MPA will include a total proposed waste disposal footprint area of approximately 215-acres and maximum final cover elevation of 3,425 feet above mean sea level (ft-amsl) within an expanded Permit Boundary.

The facility's existing and proposed waste disposal areas are shown on Figure A-2 (Site Plan) in Appendix A. The following summarizes each of the drawings provided in Appendix A.

- Figure A-1 (Aerial Photographic Map) shows the landfill area on an aerial photographic map.
- Figure A-2 (Site Plan) shows the existing site condition and delineates the existing and proposed waste disposal areas.

## 1.2 Site History

The City of Meadow Landfill is an existing Type I Arid Exempt (AE) and Type IVAE municipal solid waste (MSW) landfill facility located in Terry County, approximately three miles southeast of the City of Meadow, Texas.

According to TCEQ records, the facility's existing permit (MSW-2293) was issued April 2002 with the following design criteria:

- Permit Boundary Area: 80-acres.
- Elevation of Deepest Excavation (EDE): 3,280 ft-amsl.
- Maximum Final Cover Elevation: 3,307 ft-amsl.

Pursuant to the Title 30 TAC §330.57(a), Type IAE and IVAE landfill units are except from the Geology Report and related subsurface characterization requirements of Title 30 TAC §330.63(e). A limited Soil Investigation was conducted by Terra Engineers, Inc. (Terra) in 2000 which included the advancement of five shallow test holes. The 2000 Soil Investigation report constitutes Attachment 4 of the facility's existing Site Development Plan and is provided in its entirety in Appendix D.

# 2.1 Regional Stratigraphy

According to the Texas Bureau of Economic Geology (BEG), the Site is located upon Quaternary dune sands and Tertiary Ogallala Formation sediments as shown on Figure B-1 (Regional Geologic Map)(BEG, 1974) and Figure B-2 (Regional Geologic Cross Sections) (TWDB, 2015) in Appendix B.

Geologic formations in the Site vicinity are predominately Quaternary sediments which overlay eroded Tertiary and Cretaceous strata. Quaternary windblown sand and playa deposit sediments are present across the majority of the proposed facility area with Tertiary Ogallala Formation sediments outcropping within the southernmost extents of the Site. The Site is situated near the northern margin of a localized outcrop of eroded Cretaceous Dockum Group sediments which outcrop approximately ¾-miles south of the Site at closest extent near the northern margin of Rich Lake. Stratigraphic positions, general lithologic characteristics, and approximate depths and thicknesses for these groups are summarized in Table 2-1.

# 2.2 Regional Hydrogeology

According to the Texas Water Development Board (TWDB), regional aquifers in the facility area consist of the Tertiary-age Ogallala Aquifer and the underlying Cretaceous-age Edwards-Trinity High Plains Aquifer which are components of the greater High Plains Aquifer System that extends across the majority of west Texas and into eastern New Mexico (TWDB, 2015).

The Ogallala and Edwards-Trinity aquifers are hydraulically connected in limited areas regionally where Edwards-Trinity sediments exhibit higher permeability at contact with the overlying Ogallala sediments (TWDB, 2015). The Edwards-Trinity acts as an aquitard to the overlying saturated Ogallala Aquifer in areas where Edwards-Trinity sediments are fine-grained and exhibit low permeability. According the TWDB and area water well logs, the Edwards-Trinity is comprised of low permeability clay and shale sediments beneath the Site. Approximately 1,500 feet of low permeability Triassic-age Dockum Group sediments underlay the Edwards-Trinity beneath the Site (TWDB, 2015). The Dockum Group is composed predominately of fine-grained siltstone and mudstone sediments that comprises an aquiclude to the overlying Ogallala and Edward-Trinity in the Site area (TWDB, 2015).

### 2.2.1 Ogallala Aquifer

The Ogallala Aquifer is classified by the TWDB as a major Texas aquifer (Ashworth, 1995). The Ogallala is comprised of predominately interbedded sand/sandstone facies with caliche, silts, clays, and gravels (BEG, 1974)(Gustavson, 1996). According to the TWDB and area water well logs, the Ogallala Aquifer is observed to be about 500-feet thick regionally with an approximate thickness of 120-feet in the Site area (TWDB, 2015). Ogallala groundwater is present under unconfined water-table conditions with a saturated thickness of approximately 25-feet in the Site area (Bell & Morrison, 1978). As illustrated in Figure B-3, the regional Ogallala Aquifer groundwater flow generally follows the regional dip of the formation toward the south-southeast with a potentiometric head elevation of approximately 3,250 ft-msl locally (TWDB, 2015). The primary source of recharge to the aquifer is precipitation infiltration on outcrop and through overlying transmissive Quaternary sediments (where present).

### 2.2.2 Edwards-Trinity High Plains Aquifer

TWDB classifies the Edwards-Trinity High Plains Aquifer as a minor Texas aquifer (Ashworth, 1995). Occurrence, sedimentary composition, and saturation of the Edwards-Trinity varies regionally. According to the TWDB, sediments of the Edwards-Trinity vary regionally (where present) and are characterized with an approximate thickness of 180-feet of low permeability clay and shale in the Site area (TWDB, 2015).

Table 2-1 Regional Stratigraphy in the Vicinity of Meadow Landfill

System	Group	Formation / Unit	Lithologic Characteristics	Regional Aquifer	Approxii Depth ai	nate Formation 1d Thickness (in Feet)
Ouaternary		Windblown Sand & Playa	Sand. silt. clay. and caliche.		Depth:	Outcrops regionally
		Deposits			Thickness:	10' in Site Area
Tantian		cloller C	Sand, silt, clay, gravel, and	-l-llO	Depth:	Outcrops in Site area
reruary		Ogaliaia	cauche wurd chert and sandstone.	Ogaliala	Thickness:	$\sim$ 120' in Site area
	Washita	Duck Creek	Shale, limestone, clay, and sand.			
	Fredericksburg	Kiamichi	Shale with limestone and sandstone.		Depth:	~120' in Site area
		Edwards	Shale, clay, and limestone.	Edwards-		
Cretaceous		Comanche Peak	Limestone and shale.	Trinity High		
	Trinity	Walnut	Sandstone, shale, and limestone.	Plains	Thickness.	~180 ^t in Cite area
		Antlers	Sandstone, sandy, conglomerate, siltstone, and clav.			
		Cooper Canyon	Siltstone and mudstone with sandstone and conglomerate.	-	4	
Triassic	Dockum	Trujillo	Sandstone and conglomerate with shale.	Dockum	Deptn:	~310' in Site area
		Tecovas	Mudstone and Sandstone.			
		Santa Rosa	Sandstone and conglomerate.		I NICKNESS:	упьподал оос,1

Notes: Modified from Gustavson (BEG, 1996), BEG [1974], and TWDB (2015).

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Weaver Consultants Group, LLC Soli Boring Plan Rev. 0, 7/14/23

# 3.1 Existing Site Explorations

Based on available information, three drilling events are known to have been conducted at the site. A summary of each drilling event is provided below:

### 3.1.1 2000 Soil Investigation by Terra

A limited subsurface investigation was conducted by Terra Engineers, Inc. (Terra) in 2000 and included five shallow test holes advanced to depths from 30 to 47 feet below ground surface (ft-bgs) to assess surficial stratigraphy within the permitted 80-acre facility permit boundary. The results of the investigation were documented in a Soil Investigation report in Attachment 4 of the facility's existing Site Development Plan (SDP) (Permit No. MSW-2293), a copy of which is provided in Appendix D of this SBP. The report includes lithologic logs for each of the five test holes, but the locations and surface elevations of each test hole are unknown. The Soil Investigation report narrative states the test hole locations are shown on the report Borehole Location Plan map included therein. However, the map was scanned folded-over in both TCEQ and the facility's digital record scans and a hardcopy could not be located.

### 3.1.2 2007/2008 Piezometer Installations

A search of available records on file with the Texas Water Development Board (TWDB) was conducted in February 2023 to identify any borehole, piezometer, or monitor well information for the facility from submitted Driller's Reports. The search identified nine records associated with facility groundwater piezometer/well installations which include two 2007 installations and seven 2008 installations. The Driller's State of Texas Well Reports (STWRs) for these installations are provided in Appendix C.

It is noted that the STWRs are submitted by the individual Driller based on their records and the data are often generalized and approximated. No corresponding lithologic logs, Monitor Well Data Sheets, or similar professionally certified information were identified in TCEQ and facility records. The STWR coordinates indicate three of the wells were installed within the facility's existing 80-acre permit boundary, with the remaining six wells installed west and north of the facility. Site reconnaissance conducted by WCG in March 2023 verified these installations in the

field which appear to correspond to the STWR listed coordinates. These existing well locations are shown on Figure B-4 (Borehole Location Map) in Appendix B.

Two of the onsite wells (NW Corner #1 and SW Corner #2) were completed in 2007 as shallow installations with extended well screens similar to a perimeter gas monitoring probe design. One onsite well (MW-6) and the six offsite wells are deeper installations completed in 2008 that appear to be constructed as groundwater piezometers and screened at depths ranging from 70 to 120 ft-bgs. It is likely that these wells were installed as piezometers pursuant to a former potential landfill expansion by the City of Meadow. TCEQ records indicate the facility stated intent to pursue a landfill expansion in 2007/2008 that was subsequently retracted. However, no additional information was located in TCEQ and facility records.

The available information from these past drilling and installation events will be incorporated into the subsurface investigation for the proposed expansion application but will not be considered in determining the number and depths of boreholes and piezometers required pursuant to Title 30 TAC§330.63(e)(4). The proposed subsurface investigation is further discussed in Section 4.

# 3.2 Site-Specific Subsurface Characterization

Because the existing facility permit is arid exempt, no site-specific Geology Report or permitted site-specific subsurface lithologic or hydrogeologic subsurface characterization has been established previously.

Review of regional data and the available information from Terra (2000) and STWRs by others (2007-2008) indicate the facility area can be characterized as surficial windblown sands underlain by thick sequences of caliche situated over saturated sand/sandstone sediments with a basal aquitard of underlying clay/shale sediments. However, a comprehensive site-specific subsurface characterization will be provided following completion of the 2023 subsurface investigation as part of the MPA for facility expansion and in accordance with Title 30 TAC§330.63(e).

# 4 PROPOSED SITE EXPLORATIONS

Soil boring locations are shown on Figure B-4 (Borehole Location Map) in Appendix B. The available lithologic logs and STWRs for the nine existing borings associated with the facility are provided in Appendix C. Whether these existing nine borings have been conducted in general accordance with established field exploration methods as specified by Title 30 TAC  $\S$ 330.63(e)(4)(C) cannot be ascertained based on the available information. The data obtained from these existing borings will be incorporated into the expansion application subsurface characterization as ancillary information to the data obtained from the proposed 2023 subsurface investigation.

# 4.1 Requirements by Title 30 TAC§330.63(e)(4)

The proposed soil boring locations are shown on Figure B-4 (Borehole Location Map) in Appendix B. The proposed MPA will include an approximately 215-acre total waste disposal footprint with an EDE of 3,250 ft-msl and maximum final cover elevation of 3,425 ft-msl. The proposed scope of subsurface investigation activities seeks to characterize the existing and proposed expansion waste disposal footprints in accordance with the requirement set forth in Title 30 TAC§63(e)(4) for a 215-acre disposal area.

## 4.1.1 Requirements by Title 30 TAC §330.63(e)(4)(A)

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 soils beneath the facility. 27 new geotechnical borings and seven groundwater piezometer installations are proposed to investigate subsurface conditions for the proposed approximately 215-acre expansion area and to assess geotechnical and hydrogeological properties across the Site. The details for the existing and proposed expansion borings are summarized in Table 4-1.

## 4.1.2 Requirements by Title 30 TAC §330.63(e)(4)(B)

Title 30 TAC §330.63(e)(4)(B) indicates that 27 borings should be advanced to characterize a 215-acre waste management unit area, with all 27 borings advanced at least 5-foot below the proposed EDE and a subset of 15 borings advanced at least 30-foot below the proposed EDE. The boring depths must also be of sufficient depth
to allow identification of the Uppermost Aquifer and underlying interconnected aquifers and be deep enough to identify the aquiclude at the lower boundary. The details for the existing and proposed expansion borings are summarized in Table 4-1. The proposed boring and piezometer depths listed in Table 4-1 are based on the proposed EDE; however, borings may be advanced deeper than indicated, as necessary, to characterize subsurface hydrogeology pursuant to satisfying the requirements of Title 30 TAC §330.63(e)(4)(B).

Boring I.D.	Surface Elevation (ft-msl)	Boring Depth (ft-bgs)	Boring Bottom Elevation (ft-msl)	EDE (ft-msl)	Depth Below EDE (ft)	Tally of Deep Borings	Piezometer Completions
PWCG-1	3316	98.0	3218.0	3250.0	32.0	1	x
PWCG-2	33 <mark>1</mark> 6	98.0	3218.0	3250.0	32.0	2	x
PWCG-3	3300	82.0	3218.0	3250.0	32.0	3	×
PWCG-4	3272	54.0	3218.0	3250.0	32.0	4	x
PWCG-5	3310	92.0	3218.0	3250.0	32.0	5	x
PWCG-6	3316	98.0	3218.0	3250.0	32.0	6	x
PWCG-7	3310	92.0	3218.0	3250.0	32.0	7	×
WCG-8	3320	77.0	3243.0	3250.0	7.0		
WCG-9	3320	102.0	3218.0	3250.0	32.0	8	
WCG-10	33 <b>10</b>	67.0	3243.0	3250.0	7.0		
WCG-11	3312	94.0	3218.0	3250.0	32.0	9	
WCG-12	3315	72.0	3243.0	3250.0	7.0		
WCG-13	3315	72.0	3243.0	3250.0	7.0		
WCG-14	3310	67.0	3243.0	3250.0	7.0		
WCG-15	3310	67.0	3243.0	3250.0	7.0		-
WCG-16	3312	69.0	3243.0	3250.0	7.0		
WCG-17	3314	71.0	3243.0	3250.0	7.0		
WCG-18	3312	69.0	3243.0	3250.0	7.0		
WCG-19	3305	87.0	3218.0	3250.0	32.0	10	
WCG-20	3306	88.0	3218.0	3250.0	32.0	11	
WCG-21	3313	70.0	3243.0	3250.0	7.0		
WCG-22	3310	92.0	3218.0	3250.0	32.0	12	
WCG-23	3298	55.0	3243.0	3250.0	7.0		
WCG-24	3304	61.0	3243.0	3250.0	7.0		
WCG-25	3292	74.0	3218.0	3250.0	32.0	13	
WCG-26	3284	66.0	3218.0	3250.0	32.0	14	
WCG-27	3264	46.0	3218.0	3250.0	32.0	15	

Table 4-1 Proposed Expansion Boring Summary

Notes: Surface elevations for proposed borings estimated from 2023 topographic contours.

Borings & Piezometers may be advanced deeper than indicated to characterize Uppermost Aquifer and Lower Confining Unit.

### 4.2 Borehole Drilling and Piezometer Installation

The proposed borings will be drilled, continuously sampled, and completed in accordance with established field exploration methods and soil samples will be collected and tested to determine geotechnical properties of each strata in accordance with Title 30 TAC §330.63(e)(4).

Representative geotechnical soil samples of each soil type encountered will be retained for geotechnical properties testing in accordance with Title 30 TAC §330.63(e)(5). The proposed groundwater piezometers will be screened within the Uppermost Aquifer at their location and installed to groundwater monitoring well specifications to allow for potential future conversion to groundwater monitoring wells. Total piezometer depth will be determined at time of drilling based on lithology encountered and Uppermost Aquifer depth and may require drilling deeper than the drilling depths listed in Table 4-1.

The piezometers will be utilized to evaluate hydrogeological conditions including potentiometric head, hydraulic gradient, hydraulic conductivity and estimated groundwater flow rate within the Uppermost Aquifer.

Those borings not completed as groundwater piezometers will be plugged and abandoned by a licensed well driller in accordance with applicable TAC and Texas Department of Licensing and Regulation (TDLR) well plugging requirements.

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## APPENDIX A

## LANDFILL OVERVIEW DRAWINGS



## CONTENTS

### FIGURES

Figure A-1Aerial Photographic MapFigure A-2Site Plan



Weaver Consultants Group, LLC Soil Boring Plan Rev. 0, 7/14/23

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## APPENDIX B

## **GEOLOGY FIGURES**



### CONTENTS

### FIGURES

- Figure B-1 Regional Geologic Map
- Figure B-2 Regional Geologic Cross Sections
- Figure B-3 Regional Ogallala Aquifer Potentiometric Surface Map
- Figure B-4 Borehole Location Map



Weaver Consultants Group, LLC Soil Boring Plan Rev. 0, 7/14/23

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APPENDIX C

## **EXISTING SITE EXPLORATION DATA**



### CONTENTS

### 2000 SOIL INVESTIGATION REPORT BY TERRA ENGINEERS

STATE OF TEXAS WELL REPORTS



Weaver Consultants Group, LLC Soil Boring Plan Rev. 0, 7/14/23

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# 2000 SOIL INVESTIGATION REPORT BY TERRA ENGINEERS

Part III Site Development Plan

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## ATTACHMENT 4 GEOLOGY REPORT

Part III

Applicants for Type 1-AE facility are exempt from the Geology Report (330.56(d)) pursuant to Chapter 330.51(a). However, a soil-boring plan is enclosed for stratagraphic information.

03/02/01



STR 1460

## SOIL INVESTIGATION

Meadow Landfill Meadow, Texas

PREPARED FOR Mr. Che Shadle OJD Engineering, Inc. P. O. Box 543 804 East Avenue Wellington, Texas 79095

October 10, 2000

**TERRA ENGINEERS, INC.** 

03/02/01

LUBBOCK

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Part III

HO: 5208 34 th STREET . P.O. BOX 16605 . LUBBOCK . TEXAS 79490-6605 . (806) 793 4767 . FAX (806) 793 4768

Part III



### TERRA ENGINEERS, INC.

5208 - 34TH STREET

P.O. BOX 16605 · LUBBOCK, TEXAS 79490-6605 · (806) 793-4767 · FAX (806) 793-4768

October 10, 2000

OJD Engineering, Inc. P. O. Box 543 804 East Avenue Wellington, TX 79095

Re: Additional Geotechnical Soil Investigation for the proposed Meadow Landfill, Meadow, Texas

Dear Mr. Shadle:

Submitted herein is STR No. 1460 on the additional soil investigation for the above referenced project. Included in this report are our analysis and recommendations for foundation design.

We appreciate the opportunity to be of service to you on this project. If we may answer any questions or be of any additional assistance, please call us.

Sincerely, TERRA ENGINEERS, INC

Ajit 'AJ" Govindan, Ph.D. General Manager

AJ/ld

SOIL INVESTIGATION · MATERIAL TESTING · ENVIRONMENTAL SERVICES · PROFESSIONAL ENGINEERING SERVICES · NDT 16
03/02/01

## TABLE OF CONTENTS

1.0	INTRODUCTION	1
2.0	EXPLORATION, SAMPLING AND FIELD TESTING	2
3.0	LABORATORY TESTING	3
4.0	GENERAL SOILS AND DESIGN CONDITIONS	4
	4.1 Site Description	4
ŝ	4.2 Description of Soils	4
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TERRA ENGINEERS, INC.

## IIIG-E-39

#### SOIL INVESTIGATION

Meadow Landfill Meadow, Texas

### **1.0 INTRODUCTION**

This report contains the results of additional soil investigation recently done for the proposed Meadow Landfill, Meadow, Texas. This investigation was conducted according to the instructions from Mr. Che Shadle, OJD Engineering, Inc., Wellington, Texas. The objectives of this investigation were to conduct subsurface exploration, fieldtesting and laboratory testing.

TERRA ENGINEERS, INC.

03/02/01

### IIIG-E-40

### 2.0 EXPLORATION, SAMPLING AND FIELD TESTING

At the request of the client, the sub-surface conditions were explored by five (5) test holes, four (4) drilled to a depth of 30.0 feet and one (1) drilled to a depth of 47 feet at locations shown in the boring location plan (Figure 1). The drilling was performed using CME-75 Drilling Rig with hollow stem augers in order to secure reliable data on the natural moisture content of the soil and ground water, if any. Standard penetration tests were made at depths of 2.5, 5.0 feet and at 5.0 feet interval thereafter. The number of blows per foot of the split spoon sampler (in 6-inch increment) is shown in the boring logs and in Figure 2. The sampling was performed in accordance with the ASTM D-1586; however we limit the number of blows on the split spoon sampler to a maximum of 25 for the first 6 inches of penetration and if the penetration of the sampler for the first or the second 6 inches increment is less than 6 inches, we report the actual penetration obtained for the respective increment in the boring logs.

The changes in soil strata as observed during drilling operations were carefully determined and are shown in the boring logs. All soil samples were kept in moistureproof plastic bags to preserve the in-situ moisture content, identified by the hole number and the depth of the hole, and transported to the laboratory for additional tests and evaluation.

The boring was monitored during and immediately after drilling for the presence and level of groundwater. The groundwater table was observed during drilling only in test hole #2 at 29 feet below ground level.

> TERRA ENGINEERS, INC. LUBBOCK

> > 03/02/01

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#### **3.0 LABORATORY TESTING**

All samples have been classified following the procedures outlined in ASTM D-2487 based on the Unified Soil Classification System. Soils are described in the boring logs using the methods prescribed in ASTM D-2488, using a Munsell Soil Color Chart, published by Macbeth Division of Kollmorgen Corporation, Baltimore, Maryland, 1975 edition.

Soil samples, which indicated maximum plasticity characteristics, were selected and Atterberg Limit tests were performed on these samples according to procedures outlined in ASTM D-4318. Percentage by weight of material passing sieve # 200 was determined by ASTM D-1140 for the same samples. Moisture content for all samples were determined by the procedures outlined in ASTM D-2216.

All soil samples collected with reference to this project will be stored for a period of six (6) months from the date when this report is submitted. The samples will be discarded after elapse of this time period, unless this office is instructed.

#### TERRA ENGINEERS, INC. LUBBOCK

03/02/01

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### 4.0 GENERAL SOILS AND DESIGN CONDITIONS

#### 4.1 Site Description

The site is physically located south of Meadow, Texas and the general site topography is plain land covered with mesquite and brush.

#### 4.2 Description of Soils

The topsoil in all the four holes is reddish brown silty sand (SM) while in hole #5, the top soil is silt and is classified as gravelly silt (ML). The topsoil exists for approximately 2.5 feet below the surface. The topsoil is nonplastic. Below the topsoil, in holes #2 and #4, there are layers of either silty sand (SM) which are overconsolidated and cemented with some caliche soil. In the other holes, there are layers caliche soil/rock and some of the formations are so hard that that the Standard Penetration tests were not performed. Instead, it had to be cored using diamond core barrels. The respective boring logs indicate the hardness of the strata using SPT counts where the penetration tests were performed. Where they were cored, the RQD values are indicated in the respective boring logs.

These hard soil layers are very common in West Texas area and they form an excellent stratum for bearing foundations. However, some of these soil layers can be hard to cut during excavations compared to other types of soils normally encountered here in West Texas. Since the soil layers were nonplastic in nature, there is no problem due to expansion or contraction of the soil layers as is found among clayey type soils.

During drilling, water table was found at a depth of 29.0 feet below the ground level in hole #2. Water table was not observed in any of the other holes as the bottom of

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the holes was perhaps close to the probable water table in the area. More tests are required to establish the water table in the area.

Some of the hard soil/rock layers are not completely hard rock as they could be drilled using augers even though it was very hard to do so. These hard layers can be considered as conglomerates, which are compacted mixtures of soil and hard rock pieces. But those strata, which were cored, were indeed very hard.

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#### 5.0 QUALITY CONTROL

Construction inspection and quality control tests shall be planned and scheduled to verify materials and placement is in accordance with the specifications. Subgrade preparation, field density tests, and concrete strength are very important and therefore shall be monitored and recorded. It is recommended that Terra Engineers, Inc. shall perform quality control services in order to ensure quality construction inspection and material testing for the project. Terra Engineers, Inc. would be pleased to provide these services and can also assist with construction inspection, planning and scheduling. We also recommend that Terra Engineers, Inc. be retained, to review the final design document to verify that the recommendations made in this report have been interpreted as intended.

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#### 6.0 LIMITATIONS

Every effort has been made to accurately evaluate the subsurface conditions at the above referenced site in accordance with the standard engineering principles and practices. No other warranty or guarantee, expressed or implied, is made other than that the work was performed in a proper and workmanlike manner. However, it must be recognized that the SPT sampling tube cannot be retrieve boulders or gravel of sizes larger than 1.5 inches.

The results stated in this report is based on only five (5) borings, four (4) test holes were drilled to a depth of 30 feet and one (1) to a depth of 47 feet at locations shown in the boring location plan (Figure 1). The conclusions reached in this report are exclusively for engineering design and were based on the field tests and results of laboratory tests conducted on samples recovered from five (5) test holes drilled to a depth specified by the client. Further, the recommendations presented herein are based on analyses, which presume the conditions of soil properties in the areas between the borings to have a reasonably uniform variation as revealed by the exploratory borings. Consequently, careful observations must be made during construction to detect significant deviations of actual conditions throughout the construction area from those inferred from the exploratory boring. Should any unusual conditions be encountered during construction, this office should be notified immediately so that further investigations and supplemental recommendations can be made to suit the new existing conditions.

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> > 03/02/01

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The Terra Engineers, Inc. shall not accept the responsibility for all the adequacies of the recommendations given in this report if another party is retained for QA/QC to perform the construction material testing during the construction phase.

Due to changes in the current technology, changes to the project site conditions, changes in project specification etc., this report and the recommendations made in here shall be outdated with in a period of one (1) year from the date of the report. We strongly recommend that the client should contact Terra Engineers, Inc. to determine whether this report is valid after the expiration of the above mentioned time period.

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TERRA ENGINEERS, INC. LUBBOCK

03/02/01

#### 7.0 REPORT DISTRIBUTION

This report was prepared by Terra Engineers, Inc. for the sole and exclusive use by its client, based on specific and limited objectives. All reports, boring logs, field data, laboratory test results and other documents prepared by Terra Engineers, Inc. as instruments of service shall remain the property of Terra Engineers, Inc., and reuse of these documents is not permitted without written approval from Terra Engineers, Inc. The client may release the information to third parties, who may use and rely upon the information at their discretion. However, any use of or reliance upon the information by a party other than specifically named above shall be solely at the risk of such third party and without legal recourse against Terra Engineers, Inc., its parent company, or its subsidiaries and affiliates, or their respective employees, officers or directors, regardless of whether the action in which recovery of damages is sought is based upon contract, tort (including the sole, concurrent or other negligence and strict liability of Terra Engineers, Inc.), statute, or otherwise. This information shall not be used or relied upon by a party that does not agree to be bound by the above statement. Terra Engineers, Inc. assumes no responsibility or obligation for the unauthorized use of this report by a third party.

We appreciate the opportunity to be of assistance on this project. If you should have any questions, please feel free to call us.

Very truly yours, TERRA ENGINEERS, INC.

lelihan

C. V. G. Vallabhan, Ph.D., P. E. Geotechnical Engineer



03/02/01

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Project: Meadow Client:	Landfill .	Location: Meadow, Texas							Date of Drilling: 08-21-00 Depth of GWT:				
OJD Engineering Corface Elevation: Diameter:			De	pth:		Boring	Method:		STR N				
how	n t	7 7/8"	30	ft.	HSA - Coring				1460				
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5 - Clayey Sand w/caliche, Pink	SC	3.3	31	21	10	23.4	7	7	8				
Silty Sand w/hard caliche, Pink	SM	5.9	45	29	16	13.3	12	*25		*5.0"			
+ + + + Hard Caliche Rock w/fractures, Pink			RQI 5.0ft	   value fo   to 10.01	or a core : ft.	 run from 		9	er Sali	6' Auger Refusal Core 6'-2			
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Project: Meadow Landfill			Location: Meadow, Texas							Date of Drilling: 08-25-00				
Client: O.II) Engineering			Columbus (	Depth of GWT:										
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rs 🛓 Silty Sa	nd w/organics, Reddish Brown	SM	1 1						1	1				
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Ť				RQI 15.0	value f ft. to 20.	run from				*Start Coring				
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				RQI 40.0	) value f ft. to 45.	or a core Oft.	run from		1		84.6 %			
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Project: Meadow	Landfill		Locatio	n: v, Texas		14			Date o	f Drillin	g:			
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, th, ft	Descript	ion	USC	Moisture Content, %	Liquid Limit, %	Plastic Limit, %	Plasticity Index	Passing # 200, %	SPT, N 1st	o. of Blow 2nd	s per 6" 3rd	Remark		
rs +	Silty Sand w/organics	, Reddish Brown	SM	1.6	Non-	Plastic		42.1	-	Γ	<u> </u>			
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+ -			1		RQE 17.01	value f	or a core 1 Oft.	run from	0			69.1 %		
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Part III Site Development Plan

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## ATTACHMENT 5 GROUNDWATER CHARACTERIZATION REPORT

Part III Site Development Plan

Applicants for Type I-AE facility are exempt from the Groundwater Characterization Report (330.56(e)) pursuant to 330.51(a).

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## STATE OF TEXAS WELL REPORTS

#### STATE OF TEXAS WELL REPORT for Tracking #115590 Owner: Owner Well #: **NE Corner #1 City of Meadow** 24-47-5 Address: P.O. Box 156 Grid #: Meadow, TX 79345 33° 17' 47" N Latitude: **City Landfill** Well Location: Meadow, TX 79345 102° 12' 05" W Longitude: Well County: Terry Elevation: No Data Type of Work: New Well Proposed Use: Monitor

Drilling Start Date: 6/11/2007 Drilling End Date: 6/18/2007 Diameter (in.) Top Depth (ft.) Bottom Depth (ft.) Borehole: 18 0 30 **Drilling Method:** Air Rotary **Filter Packed** Borehole Completion: Top Depth (ft.) Bottom Depth (ft.) Filter Material Size Filter Pack Intervals: 3.5 30 Gravel Top Depth (ft.) Bottom Depth (ft.) Description (number of sacks & material) Annular Seal Data: 0 2.5 27 Cement 2.5 3.5 2 Bentonite Seal Method: Cement & Bentonite Chips Distance to Property Line (ft.): No Data Sealed By: Driller Distance to Septic Field or other concentrated contamination (ft.): No Data Distance to Septic Tank (ft.): No Data Method of Verification: No Data Surface Completion: Surface Slab Installed Water Level: No Data Packers: No Data Type of Pump: No Data Well Tests: No Test Data Specified

	Strata Depth (ft.)	Water Type		
Water Quality:	No Data	No Data		
		Chemical Analysis Made:	Unkno	wn
	Did the driller kno	owingly penetrate any strata which contained injurious constituents?:	Unkno	wn
Certification Data:	The driller certified that t driller's direct supervision correct. The driller under the report(s) being return	the driller drilled this well (or the well n) and that each and all of the stater erstood that failure to complete the re ned for completion and resubmittal.	was drill ments he equired it	ed under the rein are true and ems will result in
Certification Data: Company Information:	The driller certified that t driller's direct supervision correct. The driller under the report(s) being return <b>B &amp; B Construction</b>	the driller drilled this well (or the well n) and that each and all of the stater erstood that failure to complete the re ned for completion and resubmittal.	was drill ments he equired it	ed under the rein are true and ems will result in
Certification Data: Company Information:	The driller certified that t driller's direct supervision correct. The driller unde the report(s) being return B & B Construction P.O. Box 1281 Brownfield, TX 79316	the driller drilled this well (or the well n) and that each and all of the state erstood that failure to complete the re ned for completion and resubmittal. 6	was drill ments he equired it	ed under the rein are true and ems will result in
Certification Data: Company Information: Driller Name:	The driller certified that t driller's direct supervision correct. The driller under the report(s) being return B & B Construction P.O. Box 1281 Brownfield, TX 79316 Dwane Ward	the driller drilled this well (or the well n) and that each and all of the state erstood that failure to complete the re ned for completion and resubmittal. 6 License N	was drill ments he equired it umber:	ed under the rein are true and ems will result in 54415

Top (ft.)	Bottom (ft.)	Description
0	1	Caliche
1	7	Brown Sand
7	10	Red Sand
24	28	Rock
28	30	Sand
110	24	Tan Sand

#### Casing: BLANK PIPE & WELL SCREEN DATA

Dia. (in.) New/Used Type Setting From/To (ft.) 4 New PVC Blank 000-004

#### 4 New PVC Screen 004-030 .020

#### IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

#### Texas Department of Licensing and Regulation P.O. Box 12157 Austin, TX 78711 (512) 334-5540

#### STATE OF TEXAS WELL REPORT for Tracking #115591 Owner: Owner Well #: SW Corner #2 **City of Meadow** Address: P.O. Box 156 Grid #: 24-47-5 Meadow, TX 79345 33° 17' 58" N Latitude: **City Landfill** Well Location: Meadow, TX 79345 102° 11' 40" W Longitude: Well County: Terry Elevation: No Data Type of Work: New Well Proposed Use: Monitor

Drilling Start Date: 6/18/2007 Drilling End Date: 6/19/2007 Diameter (in.) Top Depth (ft.) Bottom Depth (ft.) Borehole: 18 0 30 **Drilling Method:** Air Rotary **Filter Packed** Borehole Completion: Top Depth (ft.) Bottom Depth (ft.) Filter Material Size Filter Pack Intervals: 3.5 30 Gravel Top Depth (ft.) Bottom Depth (ft.) Description (number of sacks & material) Annular Seal Data: 0 2.5 27 Cement 2.5 3.5 2 Bentonite Seal Method: Cement & Bentonite Chips Distance to Property Line (ft.): No Data Sealed By: Driller Distance to Septic Field or other concentrated contamination (ft.): No Data Distance to Septic Tank (ft.): No Data Method of Verification: No Data Surface Completion: Surface Slab Installed Water Level: No Data Packers: No Data Type of Pump: No Data Well Tests: No Test Data Specified

	Strata Depth (ft.)	Water Type		
Water Quality:	No Data	No Data		
		Unkno	wn	
	Did the driller kno	owingly penetrate any strata which contained injurious constituents?:	Unkno	wn
Certification Data:	The driller certified that driller's direct supervisio correct. The driller under the report(s) being return	the driller drilled this well (or the well on) and that each and all of the states erstood that failure to complete the re- med for completion and resubmittal.	was drille ments her equired ite	ed under the rein are true and ems will result in
Certification Data: Company Information:	The driller certified that driller's direct supervisio correct. The driller under the report(s) being return <b>B &amp; B Construction</b>	the driller drilled this well (or the well on) and that each and all of the stater erstood that failure to complete the re ned for completion and resubmittal.	was drille ments her equired ite	ed under the rein are true and ems will result in
Certification Data: Company Information:	The driller certified that driller's direct supervisio correct. The driller under the report(s) being retur B & B Construction P.O. Box 1281 Brownfield, TX 7931	the driller drilled this well (or the well on) and that each and all of the state erstood that failure to complete the re- med for completion and resubmittal. 6	was drilli ments he equired it	ed under the rein are true and ems will result in
Certification Data: Company Information: Driller Name:	The driller certified that driller's direct supervisio correct. The driller under the report(s) being retur B & B Construction P.O. Box 1281 Brownfield, TX 7931 Dwane Ward	the driller drilled this well (or the well on) and that each and all of the state erstood that failure to complete the re- med for completion and resubmittal. 6 License N	was drille ments hel equired ite umber:	ed under the rein are true and ems will result in 54415

Top (ft.)	Bottom (ft.)	Description
0	3	Top Soil
3	7	Red Sand
7	20	Caliche
20	28	Rock
28	30	Sand

Casing:						
BLANK PIPE & WELL SCREEN DATA						

Dia. (in.) New/Used Type Setting From/To (ft.) 4 New PVC Blank 000-004

#### 4 New PVC Screen 004-030 .020

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Texas Department of Licensing and Regulation P.O. Box 12157 Austin, TX 78711 (512) 334-5540

#### STATE OF TEXAS WELL REPORT for Tracking #168957 Owner Well #: B116 Owner: **City of Meadow** Grid #: 24-47-5 Address: Meadow, TX Latitude: 33° 18' 32" N S.E.C. Fm 250 @ FM 545 Well Location: Meadow, TX 102° 11' 36" W Longitude: Well County: Terry Elevation: No Data Type of Work: New Well Proposed Use: Monitor Drilling Start Date: 9/20/2008 Drilling End Date: 12/19/2008

	Diameter (in.	) Top De	pth (ft.)	Bottom Depth (ft.)			
Borehole:	6		)	110			
Drilling Method: Borehole Completion:	Mud (Hydraulic) Rotary 16/30 Silica Sand						
	Top Depth (ft.)	Bottom Depth (ft.)	Des	cription (number of sacks & material)			
Annular Seal Data:	0	5		Concrete			
	5	89		Grout			
	89	98		Bentonite			
Seal Method: Tr	emmie iller	Di Dista conc	stance to Pro nce to Septi entrated cor Distance to S Methoo	operty Line (ft.): <b>No Data</b> c Field or other stamination (ft.): <b>No Data</b> septic Tank (ft.): <b>No Data</b> d of Verification: <b>No Data</b>			
Surface Completion:	Alternative Proce	edure Used					
Water Level:	No Data						
Packers:	No Data						
Type of Pump:	No Data						
Well Tests:	No Test Data Sp	pecified					

	Strata Depth (ft.)	Water Type		
Water Quality:	No Data	No Data		
		Unkno	wn	
	Did the driller kno	Unknown		
Certification Data:	The driller certified that the driller's direct supervision correct. The driller under the report(s) being return	he driller drilled this well (or the well n) and that each and all of the stater rstood that failure to complete the re ned for completion and resubmittal.	was drill nents he equired it	ed under the rein are true and ems will result in
Certification Data: Company Information:	The driller certified that the driller's direct supervision correct. The driller under the report(s) being return <b>Total Support Service</b>	he driller drilled this well (or the well n) and that each and all of the stater irstood that failure to complete the re ned for completion and resubmittal.	was drille nents he equired ite	ed under the rein are true and ems will result in
Certification Data: Company Information:	The driller certified that the driller's direct supervision correct. The driller unde the report(s) being return Total Support Service P.O. Box 81621 Austin, TX 78708	he driller drilled this well (or the well n) and that each and all of the stater rstood that failure to complete the re ned for completion and resubmittal.	was drille nents he equired it	ed under the rein are true and ems will result in
Certification Data: Company Information: Driller Name:	The driller certified that the driller's direct supervision correct. The driller unde the report(s) being return Total Support Service P.O. Box 81621 Austin, TX 78708 Brian Kern	he driller drilled this well (or the well n) and that each and all of the stater rstood that failure to complete the re ned for completion and resubmittal. es	was drille nents he equired it	ed under the rein are true and ems will result in 54611

Top (ft.)	Bottom (ft.)	Description
0	1	Red Brown Sand
1	2	Red Brown Sandy Clay
2	4	Red Brown Clayey Sand
4	25	Brown Silty Sand
25	52.5	Caliche
52.5	65	Brown Silty Sand
65	81	Brown Clayey Sand
81	92	Brown Sandy Clay
92	109	Brown Sand
109	110	Gray Clay

#### Casing: BLANK PIPE & WELL SCREEN DATA

Dia. (in.) New/Used Type Setting From/To (ft.) 2 New PVC Riser 0/100 Sched. 40

#### 2 New PVC Screen 100/110 0.010 Slotted

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Texas Department of Licensing and Regulation P.O. Box 12157 Austin, TX 78711 (512) 334-5540

#### STATE OF TEXAS WELL REPORT for Tracking #168949 Owner: Owner Well #: B134 **City of Meadow** 24-47-5 Address: Grid #: Meadow, TX 33° 18' 32" N Latitude: S.E.C. Fm 250 @ FM 545 Well Location: Meadow, TX 102° 11' 52" W Longitude: Well County: Terry Elevation: No Data Type of Work: New Well Proposed Use: Monitor Drilling Start Date: 9/30/2008 Drilling End Date: 12/19/2008 Diameter (in.) Top Depth (ft.) Bottom Depth (ft.) Borehole: 6 0 110

Drilling Method: Mud (Hydraulic) Rotary

Borehole Completion: 16/30 Silica Sand

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	0	4	Concrete
	4	91	Grout
	91	98	Bentonite

Seal Method: Tremmie

Sealed By: Driller

Surface Completion:

Distance to Property Line (ft.): No Data

Distance to Septic Field or other concentrated contamination (ft.): No Data

incentrated containination (it.). No Data

Distance to Septic Tank (ft.): No Data

Method of Verification: No Data

Water Level:	No Data	
Packers:	No Data	
Type of Pump:	No Data	
Well Tests:	No Test Data Specified	

**Alternative Procedure Used** 

	Strata Depth (ft.)	Water Type		
Water Quality:	No Data	No Data		
		Chemical Analysis Made:	Unkno	wn
	Did the driller know	wingly penetrate any strata which contained injurious constituents?:	Unkno	wn
Certification Data:	The driller certified that the driller's direct supervision correct. The driller under the report(s) being return	ne driller drilled this well (or the well n) and that each and all of the stater rstood that failure to complete the re red for completion and resubmittal.	was drillen ments he equired ite	ed under the rein are true and ems will result in
Certification Data: Company Information:	The driller certified that the driller's direct supervision correct. The driller under the report(s) being return Total Support Service	ne driller drilled this well (or the well n) and that each and all of the stater rstood that failure to complete the re- red for completion and resubmittal.	was drille ments he equired ite	ed under the rein are true and ems will result in
Certification Data: Company Information:	The driller certified that the driller's direct supervision correct. The driller under the report(s) being return Total Support Service P.O. Box 81621 Austin, TX 78708	ne driller drilled this well (or the well n) and that each and all of the stater rstood that failure to complete the re ed for completion and resubmittal.	was drille nents he equired it	ed under the rein are true and ems will result in
Certification Data: Company Information: Driller Name:	The driller certified that the driller's direct supervision correct. The driller under the report(s) being return Total Support Service P.O. Box 81621 Austin, TX 78708 Brian Kern	ne driller drilled this well (or the well n) and that each and all of the stater rstood that failure to complete the re red for completion and resubmittal. rs	was drill ments he equired it umber:	ed under the rein are true and ems will result in 54611

Top (ft.)	Bottom (ft.)	Description
0	1.5	Red Brown Silty Sand
1.5	2.2	Red Brown Clayey Sand
2.2	5.5	Red Brown Clayey Sandy Silt
5.5	14	Brown Silty Sand
14	16	Red Brown Clayey Silt
16	23	Caliche
23	26	Brown Sandy Clay
26	61	Caliche
61	65	Brown Silty Sand
65	93	Caliche
93	110	Brown Sand

#### Casing: BLANK PIPE & WELL SCREEN DATA

Dia. (in.) New/Used Type Setting From/To (ft.) 2 New PVC Riser 0/100 Sched. 40

#### 2 New PVC Screen 100/110 0.010 Slotted

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Texas Department of Licensing and Regulation P.O. Box 12157 Austin, TX 78711 (512) 334-5540

#### STATE OF TEXAS WELL REPORT for Tracking #168964 Owner Well #: MW2-B117 Owner: **City of Meadow** Grid #: 24-47-5 Address: Meadow, TX Latitude: 33° 18' 32" N S.E.C. Fm 250 @ FM 545 Well Location: Meadow, TX 102° 11' 20" W Longitude: Well County: Terry Elevation: No Data Type of Work: New Well Proposed Use: Monitor Drilling Start Date: 12/15/2008 Drilling End Date: 12/19/2008

	Diamatar (in	Top Dop	46 /41 )	Pottom Donth /# )	
Borehole:	Diameter (in.	) Top Dep	un (n.)	Bollom Depth (n.)	
borenole.	Ь	U		70	
Drilling Method:	Mud (Hydraulic)	Rotary			
Borehole Completion:	16/30 Silica Sand	t			
	Top Depth (ft.)	Bottom Depth (ft.)	Des	cription (number of sacks & material)	
Annular Seal Data:	0	4		Concrete	
	4	59		Grout	
	59	63		Bentonite	
Seal Method: Tr	emmie	Dist	ance to Pro	operty Line (ft.): No Data	
Sealed By: Dr	iller	Distan	ce to Seption	c Field or other tamination (ft.): <b>No Data</b>	
		Di	stance to S	eptic Tank (ft.): No Data	
			Method	of Verification: No Data	
Surface Completion:	Alternative Proce	edure Used			
Water Level:	No Data				
Packers:	No Data				
Type of Pump:	No Data				
Well Tests:	No Test Data Sp	pecified			

	Strata Depth (ft.)	Water Type		
Water Quality:	No Data	No Data		
		Chemical Analysis Made:	Unkno	wn
	Did the driller kno	owingly penetrate any strata which contained injurious constituents?:	Unkno	wn
Cortification Data:				
Certification Data.	driller's direct supervisio correct. The driller under the report(s) being retur	the driller drilled this well (or the well on) and that each and all of the stated erstood that failure to complete the re- med for completion and resubmittal.	was drille ments he equired ite	ed under the rein are true and ems will result in
Company Information:	driller's direct supervisio correct. The driller under the report(s) being retur Total Support Servic	the driller drilled this well (or the well on) and that each and all of the states erstood that failure to complete the re- ned for completion and resubmittal.	was drille ments he equired it	ed under the rein are true and ems will result in
Company Information:	The driller certified that driller's direct supervisio correct. The driller under the report(s) being retur Total Support Servic P.O. Box 81621 Austin, TX 78708	the driller drilled this well (or the well on) and that each and all of the states erstood that failure to complete the re- ned for completion and resubmittal.	was drill ments he equired it	ed under the rein are true and ems will result in
Company Information: Driller Name:	The driller certified that driller's direct supervisio correct. The driller under the report(s) being retur Total Support Servic P.O. Box 81621 Austin, TX 78708 Brian Kern	the driller drilled this well (or the well on) and that each and all of the states erstood that failure to complete the re- ned for completion and resubmittal. res	was drill ments he equired it umber:	ed under the rein are true and ems will result in 54611

Top (ft.)	Bottom (ft.)	Description
0	2	Red Brown Silty Sand
2	6.5	Red Brown Silty Sand
6.5	7.5	Brown Clayey Silt
7.5	8.5	Brown Silty Sand
8.5	13	Brown Sandy Silt
13	62.5	Caliche
62.5	65	Brown Silty Sand
65	75	Brown Sand

#### Casing: BLANK PIPE & WELL SCREEN DATA

Dia. (in.) New/Used Type Setting From/To (ft.) 2 New PVC Riser 0/65 Sched. 40

#### 2 New PVC Screen 65/75 0.010 Slotted

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#### Texas Department of Licensing and Regulation P.O. Box 12157 Austin, TX 78711 (512) 334-5540

Well Report Tracking Number 168964 Submitted on: 2/20/2009

#### STATE OF TEXAS WELL REPORT for Tracking #168976 Owner: Owner Well #: MW6-B128 **City of Meadow** 24-47-5 Address: Grid #: Meadow, TX 33° 18' 16" N Latitude: S.E.C. Fm 250 @ FM 545 Well Location: Meadow, TX 102° 11' 26" W Longitude: Well County: Terry Elevation: No Data Type of Work: New Well Proposed Use: Monitor Drilling Start Date: 10/9/2008 Drilling End Date: 12/19/2008 Diameter (in.) Top Depth (ft.) Bottom Depth (ft.) Borehole: 6 0 75

Drilling Method: Mud (Hydraulic) Rotary

Borehole Completion: 16/30 Silica Sand

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	0	4	Concrete
	4	55	Grout
	55	63	Bentonite

Seal Method: Tremmie

Sealed By: Driller

Surface Completion:

Distance to Property Line (ft.): No Data

Distance to Septic Field or other concentrated contamination (ft.): No Data

incentrated containination (it.). No Data

Distance to Septic Tank (ft.): No Data

Method of Verification: No Data

Water Level:	No Data	
Packers:	No Data	
Type of Pump:	No Data	
Well Tests:	No Test Data Specified	

**Alternative Procedure Used** 

	Strata Depth (ft.)	Water Type		
Water Quality:	No Data	No Data		
		Chemical Analysis Made:	Unkno	wn
	Did the driller kno	owingly penetrate any strata which contained injurious constituents?:	Unkno	wn
Certification Data:	The driller certified that f driller's direct supervisio correct. The driller under the report(s) being return	the driller drilled this well (or the well on) and that each and all of the stater erstood that failure to complete the re ned for completion and resubmittal.	was drille ments he equired ite	ed under the rein are true and ems will result in
Certification Data: Company Information:	The driller certified that f driller's direct supervisio correct. The driller under the report(s) being return Total Support Service	the driller drilled this well (or the well on) and that each and all of the stater erstood that failure to complete the re ned for completion and resubmittal. es	was drille ments her equired ite	ed under the rein are true and ems will result in
Certification Data: Company Information:	The driller certified that I driller's direct supervisio correct. The driller under the report(s) being return Total Support Service P.O. Box 81621 Austin, TX 78708	the driller drilled this well (or the well on) and that each and all of the stater erstood that failure to complete the re ned for completion and resubmittal. es	was drille ments he equired it	ed under the rein are true and ems will result in
Certification Data: Company Information: Driller Name:	The driller certified that I driller's direct supervisio correct. The driller under the report(s) being return Total Support Service P.O. Box 81621 Austin, TX 78708 Brian Kern	the driller drilled this well (or the well n) and that each and all of the stater erstood that failure to complete the re ned for completion and resubmittal. es License N	was drilli ments he equired it umber:	ed under the rein are true and ems will result in 54611

Гор (ft.)	Bottom (ft.)	Description
0	12	Fill Material
12	17	Brown Sand
17	55	Caliche
55	63	Red Brown Silty Sand
63	75	Brown Sandy Silt

Casing:
<b>BLANK PIPE &amp; WELL SCREEN DATA</b>

Dia. (in.) New/Used Type Setting From/To (ft.) 2 New PVC Riser 0/65 Sched. 40

#### 2 New PVC Screen 65/75 0.010 Slotted

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Please include the report's Tracking Number on your written request.

Texas Department of Licensing and Regulation P.O. Box 12157 Austin, TX 78711 (512) 334-5540

#### STATE OF TEXAS WELL REPORT for Tracking #168968 Owner Well #: MW9-B130 Owner: **City of Meadow** Grid #: 24-47-5 Address: Meadow, TX Latitude: 33° 18' 15" N S.E.C. Fm 250 @ FM 545 Well Location: Meadow, TX 102° 11' 45" W Longitude: Well County: Terry Elevation: No Data Type of Work: New Well Proposed Use: Monitor Drilling Start Date: 12/10/2008 Drilling End Date: 12/19/2008

	Diameter (in.	) Top De	epth (ft.)	Bottom Depth (ft.)	
Borehole:	6		D	70	
Drilling Method: Borehole Completion:	Mud (Hydraulic) 16/30 Silica Sano	Rotary			
	Top Depth (ft.)	Bottom Depth (ft.)	Des	scription (number of sacks & material)	
Annular Seal Data:	0	3		Concrete	
	4	54		Grout	
	54	57		Bentonite	
Seal Method: Tro Sealed By: Dr	emmie iller	Di Dista conc	stance to Pro nce to Septi entrated cor Distance to S Methoo	operty Line (ft.): <b>No Data</b> c Field or other ntamination (ft.): <b>No Data</b> Septic Tank (ft.): <b>No Data</b> d of Verification: <b>No Data</b>	
Surface Completion:	Alternative Proce	edure Used			
Water Level:	No Data				
Packers:	No Data				
Type of Pump:	No Data				
Well Tests:	No Test Data Sp	pecified			

	Strata Depth (It.)	water Type		
Water Quality:	No Data	No Data		
		Chemical Analysis Made:	Unkno	wn
	Did the driller know	wingly penetrate any strata which contained injurious constituents?:	Unkno	wn
Cartification Data:	The dellar costified that th			
Centrication Data.	driller's direct supervisior correct. The driller under the report(s) being return	he driller drilled this well (or the well n) and that each and all of the stater rstood that failure to complete the re red for completion and resubmittal.	was drille ments he equired it	ed under the rein are true and ems will result in
Company Information:	driller's direct supervisior correct. The driller under the report(s) being return Total Support Service	he driller drilled this well (or the well h) and that each and all of the stater rstood that failure to complete the re ned for completion and resubmittal.	was drill ments he equired it	ed under the rein are true and ems will result in
Company Information:	Total Support Service P.O. Box 81621 Austin, TX 78708	he driller drilled this well (or the well n) and that each and all of the stater rstood that failure to complete the re ned for completion and resubmittal.	was drille ments he equired it	ed under the rein are true and ems will result in
Company Information: Driller Name:	Total Support Service P.O. Box 81621 Austin, TX 78708 Brian Kern	he driller drilled this well (or the well n) and that each and all of the stater rstood that failure to complete the re ned for completion and resubmittal. es	was drille ments he equired it umber:	ed under the rein are true and ems will result in 54611

	Description	Dia. (in.) New
Re	Brown Sand	2 New PVC
Re	Brown Silty Sand	2 New PVC
Ca	iche	
В	wn Silty Sand	
В	wn Sandy Silt	
Ca	iche	
В	wn Clayey Sand	
В	wn Sand	

#### Casing: BLANK PIPE & WELL SCREEN DATA

a. (in.) New/Used Type Setting From/To (ft.) New PVC Riser 0/60 Sched. 40 New PVC Screen 60/70 0.010 Slotted

#### IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

#### Texas Department of Licensing and Regulation P.O. Box 12157 Austin, TX 78711 (512) 334-5540

Well Report Tracking Number 168968 Submitted on: 2/20/2009

	STATE OF TEXAS WEL	L REPORT for Trac	king #168948
Owner:	City of Meadow	Owner Well #:	MW16-B107
Address:	Maadam TY	Grid #:	24-47-5
Well Location:	Meadow, 1X S.F.C. Em 250 @ EM 545	Latitude:	33° 18' 42" N
Well Location.	Meadow, TX	Longitude:	102° 12' 12" W
Well County:	Terry	Elevation:	No Data
Type of Work: Drilling Start Da	New Well te: 10/4/2008 Drilling End Da	Proposed Use: te: 12/19/2008	Monitor
	Diameter (in.)	Top Depth (ft.)	Bottom Depth (ft.)
Borehole:	6	0	120
Drilling Method: Borehole Compl	Mud (Hydraulic) Rotary letion: 16/30 Silica Sand		

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	0	4	Concrete
	4	100	Grout
	100	108	Bentonite

Seal Method: Tremmie

Sealed By: Driller

Surface Completion:

Distance to Property Line (ft.): No Data

Distance to Septic Field or other concentrated contamination (ft.): No Data

incentrated contamination (it.). No Data

Distance to Septic Tank (ft.): No Data

Method of Verification: No Data

Water Level:	No Data
Packers:	No Data
Type of Pump:	No Data
Well Tests:	No Test Data Specified

**Alternative Procedure Used** 

	Strata Depth (ft.)	Water Type		
Water Quality:	No Data	No Data		
		Chemical Analysis Made:	Unkno	wn
	Did the driller kno	owingly penetrate any strata which contained injurious constituents?:	Unkno	wn
Certification Data:	The driller certified that driller's direct supervisio correct. The driller under the report(s) being return	the driller drilled this well (or the well on) and that each and all of the stater erstood that failure to complete the re ned for completion and resubmittal.	was drill ments he equired it	ed under the rein are true and ems will result in
Certification Data: Company Information:	The driller certified that driller's direct supervisio correct. The driller under the report(s) being return Total Support Servic	the driller drilled this well (or the well on) and that each and all of the stater erstood that failure to complete the re ned for completion and resubmittal. es	was drill ments he equired it	ed under the rein are true and ems will result in
Certification Data: Company Information:	The driller certified that driller's direct supervisio correct. The driller under the report(s) being retur Total Support Servic P.O. Box 81621 Austin, TX 78708	the driller drilled this well (or the well on) and that each and all of the stater erstood that failure to complete the re ned for completion and resubmittal.	was drilli ments he equired it	ed under the rein are true and ems will result in
Certification Data: Company Information: Driller Name:	The driller certified that driller's direct supervisio correct. The driller under the report(s) being retur Total Support Servic P.O. Box 81621 Austin, TX 78708 Brian Kern	the driller drilled this well (or the well on) and that each and all of the stater erstood that failure to complete the re ned for completion and resubmittal. es License N	was drill ments he equired it umber:	ed under the rein are true and ems will result in 54611

Top (ft.)	Bottom (ft.)	Description
0	2	Red Brown Sand
2	6	Red Brown Clayey Silt
6	9	Red Brown Clayey Sandy Silt
9	13	Brown Silty Sand
13	21	Light Brown Silty Sand
21	113	Caliche
113	120	Brown Sand

#### Casing: BLANK PIPE & WELL SCREEN DATA

Dia. (in.) New/Used Type Setting From/To (ft.) 2 New PVC Riser 0/110 Sched. 40

#### 2 New PVC Screen 110/120 0.010 Slotted

#### IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

TEX. OCC. CODE Title 12, Chapter 1901.251, authorizes the owner (owner or the person for whom the well was drilled) to keep information in Well Reports confidential. The Department shall hold the contents of the well log confidential and not a matter of public record if it receives, by certified mail, a written request to do so from the owner.

Please include the report's Tracking Number on your written request.

#### Texas Department of Licensing and Regulation P.O. Box 12157 Austin, TX 78711

(512) 334-5540

Well Report Tracking Number 168948 Submitted on: 2/20/2009

#### STATE OF TEXAS WELL REPORT for Tracking #168960 Owner: Owner Well #: MW21-B103 **City of Meadow** 24-47-5 Address: Grid #: Meadow, TX 33° 18' 42" N Latitude: S.E.C. Fm 250 @ FM 545 Well Location: Meadow, TX 102° 11' 38" W Longitude: Well County: Terry Elevation: No Data Type of Work: New Well Proposed Use: Monitor Drilling Start Date: 12/8/2008 Drilling End Date: 12/19/2008 Diameter (in.) Top Depth (ft.) Bottom Depth (ft.)

Drilling Method: Mud (Hydraulic) Rotary

6

Borehole Completion: 16/30 Silica Sand

Borehole:

	Top Depth (ft.)	Bottom Depth (ft.)	Description (number of sacks & material)
Annular Seal Data:	0	5	Concrete
	5	65	Grout
	65	73	Bentonite

0

Seal Method: Tremmie

Sealed By: Driller

Surface Completion:

Distance to Property Line (ft.): No Data

85

Distance to Septic Field or other

concentrated contamination (ft.): No Data

Distance to Septic Tank (ft.): No Data

Method of Verification: No Data

Water Level:	No Data	
Packers:	No Data	
Type of Pump:	No Data	
Well Tests:	No Test Data Specified	

**Alternative Procedure Used** 

	Strata Depth (ft.)	Water Type		
Water Quality:	No Data	No Data		
		Chemical Analysis Made:	Unkno	wn
	Did the driller kno	owingly penetrate any strata which contained injurious constituents?:	Unkno	wn
Certification Data:	The driller certified that driller's direct supervisio correct. The driller under the report(s) being return	the driller drilled this well (or the well on) and that each and all of the stater erstood that failure to complete the re ned for completion and resubmittal.	was drill ments he equired it	ed under the rein are true and ems will result in
Certification Data: Company Information:	The driller certified that driller's direct supervisio correct. The driller under the report(s) being return Total Support Servic	the driller drilled this well (or the well on) and that each and all of the stater erstood that failure to complete the re ned for completion and resubmittal. es	was drill ments he equired it	ed under the rein are true and ems will result in
Certification Data: Company Information:	The driller certified that driller's direct supervisio correct. The driller under the report(s) being retur Total Support Servic P.O. Box 81621 Austin, TX 78708	the driller drilled this well (or the well on) and that each and all of the stater erstood that failure to complete the re ned for completion and resubmittal.	was drilli ments he equired it	ed under the rein are true and ems will result in
Certification Data: Company Information: Driller Name:	The driller certified that driller's direct supervisio correct. The driller under the report(s) being retur Total Support Servic P.O. Box 81621 Austin, TX 78708 Brian Kern	the driller drilled this well (or the well on) and that each and all of the stater erstood that failure to complete the re ned for completion and resubmittal. es License N	was drill ments he equired it umber:	ed under the rein are true and ems will result in 54611

Top (ft.)	Bottom (ft.)	Description
0	2	Red Brown Claey Sand
2	4.5	Red Brown Sandy Clay
4.5	20	Red Brown Clayey Sand
20	21	Caliche
21	28	Brown Clayey Sand
28	74	Caliche
74	85	Brown Sand

#### Casing: BLANK PIPE & WELL SCREEN DATA

Dia. (in.) New/Used Type Setting From/To (ft.) 2 New PVC Riser 0/75 Sched. 40

#### 2 New PVC Screen 75/85 0.010 Slotted

#### IMPORTANT NOTICE FOR PERSONS HAVING WELLS DRILLED CONCERNING CONFIDENTIALITY

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#### Texas Department of Licensing and Regulation P.O. Box 12157 Austin, TX 78711

(512) 334-5540

# CITY OF MEADOW LANDFILL TERRY COUNTY, TEXAS TCEQ PERMIT NO. MSW-2293C

## MAJOR PERMIT AMMENDMENT APPLICATION

# PART III – SITE DEVELOPMENT PLAN APPENDIX IIIH GROUNDWATER SAMPLING AND ANALYSIS PLAN

Prepared for

Meadow Landfill, LLC

August 2024

ARON K EVANS 08/05/2024

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. 0120-809-11-05

This document intended for permitting purposes only.



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## APPENDIX IIIH-A

Groundwater Monitoring System

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## **1 INTRODUCTION**

This groundwater sampling and analysis plan (GWSAP) has been prepared for the City of Meadow Landfill (Municipal Solid Waste [MSW] Permit No. 2293C). The City of Meadow Landfill is an existing Type IAE Arid Exempt facility (MSW Permit No. 2293) with no existing groundwater monitoring system or GWSAP. The following plan contains the groundwater

Appendix IIIH addresses §330.63(f)

monitoring system design aspects, system engineering report, the procedures for collecting samples from groundwater monitor wells, and the basic laboratory requirements for obtaining representative data. The plan also includes monitor well placement, design and construction, and well development procedures. This GWSAP has been prepared, and will be followed, in accordance with Title 30 Texas Administrative Code (TAC) §330.401 through §330.415, §330.419, and §330.421. Groundwater monitoring will be conducted through the active life of the site and post-closure care period, pursuant to Title 30 TAC §330.401(f). Once approved, a copy of this GWSAP will be placed in the Site Operating Record.

# 2.1 Groundwater Monitoring System

The facility is an existing Type IAE Arid Exempt landfill (MSW Permit No. 2293) with no groundwater monitoring system or GWSAP. Pursuant to the proposed landfill expansion for Permit No. MSW-2293C, the facility advanced 30 boreholes and installed 10 groundwater piezometers in 2023 to assess hydrogeological and geotechnical conditions for the existing Type IAE facility area and the proposed lateral expansion area. Regional and site-specific hydrogeology are detailed in Appendix IIIG (Geology Report) of the Site Development Plan (SDP). The facility's existing and previously advanced borehole and piezometer locations are shown on Figure IIIG-B-1 in Appendix IIIG.

The facility's 2023-installed groundwater piezometers were surveyed for vertical and horizontal control by WCG in August 2023 and their as-built survey data (signed and sealed by a Texas RPLS) are provided in Appendix IIIH-A.

Pursuant to the permit amendment for Permit No. MSW-2293C, a groundwater monitoring network design is proposed to accommodate the facility's proposed waste footprint expansion as a non-arid exempt Type I MSW landfill. The proposed groundwater monitoring network is discussed in Section 2.1.3 and illustrated on Figure IIIH-A-1 and Figure IIIH-A-2 in Appendix IIIH-A.

## 2.1.1 Uppermost Aquifer

The first continuous groundwater zone and Uppermost Aquifer beneath the landfill unit is contained within saturated sandy sediments of the site-specific Lower Sand stratum which is commensurate with the regional Ogallala Aquifer. The facility's proposed groundwater monitoring system is designed to monitor groundwater within the Uppermost Aquifer.

Static groundwater elevation gauging of the facility's 2023 expansion piezometers began in August 2023. Groundwater potentiometric surface contour maps prepared from sitewide groundwater gauging data collected by WCG between August 2023 and May 2024 are provided in Appendix IIIG-D in Appendix IIIG of the SDP. The groundwater elevation data were collected from the facility's ten 2023 groundwater subsurface investigation piezometers. These recent sitewide potentiometric surface contours indicate a consistent Uppermost Aquifer groundwater flow regime with groundwater flowing outward from the southwestern permit boundary near piezometer PWCG-5. The facility's site-specific aquifers and hydrogeology are discussed further in Appendix IIIG (Geology Report).

## 2.1.2 Existing Groundwater Monitoring Network

The facility is an existing Type IAE Arid Exempt landfill (MSW Permit No. 2293) with no permitted groundwater monitoring system.

## 2.1.3 Proposed Groundwater Monitoring Network Design

The proposed groundwater monitoring network design is illustrated on Figure IIIH-A-1 (Proposed Groundwater Monitoring System Network) and Figure IIIH-A-2 (Groundwater Monitor Well Details) in Appendix IIIH-A. A monitor well and observation well installation and conversion schedule is provided in Table 2-1.

The proposed monitoring system design utilizes two background monitor wells (MW-1 and MW-1P), 20 Point of Compliance (POC) monitor wells (MW-2, MW-2P, MW-3, MW-4, MW-5, MW-6, 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, and MW-20), and two observation wells (OW-21 and OW-22).

Monitor wells MW-1 and MW-1P will be converted from existing piezometers PWCG-5A and PWCG-5B; respectively. These two wells are hydrogeologically upgradient from the landfill and will serve as background wells. Monitor well MW-1 (formerly PWCG-5A) is screened within basal Uppermost Aquifer groundwater above the Lower Confining Unit. Paired monitor well MW-1P (formerly PWCG-5B) is screened within a shallower perched Uppermost Aquifer groundwater zone. Both wells will monitor saturated intervals within the Uppermost Aquifer at their location.

Monitor wells MW-2 and MW-2P will be converted from existing piezometers PWCG-4A and PWCG-4B; respectively. These two wells are hydrogeologically downgradient from the landfill and will serve as the facility's southernmost POC wells. Monitor well MW-2 (formerly PWCG-4A) is screened within basal Uppermost Aquifer groundwater above the Lower Confining Unit. Paired monitor well MW-2P (formerly PWCG-4B) is screened within a shallower perched Uppermost Aquifer groundwater zone. Both wells will monitor saturated intervals within the continuous Uppermost Aquifer at their location.

POC monitor wells MW-7 and MW-12 will be converted from existing piezometers PWCG-3 and PWCG-2; respectively. A total of 16 POC monitor wells (MW-3, MW-4, MW-5, MW-6, MW-8, MW-9, MW-10, MW-11, MW-13, MW-14, MW-15, MW-16, MW-17, MW-18, MW-19 and MW-20) will also be installed to monitor groundwater encountered within the Uppermost Aquifer at their location. The facility's seven relict piezometers (PB-107, PB-116, PB-134, PMW-2, PMW-6, PMW-9, and PMW-21) and 2023 expansion piezometers PWCG-7A and PWCG-7B, will be plugged and abandoned.

Piezometer conversions and new monitor well installations will be completed in accordance with the schedule provided in Table 2-1. Piezometer pluggings will be completed prior expansion area waste placement. Following well conversion or installation, quarterly background data collection monitoring will begin in accordance with Section 5.3. Facility monitor wells will be gauged, purged, and sampled in accordance with Section 3. Observation wells OW-20 and OW-21 will be gauged to obtain static groundwater elevations in conjunction with routine groundwater monitoring events.

Well Name	Gradient Position	Current Condition	Installation/Conversion Schedule
MW-1	BG	Existing PWCG-5A	Convert prior to waste placement in expansion area
MW-1P	BG	Existing PWCG-5B	Convert prior to waste placement in expansion area
MW-2	POC	Existing PWCG-4A	Convert prior to waste placement in expansion area
MW-2P	POC	Existing PWCG-4B	Convert prior to waste placement in expansion area
MW-3	POC	Future MW	Install prior to waste placement in expansion area
MW-4	POC	Future MW	Install prior to waste placement in expansion area
MW-5	POC	Future MW	Install prior to waste placement in expansion area
MW-6	POC	Future MW	Install prior to waste placement in expansion area
MW-7	POC	Existing PWCG-3	Convert prior to waste placement in expansion area
MW-8	POC	Future MW	Install prior to waste placement in Sector 12 or 13
MW-9	POC	Future MW	Install prior to waste placement in Sectors 11 through 13
MW-10	POC	Future MW	Install prior to waste placement in Sectors 5, 6, 10, 11, 12, or 13
MW-11	POC	Future MW	Install prior to waste placement in Sectors 4, 5, 6, 10, 11, 12, or 13
MW-12	POC	Existing PWCG-2	Convert prior to waste placement in Sectors 3 through 11
MW-13	POC	Future MW	Install prior to waste placement in Sectors 3 through 10
MW-14	POC	Future MW	Install prior to waste placement in Sectors 1 through 10
MW-15	POC	Future MW	Install prior to waste placement in Sectors 1 through 9
MW-16	POC	Future MW	Install prior to waste placement in Sectors 1 through 6
MW-17	POC	Future MW	Install prior to waste placement in Sectors 1 through 6
MW-18	POC	Future MW	Install prior to waste placement in Sectors 1 through 6
MW-19	POC	Future MW	Install prior to waste placement in Sectors 1 through 6
MW-20	POC	Future MW	Install prior to waste placement in Sectors 1 through 5
0W-21	BG	Existing PWCG-1	Convert prior to waste placement in expansion area
0W-22	BG	Existing PWCG-6	Convert prior to waste placement in expansion area

# Table 2-1Groundwater Monitoring Network

<u>NOTES:</u> MW = Monitor Well.

POC = Point of compliance well located hydraulically downgradient from landfill unit.

BG = Background well located hydraulically upgradient from the landfill unit.

OW = Observation Well.

# 2.2 Monitor Well Design and Maintenance

Monitor wells construction details are summarized in Figure IIIH-A-2 (Groundwater Monitor Well Details) in Appendix IIIH-A. Construction details for wells converted from existing piezometers were obtained from lithologic borehole logs, monitor well data sheets, and asbuilt survey reports (provided in Appendix IIIH-A). Construction details for the facility's proposed new monitor well installations are estimated from the existing subsurface and topographic data. Typical groundwater monitor well specifications are depicted in Figure IIIH-A-3 in Appendix IIIH-A.

The facility's existing groundwater piezometers proposed for conversion to monitor wells and observation wells are constructed in accordance with the requirements of Title 30 TAC §330.421. Future groundwater monitor wells will also be installed in accordance with the requirements of Title 30 TAC §330.421.

All parts of the groundwater monitoring system will be operated and maintained so they perform to design specifications throughout the life of the monitoring program. Any monitor well that is damaged to the extent that it is no longer suitable for sampling will be reported to the TCEQ who may make a determination about whether to repair or replace the well. Well drilling, installation, and plugging and abandonment, will be performed by a Texas-licensed well driller in accordance with TCEQ and any other applicable regulatory requirements. No monitor well will be plugged and abandoned without prior TCEQ written authorization. Any replacement monitor well installation will be performed in accordance with Title 30 TAC §330.421 by a Texas-licensed well driller. Monitor well construction will provide for the maintenance of the integrity of the borehole, collection of representative groundwater samples from the Uppermost Aquifer, and prevention of migration of groundwater and surface water within the borehole in accordance with Title 30 TAC §330.421(a).

Future monitor wells will be installed with a borehole diameter that is at least four inches larger than the diameter of the well casing. A smaller borehole/well annulus may be approved by TCEQ. A log of the borehole will be made by or under the supervision of a licensed professional geoscientist or engineer who is familiar with the geology of the area, and will be sealed, signed, and dated by the licensed professional. The screened section of monitor wells will be compatible with the casing (both will generally be of the same material). The screen will not involve the use of any glues or solvents for construction. A wire-wound screen is recommended to provide maximum inflow. Field-cut slots are not permitted for well screens. Filter cloth will not be used. A blank-pipe sediment trap, typically up to two-feet in length, will be installed below the screen. A bottom cap is typically placed on the bottom of the sediment trap. The sediment trap will not extend through the lower confining layer of the water-bearing zone being sampled. Screen sterilization methods will be done by a person experienced with such work and will include consideration of the

distribution of particle sizes both in the water-bearing zone and in the filter pack surrounding the screen. The screen opening will not be larger than the smallest fraction of the filter pack.

Where monitor wells are installed in unusual conditions, all aspects of the installation will be approved in writing in advance by TCEQ. Such aspects include, for example, the use of cellar-type enclosures for the top-well equipment or multiple completions in a single hole.

Monitor well installation and construction details will be submitted on forms available from the TCEQ and will be completed and submitted within 60 days of well completion. A copy of the detailed geologic log of the borehole (i.e., lithologic log), a description of development procedures, any particle size or other sample data from the well, and a site map drawn to scale showing the location of all monitor wells and the point of compliance will be submitted to the executive director at the same time. The licensed driller will be familiar with the forms required by other agencies; a copy of those forms must also be submitted to TCEQ.

## 2.3 Groundwater Monitoring Program

Facility detection monitor wells will be sampled semi-annually for the detection monitoring parameters listed in 40 Code of Federal Regulations (CFR), Part 258, Appendix I, which are also listed in Table 5-1 in Section 5.1. Details regarding groundwater sampling, analyses, and statistical comparison procedures are discussed in the following sections of Appendix IIIH.

In accordance with Title 30 TAC §403(e)(3), the facility will promptly notify the executive director, and any local pollution agency with jurisdiction that has requested to be notified, in writing of changes in facility construction or operation or changes in adjacent property that affect or are likely to affect the direction and rate of groundwater flow and the potential for detecting groundwater contamination and that may require the installation of additional wells or sampling points. Such additional wells or sampling points may require a modification of the site development plan which will be requested in accordance with Title 30 TAC §305.70(j). Details regarding groundwater sampling, analyses, and statistical comparison procedures are discussed in the following sections of Appendix IIIH.

# 3.1 Health and Safety Plan

A health and safety plan is required for all groundwater sampling events at the landfill. Prior to monitor well purging and sampling, the sampling contractor's Ground Water Sampling Health and Safety Plan must be in place. Designing the site Ground Water Sampling Health and Safety Plan will be the responsibility of the party performing the actual work. In addition, each laboratory facility is responsible for their own standard laboratory health and safety plan as required by current Occupational and Safety and Health Administration (OSHA) regulations.

A health and safety plan is recommended for all groundwater sampling events at the landfill. Designing a Ground Water Sampling Health and Safety Plan is the responsibility of the party performing the actual field sampling work.

# 3.2 Sample Event Preparation and QA/QC

## 3.2.1 General Event Preparation

The laboratory performing the groundwater analysis will supply all necessary transportation coolers, pre-cleaned sample containers, quality assurance and quality control (QA/QC) trip blanks, chemical preservatives, sample container labels, custody seals, and chain-of-custody forms. All field data will be entered on a field data sheet (see example provided in Appendix IIIH-C) or an equivalent form. A specific contact person should be established at both the facility and contract laboratory for communication between the two parties.

## 3.2.2 Sample Container Selection

Each sample container will be constructed of materials compatible and non-reactive with the sample it is designed to contain. Consult Appendix IIIH-D (Containerization and Preservation of Samples) to determine the number, type, and volume of appropriate containers. As noted in Section 3.2.1, the contract laboratory performing the analysis will supply all the required containers. Sample containers will be purchased as a pre-cleaned product or cleaned in the laboratory in a manner consistent with EPA protocols.
#### **3.2.3 Equipment Preparation Prior to Site Arrival**

Equipment preparation includes, at a minimum, decontamination procedures for water level indicators and field parameter (temperature, pH, specific conductivity, and turbidity) measurement devices. Operation and calibration of field instruments will be performed per the manufacturers' instructions.

- Water Level Indicators Water level indicators will be decontaminated prior to initial site arrival by hand-washing the sensor probe and entire length of tape in a laboratory grade non-phosphate detergent followed by a triple rinse with organic free deionized or distilled water.
- Field Parameter Measuring Devices Field parameter measuring devices will be decontaminated by hand washing the sample cells in a laboratory grade non-phosphate detergent followed by a triple rinse with organic free deionized or distilled water. Meters will then be checked for proper calibration and operation as per the manufacturers' instructions. Any malfunctioning meters will be replaced prior to packing.

In the case of equipment failure, it is recommended that back-up instruments be in the sample crew's possession. If a back-up instrument is not available, then sampling will not proceed until the necessary properly functioning and calibrated replacement equipment is made available.

#### 3.2.4 Field QA/QC Samples

Field QA/QC samples are used to identify sample contamination from the field, and/or shipping procedures, and document the precision of analytical processing by the laboratory. These blanks consist of one trip blank per sampling event, one field blank for each day of sampling, and one field duplicate per sampling event. A basic description of these field QA/QC samples follows:

- Trip Blank samples will be prepared in the laboratory by filling the appropriate clean sample containers with organic-free water and adding the applicable chemical preservative, as indicated in Appendix IIIH-D. Trip blank samples will be shipped in the transportation cooler to the field and shipped back to the laboratory with the collected groundwater samples. The trip blank will be tested to detect any contamination that may occur as a result of the containers, sample coolers, cleaning procedures, or chemical preservatives used. Trip blank samples will be analyzed for the VOC constituents indicated in Table 5-1 of Section 5.1 at a minimum frequency of one per sampling event.
- Field Blank sample containers will be collected in the field at a routine sample collection point by filling the appropriate sample containers with laboratory-grade distilled or deionized water. The field blank samples will be tested to detect contamination that may occur as a result of site ambient air

conditions and serve as an additional check for contamination in sample containers or transport coolers. Field blanks samples will be collected and analyzed for the VOC constituents indicated in Table 5-1 of Section 5.1 at a frequency of one per day of sampling.

• Field Duplicate – a duplicate set of groundwater samples collected from a detection monitor well and labeled with a non-existent well number so that the laboratory is unaware that the samples are duplicates. These samples are obtained by consecutively filling two sets of separate sample containers with groundwater obtained from the same detection monitor well and analyzing each set of samples independently. Field duplicate samples are useful in documenting the precision of sampling and analytical processes. Field duplicate samples will be collected in proper alternating order for each parameter (e.g. VOCs for the sample point container, VOCs for the field duplicate container, metals for the sample point container, metals for the field duplicate container, etc.). Field duplicate samples will be collected and analyzed for the total metal and VOC constituents indicated in Table 5-1 of Section 5.1 at a minimum frequency of one per sampling event.

Appropriate field QA/QC documentation will be recorded on the field data sheet; an example of which is included in Appendix IIIH-C.

#### **3.3 Monitor Well Inspection**

During each monitoring event, every gauged well and its surface completion will be visually examined for anything unusual. This includes examination of the well casing, well head, protective cover, locking device, concrete pad, labels, etc. All observations will be recorded on the field data sheet. If any problems are discovered, they will be reported to the facility manager as soon as practical.

#### 3.4 Monitor Well Purging

#### 3.4.1 General Well Purge Information

Purging a monitor well is just as important as the subsequent sampling of the well. Over a certain period of time stagnant well water may become unrepresentative of formation water due to chemical and biochemical changes which alter water quality.

#### 3.4.2 Water Level Measurement

Prior to purging each monitor well, a water level measurement is required. The water level in each well will be gauged and recorded on the field data sheet. Water level indicator equipment will be constructed of chemically inert materials and will be decontaminated with a non-phosphate detergent, followed with a deionized or distilled water rinse, before use in each well. Water levels will be measured with a precision of +/- 0.01 foot. Groundwater elevations must be measured within a period of time short enough to avoid temporal variations in groundwater flow which could preclude an accurate determination of groundwater flow rate and direction. Water level measurements will be taken from the permanent datum point that will be clearly marked on the top of the well casing.

#### 3.4.3 Purge Equipment and Procedures

Groundwater wells will be purged with disposable bailers or submersible pumps. Purge and decontamination/rinsate water will be collected in containers and disposed of in accordance with Section 3.4.6. Disposable, powderless gloves will be changed between wells and between purging and sampling to reduce the potential for cross-contamination and exposure to potentially contaminated groundwater.

#### 3.4.3.1 Hand Bailing

Bailer purging will be conducted until field parameters are stable, three casing volumes of water have been removed, or the well is purged to dryness. Bailer purge field parameters include temperature, specific conductivity, pH, and turbidity.

A new bailer will be used to purge each monitor well. If the well is not sampled immediately following purging, then a second new bailer will be used to collect the sample upon return to the well. All used bailers will be disposed of immediately following use. A bailer is considered contaminated and must be discarded for a new bailer if it comes in contact with any surface other than the groundwater being purged/sampled, bailing twine, well casing, sampler's nitrile gloves, or filling spout apparatus. Bailers must be constructed of Teflon, polypropylene, or polyethylene.

#### 3.4.3.2 Submersible Pumps

Samplers may employ either standard-flow purging/sampling techniques or lowflow purging/sampling techniques as deemed appropriate based on the well's recharge capacity/characteristics and the capability of the submersible pump. Pump purging must be conducted until a minimum of two pump and tubing volumes of water have been removed. Non-low-flow purging will be conducted until field parameters are stable, three casing volumes have been removed, or the well is purged to dryness. Low-flow purging will be conducted at a rate of approximately 50-250 milliliters per minute until field parameter stabilization is achieved. Purging field parameters include temperature, specific conductivity, pH, and turbidity.

Non-dedicated pumps will be constructed of chemically inert materials and will be decontaminated with a non-phosphate detergent, followed with a deionized or distilled water rinse, before use in each well.

Well-dedicated pumps will be constructed of chemically inert materials and will remain dedicated to each respective well throughout monitoring unless replacement is necessary due to damage or wear, in which case repairs will be completed or a new dedicated pump will be installed. Bladder pumps are recommended for well-dedicated pump installations.

#### 3.4.3.3 Field Parameter Stabilization

Field parameter stabilization is defined by three consecutive measurements, taken at 3- to 5-minute intervals, which exhibit values within the following ranges:

- pH = ±0.2 standard units;
- Specific Conductivity = ±3%;
- Temperature = ±3%;
- Turbidity = ±10% or 3 consecutive readings <10 NTUs.

#### 3.4.4 Purge Order

Based on water-level measurements taken prior to well purging, sampling will generally proceed from the well with the highest groundwater elevation to those with successively lower elevations unless contamination is known to be present. If contamination is present, monitor wells not likely to be contaminated must be sampled before those that are known to be contaminated. The sampling sequence may be modified to accommodate unusual weather conditions or slow recovery wells.

#### 3.4.5 Purge Volume Measurement

Purged water must be measured in a graduated container to accurately determine purge volume. The volume of water in the well casing can be calculated by subtracting the gauged depth to the water surface from the recorded total depth of the well casing. The volume of water contained in one foot of 2-inch diameter schedule 40 PVC well casing is 0.163 gallons. The total amount of water present in the well casing (one casing volume) can be calculated by multiplying the depth of water by the appropriate conversion value for the well's casing diameter (0.163 gallons/foot in this example). A well casing volume calculation example follows:

Total depth of well casing (feet)	41.50
Depth to groundwater (feet)	-12.36
Depth of water column (feet)	29.14
Gallons/feet of 2-inch casing	x 0.163
One casing volume of water (gallons)	4.75

#### 3.4.6 Purge Water Management

All purge water and excess sample water will initially be collected in appropriate sealed containers. Contaminated purge water and excess sample water is considered

contaminated if the concentration of any detected constituent statistically exceeds the constituent's background concentration. Contaminated purge water will be handled in the same manner as leachate. If needed, TCEQ will be consulted to assist in assessing proper disposal protocol. Uncontaminated groundwater may be discharged to the ground surface away from the well.

### 3.5 Monitor Well Sample Collection

#### 3.5.1 General Sample Collection Information

Sampling will take place within 24 hours of completion of purging. If field parameter stabilization is achieved, the well may be sampled immediately following stabilization. If after 24 hours, a slowly recharging well has not recovered sufficiently for a complete set of samples, a partial set of samples will be collected in the order specified in Section 3.5.2 until no more samples for the set can be collected.

#### 3.5.2 Sample Collection Order

Samples will be collected and containerized according to the volatility of the required analyses. A specific collection order is as follows:

- Volatile Organic Compounds
- Semi-Volatiles (if collected)
- Total Metals
- Field Parameters
- Inorganics (if collected)

#### 3.5.3 Sampling Equipment and Procedures

Groundwater samples will be collected with a new disposable bailer or welldedicated purging/sampling pump (if installed). If a pump is used to sample, the pump controller will be adjusted to reduce the flow rate to between 100 and 250 ml/min for the duration of sampling. If a bailer is used to sample, sample containers will be filled by draining the bailer-collected groundwater from the bottom of the bailer. Special care will be taken to minimize sample agitation. All groundwater samples will be collected by filling directly into each of the required sample containers.

#### 3.5.4 Sample Preservation

All samples will be containerized and preserved according to Appendix IIIH-D (Sample Containerization and Preservation). Preservation acids may be added to the applicable sample container in the field or pre-preserved by the laboratory prior to

sample collection. Methods of preservation are intended to retard biological action, retard hydrolysis of chemical compounds and complexes, and reduce the volatility of constituents.

Samples requiring refrigeration to four degrees Centigrade, according to Appendix IIIH-D will be accomplished by placing the sample containers immediately into coolers containing wet ice and delivering to the analytical laboratory as soon as practical. Groundwater samples for detection or assessment monitoring constituent analyses will not be filtered in the field or the laboratory.

#### **3.5.5 Field Measurements**

Required field measurements include water levels, temperature, pH, specific conductance, and turbidity. Water level measurement procedures are described in Section 3.4.2. Field parameters will be measured using either handheld instruments placed directly into discharged water or an in-line flow through cell. All instruments will be properly calibrated and checked with standards according to the manufacturer's instructions. Any improperly operating instruments must be replaced prior to continuing sample collection operations. Field parameter readings will be taken in a separate container not used for sample collection.

### 3.6 Record Keeping

#### 3.6.1 Field Data Sheets

All field information will be completely and accurately documented and entered on a standard field data sheet, an example of which is provided in Appendix IIIH-C. Information recorded on the field data sheets will be provided in the sampling event's groundwater monitoring report, a copy of which will be included in the facility's Site Operating Record. All field data sheet entries will be made legible in indelible ink.

#### **3.6.2** Chain-of-Custody/Sample Container Labels

Proper chain of custody records are required to insure the integrity of the samples and the conditions of the samples upon receipt at the laboratory, including the temperature of the samples at the time of login. The sample collector will fill in all applicable sections of the chain of custody and transmit the original, with the respective samples, to the laboratory performing the analysis. Upon receipt of the samples at the laboratory, the sample coordinator will complete the applicable receiving information on the chain of custody, make a copy for their files, and make the original documents part of the final analytical report (see Appendix IIIH-E for an example chain-of-custody form). Chain of custody form copies will be included in the sampling event's groundwater monitoring report, a copy of which will be included in the facility's Site Operating Record. All sample containers will be labeled legibly to prevent misidentification. The following information will be indicated on each sample container label with waterproof pen:

- Collector's name, date, and time of sampling
- Sample source
- Sample Identification number
- Sample preservatives (if any)
- Analytical tests to be performed on the sample

#### 3.7 Sample Transport

Samples will be transmitted from the field to the analytical laboratory either by hand delivery or via an overnight courier service. Samples are to be shipped with wet ice in insulated shipping containers capable of maintaining all samples at approximately four degrees centigrade. Before a shipping container is turned over to a common courier (or any other person who does not complete the chain-of-custody documentation), it will be sealed using a method that will reveal whether the container's security has been compromised. Overnight courier shipping containers must be of a sturdy waterproof design (ice chests are commonly used) equipped with adequate cushioning material to prevent sample container breakage during shipment.

### 4 LABORATORY PROCEDURES/PERFORMANCE STANDARDS

All groundwater analyses will be performed by a TCEQ-accredited environmental testing laboratory in accordance with acceptable accreditation standards (e.g. NELAC). All groundwater analytical data will be provided to TCEQ in the sampling event's groundwater monitoring report, a copy of which will be included in the facility's Site Operating Record.

The owner or operator will review all analytical data submitted under the requirements of this permit to ensure compliance with data quality objectives, prior to submittal of the data to the commission for review. This data review will include examination of the quality control results and other supporting information.

It is the responsibility of the owner or operator to ensure that the laboratory documents and reports all problems and anomalies observed that are associated with the analysis. If the analysis of the data indicates that it failed to meet the quality control goals for the laboratory's analytical program, it does not necessarily mean that the data is unusable. The owner or operator may still report the analytical data but will include a discussion of any issues identified by the laboratory.

A Laboratory Case Narrative (LCN) report for all problems and anomalies observed must be submitted by the owner and/or operator. A sample laboratory QC checklist is provided in Appendix IIIH-G. The LCN will report the following information:

- 1. State the exact number of samples, testing parameters and sample matrix.
- 2. The name of the laboratory involved in the analysis. If more than one laboratory is used, all laboratories will be identified in the case narrative.
- 3. State the test objective regarding samples.
- 4. Explain each failed precision and accuracy measurement determined to be outside of the laboratory and/or method control limits
- 5. Explain if the effect of the failed precision and accuracy measurements on the results induces a positive or negative bias.
- 6. Identify and explain problems associated with the sample results, along with the limitations these problems have on data usability.
- 7. A statement on the estimated uncertainty of analytical results of the samples when appropriate and/or when requested.

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- 8. A statement of compliance and/or noncompliance with the requirements and specifications. Exceedance of holding times and identification of matrix interferences will be identified. Dilutions will be identified and if dilutions are necessary, they will be done to the smallest dilution possible to effectively minimize matrix interferences and bring the sample into control for analysis.
- 9. Identify any and all applicable quality assurance and quality control samples that will require special attention by the reviewer.
- 10. A statement on the quality control of the analytical method of the permit and the analytical recoveries information will be provided when appropriate and/or when requested.

In addition to the LCN, the following information will be submitted for all analytical data:

- 1. A table identifying the field sample name with the sample identification in the laboratory report.
- 2. Chain of custody.
- 3. An analytical report that documents the results and methods for each sample and analyte to be included for every analytical testing event. The test reports will document the reporting limit/method detection limit the laboratory used.
- 4. A release statement will be submitted from the laboratory. The statement will state "I am responsible for the release of this laboratory data package. This data package has been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist or Laboratory Case Narrative, and no information or data have been knowingly withheld that would affect the quality of the data."
  - a. If it is an in-house laboratory, it will have the following statement: This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report (for example, the APAR) in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.
- 5. If the data is from soil and/or sediment samples, it will be reported on a dry weight basis with the percent solids and the percent moisture reported so that any back calculations of the wet analysis may be performed.
- 6. A laboratory checklist. The Laboratory Data Package Cover Page, and Laboratory Review Checklist or the laboratory quality assurance and quality

control data and laboratory analytical data (which may be submitted in hardcopy or electronic format), will be included with the TCEQ-0312 forms for each groundwater monitoring event. For every response of "No, NA, or NR" that is reported on the checklist, the permittee will ensure the laboratory provides a detailed description of the "exception report" in the summary of the LCN or by adding additional explanations to the checklist. The permittee will require the laboratory to do an equivalent of an EPA Level 3 review regarding quality control analysis. The facility will explain any problems encountered in the laboratory analysis, either by adding additional explanations to the laboratory checklist or by extending the laboratory case narrative. Any information required in the laboratory case narrative that cannot be completed by the laboratory will be completed by the permittee.

- 7. If requested by TCEQ, laboratory analytical reports may be submitted either electronically or in hard copy.
- 8. The facility may explain any problems encountered in the laboratory analysis, either by adding additional explanations to the checklist or by extending the laboratory case narrative.
- 9. Any information required in the laboratory case narrative that cannot be completed by the laboratory will be completed by the permittee.

#### **5.1 Analyzed Constituents**

The detection monitoring constituents at the facility will be as referenced in Title 30 TAC §330.419 and specified in 40 CFR 258 Appendix I and Table 5-1. The laboratory will report the analytical results for each constituent to its respective practical quantitation limit (PQL) concentration. Groundwater samples will be collected and analyzed for the constituents listed in Table 5-1.

15 Total Metal Constituents ¹								
Total Antimony								
Total Arsenic								
Total Barium								
Total Beryllium								
Total Cadmium								
Total Chromium								
Total Cobalt								
Total Copper								
Total Lead								
Total Nickel								
Total Selenium								
Total Silver								
Total Thallium								
Total Vanadium								
Total Zinc								

# Table 5-1Detection Monitoring Constituents

¹ Analyses will be performed using the TCEQ – recommended EPA test methods or alternative methods with equivalent or better performance.

47 VOC Constituents ¹
Acetone
Acrylonitrile
Benzene
Bromochloromethane
Bromodichloromethane
Bromoform (Tribromomethane)
Carbon Disulfide
Carbon Tetrachloride
Chlorobenzene
Chloroethane (Ethyl Chloride)
Chloroform (Trichloromethane)
Dibromochloromethane (Chlorodibromomethane)
1,2-Dibromo-3-chloropropane (DBCP)
1,2-Dibromoethane (Ethylene Dibromide or EDB)
o-Dichlorobenzene (1,2-Dichlorobenzene)
p-Dichlorobenzene (1,4-Dichlorobenzene)
trans-1,4-Dichloro-2-butene
1,1-Dichloroethane (Ethylidene Chloride)
1,2-Dichloroethane (Ethylene Dichloride)
1,1- Dichloroethylene (Vinylidene Chloride)
Cis-1,2- Dichloroethylene (Cis-1,2- Dichloroethylene)
trans-1,2-Dichloroethylene (trans-1,2-Dichloroethene)
1,2-Dichloropropane (Propylene Dichloride)
cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
Ethyl Benzene
2-Hexanone (Methyl Butyl Ketone or MBK)
Methyl Bromide (Bromomethane)
Methyl Chloride (Chloromethane)
Methylene Bromide (Dibromomethane)

# Table 5-1 (Continued)Detection Monitoring Constituents

1 Analyses will be performed using the TCEQ – recommended EPA test methods or alternative methods with equivalent or better performance.

Table 5-1 (Continued)
<b>Detection Monitoring Constituents</b>

47 VOC Constituents (Continued) ¹							
Methylene Chloride (Dichloromethane)							
Methyl Ethyl Ketone (2-Butanone or MEK)							
Methyl Iodide (Iodomethane)							
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone or MIBK)							
Styrene							
1,1,1,2-Tetrachloroethane							
1,1,2,2-Tetrachloroethane							
Tetrachloroethylene (Tetracholorethane)							
Toluene							
1,1,1 Trichloroethane (Methylchloroform)							
1,1,2-Trichloroethane							
Trichloroethylene (Trichloroethene, TCE)							
Trichloroflourmethane (CFC-11)							
1,2,3-Trichloropropane							
Vinyl Acetate							
Vinyl Chloride							
Xylenes							

¹ Analyses will be performed using the TCEQ – recommended EPA test methods or alternative methods with equivalent or better performance.

#### 5.2 Practical Quantitation Limit

The laboratory reporting limits will meet the requirements of Title 30 TAC §330.405(f)(5). Analytical results will be reported to the lowest concentration levels that can be reliably quantified (practical quantitation limits [PQL]). The following describes the PQL required:

- The PQL will be at or below the Ground Water Protection Standard (GWPS) concentration established for each analyte in accordance with Title 30 TAC §330.409(h), unless approved otherwise by the executive director.
- The PQL will be determined as the concentration that corresponds to the following precision and accuracy criteria:

Constituents/Chemicals of Concern	Precision (percent RSD)	Accuracy (percent recovery)
Metals	10	70-130
Volatiles	20	50-150
Semi-Volatiles	30	50-150

- The precision and accuracy of the PQL initially will be determined from the PQLs reported over the course of a minimum of eight groundwater monitoring events. The results obtained from these events will be used to demonstrate that the PQLs meet the specified precision and accuracy limits. The PQL may be updated as more data becomes available.
- The PQL will be supported by analysis of a PQL check sample, consisting of a laboratory reagent grade sample matrix spiked with constituents/chemicals of concern at concentrations equal to or less than the PQL. At a minimum, a PQL check sample will be performed quarterly during the calendar year to demonstrate that the PQL continues to meet the specified limits for precision and accuracy.
- Analytical results for data below the limit of detection ("non-detect" results) will be reported as less than the established PQL limit that meets those precision and accuracy requirements.
- If a PQL cannot be established according to the specified precision and accuracy limits, the owner or operator will ensure that the laboratory provides sufficient documentation to justify the alternate precision and accuracy limits. This information will be reported to the executive director by the owner or operator and will be evaluated on a case-by-case basis.

All samples will be analyzed within the required holding times for the particular analyses to be tested. A list of appropriate sample containers, sample preservation, and recommended holding times is presented in Appendix IIIH-D.

The sample containers will be filled in the following order.

- 1. VOCs
- 2. Semi-volatiles (if collected)
- 3. Total metals
- 4. Inorganics (if collected)

### 5.3 Background Data Collection

As stated in Title 30 TAC §330.405(b)(3)(A), the number of samples to be collected to establish background groundwater quality data for total metals will be consistent with the appropriate statistical procedures pursuant to Title 30 TAC §330.405(f). Following installation of a new monitor well or conversion of an existing piezometer into a monitor well, the facility will begin background data collection monitoring for the constituents listed in Table 5-1. Background data collection monitoring events will be conducted on a quarterly basis until a minimum of eight background data collection monitoring events have been completed.

Following the completion of background data collection for a given monitor well, the total metals analytical data will be evaluated to ensure that the data are representative of background groundwater constituent concentrations unaffected by waste management activities or other sources of contamination in accordance with Title 30 TAC §330.405(d) and §330.407(a). At a minimum the statistical evaluation will include a screening for potential outliers and analyses to identify significant trends. The evaluation will be documented in a report and submitted to TCEQ prior to the facility's next scheduled semiannual groundwater detection monitoring event.

#### 5.4 Updating Background Data

The collection of groundwater samples to establish background water quality data for metals constituents will be performed in accordance with Title 30 TAC §330.405(d) and §330.407(a).

For interwell total metals statistical comparisons, ongoing analytical data obtained from each monitoring event will be incorporated into the background data pool. Data will be evaluated for potential outliers prior to incorporation into the well's background data pool.

For intra-well statistical comparisons, new data may be incorporated into background as frequently as once every two years. The facility will evaluate the data to ensure that the data are representative of background groundwater constituent concentrations unaffected by waste management activities or other sources of contamination. At a minimum the statistical evaluation will include a screening for potential outliers and analyses to identify significant trends and, if appropriate, the data will be incorporated into the well's background data pool. The evaluation will be documented in a report and submitted to the TCEQ prior to the facility's next scheduled semiannual groundwater detection monitoring event.

### **5.5 Detection Monitoring Events**

Routine sampling and analysis for all facility background and point of compliance detection monitor wells will be conducted on a semi-annual basis (every six months) for the constituents listed in Table 5-1.

#### 5.6 Groundwater Reporting and Submittals

No later than 60 days following completion of each groundwater monitoring event, statistical analyses will be performed in accordance with Section 6 of Appendix IIIH. Groundwater reporting frequency and procedures will be conducted in accordance

with Title 30 TAC §330 Subchapter J, and TCEQ Guidelines for Groundwater Monitoring Report Submittals guidance (December 22, 2014).

#### 5.6.1 Semiannual Detection Monitoring Reporting

In accordance with TCEQ reporting guidance, within 90 days after completion of each semiannual groundwater monitoring event, a semiannual groundwater detection monitoring report will be submitted that includes the following information, determined since the previously submitted semiannual report:

- 1. The landfill's groundwater sample and field quality control sample analytical data collected during the reporting year in hard-copy format on TCEQ Form-0312 (Groundwater Sampling Report) and in any other format requested by the TCEQ (e.g., electronic format);
- 2. The laboratory case narrative as described in Section 4 and either:
  - a) A completed laboratory checklist equivalent to the example checklist presented in Appendix IIIH-G, or
  - b) The laboratory quality assurance and quality control data and laboratory analytical data (which may be submitted in hard-copy or electronic format);
- 3. An explanation of any problems encountered in the laboratory analysis, either by adding additional explanations to the laboratory checklist or by extending the laboratory case narrative. Any information required in the laboratory case narrative that cannot be completed by the laboratory will be completed by the landfill;
- 4. A statement regarding identification of any statistical exceedances;
- 5. The results of all groundwater monitoring, testing, and analytical work, including a summary of background groundwater quality values, groundwater monitoring analyses, statistical calculations, graphs, and drawings;
- 6. The groundwater flow rate and direction in the uppermost aquifer, using the preceding semiannual sampling event's data. The report will include all documentation used to determine the groundwater flow rate and direction;
- 7. A contour map of piezometric water levels in the uppermost aquifer based on concurrent measurements in all gauged facility wells. The report will include all data or documentation used to establish the contour map;
- 8. Recommendation for any changes; and
- 9. Any other items requested by the Executive Director.

In accordance with Title 30 TAC 330.408(d), if it is determined that the detection monitoring system no longer satisfies the requirements of Title 30 TAC §330.407, the

facility will submit an application for a permit amendment or modification to make appropriate changes within 90 days of this determination.

#### 5.6.2 Semiannual Assessment Monitoring Reporting

If there are one or more facility wells in assessment monitoring status, then the facility will submit a semiannual assessment monitoring report within 60 days after completion of each semiannual groundwater assessment monitoring event. The semiannual groundwater assessment monitoring report will include the same data and information required in the facility's semiannual detection monitoring report (as defined in Section 5.6.1) but will be specific to the facility's assessment monitor wells, constituents, and statistics. The assessment monitoring statistical results will be compared to Groundwater Protection Standard concentrations to determine if the results are statistically significant.

The required semiannual groundwater assessment monitoring information may be provided either within the facility's semiannual detection monitoring report or submitted in an assessment-specific semiannual groundwater report. If the required detection and assessment monitoring information are combined into a single semiannual report submittal, then the combined report will be submitted to TCEQ within 60 days after completion of the semiannual groundwater monitoring event.

#### 6 STATISTICAL METHODOLOGY – GROUNDWATER DATA ANALYSES

#### 6.1 Statistical Methodology

Statistical analyses of groundwater analytical data will be performed in accordance with Title 30 TAC §330.405, §330.407, and §330.409, and EPA Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities – Unified Guidance (March, 2009). Statistical comparisons will be performed using Sanitas[™], a commercial software program developed by Sanitas Technologies, Inc. or other equivalent statistical program. Flow charts depicting statistical analyses protocols for control charts, prediction limits, and 95 percent confidence intervals are included in Appendix IIIH-F. It is not possible to predict all future potential circumstances. Therefore, alternate statistical methods may be used as deemed appropriate for the data distribution of the constituents being evaluated, providing that they conform to the requirements and guidelines set forth in Title 30 TAC §330.407 and §330.409, and EPA Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities – Unified Guidance (March, 2009).

#### 6.2 Exceedances, Resampling, ASDs, and Assessment Monitoring

Detection monitoring for the constituents listed in Table 5-1 of Section 5.1 and referenced in Title 30 TAC §330.419(a) will be conducted in accordance with Sections 5.3 and 5.5. An Initial Statistical Exceedance (ISE) of any constituent will be based on a detected concentration that exceeds the constituent's statistical limit. If an ISE of any constituent is indicated at any detection monitor well, a notice will be made to the TCEQ (and any other pollution control agency with jurisdiction that has requested to be notified) within 14 days.

#### 6.2.1 Verification Resampling

Verification re-sampling is an integral part of the statistical methodology that is required to verify if an actual SSI has occurred. In the event that an ISE is indicated for any constituent listed in Table 5-1 (Section 5.1), verification resampling will be completed to either confirm or disconfirm the ISE. The verification resampling results will be submitted to TCEQ within the appropriate regulatory timeframe. If the ISE is verified through resampling then the verified exceedance constitutes a Statistically Significant Increase (SSI) and the facility will either:

- (1) Notify the TCEQ (and any local pollution agency with jurisdiction that has requested to be notified) in writing of the verified SSI within 14 days and begin assessment monitoring within 90 days of the written notice (Title 30 TAC §330.407(b)(1)), or
- (2) Within 14 days of the verified SSI determination date, notify the TCEQ (and any local pollution agency with jurisdiction that has requested to be notified) in writing of the facility's intent to submit an alternative source demonstration (ASD) report; and
- (3) Within 90 days of the verified SSI determination, submit an ASD report to the TCEQ (and any local pollution agency with jurisdiction that has requested to be notified) that demonstrates that a source other than the facility caused the contamination or that the SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality (Title 30 TAC §330.407(b)(3)(B)). The report must be prepared and certified by a qualified groundwater scientist. If the report does not sufficiently demonstrate an alternative contamination source to the TCEQ, then the facility must begin assessment monitoring with 90 days of the written ASD intent notification.

If the ASD is accepted by TCEQ then the monitor well may remain in detection monitoring status. If the owner/operator does not make a demonstration satisfactory to the executive director within 90 days of the date of the SSI notice, as made evident by a letter of denial from TCEQ, then the owner/operator will initiate an assessment monitoring program meeting the requirements of Title 30 TAC §330.409.

#### 6.3 Assessment Monitoring

Assessment monitoring will be conducted at least semiannually in accordance with Title 30 TAC §330.409. The landfill will sample and analyze the groundwater monitoring system for the full list of constituents in 40 CFR, Part 258, Appendix II. Analyses for these constituents will also be conducted for the each well located on either side of the well exhibiting the verified SSI, unless an alternative subset of wells is designated by the TCEQ.

For any new constituent detected in the point of compliance wells as a result of the completed Appendix II analysis, a minimum of four statistically independent samples from each background well will be collected and analyzed to establish background levels for the additional constituent, unless an alternative subset of Appendix II background constituent analyses is designated by the TCEQ. After sampling the assessment monitor wells for Appendix II constituents, the TCEQ may specify an appropriate subset of wells to be sampled and analyzed for the Appendix II constituents during assessment monitoring and may delete any of the Appendix II

constituents if the landfill demonstrates that the constituents are not reasonably expected to be in or derived from the waste contained in the unit.

If the concentrations of all 40 CFR Part 258, Appendix II constituents are shown to be at or below background values, using the statistical procedures in §330.405(f), for two consecutive sampling events, the owner or operator will notify the Executive Director in writing and return to detection monitoring if approved.

If the concentrations of any 40 CFR Part 258, Appendix II constituents are above background values, but all concentrations are below the groundwater protection standard established under subsection (h) or (i) of §330.409, using the statistical procedures in §330.405(f) of this title, the owner or operator shall continue assessment monitoring in accordance with §330.409.

Not later than 60 days after each sampling event, the facility will determine whether any 40 CFR Part 258, Appendix II constituents were detected at statistically significant levels above the groundwater protection standard established under subsection (h) or (i) of §330.409 in any sampling event. If the groundwater protection standard has been exceeded, the facility will notify the executive director and appropriate local government officials in writing within seven days of this determination.

The facility will also:

- characterize the nature and extent of the release by installing additional monitor wells as necessary;
- install at least one additional monitor well between the monitor well with the statistically significant level and the next adjacent wells along the point of compliance before the next sampling event and sample these wells in accordance with subsection (d)(1) of §330.409;
- notify in writing all persons that own or occupy the land that directly overlies any part of the plume of contamination if contaminants have migrated off-site as indicated by sampling of wells in accordance with §330.409(d)(1); and
- initiate an assessment of corrective measures as required by §330.411 within 90 days of the notice to TCEQ.

The facility may demonstrate that a source other than the landfill caused the contamination or that the statistically significant level resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. In making a demonstration under §330.409(g)(2), the facility will:

• notify the executive director in writing within 14 days of determining a statistically significant level above the groundwater protection standard at the

point of compliance that the facility intends to make a demonstration under this paragraph;

- within 90 days of determining a statistically significant level above the groundwater protection standard, submit a report to TCEQ that demonstrates that a source other than the landfill caused the contamination or that the statistically significant level resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. The report will be prepared and certified by a qualified groundwater scientist;
- not filter the groundwater samples for constituents addressed by the demonstration prior to laboratory analysis. TCEQ may also require the facility to provide analysis of landfill leachate to support the demonstration; and
- continue to monitor in accordance with the assessment monitoring program established under §330.409.

If a successful demonstration is made, the facility will continue monitoring in accordance with the assessment monitoring program required by §330.409 and may return to detection monitoring if the 40 CFR Part 258, Appendix II constituents are at or below background as specified in subsection (e) of §330.409. Until a successful demonstration is made, the facility will comply with paragraph §330.409(g)(1), including initiating an assessment of corrective measures.

If the facility determines that the assessment monitoring program no longer satisfies the requirements of §330.409, the facility must, within 90 days, submit an application for a permit amendment or modification to make any appropriate changes to the monitoring program.

The facility will establish a groundwater protection standard for each 40 CFR Part 258, Appendix II constituent detected in the point of compliance monitor wells. The groundwater protection standard will be:

- for constituents for which a maximum contaminant level (MCL) has been promulgated under 40 CFR Part 141, Safe Drinking Water Act (codified), §1412, the MCL for that constituent;
- for constituents for which MCLs have not been promulgated, the background concentration for the constituent established from wells in accordance with §330.405(d); or
- for constituents for which the background level is higher than the MCL identified under paragraph (1) of §330.409 or health-based levels identified under §330.409(i), the background concentration.

TCEQ may establish an alternative groundwater protection standard for 40 CFR Part 258, Appendix II constituents for which MCLs have not been established. These groundwater protection standards will be appropriate health-based levels that

satisfy either the criteria of 330.409(i)(1) - (4), inclusive or comply with 330.409(i)(5).

The facility will submit an annual assessment monitoring report within 60 days after the facility's second semiannual groundwater sampling event that includes the following information determined since the previously submitted report:

• a statement whether a statistically significant level above a groundwater protection standard established in subsection (h) or (i) of §330.409 has occurred in any well during the previous calendar year period and the status of any statistically significant level events.

#### 6.4 Corrective Action Monitoring

Detection of assessment monitoring constituents at statistically significant levels, as defined in Title 30 TAC §330.409, could result in corrective action monitoring. Groundwater monitoring for the purpose of corrective action assessment and remediation will be conducted in accordance with Title 30 TAC §330.411 through §330.415, and in consultation with TCEQ. At a minimum, the assessment will address the following:

- a characterization of the contaminated groundwater, including concentrations of assessment constituents as defined in 30 TAC §330.409;
- the concentration limit for each constituent found in the groundwater;
- detailed plans and an engineering report describing the corrective action to be taken;
- a description of how the groundwater monitoring program will demonstrate the adequacy of the corrective action; and
- a schedule for submittal of the above information provided the owner or operator obtains written authorization from the executive director prior to submittal of the complete permit application.

#### 7 GROUNDWATER ANALYTICAL RESULTS AND POTENTIAL RESPONSE ACTIONS

#### 7.1 Groundwater Quality

Title 30 TAC §330.63(f)(5-7) require a comparison of the facility's groundwater analytical data to the specific constituents referenced in Title 30 TAC §330.419(a) and listed in 40 CFR, Part 258, Appendix I. The City of Meadow Landfill was historically a Type IAE Arid Exempt facility (MSW Permit No. 2293) with no prior groundwater monitoring system or GWSAP. Therefore, no groundwater detection monitoring data exists for the facility at this time.

#### 7.2 Potential Contaminant Migration

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 Uppermost Aquifer at the point of release. Once within the Uppermost Aquifer, pollutants would be transported within the Aquifer strata, above the Lower Confining Unit, and down gradient in the direction of groundwater flow toward the permitted Point of Compliance and network of groundwater detection monitor wells.

- American Society of Testing and Materials (ASTM), 1986. Standard Guide for Sampling Ground water Monitoring Wells. D 448-850.
- American Society of Testing and Materials (ASTM), 1996. Provisional Standard Guide for Developing Appropriate Statistical Approaches for Ground Water Detection Monitoring Programs. PS 64-96.
- Gibbons, Robert, D., 1994, Statistical Methods for Groundwater Monitoring, John Wiley & Sons, Inc. New York.
- Gibbons, Robert, D. and Coleman, David E. 2001. Statistical Methods for Detection and Quantification of Environmental Contamination, John Wiley & Sons, Inc. New York.
- Gilbert, R. O. 1987. Statistical Methods for Environmental Pollution Monitoring. Van Nostrand Reinhold, New York.
- Martin, W.F., Lippirr, J.M., and Protherd, T.G. 1987. Hazardous Waste Handbook for Health and Safety, Butterworth Publishers, Stoneham, Massachusetts, pp. 28-30.
- Sanitas Technologies, Inc., 2009, Sanitas[®] Users Manual, Version 9, Shawnee, Kansas.
- Terra Engineers, Inc., 2000, Soil Investigation, Meadow Landfill, MSW Permit Number 2293.
- Texas Commission on Environmental Quality (TCEQ), "Guidelines for Groundwater Monitoring Report Submittals", December 22, 2014.
- Texas Commission on Environmental Quality (TCEQ), "Texas Administrative Code, Title 30, Chapter 330, Municipal Solid Waste", March 27, 2006 (effective date).
- U.S. Environmental Protection Agency, 1986. RCRA Groundwater Monitoring Technical Enforcement Guidance Document. OSWER – 99550.1, Office of Waste Programs Enforcement, Office of Solid Waste and Emergency Response, Washington, D.C.
- U.S. Environmental Protection Agency, 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities: Unified Guidance.

Q:\REPUBLIC\MEADOW\EXPANSION 2023\PART III\APPENDIX IIIH.DOCX

- U.S. Environmental Protection Agency, 1991. Handbook Ground water, Volume II: Methodology. EPA/625/6-90/0166.
- U.S. Environmental Protection Agency, November 1986. Test Methods for Evaluating Solid Waste – Physical/Chemical Methods, Third Edition (revised), SW-846. Office of Solid Waste and Emergency Response, Washington, D.C.
- U.S. Environmental Protection Agency, November 1993. Solid Waste Disposal Facility Criteria Technical Manual. EPA/530-R-93-017, NTIC #PB94-100-450, Office of Solid Waste and Emergency Response, Washington, D.C.
- OJD Engineering, Inc., 2006, Approved Site Development Plan, City of Meadow Landfill, MSW Permit Number 2293.

#### **APPENDIX IIIH-A**

#### **GROUNDWATER MONITORING SYSTEM**



#### CONTENTS

FIGURE IIIH-A-1 – Proposed Groundwater Monitoring Network FIGURE IIIH-A-2 – Groundwater Monitor Well Details FIGURE IIIH-A-3 – Typical Groundwater Monitor Well Details

Groundwater Monitoring System Certification	IIIH-A-4
WCG Groundwater Piezometer Asbuilt Survey Report	IIIH-A-5
Monitor Well Lithologic Logs	IIIH-A-8
AARON K. EVANS 11143 VIL OF 76 S S S S S S S S S S S S S S S S S S S	



0 30 SCALE 1	AARON K. EVANS AARON K. EVANS 11143 11143 11143						
LEC	U8/05/2024						
	PROPOSED PERMIT BOUNDARY						
	PROPOSED LIMIT OF WASTE						
N 7180000	STATE PLANE COORDINATE SYSTEM						
MW-1 (PWCG-5A) (3262.55)	PROPOSED GROUNDWATER MONITOR WELL (TO BE CONVERTED FROM EXISTING PIEZOMETER) WITH FORMER PIEZOMETER NAME POSTED IN PARENTHESIS						
₩-21 (PWCG-1) (3253.26)	PROPOSED GROUNDWATER OBSERVATION WELL (TO BE CONVERTED FROM EXISTING PIEZOMETER) WITH FORMER PIEZOMETER NAME POSTED IN PARENTHESIS						
-∲- мw-з	PROPOSED NEW GROUNDWATER MONITOR WELL (TO BE						
PWCG-7A (3259.52)	EXISTING 2023 EXPANSION PIEZOMETER (TO BE REMOVED)						
PB-116 (3256.63)	EXISTING RELICT GROUNDWATER PIEZOMETER (TO BE REMOVED) (SEE NOTE 5)						
	GROUNDWATER POTENTIOMETRIC SURFACE CONTOUR IN FT-MSL						
	PROPOSED POINT OF COMPLIANCE						
508'	INTERWELL SPACING ALONG POINT OF COMPLIANCE IN LINEAR FEET						

1. EXISTING CONTOURS ARE CREATED FROM UNMANNED AERIAL SURVEY DATA COLLECTED BY WEAVER CONSULTANTS GROUP, LLC ON OCTOBER 20, 2022. THE GRID SYSTEM IS TIED TO THE TEXAS COORDINATE SYSTEM OF 1983, NORTH CENTRAL ZONE, NAD83 (2011) EPOCH 2010.00 AND HAS BEEN SCALED TO SURFACE COORDINATES BY DIVIDING BY THE COMBINED SCALE FACTOR OF 0.99972824 FROM AN ORIGIN OF 0,0.

2. PIEZOMETER LOCATION COORDINATES OBTAINED FROM AUGUST 2023 AS-BUILT SURVEY BY WEAVER CONSULTANTS GROUP.

3. GROUNDWATER POTENTIOMETRIC SURFACE ELEVATIONS MEASURED BY WEAVER CONSULTANTS GROUP IN SEPTEMBER 2023 AND POSTED AT EACH MEASUREMENT LOCATION IN FT-MSL.

4. GROUNDWATER POTENTIOMETRIC SURFACE CONTOURS ARE INTERPOLATED BETWEEN MEASUREMENT LOCATIONS; ACTUAL CONDITIONS MAY VARY.

5. NO GEOSCIENTIST OR ENGINEER CERTIFIED LITHOLOGIC LOGS, DETAILS, OR OTHER INFORMATION IS AVAILABLE FOR THE EXISTING RELICT GROUNDWATER PIEZOMETERS; THEIR LOCATIONS AND MEASURED POTENTIOMETRIC SURFACE ELEVATIONS ARE SHOWN FOR INFORMATION PURPOSES BUT ARE NOT INCORPORATED INTO POTENTIOMETRIC CONTOURS SHOWN.

6. PROPOSED MONITOR WELLS WILL BE INSTALLED, OR CONVERTED FROM EXISTING PIEZOMETERS, AS LANDFILL IS DEVELOPED IN ACCORDANCE WITH SECTION 2.0 AND FIGURE IIIH-A-2 OF THE FACILITY'S GWSAP.

PREPARED FOR	MAJOR PE PROPOSE	RMIT AMMENDMENT D GROUNDWATER			
REVISIONS DESCRIPTION	MONITORING	SYSTEM NETWORK meadow landfill county, texas			
	WWW.WCGRP.COM	FIGURE IIIH-A-1			

8ACKGROUND WELL NAME (BG) OR POINT OF INSTALL		INSTALL	SITE GRID COORDINATES		RDINATES TOP OF		TOP OF CASING ELEVATION	GROUND	,	WELL CONSTR	UCTION DEPTHS	5	WE	LL CONSTRUC	CTION ELEVATIO	NS	GROUNDWATER
(FORMER NAME USTED IN PARENTHESIS)	NAME USTED IN COMPLIANCE RENTHESIS) (POC) WELL?	DATE	NORTHING EASTING	ELEVATION	TOP OF FILTER PACK	TOP OF		BOTTOM OF SCREEN	BOTTOM OF FILTER PACK	TOP OF FILTER PACK	TOP OF SCREEN	BOTTOM OF SCREEN	BOTTOM OF FILTER PACK	ELEVATION ³			
WELLS TO BE CONVERTED FROM EXISTING EXPANSION PIEZOMETERS																	
MW-1 (PWCG-5A)	BG	Aug-23	7179381.82	839309.31	3312.19	3309.1	90.0	93.0	103.0	103.C	3219.1	3216.1	3206.1	3206.1	3262.55		
MW-1P (PWCG-58)	BG	Aug-23	7179389.37	839298.83	3312.08	3309.0	73.0	75.0	80.D	80.0	3236.D	3234.C	3229.0	3229.0	3263.43		
MW-2 (PWCG-4A)	POC	Aug-23	7177577.27	841014.12	3270.51	3267.1	37.0	40.0	50.0	50.0	3230.1	3227.1	3217.1	3217.1	3248.75		
MW-2P (PWCG-48)	POC	Aug-23	7177579.69	840996.83	3270.11	3267.1	26.0	28.0	32.0	32.0	3241.1	3239.1	3235.1	3235.1	3248.83		
MW-7 (PWCG-3)	POC	Aug-23	7179290.62	841999.62	3298.84	3295.9	52.0	57.0	67.0	57.0	3243.9	3238.9	3228.9	3228.9	3257.65		
MW-12 (PWCG-2)	POC	Aug-23	7181829.44	842081.66	3317.74	3314.8	75.0	77.0	87.0	90.0	3239.8	3237.8	3227.8	3224.8	3249.28		
OW-21 (PWCG-1)	BG	Aug-23	7182024.79	836913.78	3319.34	3315.3	80.0	85.0	95.0	95.0	3236.3	3231.3	3221.3	3221.3	3253.26		
OW-22 (PWCG-6)	BG	Aug-23	7180756.96	838049.09	3314.86	3311.7	70.0	72.0	82.0	82.0	3241.7	3239.7	3229.7	3229.7	3261.65		
NEW MONITOR WELLS - TO BE INSTALLED																	
MW-3	POC	TBD	7177551	841539	3271.0	3268.0	35.0	38.0	48.0	48.0	3233.0	3230.C	3220.0	3220.0	3250.0		
MW-4	POC	TBD	7177530	841949	3267.0	3264.0	31.0	34.0	44.0	44.0	3233.0	3230.C	3220.0	3220.0	3251.0		
MW-5	POC	TBD	7178116	841970	3279.0	3275.0	43.0	45.0	56.0	56.0	3233.0	3230.C	3220.0	3220.0	3253.0		
MW-6	POC	TBD	7178703	841990	3291.0	3288.0	55.0	58.0	68.0	58.0	3233.0	3230.0	3220.0	3220.0	3255.0		
MW-8	PDC	TBD	7179797	842023	3305.0	3302.0	59.0	62.0	72.0	72.0	3243.0	3240.C	3230.0	3230.0	3257.0		
MW-9	POC	TBD	7180305	842038	3307.0	3304.0	61.0	64.0	74.0	74.0	3243.0	3240.C	3230.0	3230.0	3255.0		
MW-10	PDC	TBD	7182025	837485	3311.0	3308.0	65.0	68.0	78.0	78.0	3243.0	3240.0	3230.0	3230.0	3253.0		
MW-11	POC	TBD	7181319	842064	3313.0	3310.0	67.0	70.0	80.0	80.0	3243.0	3240.0	3230.0	3230.0	3252.0		
MW-13	PDC	TBD	7181878	841510	3317.0	3314.0	71.0	74.0	84.0	84.0	3243.0	3240.C	3230.0	3230.0	3252.0		
M:W-14	PDC	TBD	7181900	840935	3315.0	3312.0	79.0	82.0	92.0	92.0	3233.0	3230.C	3220.0	3220.0	3254.0		
MW-15	POC	TBD	7181922	840360	3313.0	3310.0	67.0	70.0	80.0	80.0	3243.0	3240.0	3230.0	3230.0	3256.0		
MW-16	POC	TBD	7181942	839785	3315.0	3312.0	59.0	62.0	72.0	72.0	3253.0	3250.0	3240.0	3240.0	3257.0		
₩W-17	POC	TBD	7181962	839210	3319.0	3315.0	63.0	65.0	76.0	76.0	3253.0	3250.0	3240.0	3240.0	3258.0		
₩W-18	POC	TBD	7181981	838635	3321.0	3318.0	65.0	68.0	78.0	78.0	3253.0	3250.0	3240.0	3240.0	3258.0		
MW-19	POC	TBD	7182002	838060	3321.0	3318.0	65.0	68.0	78.0	78.0	3253.0	3250.0	3240.0	3240.0	3257.0		
MW-20	POC	TBD	7182025	837485	3321.0	3318.0	65.0	68.0	78.0	78.0	3253.0	3250.C	3240.0	3240.0	3255.0		

#### NOTES:

1. ELEVATIONS USTED IN FEET ABOVE MEAN SEA LEVEL (FT-MSL); DEPTHS LISTED IN FEET BELOW GROUND SURFACE (FT-BGS).

2. EXISTING WELL COORDINATES, TOP OF CASING ELEVATIONS, AND GROUND ELEVATIONS OBTAINED FROM ASBUILT SURVEY CONDUCTED BY WEAVER CONSULTANTS GROUP IN AUGUST 2023.

3. GROUNDWATER ELEVATIONS GAUGED BY WEAVER CONSULTANTS GROUP IN SEPTEMBER 2023.

4. MONITOR WELLS MW-1P AND MW-2P SCREENED IN PERCHED UPPERMOST AQUIFER GROUNDWATER ADJACENT PAIRED DEEPER WELLS MW-1 and MW-2; RESPECTIVELY.

5. OBSERVATION WELLS TO BE RETAINED IN SYSTEM FOR GROUNDWATER GAUGING PURPOSES INDICATED BY "OW" DESIGNATION.

6. DETAILS FOR PROPOSED FUTURE WELLS ESTIMATED FROM EXISTING SUBSURFACE INVESTIGATION DATA; ACTUAL DETAILS TO BE DETERMINED AT TIME OF INSTALLATION BASED ON SUBSURFACE CONDITIONS ENCOUNTERED.

7. WELLS ARE TO BE CONVERTED, INSTALLED, OR REMOVED IN ACCORDANCE WITH SECTION 2.0 OF THE GWSAP.

8. TBD = TO BE DETERMINED.

222811 AARON K. EVANS 08/05/2024

DRAFT           X         FOR PERMITTING PURPOSES ONL           ISSUED FOR CONSTRUCTION	Y	PREPARED FOR MEADOW LANDFILL, LLC			MAJOR PERMIT AMMENDMENT GROUNDWATER MONITOR WELL DETAILS		
DATE: 08/2024 FILE: 0120-809-11	DRAWN BY: SRF DESIGN BY: DCS	REVISIONS					
CAD: IIIH-A-2-WELL DETAILS.DWG	REVIEWED BY: AKE				CITY OF	MEADOW LANDFILL	
Weaver Consultants Group TBPE REGISTRATION NO. F-3727					WWW.WCGRP.COM	FIGURE IIIH-A-2	

## TYPICAL GROUNDWATER MONITOR WELL DETAIL





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08/05/2024					
PREPARED FOR MEADOW LANDFILL, LLC	MAJOR PER	RMIT AMENDMENT			
REVISIONS VATE DESCRIPTION	WE	LL DETAILS			
	CITY OF MEADOW LANDFILL TERRY COUNTY, TEXAS				
	WWW.WCGRP.COM	FIGURE IIIH-A-3			

13.

AARON K. EVANS

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#### **GROUNDWATER MONITORING SYSTEM CERTIFICATION**

#### General Site Information

Site:	City of Meadow Landfill
Site Location:	Terry County
MSW Permit No.:	2293C

#### **Qualified Groundwater Scientist Statement**

I, Aaron K. Evans, am a registered professional geoscientist in the State of Texas and a qualified groundwater scientist as defined in Title 30 TAC §330.3(120). I have reviewed the groundwater monitoring system and supporting details contained herein. In my professional opinion, the groundwater monitoring system design and construction details are in compliance with the groundwater monitoring requirements specified in Title 30 TAC §§330.401, 330.403, 330.405, 330.407, 330.409, 330.419, and 330.421. This system has been designed for the City of Meadow Landfill. The only warranty made by me in connection with this document 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/Addre	ss: Weaver Consultants Group, LLC 6420 Southwest Boulevard, Suite 206 Fort Worth, Texas 76109	AARON K. EVANS
Signature:	Aaron K. Evans, P.G., Texas License No. 11143	08/05/2024
Date:	08/05/2024	_

## WCG GROUNDWATER PIEZOMETER ASBUILT SURVEY REPORT



	PROPERTY BOUNDARY
	EXISTING PERMIT BOUNDARY
	PROPOSED PERMIT BOUNDARY
	PERMITTED LIMITS OF WASTE
	PROPOSED LIMITS OF WASTE
N 3648000	STATE PLANE COORDINATE
16	EXISTING RELICT PIEZOMETER LOCATION
G-2	2023 EXPANSION PIEZOMETER LOCATION

-1	GAS	MONITORING	PROBE	

Meadow Site Control											
NORTHING	EASTING	ELEVATION	DESCRIPTION								
7170143-07	041050.00	2207.45	GP-1 BRONZE DISC								
/1/9142.6/	041333.30	3297.43	STAMPED 12-14-2022								
7170100.00	830616 37	2204 87	1/2" ROD W/RED								
/1/6136.90	839010.27	3304.67	"WCG" CAP								
7170257.04	041100 30	2201 52	1/2" ROD W/RED								
/1/855/.04	841109.20	3281.33	"WCG" CAP								
7176667.67	841030-01	2252.50	1/2" ROD W/RED								
/1/0002.03	041323.01	3232.39	"WCG" CAP								

 COORDINATES AND GRID LINES SHOWN HEREON ARE RELATIVE TO THE TEXAS COORDINATE SYSTEM OF 1983, NORTH AMERICAN DATUM OF 1983(2011)[EPOCH 2010.00], NORTH CENTRAL ZONE, U.S. SURVEY FEET, AND HAVE BEEN SCALED TO SURFACE VALUES. TO REDUCED COORDINATES TO GRID VALUES, MULTIPLY BY THE PROJECT COMBINED SCALE FACTOR OF 0.99972824 FROM AN ORIGIN OF 0.0. GEODETIC COORDINATES SHOWN

ELEVATIONS SHOWN HEREON ARE RELATIVE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) BASED ON STATIC GNSS OBSERVATIONS AND OPUS SOLUTION OBSERVED ON THE CITY OF MEADOW LANDFILL SITE BENCHMARK, BY FIELD SURVEY PERFORMED BY WEAVER CONSULTANTS GROUP, LLC (WCG) ON

REVISIONS
DESCRIPTION



PIEZOMETER AS-BUILT SURVEY REPORT

CITY OF MEADOW LANDFILL TERRY COUNTY, TEXAS

WWW.WCGRP.COM

DRAWING ABS-1

PIEZO-ID	NORTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION	DESCRIPTION
	7182027.64	836914.18	33.31159204N	102.20572338W	3316.33	NG
DIALOG A	7182025.66	836913.86	33.31158656N	102.20572420W	3316.94	NAIL
PWCG-1	7182024.79	836913.78	33.31158417N	102.20572437W	3319.34	PVC
	7182024.67	836913.84	33.31158385N	102.20572414W	3319.95	LID
	7181829.29	842084.59	33.31154728N	102.18879045W	3314.83	NG
DIVICE 2	7181829.40	842082.65	33.31154740N	102.18879678W	3315.25	NAIL
PWCG-2	7181829.44	842081.66	33.31154743N	102.18880003W	3317.74	PVC
a	7181829.42	842081.70	33.31154736N	102.18879992W	3318.20	LID
	7179290.01	842002.37	33.30456632N	102.18876759W	3295.86	NG
DIALOG D	7179290.46	842000.72	33.30456740N	102.18877304W	3296.40	NAIL
PWCG-3	7179290.62	841999.62	33.30456775N	102.18877664W	3298.84	PVC
	7179290.66	841999.74	33.30456785N	102.18877626W	3299.61	LID
	7177574.94	841014.30	33.29976126N	102.19180168W	3267.07	NG
DIALCC AA	7177576.02	841015.26	33.29976432N	102.19179866W	3267.37	NAIL
PWCG-4A	7177577.27	841014.12	33.29976765N	102.19180254W	3270.51	PVC
	7177577.24	841014.20	33.29976759N	102.19180227W	3270.69	LID
	7177579.65	840999.29	33.29977276N	102.19185130W	3267.09	NG
PWCG-4B	7177578.35	840997.92	33.29976905N	102.19185563W	3267.49	NAIL
PWCG-4B	7177579.69	840996.83	33.29977262N	102.19185936W	3270.11	PVC
	7177579.63	840996.75	33.29977245N	102.19185960W	3270.34	LID
	7179379.34	839309.67	33.30455157N	102.19758381W	3309.07	NG
	7179380.92	839310.25	33.30455596N	102.19758209W	3309.28	NAIL
PWCG-5A	7179381.82	839309.31	33.30455833N	102.19758525W	3312.19	PVC
	7179381.84	839309.28	33.30455839N	102.19758538W	3312.37	LID
	7179386.89	839299.08	33.30457128N	102.19761931W	3308.99	NG
	7179388.08	839299.68	33.30457460N	102.19761747W	3309.46	NAIL
PWCG-56	7179389.37	839298.83	33.30457805N	102.19762040W	3312.08	PVC
	7179389.41	839298.99	33.30457817N	102.19761988W	3312.32	LID
	7180754.19	838049.28	33.30820504N	102.20186415W	3311.70	NG
DWCC 6	7180756.12	838050.06	33.30821039N	102.20186183W	3312.16	NAIL
FWCG-0	7180756.96	838049.09	33.30821262N	102.20186511W	3314.86	PVC
	7180756.86	838049.09	33.30821233N	102.20186507W	3315.00	LID
	7181318.36	840014.60	33.30994437N	102.19550164W	3311.71	NG
PMCG-7A	7181316.61	840013.48	33.30993946N	102.19550510W	3311.99	NAIL
PWCG-7A	7181315.52	840014.52	33.30993657N	102.19550158W	3314.70	PVC
	7181315.48	840014.61	33.30993647N	102.19550129W	3314.87	LID
	7181318.76	840001.68	33.30994423N	102.19554395W	3311.89	NG
DW/CG-7P	7181317.24	840000.32	33.30993991N	102.19554823W	3312.21	NAIL
FWCG-7D	7181315.96	840001.46	33.30993650N	102.19554433W	3315.00	PVC
	7181315.97	840001.49	33.30993655N	102.19554424W	3315.18	LID

WELL-ID	NORTHING	EASTING	LATITUDE	LONGITUDE	ELEVATION	DESCRIPTION
	7179137.53	841959.55	33.30414349N	102.18889012W	3297.03	NG
GMP-1	7179139.74	841959.63	33.30414956N	102.18889012W	3297.52	CONC
GIVIP-1	7179141.72	841959.91	33.30415501N	102.18888941W	3300.93	PVC
	7179141.58	841959.76	33.30415461N	102.18888990W	3301.64	LID
	7177585.73	840022.87	33.29969513N	102.19504503W	3287.74	NG
CMD 2	7177579.89	840021.05	33.29967891N	102.19505029W	3287.90	CONC
GIVIP-2	7177582.04	840023.19	33.29968504N	102.19504354W	3291.39	PVC
	7177582.18	840022.95	33.29968541N	102.19504434W	3287.90         CO           3291.39         P\           3291.87         Ll           3306.11         N           3306.28         CO           3308.78         P\           3309.27         Ll           3319.53         N           3319.78         BA           3322.15         P\	LID
	7181871.68	840568.36	33.31151734N	102.19375422W	3306.11	NG
DD 102	7181872.60	840568.21	33.31151985N	102.19375483W	3306.28	CONC
PB-103	7181874.55	840568.31	33.31152520N	102.19375472W	3308.78	PVC
	7181874.73	840568.34	33.31152570N	102.19375464W	3309.27	LID
	7181968.32	837664.81	33.31150186N	102.20326156W	3319.53	NG
DD 107	7181970.61	837665.22	33.31150820N	102.20326049W	3319.78	BASE
PB-107	7181972.07	837665.51	33.31151224N	102.20325973W	3322.15	PVC
	7181972.15	837665.40	33.31151243N	102.20326009W	3322.63	LID
	7180937.82	840643.82	33.30896017N	102.19339999W	3308.46	NG
DD 446	7180940.29	840644.49	33.30896704N	102.19339811W	3308.89	BASE
PB-110	7180941.57	840644.67	33.30897056N	102.19339766W	3310.15	PVC
	7180941.64	840644.55	33.30897075N	102.19339807W	3310.65	LID (DAMAGED)
	7180996.05	842059.37	33.30925672N	102.18877717W	3309.54	NG
DD 117	7180999.05	842059.41	33.30926496N	102.18877740W	3309.84	BASE
PB-117	7180999.58	842059.43	33.30926643N	102.18877741W	3311.50	PVC
	7180999.63	842059.38	33.30926656N	102.18877757W	3311.77	LID
	7179230.86	841441.20	33.30434974N	102.19059598W	3298.62	NG
DD 120	7179229.36	841440.96	33.30434561N	102.19059659W	3299.21	NAIL
PB-128	7179228.31	841440.96	33.30434273N	102.19059650W	3301.48	PVC
	7179228.21	841440.94	33.30434246N	102.19059653W	3302.06	LID
	7179237.60	839798.06	33.30420956N	102.19597030W	3309.27	NG
DD 430	7179241.37	839798.88	33.30421998N	102.19596805W	3309.83	DISK
PB-130	7179240.14	839798.69	33.30421660N	102.19596854W	3312.24	PVC
	7179240.24	839798.72	33.30421687N	102.19596845W	3312.70	LID
	7180903.12	839264.73	33.30873159N	102.19790625W	3314.28	NG
DD 134	7180905.88	839264.56	33.30873917N	102.19790713W	3314.27	BASE
PB-134	7180906.72	839264.26	33.30874144N	102.19790821W	3316.50	PVC
	7180906.83	839264.37	33.30874177N	102.19790788W	3317.06	LID

IIIH-A-7

#### TABLE LEGEND

NG	NATURAL GROUND ADJACENT TO WELL
NAIL/DISK	SURFACE PAD MONUMENT
CONC	TOP OF CONCRETE PAD (NO MONUMENT)
BASE	NATURAL GROUND AT BASE OF CASING (NO CONCRETE PAD)
PVC	TOP OF PVC WELL CASING
LID	TOP OF PROTECTIVE COVER

#### NOTES:

- 1. COORDINATES AND GRID LINES SHOWN HEREON ARE RELATIVE TO THE TEXAS COORDINATE SYSTEM OF 1983, NORTH AMERICAN DATUM OF 1983(2011)[EPOCH 2010.00], NORTH CENTRAL ZONE, U.S. SURVEY FEET, AND HAVE BEEN SCALED TO SURFACE VALUES. TO REDUCED COORDINATES TO GRID VALUES, MULTIPLY BY THE PROJECT COMBINED SCALE FACTOR OF 0.99972824 FROM AN ORIGIN OF 0.0. GEODETIC COORDINATES SHOWN HEREON RELATIVE TO WGS84. GEODETIC COORDINATES SHOWN HEREON (LATITUDE/LONGITUDE) ARE BASED ON WGS84 IN DECIMAL DEGREE FORMAT.
- ELEVATIONS SHOWN HEREON ARE RELATIVE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) BASED ON STATIC GNSS OBSERVATIONS AND OPUS SOLUTION OBSERVED ON THE CITY OF MEADOW LANDFILL 2. SITE BENCHMARK, BY FIELD SURVEY PERFORMED BY WEAVER CONSULTANTS GROUP, LLC (WCG) ON 12-16-2022.

ELEVATION=3,297.45 NAVD88

- 3. LOCATIONS BASED ON FIELD SURVEY PERFORMED BY WCG ON 4-12-2023 & 8-28-2023.
- 4. SEE DRAWING ABS-1 FOR EXHIBIT OF AS-BUILT LOCATIONS.

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THAT I, ANDREW J. WIDOLFF, A REGISTERED PROFESSIONAL LAND SURVEYOR BY THE STATE OF TEXAS, AFFIRM THAT THIS DOCUMENT AND DATA DEPICTED HEREON IS BASED UPON A FIELD STER 会 50 SURVEY ON APRIL 12, 2023 & AUGUST 28, 2023 UNDER MY DIRECT SUPERVISION. ANDREW J. WIDOLFF 677 PLS #6771 GROUP, LLC #206 3 817-735-9770 TBPELS SURV FIRM NO. 10095400 08/01/2024 PREPARED FOR

ANDREW	J. W	IDOL	FF,	RF
WEAVER	CONS	ULT	ANT:	S (
6420 S	OUTHW	EST	BĽ	٧D
FORT W	ORTH,	ΤX	761	03
TRPFIS	SHRV	FIR	M N	JO .

DRAFT X FOR INFORMATIONAL PURPOSES ISSUED FOR CONSTRUCTION		MEA	
DATE: 08/2024 FILE: 0120-809-14-00 CAD: PIEZO AS-BUILT 20230828.DWG	DRAWN BY: GR DESIGN BY: AE REVIEWED BY: AJW	NO.	DATE
Weaver Consulta TBPE REGISTRATION NO.			

PIEZOMETER AS-BUILT SURVEY REPORT

OF

CITY OF MEADOW LANDFILL TERRY COUNTY, TEXAS

WWW.WCGRP.COM DRAWING ABS-2

ADOW LANDFILL, LLC

REVISIONS DESCRIPTION MONITOR WELL LITHOLOGIC LOGS

	Weaver Consultants Project Title: Meadow Landfill - 2023 Subsurface Investigation				Supervising Geologist: Aaron K. Evans, P.G.Logging Geologist:CGMDrilling Firm:Envirotech						Э. Ра	ge 1 of 4			
		Group		Project No: 0120-809-11-05	Field	d Tests			La	bora	itory	Tests			
	Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date: 3/14/2023       Northing (State Plane): 71820         Boring End Date: 3/20/2023       Easting (State Pane): 83691         Ground Elevation at Time of Drilling: 3316.30 ft-msl         Top of Well Casing Datum Elevation: 3319.34 ft-msl         Remarks: Borehole drilled and continuously sampled via dry aug and air rotary techniques. Static groundwater elevation gauged September 2023.         Y = First Water Encountered at Time of Drilling:       3231.3 ft-r         Y = Second Water Encountered at Time of Drilling:       Not Obser         Y = Static Potentiometric Surface Elevation:       3253.26 ft-         Description       Description	24.79 3.78 er nsl ved -msl FT MSL	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer Construction Detail (with contact depths posted in ft-bgs)
	_	SPT	• • • • • • • • • • • • • • • • • • •	SAND, with SILT, dry, non-plastic when moistened, very loose to loose, no visible bedding, reddish-brown.		-	2 4 5								-
	-	SPT	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			-	5 4 4 6 8 7								2.0
	5 -	SPT		CALICHE, with SAND, intermixed, dry, non-plastic when moistened, loose to medium dense, no visible bedding, white	3311.3		8 10 12								
-	_	SPT		& reddish-brown.		-	8 9 11								-
	_	SPT		below 8'.		-	11 6 11 12								-
	10 -	SPT				-	12 7 10 17 18								
		SPT			3302.3	-	10 15 19 29								-
	15 -	U		SAND, with SILT, trace clay, intermixed, dry, non-plastic to low plasticity when moistened, medium dense, no visible	3301.3	_									
		Α		bedding, light-reddish-brown, light-yellowish-brown & white. CALICHE, with SAND, intermixed, dry, non-plastic when											
.GDT 8/5/24	_	SPT		moistened, medium dense, no visible bedding, light-gray & pinkish-white.	3298.3	-	15 17 27 35								-
	- 20 -	SPT	<pre></pre>	SAND, with SILT, with caliche gravel, intermixed, dry, non-plastic to low plasticity when moistened, medium dense to dense, no visible bedding, light-reddish-brown & pinkish-white.		-	11 13 29 38								-
- 2024 PER	-	SPT	• • • • • • • • • • • • • • • • • • •		3294.3	_	22 50/2"								
.GPJ MLF.	_	SPT		CALICHE, sandy, dry, non-plastic when moistened, medium dense to very dense, no visible bedding, white, light-gray & pinkish-white.		_	27 50/6"								
9 EZO LOG MLF - PERMIT (2023).	25 -	AR				- 3.0									
MLF															

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		Weaver Consul	r tants	LOG OF PWCG-1 (OW-21) Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supe Logg Drill	ervising ( ging Geo ing Firm	Geolo logist 1:	gist: . t:	Aaror CGM Envir	n K. I	Evar 1	ns, P.O	G. Pa	ge 2 of 4
		Jroup		Project No: 0120-809-11-05		Field	1 Tests			La	bora	tory	Tests	3	
	Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date: 3/14/2023       Northing (State Plane): 7182024.         Boring End Date: 3/20/2023       Easting (State Plane): 7182024.         Boring End Date: 3/20/2023       Easting (State Plane): 836913.7         Ground Elevation at Time of Drilling: 3316.30 ft-msl       319.34 ft-msl         Top of Well Casing Datum Elevation: 3319.34 ft-msl       8         Remarks: Borehole drilled and continuously sampled via dry auger and air rotary techniques. Static groundwater elevation gauged September 2023.       ¥ = First Water Encountered at Time of Drilling: 3231.3 ft-msl         ¥ = Second Water Encountered at Time of Drilling: Static Potentiometric Surface Elevation: 3253.26 ft-msl       Description	79 8	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer Construction Detail (with contact depths posted in ft-bgs)
╞	I	AR		CALICHE, sandy, dry (continued).	ISL							_			
			<u>૾૾ૼ૾ૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢૢ</u> ૾૾ૢૢૢૢૢૢૢૢૢૢૢૢૢ	- with calcite seams from 33'-38'.	-	4.5+									-
-	-	AR			-	- 4.5+									-
-	40 -	AR		32	73.3	4.5+									-
-:GDT 8/5/24	- 45 - -	AR		SAND, with CALICHE, intermixed, dry to moist, non-plastic, loose to medium dense, no visible bedding, light-gray & white.	-										-
II TEMPLATE	- 50 -	SPT		CALICHE condu with coloite day, non plastic when	66.3	-	6 8 11 21								-
T (2023).GPJ MLF - 2024 PEK		AR		moistened, hard, no visible bedding, white, light-gray & pinkish-white.	-	4.5+									-
		AR			-	4.5+									-

	Weaver Consul	r tants	LOG OF PWCG-1 (OW-21) Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supe Logg Drill	ervising ging Geo ling Firm	Geolo ologis n:	gist: t:	Aaror CGM Envir	n K.	Evar h	ns, P.0	G. Pa	ge 3 of 4
	Group		Project No: 0120-809-11-05		Field	d Tests			La	lbora	atory	Test	5	
Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date: 3/14/2023       Northing (State Plane): 71820         Boring End Date: 3/20/2023       Easting (State Pane): 83691         Ground Elevation at Time of Drilling: 3316.30 ft-msl         Top of Well Casing Datum Elevation: 3319.34 ft-msl         Remarks: Borehole drilled and continuously sampled via dry aug and air rotary techniques. Static groundwater elevation gauged September 2023.         ♥ = First Water Encountered at Time of Drilling: ■ Second Water Encountered at Time of Drilling: Not Obser         ♥ = Static Potentiometric Surface Elevation: Description	24.79 3.78 er nsl ved -msl FT MSL	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer Construction Detail (with contact depths posted in ft-bgs)
		, , , , , , , , , , , , , , , , , , ,	CALICHE, sandy, dry (continued).	WIGE										
	AR				- - -									- - -
- 65 - 	AD		- becomes pinkish-white & light-reddish-brown belwo 65'.		4.5+									-
  - 70 -					-									-
	AR			3241.3	- 4.5+ - -									-
	AR		SAND, with SILT, moist, non-plastic, medium dense to very dense, no visible bedding, light-reddish-brown.	-										
- 80 -	SPT				-	15 25 28 27								- 80.0
	AR			-	-									
	SPT		<ul> <li>becomes moist to wet below 85'.</li> <li>becomes interbedded, laminated to thinly bedded, pinkish-white &amp; light-reddish-brown below 86.5'.</li> </ul>	.	-	13 21 24 24								- 86.0
	AR		- 3" calcite seam at 89.5'.		-									

	Weaver Consul Group	r tants	LOG OF PWCG-1 (OW-21) Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supe Logg Drill	ervising ( ging Geo ling Firm	Geolo logist ::	gist: .	Aaror CGM Envir	n K.	Evar h	ns, P.	G. Pa	ge 4 of 4	1
Depth (ft)	Sample Type and Interval	Graphic Log	Project No: 0120-809-11-05         Boring Start Date: 3/14/2023       Northing (State Plane): 718202.         Boring End Date: 3/20/2023       Easting (State Plane): 836913.         Ground Elevation at Time of Drilling: 3316.30 ft-msl       Top of Well Casing Datum Elevation: 3319.34 ft-msl         Remarks: Borehole drilled and continuously sampled via dry auged and air rotary techniques. Static groundwater elevation gauged September 2023.       ¥ = First Water Encountered at Time of Drilling: 3231.3 ft-mst         ¥ = Second Water Encountered at Time of Drilling:       3231.3 ft-mst         ¥ = Static Potentiometric Surface Elevation:       3253.26 ft-n         Description       Description	4.79 .78 r sl ed <u>nsl</u> FT MSL	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer Construction Detail	(with contact depths posted in ft-bgs)
	SPT		- with caliche seams below 90'.		-	17 28 50/2.5"								-	
 - 95 -	AR		SAND, with SILT, trace caliche gravel, interbedded, dry to moist, non-plastic, hard, laminated to thinly bedded, light-reddish-brown with iron staining	3222.3	-									- *	
	AR	$\begin{array}{c} \circ \\ \circ $	- 6" caliche seam at 97'.		- 4.5+ - -									- 96.0	
-100-	AR		- 6" caliche seam at 105'.	-	- 4.5+ - -									+ /////////////////////////////////////	
	AR		<ul> <li>- 6" clayey sand seam at 105.5'.</li> <li>- with trace clay below 105'.</li> </ul>	3206.3	- - -		0.0	16.1	95.6	40		41	2.8x10 ⁻³	- - - -	
	-		I otal Borehole Drill Depth = 110'		-									+	
	-			-	-								-	+	

	Weaver Consul	r tants	LOG OF PWCG-2 (MW-12) Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supe Log	ervising ( ging Geo ling Firm	Geolo logist	gist: :	Aaror CGM Envir	n K.	Evai h	1s, P.0	G. Pa	ge 1 of <b>3</b>
	Group		Project No: 0120-809-11-05		Fiel	d Tests			La	ibora	atory	Test	5	
(J)	Type and Interval	c Log	Boring Start Date: 3/29/2023       Northing (State Plane): 71818         Boring End Date: 3/31/2023       Easting (State Pane): 84208         Ground Elevation at Time of Drilling: 3314.83 ft-msl         Top of Well Casing Datum Elevation: 3317.74 ft-msl         Remarks: Borehole drilled and continuously sampled via dry aug and air rotary techniques. Static groundwater elevation gauged September 2023.         ¥       = First Water Encountered at Time of Drilling: 3239.8 ft-r         ¥       = Second Water Encountered at Time of Drilling: Not Obser	29.44 1.66 ger	Penetrometer Test (tsf)	ation Blows/6-inches	nt Passing No. 200	nt Moisture Content	ensity (pcf)	l Limit	Limit	ity Index	ability (cm/sec)	ndwater Piezometer truction Detail ontact depths posted in ft-bgs)
spth (	mple	aphi	$\mathbf{I}$ = Static Potentiometric Surface Elevation: 3249.28 ft	-msl	land	eneti	ercei	ercel	Dry D	iquid	lasti	lasti	erme	Jrou Jons vith c
De	Sa	Č.	Description	MSL	<b></b>	Ч	Р	Р	Д	Г	Р		Ч	SOO
_	SPT		SAND, with SILT, dry, non-plastic when moistened, loose to medium dense, reddish-brown.		-	4 5 4 5								2.0
_	SPT		- with caliche seams below 4'.		-	5 7 19 21 5								-
- 5	SPT	* • • • • • • • • • • • • • • • • • • •			ł	7 12								
-	SPT		CALICHE, with SAND, clayey, interbedded, dry, non-plastic to low plasticity when moistened, very loose to medium dense, laminated, pinkish-white & light-gray.	3308.8		19 8 9 7 7								-
- 10	SPT				+	4 3 4 3								-
_	SPT				-	13 18 25 30								-
-	SPT				+	10 15 18 21								-
- 15	SPT				-	14 15 28 21								
	SPT				-	12 22 27 37								
	SPT			3294.8	-	18 22 22 28	35.3	11.6		44	22	22		
	-		CALICHE, sandy, intermixed, dry, non-plastic when moistened, medium dense to dense, no visible bedding, light-gray & white.		4.5+									
	AR				+									-
∑ ≣ - 25			CALICIE with SAND intermined descent shorts and	3289.8	4.5+						<u> </u>	$\square$		- 88
 - -	SPT		moistened, dense to very dense, no visible bedding, pinkish-white & light-gray.		-	18 50/4.5"								
	- AR -				4.5+									+

	Weaver Consul	: tants	LOG OF PWCG-2 (MW-12) Project Title: Meadow Landfill 2023 Subsurface Investigation		Supe Logg	ervising ( ging Geo	Geolo logist	gist:	Aaror CGM	n K. I	Evan	ns, P.C	i. Pa	ge 2 of <b>3</b>
	Group		Project No: 0120-809-11-05		Field	d Tests	•		Envir La	oteci bora	n .torv	Tests		
	terval		Boring Start Date:3/29/2023Northing (State Plane):71818/Boring End Date:3/31/2023Easting (State Pane):84208Ground Elevation at Time of Drilling:3314.83 ft-mslTop of Well Casing Datum Elevation:3317.74 ft-msl	29.44 1.66	Test (tsf)	6-inches	. 200	ontent					()c	zometer ail osted in ft-bgs)
epth (ft)	ample Type and In	raphic Log	<ul> <li>Remarks: Borehole drilled and continuously sampled via dry aug and air rotary techniques. Static groundwater elevation gauged September 2023.</li> <li>              ✓ = First Water Encountered at Time of Drilling: 3239.8 ft-n      </li> <li>             ✓ = Static Potentiometric Surface Elevation: 3249.28 ft- 3249.28 ft-n      </li> </ul>	er nsl ved •msl FT	Hand Penetrometer	Penetration Blows/	Percent Passing No	Percent Moisture C	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/s	Groundwater Pie Construction Det (with contact depths I
	Ň	بې چړونې	CALICHE, with SAND, dry (continued).	MSL			-	-		40		-		
	-			-	-		34.0	9.5		48	27	21		- 88
	AR		CALICHE, sandy, dry, non-plastic when moistened, hard, light-gray & white.		4.5+									-
- 35 -	-			-	-									-
	AR			-	- 4.5+									
- 40 -				3274.8										
	AR		CALICHE, with calcite, dry, non-plastic when moistened, hard, no visible bedding, light-gray & white.	-	4.5+									-
	AR			-	-									-
	AR			-	4.5+ - -									-
- 55 -				-	-									
	AR			-	- - - 4.5+									+

		Weave Consul	r Itants	LOG OF PWCG-2 (MW-12) Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supe Log	ervising ( ging Geo ling Firm	Geolo ologist	gist: . t:	Aaror CGM Envir	n K.	Evai b	ns, P.C	i. Pa	ge 3 of <b>3</b>	
		Group		Project No: 0120-809-11-05		Fiel	d Tests			La	ibora	atorv	Tests			
ŀ				Boring Start Date: 3/29/2023 Northing (State Plane): 718182	9 44	1 101									(Sz	(20
		terval		Boring End Date: 3/31/2023 Easting (State Pane): 842081 Ground Elevation at Time of Drilling: 3314.83 ft-msl Top of Well Casing Datum Elevation: 3317.74 ft-msl	1.66	Test (tsf)	6-inches	. 200	ontent					()c	zometer ail	
		pe and In	<u>в</u>	Remarks: Borehole drilled and continuously sampled via dry aug and air rotary techniques. Static groundwater elevation gauged September 2023.	er	letrometer	on Blows/	assing Nc	foisture C	ity (pcf)	mit	mit	Index	lity (cm/s	vater Pie ction Det	I maden and
	pth (ft)	mple Ty	aphic Lo	$\mathbf{Y}$ = Second Water Encountered at Time of Drilling:3239.8 ft-m $\mathbf{Y}$ = Second Water Encountered at Time of Drilling:Not Observ $\mathbf{Y}$ = Static Potentiometric Surface Elevation:3249.28 ft-m	isi ved msl	and Per	enetratio	ercent P	ercent N	ry Dens	iquid Li	lastic Li	lasticity	ermeabi	roundv onstruc vith cont	
	Ď	Sa	Ğ	Description	MSL	H	Ч	Р	Р	Д	Г	Р	Ч	Ч	002	
-		AR		CALICHE, dry (continued).	3251.8	-									-	
	 - 65 -			SAND, with SILT, trace caliche, dry to moist, non-plastic, hard, no visible bedding, light-reddish-brown & pinkish-white.	-	-								-		
						-										
						4.5+										
		AR				- 1 5 1										
			؞ ؞ ؞			4.5+										
	- 70 -				3244.8											
			* * * * * * * * * * * * * * * * * *	SAND, with SILT, gravelly, intermixed, moist, non-plastic, medium dense to very dense, no visible bedding,												
			• • • • • • • • • • • • • • • • • •	light-reddish-brown & pinkish-white.												
		AR	<ul> <li>○</li> /ul>													
	- 75 -		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	- becomes wet below 75'.	3239.8										75.0	
		~~~~	。。。。。。。。。 。。。。。。。。。。。。。。。。。。。。。。。。。。。。				28 50/2"									••••
8/5/24		SPT	• • • • • • • • • • • • • • • • • •													***
:GDI			• • • • • • • • • • • • • • • • •												77.3	***
PLATE		AR														
I IEN	 00		• • • • • • • • • • • • • • •													
PERMI	- 80 -	SPT					17 25									***
2024		511	* * * * * * * * * * * * * * * * * *		-		36									***
MLF			●		-											
().GPJ		AR			-	-										
(202)			• • • • • • • • • • • • • • • • • •		3229.8	-										
ERMI	- 85 -	SPT	0 0	- becomes moist below 85'.			50/6"									****
4- F			* * * * * * * * * * * * * * * *		-	-										****
2 90		4.75	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		-										87.3	**
IEZO L		AK	* • • • • • • • • • • • • • • • • •			-										
				Total Borehole Depth = 90'	3224.8	-										
< L			ur h r l i .	1 • •	Ľ – Ť		1	I	I	I	I	I				V

N		Weave Consul	r tants	LOG OF PWCG-3 (MW-7) Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supe Log Drill	ervising (ging Geo ling Firm	Geolo ologis 1:	gist: t:	Aaror CGM Envir	n K. otec	Evar h	ns, P.C	i. Pa	ge 1 of 4	ļ
		JIOUP		Project No: 0120-809-11-05		Fiel	d Tests			La	bora	ntory	Tests			
	th (ft)	ple Type and Interval	phic Log	Boring Start Date: 3/21/2023 Northing (State Plane): 71792 Boring End Date: 3/29/2023 Easting (State Pane): 84199 Ground Elevation at Time of Drilling: 3295.86 ft-msl Top of Well Casing Datum Elevation: 3298.84 ft-msl Remarks: Borehole drilled and continuously sampled via dry aug and air rotary techniques. Static groundwater elevation gauged September 2023. ✓ = First Water Encountered at Time of Drilling: = Second Water Encountered at Time of Drilling: Not Obser ✓ = Static Potentiometric Surface Elevation: 3257 66 ft.	90.62 9.62 er nsl ved	nd Penetrometer Test (tsf)	netration Blows/6-inches	cent Passing No. 200	cent Moisture Content	y Density (pcf)	quid Limit	stic Limit	sticity Index	meability (cm/sec)	oundwater Piezometer instruction Detail	th contact depths posted in ft-bgs)
	Dep	Sam	Graj	Description	FT	На	Per	Pei	Pei	Dr.	Lic	Pla	Pla	Pei	່ອີວິ	(wi
-	-	SPT		SAND, with SILT, dry, non-plastic when moistened, loose, no visible bedding, reddish-brown.		-	4 4 44								- 2.0	
-	_	SPT			3291.9	_	4 9 10									
-	5 -	SPT		SAND, with CALICHE, silty, dry, non-plastic when moistened, very loose to medium dense, laminated, light-reddish-brown & white.		-	3 5 7 8								-	
-	_	SPT		CALICHE, sandy, dry, non-plastic when moistened, loose to very dense, no visible bedding, white & pale-vellowish-pink.	3288.9		4 8 20								-	
-	-	SPT				-	10 14 15								+	
	10 -	AR				- 4.5+ 	14								-	
	15 -	SPT					50/6"									
		AR		CALICHE, dry, non-plastic when moistened, hard, no visible bedding, white & pinkish-white. - low angle fracture at 17'.	3279.4	4.5+		33.0	6.4		NL	NP				
	20 -		, , , , , , , , , , , , , , , , , , ,	- high angle fracture at 21.5'.		4.5+										
I (2023).GPJ MLF - 20		AR		- high angle fracture at 23'. - high angle fracture at 24'.	. .	-									-	
	 	AR		CALICHE with SANDSTONE, interbedded, dry, non-plastic when moistened, hard, very thinly bedded, white.	3267.4	4.5+										

	Weaver Consul Group	r tants	LOG OF PWCG-3 (MW-7) Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supe Logg Drill	ervising ging Geo ing Firm	Geolo ologist 1:	gist: . t:	Aaror CGM Envir	n K.	Evar h	ns, P.C	ð. Pa	ge 2 of 4
Depth (ft)	Sample Type and Interval	Graphic Log	Project No: 0120-809-11-05 Boring Start Date: 3/21/2023 Northing (State Plane): 7179290 Boring End Date: 3/29/2023 Easting (State Plane): 841999. Ground Elevation at Time of Drilling: 3295.86 ft-msl Top of Well Casing Datum Elevation: 3298.84 ft-msl Remarks: Borehole drilled and continuously sampled via dry auger and air rotary techniques. Static groundwater elevation gauged September 2023. ¥ = First Water Encountered at Time of Drilling: Not Observer ¥ = Static Potentiometric Surface Elevation: 3257.66 ft-m Description	0.62 62 sl sd nsl FT MSL	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer Construction Detail (with contact depths posted in ft-bgs)
	AR		SANDSTONE with CALICHE, silty, with calcite, dry, non-plastic when moistened, hard, no visible bedding, pale-yellowish-pink & white.	+	4.5+ 4.5+		22.9	2.7		NL	NP			-
 - 40 -	AR			+ + + + + +		50/0.5"								- - -
	AR			+ + + + + + +										
	AR		- high angle fracture at 48'.	+ + + + + + +									•	
WII (2023).0PJ MLF - 2024 PE	AR		3 SAND, with SILT, clayey, with caliche gravel, wet, low			17								- - - 55.0
	AR	• • <td>plasticity, medium dense to very dense, no visible bedding, light-reddish-brown & white, calcareous.</td> <td>+</td> <td></td> <td>50/6"</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>57.4</td>	plasticity, medium dense to very dense, no visible bedding, light-reddish-brown & white, calcareous.	+		50/6"								57.4

	Weave Consu	r ltants	LOG OF PWCG-3 (MW-7) Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supe Logg Drill	ervising (ging Geo ing Firm	Geolo logist :	gist:	Aaror CGM Envir	n K. otec	Evar h	ns, P	G. Pa	ge 3 of	4
	Group		Project No: 0120-809-11-05		Field	1 Tests			La	bora	tory	Test	s		
Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date: 3/21/2023 Northing (State Plane): 7179290.6 Boring End Date: 3/29/2023 Easting (State Plane): 841999.62 Ground Elevation at Time of Drilling: 3295.86 ft-msl Top of Well Casing Datum Elevation: 3298.84 ft-msl Remarks: Borehole drilled and continuously sampled via dry auger and air rotary techniques. Static groundwater elevation gauged September 2023. ✓ = First Water Encountered at Time of Drilling: Not Observed ✓ = Static Potentiometric Surface Elevation: State Plane): Pescription	52 2	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer Construction Detail	(with contact depths posted in ft-bgs)
-			SAND, with SILT, clayey, wet (continued).	SL		18								•	
-	- SPT -			+		36 50/6"								- 0	
65	AR						57.3	12.1		55	26	29	-	- 0 - 0 - 0 - 0	
-	- SPT			+		15 20 50/4"							-	- 0	
-	AR			+										67.4	
	SPT		322	3.9		34 50/4"							-	-	
-	AR		SAND, with SILT, trace clay, trace gravel, dry to moist, non-plastic to low plasticity, medium dense to very dense, no visible bedding, light-reddish-brown & brown, calcareous.	20.9									-	-	
- 75	- SPT		SAND, silty, moist, non-plastic, medium dense to very dense, no visible bedding, brown.	-		18 37 50/5"							-	-	
	AR		321	5.9									-	-	
- 80	+	- <u>9.</u> • •	CLAY, moist, medium plasticity, very stiff to hard, laminated,			9									
ALF - 2024 PE	SPT		light-greenish-gray & brown, with iron stains.	+		15 18 22								-	
	AR													-	
	SPT			- +		10 16 20 26	93.9	24.5	101.2	74	31	43	8.1x10 ⁻⁹ -	-	
	AR			+									-	-	

Group Project No: 0120-809-11-05 Field Tests Laboratory Tests Boring Star Date: 321/2023 Rearing (Stare Pane): 71/79/00.67 Group Group <th></th> <th></th> <th>Weave Consul</th> <th>r Itants</th> <th>LOG OF PWCG-3 (MW-7) Project Title: Meadow Landfill - 2023 Subsurface Investigation</th> <th></th> <th>Supe Logg Drill</th> <th>ervising (ging Geo ling Firm</th> <th>Geolo logist</th> <th>gist:</th> <th>Aaror CGM Envir</th> <th>n K.]</th> <th>Evar h</th> <th>ns, P.C</th> <th>Э. Раз</th> <th>ge 4 of 4</th>			Weave Consul	r Itants	LOG OF PWCG-3 (MW-7) Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supe Logg Drill	ervising (ging Geo ling Firm	Geolo logist	gist:	Aaror CGM Envir	n K.]	Evar h	ns, P.C	Э. Раз	ge 4 of 4
Image: Second			Group		Project No: 0120-809-11-05		Fiel	d Tests		-	La	bora	tory	Tests		
SPT CLAY, moist (continued). 9 13 9 13 100 10 10 10 10 10 10 100 10 10 10 10 10 10 10 100 <td< td=""><td></td><td>Depth (ft)</td><td>Sample Type and Interval</td><td>Graphic Log</td><td>Boring Start Date: 3/21/2023 Northing (State Plane): 71792 Boring End Date: 3/29/2023 Easting (State Pane): 84199 Ground Elevation at Time of Drilling: 3295.86 ft-msl Top of Well Casing Datum Elevation: 3298.84 ft-msl Remarks: Borehole drilled and continuously sampled via dry aug and air rotary techniques. Static groundwater elevation gauged September 2023. ¥ = First Water Encountered at Time of Drilling: = Second Water Encountered at Time of Drilling: Not Obser ¥ 3240.9 ft-r 3257.66 ft- Description</td><td>90.62 9.62 er msl ved -msl FT MSL</td><td>Hand Penetrometer Test (tsf)</td><td>Penetration Blows/6-inches</td><td>Percent Passing No. 200</td><td>Percent Moisture Content</td><td>Dry Density (pcf)</td><td>Liquid Limit</td><td>Plastic Limit</td><td>Plasticity Index</td><td>Permeability (cm/sec)</td><td>Groundwater Piezometer Construction Detail (with contact depths posted in ft-bgs)</td></td<>		Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date: 3/21/2023 Northing (State Plane): 71792 Boring End Date: 3/29/2023 Easting (State Pane): 84199 Ground Elevation at Time of Drilling: 3295.86 ft-msl Top of Well Casing Datum Elevation: 3298.84 ft-msl Remarks: Borehole drilled and continuously sampled via dry aug and air rotary techniques. Static groundwater elevation gauged September 2023. ¥ = First Water Encountered at Time of Drilling: = Second Water Encountered at Time of Drilling: Not Obser ¥ 3240.9 ft-r 3257.66 ft- Description	90.62 9.62 er msl ved -msl FT MSL	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer Construction Detail (with contact depths posted in ft-bgs)
SPT 3200 s 15 10 10 Total Borchole Depth = 92" 10 10 10 10 95 10 10 10 10 10 100 100 100 100 100 100 101 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100					CLAY, moist (continued).	MDL		9								
Total Berchole Depth = 92" -			SPT			3203.9	-	12							-	
	\vdash			///	Total Borehole Depth = 92'	5203.9		18								92.0
	_						-									-
	-					-	-								-	-
		95 -				-	-									-
	-					-	-								-	-
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June -	8/5/24	· _				-	-									-
Import Import <td>GDT</td> <td></td> <td></td> <td></td> <td></td> <td>-</td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>-</td> <td>-</td>	GDT					-	-								-	-
Image: Second	LATE.					-	-								-	-
	TEMF					-	-									-
	ERMI	110-				-	-								-	-
	2024 F					-	-								-	-
n- - </td <td>∵_ ⊌⊓⊔</td> <td></td> <td></td> <td></td> <td></td> <td>-</td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>-</td> <td>-</td>	∵_ ⊌⊓⊔					-	-								-	-
	GPJ					-	-								-	-
	(2023)	· _				-	-								-	-
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	EZOL	-				-	-									+
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	Weav Consi	er ultan	its	LOG OF PWCG-4A (MW-2) Project Title: Meadow Landfill - 2023 Subsurface Investigation		Sup Log Dril	ervising ging Geo ling Firm	Geolo ologis 1:	gist: t:	Aaroı AE/D Envir	n K. 9S ronm	Evai ienta	ns, P. 1 Wo	G. Pa rks	ige 1 of	f2
	GIOUL)		Project No: 0120-809-11-05		Fiel	d Tests			La	lbora	atory	Test	S		
	terval			Boring Start Date:7/12/2023Northing (State Plane):71775Boring End Date:7/12/2023Easting (State Pane):84101Ground Elevation at Time of Drilling:3267.07 ft-mslTop of Well Casing Datum Elevation:3270.51 ft-msl	77.27 4.12	Test (tsf)	6-inches	. 200	ontent					() 2	zometer	aut osted in ft-bgs)
	e and Int			Remarks: Borehole drilled and continuously sampled via dry son drilling techniques. Static groundwater elevation gauge September 2023.	ic ed	trometer	1 Blows/	ssing No	oisture C	y (pcf)	nit	nit	ndex	ty (cm/se	ater Pie	t depths p
pth (ft)	nple Typ	of Loc	in and		nsl nsl -msl	and Pene	enetration	srcent Pa	srcent Mo	ry Densit	quid Lin	astic Lin	asticity I	ermeabili	roundw	ith contac
Dej	Sar	5	5	Description	FT MSL	Ĥ	Pe	Ρe	Pe	D	Ľ	PI	Pl	Pe	00) <u>E</u>
-	SC		• • • • • • • • • • • • • • • • • • •	SAND, silty, dry, non-plastic when moistened, loose, no visible bedding, pinkish-white.becomes brown below 1'.	-	-									- 2.0	
- 5	- sc				-	-									+	
	_		• • • •		3261.1										ļ	
_	SC		••••	SAND, silty, clayey, dry, non-plastic to low plasticity when moistened, loose to poorly consolidated, no visible bedding, light-gray, calcareous.	3259.6	-										
-	- SC		· · · · · · · · · · · · · · · · · · ·	SAND, silty, trace gravel, dry, non-plastic when moistened, loose, no visible bedding, white, calcareous.	3257.6	-									+	
- 10	- SPT	•••••	••••	SAND, trace silt, dry to moist, non-plastic, loose to medium dense, no visible bedding, very-pale-brown.	3255.6	-	8 9 21								+	
-	SC		• • • • • • •	SAND, silty, trace clay, dry to moist, non-plastic when moistened, hard, no visible bedding, reddish-brown. - becomes loose to poorly consolidated, friable, pinkish-white, and calcareous below 12.5'.	3253 1	-		40.0	16.5		37	19	18		-	
- 15	SC	• • • • • • • • • • • •		SILT, sandy, dry to moist, hard, non-plastic, no visible bedding, pinkish-white, friable, calcareous.	-	-									+	
+ -					3251.1										ļ	
1 1/2/2/2	- SC			CALICHE, sandy, with calcite and sandstone seams, interbedded, dry, non-plastic when moistened, very dense, laminated to thinly bedded, white & pinkish-white.	-	-									ł	
	SC				3246.8	-	50/2 5"								+	
	SPT	Ţ	Ň	CALICHE, silty, with calcite seams, trace sand, interbedded,	5240.0	-	00.210								Ŧ	
MLF - 2024 FI	sc			dry to moist, non-plastic, very dense, very thinly bedded to thinly bedded, pinkish-white & white.	-	-									+	
(2023).GPJ	SC				3242.1	-									+	
			• • • • • • •	SANDSTONE, silty, moist, non-plastic, hard, no visible bedding, light-brown & pinkish-brown, friable, calcareous,	-	-										
	sc	• • • • • • • • • • •	• • • • • • • • •		3238.1	-										
MLF -				- becomes wet from 29' to 31'.												

		Weave Consu	r Itants	LOG OF PWCG-4A (MW-2) Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supe Logg Drill	ervising (ging Geo ling Firm	Geolo logist	gist: / : /	Aaror AE/D Envir	n K. S onm	Evar enta	ns, P.C I Worl	ð. Pa	ge 2 of	2
		Group		Project No: 0120-809-11-05		Field	d Tests			La	bora	atory	Tests			
	epth (It)	mple Type and Interval	aphic Log	 Boring Start Date: 7/12/2023 Northing (State Plane): 7177577 Boring End Date: 7/12/2023 Easting (State Plane): 841014. Ground Elevation at Time of Drilling: 3267.07 ft-msl Top of Well Casing Datum Elevation: 3270.51 ft-msl Remarks: Borehole drilled and continuously sampled via dry sonic drilling techniques. Static groundwater elevation gauged September 2023. Y = First Water Encountered at Time of Drilling: 3228.1 ft-ms Y = Second Water Encountered at Time of Drilling: 3229.6 ft-ms Y = Static Potentiometric Surface Elevation: 3248.75 ft-m 	7.27 12 sl sl nsl	land Penetrometer Test (tsf)	enetration Blows/6-inches	ercent Passing No. 200	ercent Moisture Content	Jry Density (pcf)	iquid Limit	lastic Limit	lasticity Index	'ermeability (cm/sec)	Broundwater Piezometer	with contact depths posted in ft-bgs)
ĥ	ă	Sa	ন্য চান্য	Description	MSL	<u>ц</u>	<u>н</u>	щ	Ч	I	Ι	4	ц	ц		
	_	SPT	。 。 。 。 。	SANDSTONE, stity, wet (continued).	236.1		28 50/3.0"									
	_	SC		- becomes moist and very stiff with trace clay below 31'.	-	-									-	
	- 35 -	SC			-	-									-	
-	_	SC		becomes maist to wat below 37.5'	229.6	-									- 37.0	
_	-	SC		- occomes moist to wet below 57.5.	-	- 4.5+									- 20.0	
- 4	40 -	SPT	●	3	226 1	-	23								- 39.9	
-		SC SC		SAND, silty, trace caliche, moist to wet, non-plastic, loose to very stiff, laminated to moderately bedded, light-brown, friable, calcareous.		-	50/5.0'							 - -	-	
	45 - - -	SC		- becomes wet and loose with black mottling below 47.5'.	-	-		53.8	17.7		29		30		-	
	- 50 -	SC			-	-	50/5.0"								- - 49.9	
	_	SPT		3 SANDSTONE, silty, moist, non-plastic, hard, no visible	216.1	-									-	
	_	SC		ocdumg, orown, madic, carcareous.	-	-									-	
	- 55 - -	SC		3 SANDSTONE, with siltstone, trace clay, dry, non-plastic when moistened, hard, laminated to very thinly bedded, dark-reddish-brown, light-brown, white, dark-red & light-gray, calcareous.	5213.1 5212.1	-									- 55.0	
	-			i otal Borenole Deptn = 55.	-	-								-	-	

	Weave Consu	er Itants	LOG OF PWCG-4B (MW-2P) Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supe Logg Drill	ervising (ging Geo ling Firm	Geolo logist :	gist: . :	Aaror DS Envir	ı K. onm	Evar	ns, P.C I Wor	G. Pa ks	ge 1 of	2
	Group		Project No: 0120-809-11-05		Field	d Tests			La	bora	atory	Tests	;		
	and Interval		Boring Start Date: 8/25/2023 Northing (State Plane): 71775 Boring End Date: 8/25/2023 Easting (State Pane): 84099 Ground Elevation at Time of Drilling: 3267.09 ft-msl Top of Well Casing Datum Elevation: 3270.11 ft-msl Remarks: Borehole drilled and continuously sampled via dry sor drilling techniques. Static groundwater elevation gauge Sentember 2023.	579.69 96.83 nic ed	ometer Test (tsf)	Blows/6-inches	ing No. 200	sture Content	(pcf)			dex	r (cm/sec)	ter Piezometer	depths posted in ft-bgs)
epth (ft)	umple Type	raphic Log	¥= First Water Encountered at Time of Drilling:3238.1 ft-i¥= Second Water Encountered at Time of Drilling:Not Obser¥= Static Potentiometric Surface Elevation:3248.83 ft	msl ved t-msl	Hand Peneti	enetration	ercent Pass	ercent Moi	Dry Density	iquid Limi	lastic Limi	lasticity In	Permeability	Groundwa	with contact
ď	Sa	5	Description	MSL			Ц	<u> </u>		Γ	Р	Ч	4		
5	- - - - SC		SAND, silty, dry, non-plastic when moistened, loose, no visible bedding, pinkish-white. - becomes brown below 1'.	-	-									- 2.0 	
-	-		SAND, silty, clayey, dry, non-plastic to low plasticity when	3261.1										ł	
_			moistened, loose to poorly consolidated, no visible bedding, light-gray, calcareous. SAND, silty, trace gravel, dry, non-plastic when moistened,	3259.6	-										
			loose, no visible bedding, white, calcareous.												
	1			3257.6										Ţ	
- 10			SAND, trace silt, dry to moist, non-plastic, loose to medium dense, no visible bedding, very-pale-brown.	3255.6	-									+	
_	-		SAND, silty, trace clay, dry to moist, non-plastic when moistened, hard, no visible bedding, reddish-brown. - becomes loose to poorly consolidated, friable, pinkish-white, and calcareous below 12.5'.	3253.1	-		40.0	16.5		37	19	18		-	
- 15	sc		SILT, sandy, dry to moist, hard, non-plastic, no visible bedding, pinkish-white, friable, calcareous.	-	-									-	
4	-		CALICHE candy with calcite and conditions sooms	3251.1										ł	
	-		interbedded, dry, non-plastic when moistened, very dense, laminated to thinly bedded, white & pinkish-white.	-	-									+	
≝ = - 20				3246.8	_									ļ	
	-	ŢŢŢ	CALICHE, silty, with calcite seams, trace sand, interbedded, dry to moist, non-plastic, very dense, very thinly bedded to thinly bedded, pinkish-white & white.		-									+	
					-									+ + +	
- 25	-		SANDSTONE, silty, moist, non-plastic, hard, no visible	5242.1										ł	
	sc		bedding, light-brown & pinkish-brown, friable, calcareous,	-	-									26.0	
	1			-	-									1 20 1	
	-		- becomes wet from 29' to 31'.	3238.1										28.0	

		<i>N</i> eave Consu	r ltants	LOG OF PWCG-4B (MW-2P)		Supe Log	ervising (ging Geo	Geolo logist	gist: .	Aaroi DS	ı K.	Eva	ns, P.C	Э. Ра	ge 2 of 2
		Group		Project No: 0120, 809, 11, 05		Drill	d Tests			Envir	onm	enta atory	I Wor	ks	
-				Boring Start Date: 8/25/2023 Northing (State Plane): 71775	70 60	Tien									(s)
	h (ft)	ole Type and Interval	hic Log	Boring Start Date: 8/25/2023 Froming (state Franc): ////3 Boring End Date: 8/25/2023 Easting (State Pane): 84099 Ground Elevation at Time of Drilling: 3267.09 ft-msl Top of Well Casing Datum Elevation: 3270.11 ft-msl Remarks: Borehole drilled and continuously sampled via dry son drilling techniques. Static groundwater elevation gauge September 2023. ¥ = First Water Encountered at Time of Drilling: 3238.1 ft-r ¥ = Second Water Encountered at Time of Drilling: Not Obser ¥ = Static Potentiumetric Surface Elevation: 3248.82.492	6.83 ic cd msl ved	id Penetrometer Test (tsf)	etration Blows/6-inches	cent Passing No. 200	cent Moisture Content	Density (pcf)	uid Limit	stic Limit	sticity Index	meability (cm/sec)	oundwater Piezometer astruction Detail h contact depths posted in ft-bg
)ept	amp	ìrap	Description	-msi FT	Har	Pen	Perc	Pere	Dry	Lig	Plas	Plas	Pen	Grc Coi (with
-		S	- 0 *****	SANDSTONE silty wet (continued)	MSL										••
L	_		• • • • • • • • • • • • • • • • • •		3236.1										-
				- becomes moist and very stiff with trace clay below 31'.	3235.1										31.6
Γ				Total Borehole Depth = 32'											32.0
	- 35 - - -					-								· · ·	- - - -
	- 40 - _					-									-
-	-					-									-
-	-				-	-									+
- 4	45 -					-									+
4-	_					_									+
8/5/2															
GDT															
- TE	-				-	-									t
EMP	-					-									+
	50 -				-	-									+
H PE	_					-									-
- 202															
MLF															
GPJ	-				-	-									Ť
1023)	-					-									+
) 1 1 1	55 -					-									ł
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MLF						Ĺ									
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EZOL	-				.	ŀ									†
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ML															

1		Weave Consul	r Itants	LOG OF PWCG-5A (MW-1) Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supe Logg Drill	ervising (ging Geo ling Firm	Geolo ologist 1:	gist:	Aaror DS Envir	n K. onm	Evar enta	ns, P.0 l Woi	G. Pa ks	ge 1 of	f 4
		Group		Project No: 0120-809-11-05		Fiel	d Tests			La	lbora	atory	Tests	5		
		aterval		Boring Start Date: 7/12/2023 Northing (State Plane): 717938 Boring End Date: 7/13/2023 Easting (State Pane): 839309 Ground Elevation at Time of Drilling: 3309.07 ft-msl Top of Well Casing Datum Elevation: 3312.19 ft-msl	31.82 0.31	er Test (tsf)	//6-inches	o. 200	Content					sec)	ezometer	posted in ft-bgs)
		ype and I	go	 Kenarks: Borenole drined and continuously sampled via dry solid drilling techniques. Static groundwater elevation gauged September 2023. ✓ = First Water Encountered at Time of Drilling: 3235.1 ft-m 	c 1 	netromete	ion Blows	Passing N	Moisture (sity (pcf)	imit	imit	/ Index	ility (cm/	water Pi	tact depths
	epth (ft)	mple T	aphic L	Υ = Second Water Encountered at Time of Drilling:3219.1 ft-m Υ = Static Potentiometric Surface Elevation:3262.55 ft-n	nsl msl	Iand Pe	enetrati	ercent]	ercent]	Den	iquid L	lastic L	lasticity	ermeab	Tound	with con
	ă	Sa	5 • • • • •	Description	MSL		<u>ц</u>	Ч	Ч		Г	Ч		Ц		
-	_	SC		SAND, silty, moist, non-plastic, loose, no visible bedding, brown & light-brown, calcareous.	-	-									ł	
-	_	50			3307.1										2.0	
-	-	SC		SAND, silty, with caliche, dry to moist, non-plastic, loose, no visible bedding, pinkish-gray & white. - becomes light-gray, pinkish-gray & reddish-orange below 3.5'.	-	- - 1.5									+	
-	5 -	SC		- becomes laminated to very thinly bedded below 7'.	-	-									+ + +	
-	- - 10 -	SC	••••••••••••••••••••••••••••••••••••••	CALICHE, with SILTSTONE, sandy, dry to moist, non-plastic, soft to hard, no visible bedding, light gray, reddish-yellow, & pinkish-white, with iron stains.	3299.1	-									+ +	
-	-	SC		SILTSTONE, with CALICHE, sandy, dry to moist, non-plastic, soft to hard, no visible bedding, light-gray, reddish-yellow & pinkish-white, with iron stains. - becomes laminated to thinly bedded and crossbedded below 12'.	-	-									+	
	- - 15 -	SC			-	-									+ + +	
1 1	-	SC		SAND, silty, dry, non-plastic when moistened, medium dense,	3292.6	-									+ - +	
	-	SC		no visiole beduing, leadisil-biowii.	-	-									+	
	20 -	SPT			- 3287.6	-	25 22 19								+	
	_	SC		CALICHE, sandy, dry, non-plastic when moistened, very	-	-									ł	RE
		sc		dense, no visiole dedding, pinkisn-wnite & pale-red.	-	-									+	
	- 23	SC		CALICHE, with SAND, interbedded. drv. non-plastic when	3282.1	-									-	
	-	SC		moistened, very dense, moderately bedded, pinkish-white & pale-red.	-	-									+	

	Weave Consu	er ltants	LOG OF PWCG-5A (MW-1) Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supe Logg	ervising ging Geo	Geolo ologist	gist:	Aaroi DS Envir	ı K.	Eva	ns, P.o	G. Pa	age 2 of 4
	Group		Project No: 0120-809-11-05		Field	d Tests	ı.		La	onin ibora	atory	Tests	s	
			Boring Start Date: 7/12/2023 Northing (State Plane): 71793	81.82										gs)
	erval		Boring End Date:7/13/2023Easting (State Pane):83930Ground Elevation at Time of Drilling:3309.07 ft-mslTop of Well Casing Datum Elevation:3312.19 ft-msl	9.31	Test (tsf)	inches	200	ontent					()	cometer ail osted in ft-b
	be and Inte	50	Remarks: Borehole drilled and continuously sampled via dry son drilling techniques. Static groundwater elevation gauge September 2023.	ic cd	strometer	n Blows/6	ssing No.	oisture Co	ty (pcf)	nit	nit	Index	ity (cm/se	ater Piez tion Deta et depths po
epth (ft)	imple Tyj	aphic Lo	\checkmark = First Water Encountered at Time of Drilling:3235.1 ft-n \checkmark = Second Water Encountered at Time of Drilling:3219.1 ft-n \checkmark = Static Potentiometric Surface Elevation:3262.55 ft-n	nsl nsl -msl	Iand Pene	enetratio	ercent Pa	ercent M	Dry Densi	iquid Lir	lastic Lir	lasticity]	ermeabil	Broundw Construc with contac
Ď	Sa	5 S	Description	MSL									<u>н</u>	
	_		CALICHE, with SAIND, dry (commund).	-	-									
-	SC			-	-									-
-	-			-	-									-
25	SC			-	-									
- 33														
	SC			-	-									+
-	-			-	-									-
				-	_	50/2.0"								
- 40	SPT			_	-	20/210								T AA
	sc				-									
-	sc			2265 1	-									-
-	+		SILTSTONE, with CALICHE, sandy, dry, non-plastic when moistened hard no visible bedding ninkish-white	5205.1										
- 45	SC		noisenea, nara, no visiole occanig, pinkish vince.	3263.1	-									
1 8/5/2			SAND, with CALICHE, silty, interbedded, crossbedded, dry, non-plastic when moistened, hard, laminated to very thinly bedded, white, pinkish-white & light-reddish-brown.	-	-									-
LAIE.GL				-	4.5+									-
	1			3259 1	-									
	SC		SAND, silty, dry to moist, non-plastic, soft to firm, no visible bedding, brown.	5257.1										
- 2024	SC			2256 6	-									
			SAND, with SILTSTONE, gravelly, interbedded,	5250.0										
- 3).GF	SC		crossbedded, dry, non-plastic when moistened, medium dense to dense, laminated, light-gray & reddish-brown, calcareous.		_									
507 = - 55					-									
			- with trace clay below 56'.		_									
MLF	SC				_									
LOG.														
		* * * * * * * * * * * * * * *			-									

		Weaver Consul	: tants	ants LOG OF PWCG-5A (MW-1) Supervising Geologist: Aaron K. Evans, P.G. Logging Geologist: DS Drilling Firm: Environmental Works												£4
		Group		Project 1 itle: Meadow Landfill - 2023 Subsurface Investigation		Dril	ling Firm	1: 		Envir	onm	enta	I Wo	rks		
-		-		Project No: 0120-809-11-05 Poring Start Data: 7/12/2022 Northing (State Plane): 717026	01.00	Fiel	d Tests			La		liory		5	-	s)
		iterval		Boring Statt Date: 7/12/2023 Rothing (State Plane): 7/1938 Boring End Date: 7/13/2023 Easting (State Plane): 839309 Ground Elevation at Time of Drilling: 3309.07 ft-msl Top of Well Casing Datum Elevation: 3312.19 ft-msl	9.31	r Test (tsf)	/6-inches	o. 200	Content					(cec)	szometer	posted in ft-bg
		ype and Ir	og	 Remarks: Borenoie drilled and continuously sampled via dry soni drilling techniques. Static groundwater elevation gauges September 2023. ✓ = First Water Encountered at Time of Drilling: 3235.1 ff-m 	ic d nsl	enetromete	ion Blows	Passing N	Moisture (nsity (pcf)	imit	imit	y Index	oility (cm/	water Piction De	tact depths
	epth (ft	ample T	raphic I	Ψ = Second Water Encountered at Time of Drilling:3219.1 ft-n Ψ = Static Potentiometric Surface Elevation:3262.55 ft-	nsl msl	Hand Pe	enetrat	ercent	Percent	Dry Dei	I pinbi	Plastic I	Plasticit	Permeal	Ground	with cor
_	Ă	Sa	ন্দ্র বিদ্যুগ	Description	MSL			щ			I	F	-	ц		
-		SPT		SAND, with SIL1STONE, ary (continued).	3247.6	-	21 28 31								+	
	· _	SC		CLAY, silty, sandy, trace gravel, dry to moist, low to medium plasticity, hard, laminated to very thinly bedded, reddish-brown.	-	-									-	
		SC			-	4.5+									-	
	· -	SC			-	-		99.0	22.7		84	42	42		-	
		SC			-	-									-	
	· 70 - · -	SC			-	-		70.6	24.7	99.2	33		34	2.3x10 ⁻⁷	-	
	· _	SC			3235.1	4.5+									73.0	
-	75 -			SAND, silty, trace clay, moist to wet, non-plastic to low plasticity, soft to firm, no visible bedding, light-reddish-brown with black mottling.	_	2.5									- 75.0	
01 8/5/24	· -	SC			-	-									+	
MPLATE.GI	· -	SC			-	2.5									+	
Щ Ц	80 -				3229.1										ļ	
124 PERM		SPT		SAND, silty, trace clay, dry to moist, non-plastic, dense to very dense, no visible bedding, reddish-brown.	-	-	40 50/3.0"								+	
J MLF - 2(SC		- becomes clayey and non-plastic to low plasticity below 82.5'.	-	- 4.5+									+	
III (2023).GP	- 85 -	SC			-	-									-	
MLF - PERN		SC		- becomes moist below 87'.	-	4.5+									-	
		SC			-	4.5+										
	-				3219.1	2.75										
	COP	VRIGH	T © 2	024 WEAVER CONSULTANTS GROUP LLC. ALL RIGHTS R	ESER	VFD	•									

	Weave Consu	r ltants	LOG OF PWCG-5A (MW-1) Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supe Logg Drill	ervising (ging Geo ling Firm	Geolo logist :	gist: / :]	Aaror DS Envir	n K. I	Evar enta	ns, P.C l Wor	J. Paį	ge 4 of 4
	Group		Project No: 0120-809-11-05		Field	d Tests			La	bora	itory	Tests		
Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date: 7/12/2023 Northing (State Plane): 717938 Boring End Date: 7/13/2023 Easting (State Pane): 839309 Ground Elevation at Time of Drilling: 3309.07 ft-msl Top of Well Casing Datum Elevation: 3312.19 ft-msl Remarks: Borehole drilled and continuously sampled via dry sonidrilling techniques. Static groundwater elevation gauged September 2023. ♥ = First Water Encountered at Time of Drilling: 3235.1 ft-m ♥ = Second Water Encountered at Time of Drilling: 3219.1 ft-m ♥ = Static Potentiometric Surface Elevation: 3262.55 ft-Description	31.82 0.31 c d usl msl FT MSI	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer Construction Detail (with contact depths posted in ft-bgs)
		****	SAND, wet, non-plastic, medium dense to dense, no visible	MSL										90.0
-	sc		bedding, brown.	-	-								-	- ••• •••
-	sc	• •		-	3.5								-	- 92.9 -
- 95	SC			-	-								-	
-	- sc			-	-									
-100	- SPT			-	-	21 33 42							-	
-	SC			3206.1	0.5								-	
-105	sc		CLAY, shaley, dry to moist, medium to high plasticity, hard, laminated, gray & brown, with iron stains.	-	4.5+								-	102.9
1 8/3/24	sc			-	- 4.5+								-	-
	SC		- with dark red mottling below 108.0'.	- 3199.1	4.5+		99.3	22.2 21.6	104.0	71	32	39]	.5x10 ⁻⁸ -	-
			Total Borehole Depth = 110'											- 110.0
					_								-	
				-	-								-	-
1	_			-	-								-	-
₹ 115	_			-	-									-
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ן 10 ₪	-			-	-								-	-
	-			-	-								-	-
」 赵														

	Weave Consu	er ltants	LOG OF PWCG-5B (MW-1P) Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supe Logg Drill	ervising (ging Geo ling Firm	Geolo ologist n:	gist: . :	Aaron DS Envir	n K. I	Evai enta	ns, P.C I Worl	i. Pa	ge 1 of	f 3
	Group		Project No: 0120-809-11-05		Field	d Tests			La	lbora	ıtory	Tests			
Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date: 8/24/2023 Northing (State Plane): 71793 Boring End Date: 8/24/2023 Easting (State Pane): 83929 Ground Elevation at Time of Drilling: 3308.99 ft-msl Top of Well Casing Datum Elevation: 3312.08 ft-msl Remarks: Borehole drilled and continuously sampled via dry son drilling techniques. Static groundwater elevation gauge September 2023. ¥ = First Water Encountered at Time of Drilling: 3235.0 ft-r ¥ = Second Water Encountered at Time of Drilling: Not Obser ¥ = Static Potentiometric Surface Elevation: 3263.43 ft	89.37 8.83 ic cd msl ved -msl	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer	Collisit uctuol Detail (with contact depths posted in ft-bgs)
			SAND, silty, moist, non-plastic, loose, no visible bedding,	MSL										+	
- 5 - 10 - 15	- SC 		 SAND, silty, with caliche, dry to moist, non-plastic, loose, no visible bedding, pinkish-gray & white. becomes light-gray, pinkish-gray & reddish-orange below 3.5'. becomes laminated to very thinly bedded below 7'. CALICHE, with SILTSTONE, sandy, dry to moist, non-plastic, soft to hard, no visible bedding, light gray, reddish-yellow, & pinkish-white, with iron stains. SILTSTONE, with CALICHE, sandy, dry to moist, non-plastic, soft to hard, no visible bedding, light-gray, reddish-yellow & pinkish-white, with iron stains. SILTSTONE, with CALICHE, sandy, dry to moist, non-plastic, soft to hard, no visible bedding, light-gray, reddish-yellow & pinkish-white, with iron stains. becomes laminated to thinly bedded and crossbedded below 12'. 	3307.0										- 2.0	
PU MLF - 2024 FERMILI IEMPLAIE. 5001 0/322	- - - - -	ا ا -	SAND, silty, dry, non-plastic when moistened, medium dense, no visible bedding, reddish-brown. CALICHE, sandy, dry, non-plastic when moistened, very dense, no visible bedding, pinkish-white & pale-red.	3292.5	-										
MLF - MEZO LUG MLF - PERMII (2023).G	- sc 		CALICHE, with SAND, interbedded dry, non-plastic when moistened, very dense, moderately bedded, pinkish-white & pale-red.	3282.0	-									- - - -	

	Weave Consu	r Itants	LOG OF PWCG-5B (MW-1P) Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supe Logg Drill	ervising ging Geo ling Firm	Geolo ologist n:	gist: .	Aaror DS Envir	n K. I	Evai enta	ns, P.C l Wor	ο. Pa ks	age 2 of 3
	Group		Project No: 0120-809-11-05		Field	d Tests			La	bora	tory	Tests		
Depth (ft)	Sample Type and Interval	Graphic Log	Boring Start Date: 8/24/2023 Northing (State Plane): 71793; Boring End Date: 8/24/2023 Easting (State Pane): 83929; Ground Elevation at Time of Drilling: 3308.99 ft-msl Top of Well Casing Datum Elevation: 3312.08 ft-msl Remarks: Borehole drilled and continuously sampled via dry som drilling techniques. Static groundwater elevation gauge September 2023. ♥ = First Water Encountered at Time of Drilling: 3235.0 ft-m ♥ = Second Water Encountered at Time of Drilling: Not Observertion: 3263.43 ft-Description 3263.43 ft-Description	89.37 8.83 ic vd msl ved -msl	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer Construction Detail (with contact depths posted in ft-bgs)
			CALICHE, with SAND, dry (continued).	MSL										
- 35	SC	<pre>C C C C C C C C C C C C C C C C C C C</pre>			- - - - - - -									
- 45 -	SC		SILTSTONE, with CALICHE, sandy, dry, non-plastic when moistened, hard, no visible bedding, pinkish-white. SAND, with CALICHE, silty, interbedded, crossbedded, dry, non-plastic when moistened, hard, laminated to very thinly bedded, white, pinkish-white & light-reddish-brown.	3265.0	-									-
					_									
ษี ≣ - 50 -				3259.0										
	sc	· · · · · · · · · · · · · · · · · · ·	SAND, silty, dry to moist, non-plastic, soft to firm, no visible bedding, brown. SAND, with SILTSTONE, gravelly, interbedded, crossbedded, dry, non-plastic when moistened, medium dense to dense, laminated, light-gray & reddish-brown, calcareous. - with trace clay below 56'.		-									

	W C	Veave	r tants	LOG OF PWCG-5B (MW-1P)		Supe Logg	ervising (ging Geo	Geolo logist	gist: .	Aaror DS	n K. 1	Evar	ıs, P.G	Pa	ge 3 of 3
	G	froup	Carro	Project Title: Meadow Landfill - 2023 Subsurface Investigation		Drill	ing Firm	:		Envir	onm	ental	Work	(S	
				Project No: 0120-809-11-05 Poring Start Date: 8/04/2022 Northing (State Plane): 71702	00.27	Field				La			Tests		s l
Denth (ft)	() I	Sample Type and Interval	Graphic Log	Boring Start Date: 8/24/2023 Northing (State Plane): 71793 Boring End Date: 8/24/2023 Easting (State Plane): 83929 Ground Elevation at Time of Drilling: 3308.99 ft-msl Top of Well Casing Datum Elevation: 3312.08 ft-msl Remarks: Borehole drilled and continuously sampled via dry son drilling techniques. Static groundwater elevation gauge September 2023.	89.37 8.83 ic ad nsl ved -msl FT MST	Hand Penetrometer Test (tsf)	Penetration Blows/6-inches	Percent Passing No. 200	Percent Moisture Content	Dry Density (pcf)	Liquid Limit	Plastic Limit	Plasticity Index	Permeability (cm/sec)	Groundwater Piezometer Construction Detail (with contact depths posted in ft-bgs
		•		SAND, with SILTSTONE, dry (continued).	MSL										
- - - 65 - - - - - - - - - - - - - -		SC		CLAY, silty, sandy, trace gravel, dry to moist, low to medium plasticity, hard, laminated to very thinly bedded, reddish-brown.	3247.5	- - - - - - - - -								· · · · · · · · · · · · · · · · · · ·	
	5	SC		SAND, silty, trace clay, moist to wet, non-plastic to low plasticity, soft to firm, no visible bedding, light-reddish-brown with black mottling.	3235.0	-									- 75.0
)			Total Borehole Depth = 80'		- - - - -									- 80.0

		Weave Consu	r Itants	LOG OF PWCG-6 (OW-22) Project Title: Meadow Landfill - 2023 Subsurface Investigation		Supe Logg Drill	ervising ging Geo ling Firm	Geolo ologist 1:	gist: . :	Aaror DS Envir	n K. onm	Evar enta	ns, P.0 I Woi	G. Pa ks	ige 1 of	[4
		Group		Project No: 0120-809-11-05		Fiel	d Tests			La	bora	tory	Test	\$		
		erval		Boring Start Date:7/14/2023Northing (State Plane):718075Boring End Date:7/14/2023Easting (State Pane):838049Ground Elevation at Time of Drilling:3311.70 ft-mslTop of Well Casing Datum Elevation:3314.86 ft-msl	56.96 9.09	Test (tsf)	-inches	200	intent					()	ometer	sted in ft-bgs)
		be and Inte	ac	Remarks: Borehole drilled and continuously sampled via dry soni drilling techniques. Static groundwater elevation gauge September 2023.	c d	strometer [']	n Blows/6	lssing No.	oisture Cc	ty (pcf)	nit	nit	Index	ity (cm/se	ater Piez	ct depths po
	epth (ft)	ample Tyj	raphic Lo	Ψ = First Water Encountered at Time of Drilling:3242.7 ft-m Ψ = Second Water Encountered at Time of Drilling:Not Observ Ψ = Static Potentiometric Surface Elevation:3261.66 ft-	ısl /ed msl	Hand Pen	enetratio	Percent Pa	Percent M	Dry Densi	iquid Lir	Plastic Lir	lasticity	Permeabil	Groundw	with contact
	Ă	Sa	- তি নানানান	Description	MSL	<u>ц</u>	щ	<u> </u>	ш.		I	F	-	H	100	
-	· _	SC		SAND, silty, moist, non-plastic, loose, no visible bedding, brown.	3309.2	-									- 2.0	
-		SC		SAND, silty, with caliche, dry to moist, non-plastic, very stiff, no visible bedding, pinkish-white, friable, calcareous.		-									- - - -	
_	- 5 -	SC		- becomes hard and white, light-red, & pinkish-white below	-	- 4 5+									+ +	
_	· -			- with iron stains below 7.5'.	- 3302 7	-									+	
	- 10 -	SC		SAND, with SILTSTONE, gravelly, dry, non-plastic when moistened, hard, no visible bedding, pinkish-white, red, & yellowish-red, calcareous.		- 4.5+ -									+ +	
_	· _	SC			-	-									+ +	
-	 	SC			-	-									+ +	
r 8/5/24	· 15 - · -	SC			3294 2	-									- -	
TEMPLATE.GD		SC		CALICHE, sandy, dry, non-plastic when moistened, hard, no visible bedding, white.	-	-									- 	
	20 -			CALICHE, silty, dry, non-plastic when moistened, dense to	3291.7	_	16								ł	
024 PEF		SPT		very dense, no visible bedding, pinkish-white & pink.	-	-	50/5"								ł	
GPJ MLF - 2	· -	sc			-	-									+ +	
T (2023).					3286.7	-										
PERMI		SC		SAND, with CALICHE, dry, non-plastic when moistened, dense to very dense, no visible bedding, pinkish-white & pink.	-	_									+	
LOG ML		SC				-									ļ	
MLF - PIEZO		SC			3281.7	-									ļ	

	Weaver Consul	r Itants	Ants LOG OF PWCG-6 (OW-22) Project Title: Meadow Landfill - 2023 Subsurface Investigation										
	Group		Project No: 0120-809-11-05	Fiel	d Tests			La	bora	atory	Tests		
	erval		Boring Start Date:7/14/2023Northing (State Plane):7180756.96Boring End Date:7/14/2023Easting (State Pane):838049.09Ground Elevation at Time of Drilling:3311.70 ft-mslTop of Well Casing Datum Elevation:3314.86 ft-msl	Test (tsf)	inches	200	ontent					()	cometer ail ssted in ft-bgs)
	pe and Inte	50	Remarks: Borehole drilled and continuously sampled via dry sonic drilling techniques. Static groundwater elevation gauged September 2023.	etrometer	n Blows/6	assing No.	loisture Co	ity (pcf)	mit	mit	Index	ity (cm/se	vater Piez tion Deta ct depths po
epth (ft)	ample Ty	raphic Lo		Hand Pen	Penetratic	Percent P	Percent M	Dry Dens	Liquid Li	Plastic Li	Plasticity	Permeabil	Groundv Construc (with conta
	Ň		Description MSL	<u> </u>						_			
_	SC		non-plastic when moistened, very dense, no visible bedding, light-reddish-brown, friable.	+									-
- 35	SC			+ + +									-
_	SC		- 12" calcitic siltstone seam at 36.5'. 3274.2	2									-
_	SC		SAND, silty, trace caliche, dry to moist, non-plastic, medium dense to very dense, no visible bedding, pinkish-white & light-reddish-brown.	-									-
- 40	SC				26 46 50/5"	23.4	19.9		NL	NP			
	SPT			ł									- 99
_	SC			+									-
- 45	SC			-									-
	SC		- 6" caliche seam at 47.5'.	-									-
	SC		- caliche content increasing with depth below 49'.	-									-
	sc		- 3" caliche seam at 52'.	+									-
	SC			-									+
	SC		- 1" caliche seam at 56'.	Ī									-
	sc			+									-
	VRIGH		024 WEAVER CONSULTANTS GROUP LLC ALL RIGHTS RESE										

		Weave Consul	r tants	Ants LOG OF PWCG-6 (OW-22) Project Title: Meadow Landfill - 2023 Subsurface Investigation Supervising Geologist: Aaron K. Evans, P.G. Drilling Firm: Environmental Works									G. Pa rks	ge 3 of	4	
		Group		Project No: 0120-809-11-05		Fiel	d Tests			La	bora	itory	Test	S		
		erval		Boring Start Date:7/14/2023Northing (State Plane):718075Boring End Date:7/14/2023Easting (State Pane):838049Ground Elevation at Time of Drilling:3311.70 ft-mslTop of Well Casing Datum Elevation:3314.86 ft-msl	6.96 9.09	Test (tsf)	-inches	200	ontent					()	cometer	sted in ft-bgs)
		pe and Inte	5	Remarks: Borehole drilled and continuously sampled via dry sonid drilling techniques. Static groundwater elevation gauged September 2023.	2 1	etrometer	n Blows/6	assing No.	loisture Co	ity (pcf)	mit	mit	Index	lity (cm/se	vater Piez	ict depths po
	epth (ft)	ample Ty	iraphic Lo		sl ed <u>msl</u> FT	Hand Pen	Penetratic	Percent P	Percent M	Dry Dens	Liquid Li	Plastic Li	Plasticity	Permeabil	Groundv	(with conta
+	Ц			SAND, silty, dry to moist (continued).	MSL		50/2"									ИИ
		SC		CALICHE, sandy, dry, non-plastic when moistened, very dense, no visible bedding, white.	3250.7										-	
	· _	SC		, ,,	-	-									63.0	
	-				-	-									-	
	- 65 -	SC		SAND, with SILTSTONE, with caliche, dry to moist,	3246.2	-								· · · · · · · · · · · · · · · · · · ·		
-	· _	SC		non-plastic when moistened, hard, no visible bedding, reddish-brown, calcareous.		-									+	
_		SC	• • • • • • • • • • • • • • • • • • •	SAND, silty, clayey, trace gravel, wet, non-plastic to low plasticity, very stiff to hard, no visible bedding,	3242.7										70.0	Y
_		SC		reddish-brown, calcareous.	-	-									- /0.0	
	· -	SC			-	4.5+									72.3	<pre></pre>
	- 75 -	SC			-	-									+	
GDT 8/5/24	· _	SC			-	- 4.5+									+	
	· _	SPT			-	-	20 50/3"									
	. 80 -	SC	• • • • • • • • • • • • • • • • • • •		-	3.0										
024 PERM	. –	SC			- ד 2220 ד	-										
 2			• • • • • • • • • • • • • • • • • • •	- becomes dry to moist below 82'.	5229.1										82.3	X
2023).GPJ N	· _	SC			-	- -									83.0	
PERMIT (;	- 85 - 	SC				-									+	
OG MLF				SAND, silty, clayey, dry, plastic when moistened, hard, no visible bedding reddich-brown calcarcous	3224.7										+	
- PIEZO L	· _	SC		visione ocualing, reaction-orown, calcaleous.	-	4.5+									+	
MLF																

		Weaver Consultants Group LOG OF PWCG-6 (OW-22) Project Title: Meadow Landfill - 2023 Subsurface Investigation Project No: 0120-809-11-05						Geolo ologist 1:	gist:	Aaroı DS Envir	n K. ronm	.G. Pa	Page 4 of 4		
		Group		Project No: 0120-809-11-05		Fiel	d Tests			La	ıbora	atory	Tes	ts	
Ī				Boring Start Date: 7/14/2023 Northing (State Plane): 71807	56.96										gs)
				Boring End Date: 7/14/2023 Easting (State Pane): 83804	9.09	(tsf)	les		t						ter in ft-ł
		srval		Top of Well Casing Datum Elevation: 3311.70 ft-msl		Test	-incl	200	nten					5	ome iil sted
		e and Inte		Remarks: Borehole drilled and continuously sampled via dry sor drilling techniques. Static groundwater elevation gaug September 2023.	ic ed	rometer	Blows/6	sing No.	isture Cc	/ (pcf)	it	it	Idex	y (cm/se	tter Piez on Deta depths pc
	th (ft)	ple Type	bhic Log		nsl ved -msl	nd Penet	letration	cent Pas	cent Mo	/ Density	uid Lim	stic Lim	sticity In	meabilit	oundwa nstructi th contact
	Jept	Samj	Grap	Description	FT	Haı	Pen	Per	Per	Dry	Liq	Pla	Pla	Per	CC Cr
ŀ		SC		SAND, silty, clayey, dry to moist (continued).	MSL	4.5+									
		SC		CLAY, silty, dry to moist, medium to high plasticity, hard, no visible bedding, weak-red with black mottling.	3220.7	4 5+									
-						-								-	-
-		SC				-								-	-
-	- 95 -				-	-									
		SC						89.2	24.0	102.1	60	32	28	2.1x10 ⁻⁹	
														-	
		SC		- slickenside at 99'.											-
-	-100-					-	17							-	- ///
_		SPT			3210.2	-	17 30 50/5"								-
				Total Borehole Depth = 101.5'	-	_								-	- 101.5
-						-									-
-					-	-								-	-
-	-105-					-									-
5/24						-								-	-
GDT 8					-	-								-	-
PLATE						-								-	-
T TEMF						-								-	-
PERMI	-110-														
- 2024														-	-
J MLF															-
23).GP						-									-
MIT (20	-115-														-
- PER						ŀ									-
JG MLI						-								-	_
EZOLC					.	ŀ								-	-
ГЕ - РІ					-	-								-	_
≥				1		L				1					

APPENDIX IIIH-B

HISTORICAL GROUNDWATER DETECTION MONITORING DATA

[NO EXISTING DETECTION MONITORING DATA TO REPORT]



APPENDIX IIIH-C

SAMPLE FIELD DATA SHEET



SAMPLE Groundwater Sampling Field Data Sheet

Date:

Site: File: (Project #)	Location:	Permit No.:									
Name of Person(s) Sampling:	Title: (Tech. Title)										
Monitor Well No.:	Upgradient: (Yes or No)	Downgradient: (Yes or No)									
Top of Procover: (Number) FT-MSL	Top of PVC: (Number) FT-MSL	Ground Surface: (Number) FT-MSL									
Ground Water Depth (from top of PVC): (<u>Number)</u> FT-BGS. <u>(Number)</u> FT-MSL Well Depth (from top of PVC) (<u>Number)</u> FT-BGS. <u>(Number)</u> FT-MSL											
Water Volume in Casing: (Number) gal. 2" well contains 0.163 gallons/foot	Time Purge Started: (Number)) Time Purge Ended: (Number)									
Well Diameter: (Number) in. Total V Well Pumped/Bailed Dry? (Yes or No)	olume Purged: (Number) gal. (N	Min. 3 to 5 vols.)									
Bailer/Pump: (Description) Field Meters (pH, Eh, SC): (Description) Field Equipment: (Description)	Dedicated? (Dedicated? (Dedicated? (Yes or No) Disposable? (Yes or No) Yes or No) Disposable? (Yes or No) Yes or No) Disposable? (Yes or No)									
Method of Decontamination: (insert brief description)											
Sample Condition: Color:	(Description)	Odor: (Description)									
Field Measurements:											
pH: (Number)	(Number)	(Number) (Number) std. units									
Specific Conductivity: (Number)	(Number)	(Number) (Number) umhos/cm									
Temperature: (Number)	(Number)	(Number) (Number) °C									
Dis. Oxygen: (Number)	(Number)	(Number) (Number)									
Eh: (Number)	(Number)	(Number) (Number) MV									
Time: (Number)	(Number)	(Number) (Number)									
Well Recharge: Very Poor Poor	Fair Mode	rate Good Very Good									
Weather Conditions: Temperature: (Num	ber) Skies:	Clear Partly Cloudy Cloudy									
Precipitation: (Description) Light Moderate Heavy											
Wind Speed/Direction: (Number) N NE E SE S SW W NW											
Notes/Observations: (Text inserted here)											
Sampler(s) Signature:											

APPENDIX IIIH-D

CONTAINERIZATION AND PRESERVATION OF SAMPLES



RECOMMENDED CONTAINERIZATION AND PRESERVATION OF SAMPLES

Measurement _a	Volume (mL)	Container _b	Preservative	Holding Times	Reference
Physical Properties					_
Specific Cond. (Field)	100	P,G	Cool, 4 °C	Det. on Site	1
Specific Cond. (Lab)	100	P,G	Cool, 4 °C	28 Days	1
pH (Field)	50	P,G	None	Det. on Site	1,2
pH (Lab)	50	P,G	None	24 Hrs	1,2
Temperature	1000	P,G	None	Det. On Site	1
Turbidity	100	P,G	Cool, 4 °C	Det. On Site	1

Measurement _a	Volume (mL)	Container _b	Preservative	Holding Times	Reference
Inorganics, Non-Metallics					
Ammonia as Nitrogen	1000	P,G	Cool, 4 °C H ₂ SO ₄ to pH <2	28 days	2,3
Carbonate/Bicarbonate	200	P,G	Cool, 4 °C	14 days	1
Chemical Oxygen Demand (COD)	50	P,G	H_2SO_4 to pH <2	28 days	1
Chloride	200	P,G	None	28 Days	1,2
Nitrate plus Nitrite	200	P,G	Cool, 4 °C H ₂ SO ₄ to pH <2	28 days	1,2
Sulfate	100	P,G	Cool, 4 °C	28 days	1,2
Total Alkalinity	200	P, G	Cool, 4 °C	14 days	1
Total Dissolved Solids (TDS)	500	P,G	Cool, 4 °C	7 days	2,3
Total Organic Carbon (TOC)	250	P,G	Cool, 4 °C HCL or H ₂ SO ₄ to pH <2	28 days	2,3

RECOMMENDED CONTAINERIZATION AND PRESERVATION OF SAMPLES

Measurement _a	Volume (mL)	Container _b	Preservative	Holding Times	Reference
Metals (except mercury)					
Total	500	P,G	HNO3 to pH <2	6 Mos	1,2
Dissolved	500	P,G	Filt. + HNO ₃ to pH <2	6 Mos	1,2
Mercury Total	500	P,G	HNO3 to pH <2	28 days	1,2
Mercury – Dissolved	300	P,G	Filt. + HNO ₃ to pH <2	28 days	1,2

Measurement _a	Volume (mL)	Container _b	Preservative	Holding Times	Reference
Organics					
Volatile Organics by GC/MS	100 (2 vials @ 40ml)	G, Teflon septum cap	Cool, 4 °C HCL to pH <2	14 days	2,3
Herbicides	1000	Glass Only	Cool, 4 °C	7 days [°] 40 days ^d	2,3
Pesticides and PCB's	1000	Glass Only	Cool, 4 °C	7 days ^c 40 days ^d	2,3
Semi-Volatiles Acid and Base/Neutral Compounds	2000	Glass Only	Cool, 4 °C	7 days ^c 40 days ^d	2,3

NOTES:

- a Additional measurements not required per the GWSAP are included in the event assessment monitoring is initiated or if the need to sample for additional parameters arises due to unforeseen circumstances.
- b Plastic (P) or Glass (G). For metals, polyethylene with an all polypropylene cap is preferred.
- c Maximum holding time from sampling to extraction.
- d Maximum holding time from extraction to analysis.

REFERENCES:

- 1 <u>Methods for Chemical Analysis of Water and Wastes</u>, March, 1983, USEPA, 600/4-79-020 and additions thereto.
- 2 <u>Test Methods for Evaluating Solid Waste, Physical/Chemical Method</u>, November, 1986, Third Edition, USEPA, SW-846 and additions thereto.
- 3 "Guidelines Establishing Test Procedures for the Analysis of Pollutant Under the Clean Water Act", Environmental Protection Agency, <u>Code of Federal Regulations</u> (CFR), Title 40, Part 136.

APPENDIX IIIH-E

SAMPLE CHAIN-OF-CUSTODY FORM



CHAIN OF CUSTODY RECORD

Bill to:

Page of

Other:_

Client:					Phone #:		F	ax #:			-	۱nal	ysi	s Re	equ	este	ed		
Project Nam	ne:				Project Task Co	ode:	P	0/WO #:			Π	Т	T		T	Π	Т	Π	-
Samplers: (print first & last name)			5	Samplers: (signatur	e)													
Lab Code	Station ID/Sample Description	Date	Time	# of Bottles	Sample Method	Start Depth (m)	End Depth (m)	Sample Type	Matrix										Sample Comment (Equipment Type Filtration, AlS, Preservation)
											\square		\square					\square	
																		\square	
						Ť													
																		\square	
											1					\square	\perp	\square	
																		\square	_
		4													_	\square	_	\square	
												_			_		+	\square	
							-				$\left \right $	_	-		+	+	+	++	_
		-				-	-					-	-		+		+	$\left \right $	
						-					+	_	+		+	++	+	++	
								96. 1201. 70	· · · ·								-		
(Initials) In the event that samples a	re received	l by the la	ib at a ter	mperature greater	than 6 °	C, I her	eby authori:	ze RMB Enviror	nmenta	al Lat	orato	ries t	o pro	cess	the sa	mple	s as r	eceived.
(Initials) In the event that samples and by: (signature)	re received	by the la	ab at a ter Time	mperature greater	than 6°	C, plea	se contact c	lient at phone a	#		IT	ime		_bef	ore pr	ocess	ing sa	mples.
Reiniquisite			-				. (Signat			-			mite			Shi	npin	g.	
Electro	nic Data Deliverable (EDD): Lab_MN	l format		Shipping	Method DOE	ES meet	t prope	r sample s	torage and tr	anspo	rtati	on gu	ideli	nes			rr	0	
Report to:				Speedee Does NOT meet proper sample storage and transportation guidelines						Mileage:									
					Evr	lain										Fie	ld C+	- <i>ff</i> ,	
				USPS		d on ice	• 🗆	Rcvd at ro	om temp F	cvd T	emp	:			°C	Fie	iu sta	an:	
Bill to:				FedEx	San	noles re	ceived	same dav	as collection						-	Eq	uipm	ent:_	

Comments:

Hand Delivery

Other:_

APPENDIX IIIH-F

STATISTICAL ANALYSIS FLOW CHARTS



FIGURE 1	
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IIIH-F-2


IIIH-F-3

APPENDIX IIIH-G

SAMPLE LABORATORY QC CHECKLIST



Laboratory Data Package Cover Page

This data package consists of:

- This signature page, the laboratory review checklist, and the following reportable data:
 - R1 Field chain-of-custody documentation;
- R2 Sample identification cross-reference;
 - R3 Test reports (analytical data sheets) for each environmental sample that includes:
 - a) Items specified in NELAC Chapter 5 for reporting results, e.g., Section 5.5.10 in 2003 NELAC Standard
 - b) dilution factors,
 - c) preparation methods,
 - d) cleanup methods, and
 - e) if required for the project, tentatively identified compounds (TICs).
- R4 Surrogate recovery data including:
 - a) Calculated recovery (%R), and
 - b) The laboratory's surrogate QC limits.
 - R5 Test reports/summary forms for blank samples;
 - R6 Test reports/summary forms for laboratory control samples (LCSs) including:
 - a) LCS spiking amounts,
 - b) Calculated %R for each analyte, and
 - c) The laboratory's LCS QC limits.
 - R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
 - a) Samples associated with the MS/MSD clearly identified,
 - b) MS/MSD spiking amounts,
 - c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
 - d) Calculated %Rs and relative percent differences (RPDs), and
 - e) The laboratory's MS/MSD QC limits
 - R8 Laboratory analytical duplicate (if applicable) recovery and precision:
 - a) the amount of analyte measured in the duplicate,
 - b) the calculated RPD, and
 - c) the laboratory's QC limits for analytical duplicates.
 - R9 List of method quantitation limits (MQLs) for each analyte for each method and matrix;
 - R10 Other problems or anomalies.

The Exception Report for every "No" or "Not Reviewed (NR)" item in laboratory review checklist.

- **Release Statement:** I am responsible for the release of this laboratory data package. This data package as been reviewed by the laboratory and is complete and technically compliant with the requirements of the methods used, except where noted by the laboratory in the attached exception reports. By my signature below, I affirm to the best of my knowledge, all problems/anomalies, observed by the laboratory as having the potential to affect the quality of the data, have been identified by the laboratory in the Laboratory Review Checklist, and no information or data have been knowingly withheld that would affect the quality of the data.
- **Check, if applicable:** [] This laboratory is an in-house laboratory controlled by the person responding to rule. The official signing the cover page of the rule-required report (for example, the APAR) in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

La	bora	atory Review Checklist: Reportable Data						
Lab	Laboratory Name: LRC Date:							
Proj	ect N	ame: L	Laboratory Job Number:					
Rev	iewer	Name: Pr	ren Batch Number(s):					
#1	A2	Description	top Baten Humber(b).	Vee	No	NA ³	NR ⁴	FR#5
#	A	Chain of sustady (C.O.C)		103	140	in a	IVIX	LIN
D1	OI	Did some les most the leb sectors's standard conditions of som	ala assantabilita anan assaint?					
KI	U	Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?			2	a :		
Da	OI				2			
R2	OI	Sample and quality control (QC) identification						
		Are all laboratory ID numbers cross-referenced to the corresponding OC date?				9 - 5		
D2	OI	Are all laboratory ID numbers cross-referenced to the corresp	onding QC data?			-		
KJ	U	Were all samples prepared and analyzed within holding times?						
		Other than those results < MOL, were all other raw values bracketed by calibration standards?						
		Were calculations checked by a peer or supervisor?						
		Were all analyte identifications checked by a peer or supervisor?				2		
		Were sample quantitation limits reported for all analytes not detected?						
		Were all results for soil and sediment samples reported on a d	ry weight basis?		1	0		
		Were % moisture (or solids) reported for all soil and sediment samples?					Í	
		If required for the project, TICs reported?						
R4	0	Surrogate recovery data						
		Were surrogates added prior to extraction?]	
		Were surrogate percent recoveries in all samples within the laboratory QC limits?						
R5	OI	I Test reports/summary forms for blank samples						
		Were appropriate type(s) of blanks analyzed?						
		Were blanks analyzed at the appropriate frequency?						
		Were method blanks taken through the entire analytical process, including preparation and, if						
		applicable, cleanup procedures?				9 5		
D6	OI	Laboratory control samples (LCS):				· · · · · · · · · · ·		
KO	01	Were all COCs included in the LCS?						
		Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?					2	
		Were LCSs analyzed at the required frequency?			1	a - 1		
		Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			4	2		
		Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to						
		calculate the SQLs?						
		Was the LCSD RPD within QC limits?						
R 7	OI	Matrix spike (MS) and matrix spike duplicate (MSD) data						
		Were the project/method specified analytes included in the M	S and MSD?					
		Were MS/MSD analyzed at the appropriate frequency?						
		Were MS (and MSD, if applicable) %Rs within the laboratory	/ QC limits?					
Do		Were MS/MSD RPDs within laboratory QC limits?			1			
K8	OI	Analytical duplicate data			-			
		Were appropriate analytical duplicates analyzed for each matr	nx?		2	2 - 2		
		Were analytical duplicates analyzed at the appropriate frequent	ncy?		·			
DO	OI	Were RPDs of relative standard deviations within the laborato	bry QC limits?			C		
K9	or	Are the MOL's for each method analyte included in the laboratory data nackage?						
		Do the MOLs correspond to the concentration of the lowest m	on-zero calibration standard?					
		Are unadjusted MOLs included in the laboratory data package	a?				2	
R10	OI	Other problems/anomalies						
335.6	~1	Are all known problems/anomalies/special conditions noted in	n this LRC and ER?					
		Were all necessary corrective actions performed for the report	ted data?					
		Was applicable and available technology used to lower the SC	QL minimize the matrix interference affects			9		
		on the sample results?	ne na nakola na witerio di Arabi ilikulare do contrato and en argente di Contrato di Contrato di Contrato di Co Na					

La	abor	atory Review Checklist: Supporting Data						
Laboratory Name: LRC Date:				- 60	-	(44)	-	1.44
Project Name:			Laboratory Job Number:					
Revi	ewer	Name: F	Prep Batch Number(s):	0.0	240	1941	0.00	1.45
# ¹	\mathbf{A}^2	Description		Yes	No	NA ³	NR ⁴	ER# ⁵
S1	OI	Initial calibration (ICAL)					1	
		Were response factors and/or relative response factors for each analyte within QC limits?						
		Were percent RSDs or correlation coefficient criteria met?					¢	
		Was the number of standards recommended in the method used for all analytes? Were all points generated between the lowest and highest standard used to calculate the curve?			-		-	
							9	
		Are ICAL data available for all instruments used?	or all instruments used?			1	<u> </u>	
		Has the initial calibration curve been verified using an appropriate second source standard?						
S2	OI	Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank ⁶ :						
		Was the CCV analyzed at the method-required frequency?						
	Were percent differences for each analyte within the method-required QC limits? Was the ICAL curve verified for each analyte?							
		Was the absolute value of the analyte concentration in the inorganic CCB < MDL?					Ĩ	
S 3	0	Mass spectral tuning:						
		Was the appropriate compound for the method used for tunin	g?					
		Were jon abundance data within the method-required OC limits?						
S 4	0	Internal standards (IS):						
-		Were IS area counts and retention times within the method-required OC limits?						
	OI	OI Raw data (NELAC section 1 appendix A glossary, and section 5.)						
		Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?						
		Were data associated with manual integrations flagged on the raw data?					2 0	
S6	O Dual column confirmation							
		Did dual column confirmation results meet the method-required QC?					<u> </u>	
S 7	0	Tentatively identified compounds (TICs):						
		If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?					с с	
S8	Ι	Interference Check Sample (ICS) results:			8			
		Were percent recoveries within method QC limits?			۵		t	
S 9	Ι	Serial dilutions, post digestion spikes, and method of standard additions						2
		Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			1	1	-	
S10	OI	Method detection limit (MDL) studies						
		Was a MDL study performed for each reported analyte?						
		Is the MDL either adjusted or supported by the analysis of DCSs?			2			
S11	OI	Proficiency test reports:						
		Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?						
S12	OI	Standards documentation						
	1	Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?						
S13	OI	Compound/analyte identification procedures						
	Ĩ	Are the procedures for compound/analyte identification documented?						
S14	OI	Demonstration of analyst competency (DOC)						
		Was DOC conducted consistent with NELAC Chapter 5C?						
		Is documentation of the analyst's competency up-to-date and on file?						
S15	OI	Verification/validation documentation for methods (NELA	AC Chap 5n 5)					
		Are all the methods used to generate the data documented, ve	rified, and validated, where applicable?				-	
S16	OI	Laboratory standard operating procedures (SOPs):						
		Are laboratory SOPs current and on file for each method perf	formed?					
1	1							

Laboratory Review Checklist: Exception Reports					
Laborat	tory Name:	LRC Date:			
Project	Name:	Laboratory Job Number:			
Reviewer Name:		Prep Batch Number(s):			
ER# ⁵	DESCRIPTION				

Items identified by the letter "R" must be available as a hard copy or as a .pdf file. Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
O= organic analyses; I = inorganic analyses (and general chemistry, when applicable);

NA = Not applicable;
NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

6. CCB = Continuing Calibration Blank